

Bradley Development League: Target Industry Analysis

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Prepared for:

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Executive Summary

Camoin Associates was commissioned by the Bradley Development League to conduct a Target Industry Analysis for the 4-Town Region that comprises the Bradley Development League (“the League”). The League’s jurisdiction covers the towns of Suffield, East Granby, Windsor Locks and Windsor, and includes the Bradley International Airport (BDL).

The League has overseen significant economic activity in the region over the last 18 years and seeks to better understand the industry landscape as it applies to future economic potential. This includes understanding the current industry mix within the region, but also looking towards its future economic development focus and determining if the League’s member towns are equipped to maintain and grow their businesses in an increasingly competitive and technology driven world.

Target industries were determined based on several layers of criteria. These criteria consisted of economic and industry data like historic and projected job growth, location quotient and gross regional product to assess each industry’s contribution to the regional economy. Along with quantitative data, our analysis also considered local and regional assets, physical infrastructure, and stakeholder networks that will enable business growth. Additional context was provided through interviews with David Griggs of the MetroHartford Alliance, Dan Carstens of the Greater Hartford Foreign Trade Zone and by the League’s Operations Committee and Board of Directors during a site visit and presentation on April 10, 2018.

Based on the data outlined above, Camoin Associates determined the following target industry clusters for the Bradley Development League.

Aviation Related Design and Manufacturing - These industries are related to the designing, engineering, and technical services associated with manufacturing airplanes and related airplane components, with a focus on engines and turbines.

Insurance, Finance and Technology - The Insurance, Finance, and Technology cluster is a combination of industries that captures the intersection of subsectors in both Insurance and Finance, as well as Information Technology. Together, these industries support both the Financial Technology (“Fintech”) and Insurance Technology (“Insurtech”) industries, defined as the use of computer programs and other technology that support or enable banking and financial services or the insurance sector.

Recommendations for Growing Target Industries

With the target clusters established, Camoin Associates delved further into the industry and occupational trends of each cluster, including emerging changes in subsectors relevant to the League’s member towns.

Designating target industries does not preclude the Bradley Development League or their partner Economic Development Organizations (EDOs) from pursuing growth strategies in additional industries. Rather, target industries allow EDOs like the Bradley Development League to strategically direct resources to industries with a competitive advantage. These industries play a crucial role in the overall economic environment of the 4-Town Region and should remain a high priority for the League. The **Aviation Related Design and Manufacturing** cluster and **Insurance, Finance and Technology** cluster produce \$37.6 billion in Gross Regional Product across the 2-County Region of Hartford County, CT and Hampden County, MA. This is over a third of the 2-County Region’s overall GRP, \$102.5 billion.

Recommendations for facilitating growth in the target industry clusters are divided into four categories, listed below. Additional details and next steps for the League are discussed in the Final Recommendations section.

Strategic Partnerships & Organizational Capacity

1. Strengthen the League's partnership with the MetroHartford Alliance and its CEO.
2. Establish relationships and partnerships with all entities providing workforce training and education programs that support the target sectors.
3. Establish relationships and partnerships with regional/state target industry trade associations.
4. Enlist the member towns of the Bradley Development League and other regional organizations to build capacity for implementation of Target Industry Analysis recommendations.
5. Formalize the entity that will be responsible for the oversight of implementation of the Target Industry Analysis recommendations.

Marketing & Attraction

1. Establish a dual brand for the Bradley Development League as an ideal location for both Aviation Related Design and Manufacturing and Finance, Insurance and Technology companies.
2. Establish a marketing campaign targeted to aircraft engine product manufacturing.
3. Establish a marketing campaign targeted to insurance company data centers, cyber security and other IT support divisions.

Business Retention & Expansion

1. Develop a cooperative business visitation program for the two target industry clusters and their respective suppliers. This program would establish a list of known businesses within Aviation Related Design and Manufacturing and Insurance, Finance and Technology sectors located within the League member towns.
2. Work closely with the Capitol Region Council of Governments (CRCOG) as their Comprehensive Economic Development Strategy (CEDS) moves to completion and recommendations for their target industry clusters are finalized.

Sites & Incentives

1. Update the existing Sites and Building portion of the Bradley Development League website to provide information specific to target industry clusters.
2. Enhance the promotion of the FTZ to local leaders and most importantly to the League's Aviation Manufacturing companies that are likely doing business internationally.
3. Develop a uniform incentive page across the League region that would offer economic benefits to those new and expanding businesses that support further development of both the Aviation Related Design and Manufacturing supply chain and Insurance, Finance and Technology businesses.

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Project Intent

Recent research shows that today's most successful economic development organizations (EDO's) are collecting and utilizing data to identify industries and subsectors that are most prevalent to their region's growth, or demonstrate the greatest opportunity for attracting and retaining private investment, growing jobs and personal prosperity, as well as tax base.

The purpose of the Bradley Development League ("the League") Target Industry Analysis is to identify those target industries that the League member towns can focus their collective economic development initiatives on to achieve similar goals. By examining past, current, and future job projections for all industries in the Hartford region, and more specifically around the catchment area of the Bradley International Airport (BDL), this project identifies those industries with the greatest likelihood of supporting economic growth for the Towns of Suffield, Windsor, East Granby, and Windsor Locks.

Introduction

This report is divided into three sections:

- **Regional Profile** – This section of the report uses industry data from Economic Modeling Specialists, Intl. (EMSI) to outline the business mix in the Bradley Development League 4-Town Region, in addition to the 2-County Region of Hartford County, CT and Hampden County, MA. Gaining an understanding of industry dynamics across the four towns and how those relate to the larger regional area helps pinpoint regional strengths, competitive factors and industries that present opportunities for the Bradley Development League jurisdiction.
- **Target Industry Cluster Profiles** – These profiles further investigate characteristics of the target industry clusters, including workforce availability, education pipeline, and emerging trends in the industry that will be critical to ensuring future success.
- **Final Recommendations** – The recommendations advise the Bradley Development League on specific tasks that will advance business growth in the identified target industry clusters, as well as organizational capacity guidance that will enable the League to align itself with other entities in the region to leverage shared resources.

Process and Methods Overview

Our team utilized extensive knowledge of the broader Connecticut economic landscape, industry data available from the member towns and various stakeholders, and the proprietary data from EMSI (Economic Modeling Specialists, Intl.) to conduct an analysis of current industry employment, wages, and historic and projected growth to assess trends and future opportunities for generating economic activity based on the assets in the League region.

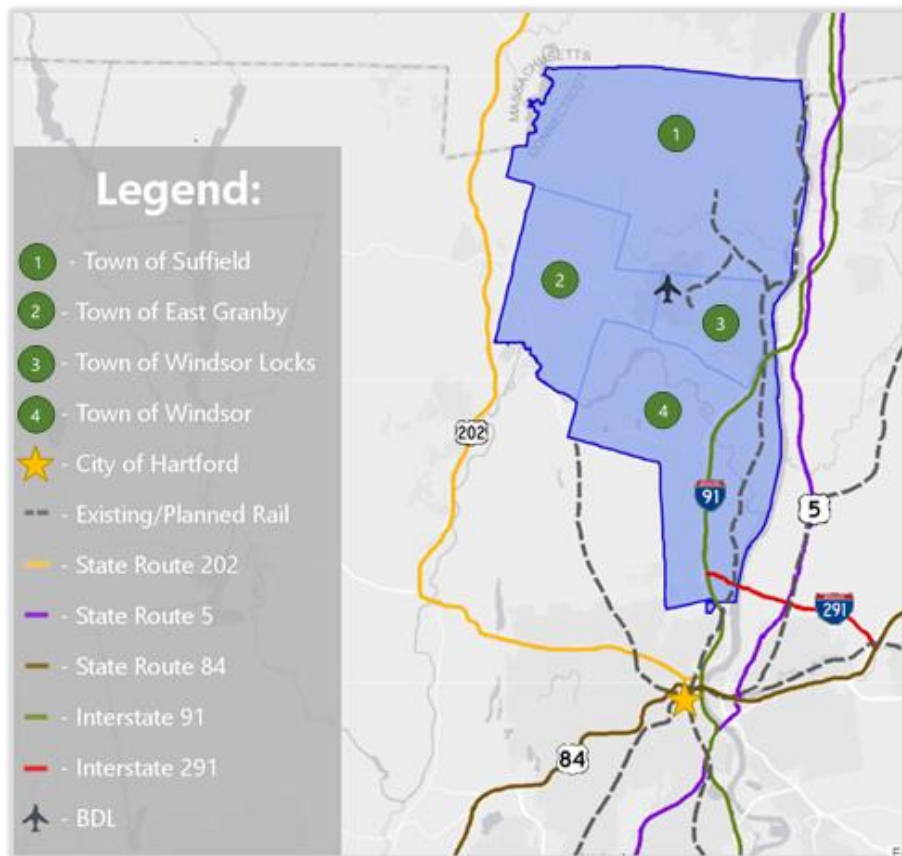
After determining the region's competitive advantages compared to the surrounding region, Camoin Associates established a preliminary list of target industries for consideration. These target industries were filtered through a series of criteria, to determine the precise subsectors that demonstrate the greatest opportunities for the League region based on existing assets and industry trends. This methodology is discussed in greater detail in Appendix B. After confirming the target industries with the Operations Committee, Camoin Associates completed an in-depth industry analysis on the target clusters to gain insight into industry trends and factors required for future investment.

Finally, data collected for the target industry clusters was developed into target industry profiles. These profiles showcase industrial and occupation trends, education and skills required to successfully build the workforce around the target industries and lastly, emerging industry trends that will drive the success of the industry over the coming years.

Geographies

Analysis was conducted on two primary geographies. The first was comprised of the four Bradley Development League towns. The second, was defined as the labor shed area for the Hartford region and is comprised of Hartford County, CT and Hampden County, MA. Hampden County, MA was included in this regional geography for several reasons, including: the airport's proximity to the Massachusetts border, commutation patterns of large employment sectors, and the likelihood that the airport supports business development in the Springfield MSA.

Bradley Development League, 4-Town Region¹



Source: Esri, Connecticut State Railway Plan

¹ ZIP Codes: East Granby (06026), Town of Suffield (06093, 06078), Town of Windsor (06095), Town of Windsor Locks (06096)

Regional Geography

While BDL is located in Connecticut, it is important to consider the regional labor pool and look beyond state boundaries to account for potential growth patterns. BDL is nearly equidistant between Hartford, CT and Springfield, MA, placing it between two mid-size northeast cities. While the Bradley Development League is concerned with building resources to attract and support business within their four-town jurisdiction, understanding the regional flow of labor, and goods and services will be beneficial as the League develops marketing materials.

Bradley International Airport, 2-County Region



Regional Profile

The goal of the Regional Profile is to identify top employment sectors and clusters in the region based on current employment size, growth, and concentration. Beyond the status of industry, the profile analyzes historical and projected figures to reveal trends across time. Additionally, previous knowledge of the region, desktop research and conversations with local and regional stakeholders provided context for the Regional Profile.

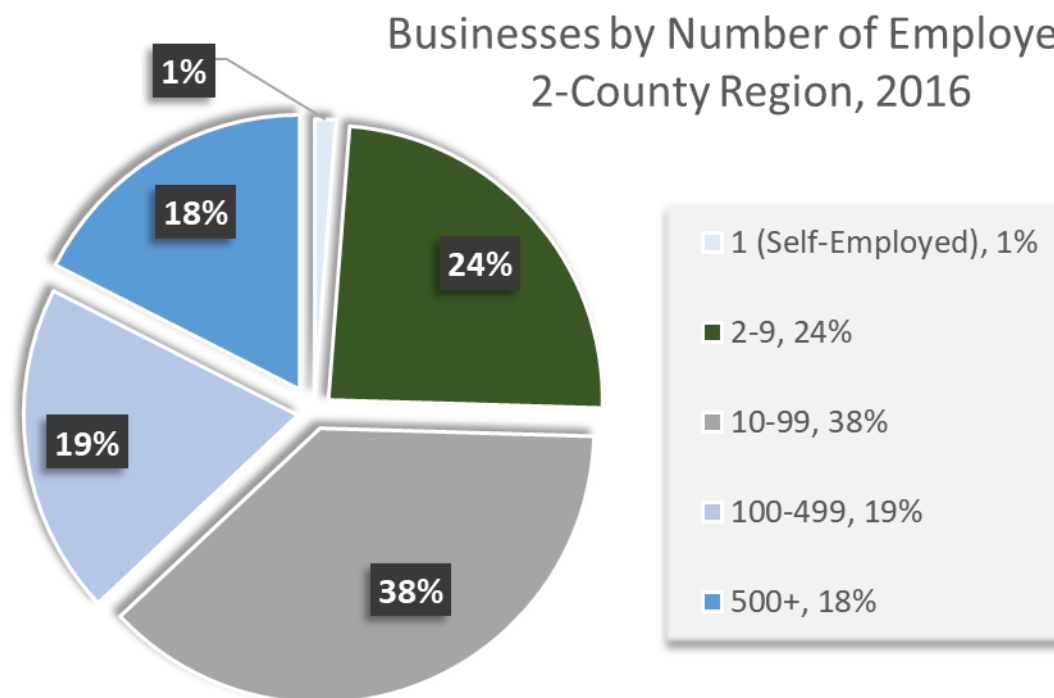
Regional Industry Data

This report utilizes industry data from Economic Modeling Specialists, Intl. (EMSI) to outline the business mix in the Bradley Development League 4-Town Region and the 2-County Region of Hartford County, CT and Hampden County, MA. These geographies are benchmarked against the State of Connecticut.

Business Size

Within the 2-County Region of Hampden County, MA and Hartford, CT, the largest percentage of employees, 38%, work within businesses that employ between 10 and 99 people. The next largest size business category are businesses with two to nine employees, comprising 24% of all businesses. Approximately 1% of all businesses in the 2-County Region have a single employee.

Figure 1: Businesses by Number of Employees, 2-County Region, 2016



Source: YourEconomy

Jobs by Industry

Below, are three tables detailing the historic job change from 2012 to 2017 by 2-digit NAICS² industries for the 4-Town Region, the 2-County Region, and the state of Connecticut.

In total, the 4-Town Region employs 49,486 people. Over the past five years, job growth within the 4-Town Region has remained flat, adding 47 jobs since 2012. Within the 4-Town Region, the largest number of people are employed in the Manufacturing industry, at 8,833 jobs in 2017. This is closely followed by Finance and Insurance employing 7,665 people. Both industries, however, have shed jobs over the past five years, losing 613 and 1,145 jobs respectively. Conversely, the industries that have shown the most growth over the past five years include Transportation and Warehousing, adding 584 jobs; followed by, Professional, Scientific, and Technical Services; and Health Care and Social Assistance, adding nearly 389 jobs and 322 jobs, respectively. Within the 4-Town Region, average earnings are high; overall average earnings are \$92,071, which is over \$21,000 higher than the 2-County Region, and nearly \$16,000 higher than the state.

Table 1: Jobs by Industry, 4-Town Region

Jobs by Industry, 4-Town Region						
NAICS (2-digit)	Description	2012 Jobs	2017 Jobs	2012 - 2017 Change	2012 - 2017 % Change	Avg. Earnings Per Job
11	Agriculture, Forestry, Fishing and Hunting	0	0	0	0%	\$ -
21	Mining, Quarrying, and Oil and Gas Extraction	<10	<10	Insf. Data	Insf. Data	Insf. Data
22	Utilities	59	45	(14)	(24%)	\$ 168,714
23	Construction	1,501	1,697	196	13%	\$ 85,832
31	Manufacturing	9,446	8,833	(613)	(6%)	\$ 115,029
42	Wholesale Trade	3,669	3,125	(544)	(15%)	\$ 89,187
44	Retail Trade	1,546	1,598	52	3%	\$ 37,111
48	Transportation and Warehousing	4,272	4,856	584	14%	\$ 57,648
51	Information	521	432	(89)	(17%)	\$ 96,317
52	Finance and Insurance	8,810	7,665	(1,145)	(13%)	\$ 157,711
53	Real Estate and Rental and Leasing	526	601	75	14%	\$ 58,142
54	Professional, Scientific, and Technical Services	3,178	3,567	389	12%	\$ 94,675
55	Management of Companies and Enterprises	1,250	1,514	264	21%	\$ 137,685
56	Administrative and Support	2,346	2,603	257	11%	\$ 48,875
61	Educational Services	826	771	(55)	(7%)	\$ 60,503
62	Health Care and Social Assistance	2,340	2,662	322	14%	\$ 52,572
71	Arts, Entertainment, and Recreation	192	232	40	21%	\$ 29,132
72	Accommodation and Food Services	2,291	2,432	141	6%	\$ 26,248
81	Other Services (except Public Administration)	1,571	1,806	235	15%	\$ 39,261
90	Government	5,086	5,032	(54)	(1%)	\$ 95,593
99	Unclassified Industry	<10	<10	Insf. Data	Insf. Data	Insf. Data
	Total	49,439	49,486	47	0.1%	\$ 92,071

Source: EMSI

² The North American Classification Standard (NAICS) codes are used to identify industries in this analysis. The standard is maintained by the US Census Bureau and is used by Federal statistical agencies in classifying business establishments. Under this standard, industries are organized into 2-digit through 6-digit levels. 2-digit codes show the highest aggregate NAICS code level representing broad categories such as "retail," whereas 6-digit industry codes present a finer level of detail like "fruit and vegetable markets."

The 2-County Region employs 774,347 people. Over the past five years, the 2-County Region has shown growth, adding 24,574 jobs since 2012, resulting in over 3% growth, just larger than that of the state as a whole. In the 2-County Region, the industries with the highest number of jobs include Health Care and Social Assistance employing 136,115 people, and Government employing 107,393 people. Health Care and Social Assistance added the most jobs of all industries within the 2-County Region at nearly 18,925 jobs, a 16% increase, which is growth nearly 13 percentage points higher than the 2-County Region as a whole. The cities of Springfield and Hartford are home to a number of large hospitals, attributing to the high number of jobs and growth. Additionally, the University of Connecticut has a medical school.

Other industries have shown growth including Transportation and Warehousing, as well as Professional, Scientific, and Technical Services; and Administrative and Support, adding 4,472, 3,656, and 3,623 jobs respectively. Conversely, the industries that shed the largest number of jobs over the past five years include Other Services (except Public Administration)³, which lost 6,123 jobs; followed by Finance and Insurance declining by 4,544 and Manufacturing declining by 2,539 jobs. This job decline is mirrored in the 4-Town Region and suggests that attention to both geographies is warranted by economic development officials.

Table 2: Jobs by Industry, 2-County Region

Jobs by Industry, 2-County Region						
NAICS (2-digit)	Description	2012 Jobs	2017 Jobs	2012 - 2017 Change	2012 - 2017 % Change	Avg. Earnings Per Job
11	Agriculture, Forestry, Fishing and Hunting	2,123	1,644	(479)	(23%)	\$ 33,135
21	Mining, Quarrying, and Oil and Gas Extraction	177	145	(32)	(18%)	\$ 93,287
22	Utilities	2,261	1,967	(294)	(13%)	\$ 161,726
23	Construction	29,386	31,517	2,131	7%	\$ 69,783
31	Manufacturing	74,304	71,765	(2,539)	(3%)	\$ 96,002
42	Wholesale Trade	25,244	24,747	(497)	(2%)	\$ 85,003
44	Retail Trade	73,296	73,065	(231)	(0%)	\$ 36,955
48	Transportation and Warehousing	20,847	25,319	4,472	21%	\$ 54,010
51	Information	13,611	13,173	(438)	(3%)	\$ 108,514
52	Finance and Insurance	64,346	59,802	(4,544)	(7%)	\$ 143,936
53	Real Estate and Rental and Leasing	9,839	10,382	543	6%	\$ 63,958
54	Professional, Scientific, and Technical Services	38,866	42,522	3,656	9%	\$ 97,125
55	Management of Companies and Enterprises	11,583	13,599	2,016	17%	\$ 131,528
56	Administrative and Support	35,941	39,564	3,623	10%	\$ 43,230
61	Educational Services	22,751	23,854	1,103	5%	\$ 43,647
62	Health Care and Social Assistance	117,190	136,115	18,925	16%	\$ 59,842
71	Arts, Entertainment, and Recreation	10,918	11,665	747	7%	\$ 24,233
72	Accommodation and Food Services	48,367	50,637	2,270	5%	\$ 23,144
81	Other Services (except Public Administration)	41,501	35,378	(6,123)	(15%)	\$ 33,673
90	Government	107,184	107,393	209	0%	\$ 88,282
99	Unclassified Industry	40	95	55	138%	\$ 76,072
	Total	749,773	774,347	24,574	3.3%	\$ 71,411

Source: EMSI

³ The Other Services (except Public Administration) comprises establishments engaged in services not specifically provided for elsewhere in the classification system, including but not limited to: equipment and machinery repairing, advocacy, etc. <https://www.bls.gov/iag/tgs/iag81.htm>

In 2017, there were over 1.8 million jobs in Connecticut. Similar to the 2-County Region, the largest industries in Connecticut by number of jobs include Health Care and Social Assistance employing 281,106 people; followed by Government employing 248,389 people. Additionally, the most job growth was realized in Health Care and Social Assistance adding nearly 11,863 jobs over the past five years, resulting in 4% growth. This is closely followed by Education Services, adding over 10,459 jobs, a 15% growth. Conversely, the industries that shed the highest number of jobs include Government losing over 8,205; followed by Manufacturing losing over 7,463; and Finance and Insurance losing over 6,304; these trends of job loss are also mirrored in the 4-Town Region and 2-County Region.

Table 3: Jobs by Industry, Connecticut

Jobs by Industry, Connecticut						
NAICS (2-digit)	Description	2012 Jobs	2017 Jobs	2012 - 2017 Change	2012 - 2017 % Change	Avg. Earnings Per Job
11	Agriculture, Forestry, Fishing and Hunting	6,646	6,897	251	4%	\$ 36,409
21	Mining, Quarrying, and Oil and Gas Extraction	595	562	(33)	(6%)	\$ 94,016
22	Utilities	5,934	5,593	(341)	(6%)	\$ 158,850
23	Construction	80,271	86,441	6,170	8%	\$ 63,822
31	Manufacturing	167,707	160,244	(7,463)	(4%)	\$ 100,691
42	Wholesale Trade	65,074	63,954	(1,120)	(2%)	\$ 107,156
44	Retail Trade	188,634	191,241	2,607	1%	\$ 39,786
48	Transportation and Warehousing	45,016	49,649	4,633	10%	\$ 58,273
51	Information	32,874	34,097	1,223	4%	\$ 116,985
52	Finance and Insurance	117,808	111,504	(6,304)	(5%)	\$ 187,947
53	Real Estate and Rental and Leasing	25,429	26,555	1,126	4%	\$ 67,287
54	Professional, Scientific, and Technical Services	110,033	116,705	6,672	6%	\$ 105,504
55	Management of Companies and Enterprises	30,567	32,367	1,800	6%	\$ 179,894
56	Administrative and Support	94,948	102,049	7,101	7%	\$ 48,860
61	Educational Services	69,780	80,239	10,459	15%	\$ 59,642
62	Health Care and Social Assistance	269,243	281,106	11,863	4%	\$ 62,268
71	Arts, Entertainment, and Recreation	31,016	34,275	3,259	11%	\$ 32,294
72	Accommodation and Food Services	120,837	130,548	9,711	8%	\$ 25,401
81	Other Services (except Public Administration)	89,878	96,264	6,386	7%	\$ 32,262
90	Government	256,594	248,389	(8,205)	(3%)	\$ 87,375
99	Unclassified Industry	321	494	173	54%	\$ 98,060
	Total	1,809,205	1,859,173	49,968	3.0%	\$ 76,175

Source: EMSI

Detailed Industries

To get a more detailed view of industry dynamics, we examined the 6-digit NAICS industries, which are the most specific classification of NAICS codes. The following two tables include detailed industry data for the top 25, 6-digit industries by 2017 jobs, within the 4-Town Region and the 2-County Region. In the 4-Town Region, the 6-digit industry that employs the most people is Direct Life Insurance Carriers with 5,236 jobs in 2017; however, this industry has shed jobs over the past five years, declining by 679 jobs, an 11% decrease. Despite job loss, this industry has very high average earnings of \$166,542 compared to the 4-Town Region average of \$92,000. Following Direct Life Insurance Carriers, Other Aircraft Parts and Auxiliary Equipment Manufacturing has a significant number of jobs employing 3,783 people. This industry has shown nominal decline over the past five years shedding 11 jobs. Similarly, this industry has high average earnings at nearly \$133,894. 11 of the 25 largest 6-digit NAICS industries within the Bradley Development League Region have shown job decline over the past five years.

Table 4: Top 25 Industries by 2017 Jobs, 6-digit NAICS, 4-Town Region

Top 25 Industries by 2017 Jobs, 6-digit NAICS, 4-Town Region							
NAICS (6-digit)	Description	2012 Jobs	2017 Jobs	2012 - 2017 Change	2012 - 2017 % Change	Avg. Earnings Per Job	2017 GRP
524113	Direct Life Insurance Carriers	5,915	5,236	(679)	(11%)	\$ 166,542	\$ 3,160,632,436
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	3,794	3,783	(11)	(0%)	\$ 133,894	\$ 1,018,135,532
902999	State Government, Excluding Education and Hospitals	1,763	1,697	(66)	(4%)	\$ 111,666	\$ 218,746,801
903611	Elementary and Secondary Schools (Local Government)	1,518	1,511	(7)	(0%)	\$ 89,839	\$ 124,443,235
551114	Corporate, Subsidiary, and Regional Managing Offices	1,224	1,501	277	23%	\$ 137,377	\$ 216,103,886
493110	General Warehousing and Storage	966	1,386	420	43%	\$ 51,783	\$ 78,773,860
561320	Temporary Help Services	1,085	1,331	246	23%	\$ 44,871	\$ 86,467,691
541330	Engineering Services	889	1,092	203	23%	\$ 95,138	\$ 110,973,166
903999	Local Government, Excluding Education and Hospitals	1,034	1,038	4	0%	\$ 93,129	\$ 93,195,373
524126	Direct Property and Casualty Insurance Carriers	956	980	24	3%	\$ 164,111	\$ 535,942,995
492110	Couriers and Express Delivery Services	739	926	187	25%	\$ 52,009	\$ 70,355,652
721110	Hotels (except Casino Hotels) and Motels	749	791	42	6%	\$ 32,461	\$ 54,336,665
336412	Aircraft Engine and Engine Parts Manufacturing	747	722	(25)	(3%)	\$ 140,082	\$ 176,655,162
722511	Full-Service Restaurants	652	691	39	6%	\$ 25,133	\$ 21,620,882
425120	Wholesale Trade Agents and Brokers	701	689	(12)	(2%)	\$ 131,467	\$ 314,631,861
623110	Nursing Care Facilities (Skilled Nursing Facilities)	628	611	(17)	(3%)	\$ 49,011	\$ 33,383,963
336390	Other Motor Vehicle Parts Manufacturing	395	577	182	46%	\$ 80,761	\$ 64,334,459
611110	Elementary and Secondary Schools	584	558	(26)	(4%)	\$ 67,889	\$ 39,274,068
561730	Landscaping Services	514	546	32	6%	\$ 36,780	\$ 28,094,443
424490	Other Grocery and Related Products Merchant Wholesalers	772	523	(249)	(32%)	\$ 64,757	\$ 77,319,471
722513	Limited-Service Restaurants	430	499	69	16%	\$ 19,280	\$ 18,699,831
424410	General Line Grocery Merchant Wholesalers	597	481	(116)	(19%)	\$ 62,724	\$ 60,949,959
523930	Investment Advice	337	476	139	41%	\$ 124,206	\$ 154,810,446
445110	Supermarkets and Other Grocery (except Convenience) Stores	489	475	(14)	(3%)	\$ 32,171	\$ 25,880,988
812930	Parking Lots and Garages	341	457	116	34%	\$ 39,155	\$ 20,189,111

Source: EMSI

The top industries by number of 2017 employees within the 2-County Region include Elementary and Secondary Schools (Local Government), employing 36,461 people; followed by General Medical and Surgical Hospitals employing over 25,307; and State Government, Excluding Education and Hospitals employing over 24,035 people. All three of these industries pay average earnings higher than the overall 2-County average (\$71,400). Nine of the top 25 industries have shown decline over the past five years.

Table 5: Top 25 Industries by 2017 Jobs, 6-digit NAICS, 2-County Region

Top 25 Industries by 2017 Jobs, 6-digit NAICS, 2-County Region							
NAICS (6-digit)	Description	2012 Jobs	2017 Jobs	2012 - 2017 Change	2012 - 2017 % Change	Avg. Earnings Per Job	2017 GRP
903611	Elementary and Secondary Schools (Local Government)	36,195	36,421	226	1%	\$ 84,354	\$3,072,606,589
622110	General Medical and Surgical Hospitals	27,001	25,307	(1,694)	(6%)	\$ 75,685	\$2,145,195,114
902999	State Government, Excluding Education and Hospitals	23,539	24,035	496	2%	\$ 106,795	\$3,298,994,942
722511	Full-Service Restaurants	21,464	22,440	976	5%	\$ 24,225	\$701,281,667
524113	Direct Life Insurance Carriers	24,721	22,186	(2,535)	(10%)	\$ 166,173	\$13,585,002,927
903999	Local Government, Excluding Education and Hospitals	18,413	18,561	148	1%	\$ 88,390	\$1,805,164,213
624120	Services for the Elderly and Persons with Disabilities	4,733	18,096	13,363	282%	\$ 24,033	\$471,811,254
621111	Offices of Physicians (except Mental Health Specialists)	14,445	15,756	1,311	9%	\$ 118,107	\$2,039,322,855
623110	Nursing Care Facilities (Skilled Nursing Facilities)	14,625	13,832	(793)	(5%)	\$ 47,913	\$771,588,551
445110	Supermarkets and Other Grocery (except Convenience) Stores	14,147	13,760	(387)	(3%)	\$ 32,252	\$759,424,933
551114	Corporate, Subsidiary, and Regional Managing Offices	11,330	13,460	2,130	19%	\$ 130,969	\$2,072,469,852
722513	Limited-Service Restaurants	11,695	13,227	1,532	13%	\$ 18,928	\$494,794,399
902612	Colleges, Universities, and Professional Schools (State Government)	12,830	12,912	82	1%	\$ 72,588	\$937,366,516
561320	Temporary Help Services	10,841	12,787	1,946	18%	\$ 42,328	\$830,972,775
611310	Colleges, Universities, and Professional Schools	11,416	12,558	1,142	10%	\$ 39,030	\$553,541,470
336412	Aircraft Engine and Engine Parts Manufacturing	11,816	11,325	(491)	(4%)	\$ 138,335	\$2,906,081,866
524126	Direct Property and Casualty Insurance Carriers	9,965	10,194	229	2%	\$ 163,783	\$5,704,381,012
621610	Home Health Care Services	5,126	8,161	3,035	59%	\$ 47,056	\$458,523,076
452210	Department Stores	8,697	7,885	(812)	(9%)	\$ 26,569	\$356,864,131
561720	Janitorial Services	6,432	7,408	976	15%	\$ 25,419	\$305,895,320
541110	Offices of Lawyers	7,416	7,193	(223)	(3%)	\$ 93,411	\$1,220,726,220
611110	Elementary and Secondary Schools	7,125	7,054	(71)	(1%)	\$ 58,435	\$453,867,955
624410	Child Day Care Services	7,175	6,735	(440)	(6%)	\$ 23,877	\$193,099,775
541512	Computer Systems Design Services	3,022	6,682	3,660	121%	\$ 133,762	\$1,061,601,976
493110	General Warehousing and Storage	4,070	5,906	1,836	45%	\$ 51,628	\$369,149,365

Source: EMSI

Regional Comparison

The following four tables compare the 4-Town Region, 2-County Region, and State of Connecticut on the following data points: (1) Historic percent change in number of jobs by industry, (2) Employment share by industry, (3) Location quotient by industry, and (4) Average earnings by industry.

As shown below, the percent change in employment by industry shows similarities among the three regions. All three regions have shown decline in Utilities; Manufacturing; Wholesale Trade; and Finance and Insurance. Compared to the other two regions, the 4-Town Region has shown notable growth in Management of Companies and Enterprises⁴; Arts, Entertainment, and Recreation; Other Services (except Public Administration); and Real Estate and Rental and Leasing.

Table 6: 2012-2017 Percent Change in Employment by Industry, Regional Comparison

2012 - 2017 Percent Change in Employment by Industry, Regional Comparison				
NAICS (2-digit)	Description	4-Town Region	2-County Region	Connecticut
11	Agriculture, Forestry, Fishing and Hunting	0%	(23%)	4%
21	Mining, Quarrying, and Oil and Gas Extraction	Insf. Data	(18%)	(6%)
22	Utilities	(24%)	(13%)	(6%)
23	Construction	13%	7%	8%
31	Manufacturing	(6%)	(3%)	(4%)
42	Wholesale Trade	(15%)	(2%)	(2%)
44	Retail Trade	3%	(0%)	1%
48	Transportation and Warehousing	14%	21%	10%
51	Information	(17%)	(3%)	4%
52	Finance and Insurance	(13%)	(7%)	(5%)
53	Real Estate and Rental and Leasing	14%	6%	4%
54	Professional, Scientific, and Technical Services	12%	9%	6%
55	Management of Companies and Enterprises	21%	17%	6%
56	Administrative and Support	11%	10%	7%
61	Educational Services	(7%)	5%	15%
62	Health Care and Social Assistance	14%	16%	4%
71	Arts, Entertainment, and Recreation	21%	7%	11%
72	Accommodation and Food Services	6%	5%	8%
81	Other Services (except Public Administration)	15%	(15%)	7%
90	Government	(1%)	0%	(3%)
99	Unclassified Industry	Insf. Data	138%	54%
	Total	0.1%	3.3%	3.0%

Source: EMSI

⁴ According to the BLS, Management of Companies and Enterprises sector comprises (1) establishments that hold the securities of (or other equity interests in) companies and enterprises for the purpose of owning a controlling interest or influencing management decisions or (2) establishments (except government establishments) that administer, oversee, and manage establishments of the company or enterprise and that normally undertake the strategic or organizational planning and decision making role of the company or enterprise. Establishments that administer, oversee, and manage may hold the securities of the company or enterprise. For more information please visit: <https://www.bls.gov/iag/tgs/iag55.htm>

Table 7 displays employment share by sector for each of the three geographies. Darker shades of green indicate a high employment share in the region, while lighter shades of green indicate lower employment share. Completely white boxes indicate no (0%) share of employment in the region.⁵ In the 4-Town Region there is a notably higher percentage of people working in Manufacturing (19%) than within the 2-County Region (9%) and the state (9%). Similarly, within Finance and Insurance, 18% of employees work in this industry in the 4-Town Region, compared to 8% in the 2-County Region and 6% in the state. Conversely, there is a notably higher percentage of people who work in Health Care and Social Assistance within the 2-County Region and state compared to the 4-Town Region, at 18%, 15%, and 5% respectively.

Table 7: 2017 Employment Share by Sector, Regional Comparison

2017 Employment Share by Sector, Regional Comparison				
NAICS (2-digit)	Description	4-Town Region	2-County Region	Connecticut
11	Agriculture, Forestry, Fishing and Hunting	0%	0%	0%
21	Mining, Quarrying, and Oil and Gas Extraction	0%	0%	0%
22	Utilities	0%	0%	0%
23	Construction	3%	4%	5%
31	Manufacturing	19%	9%	9%
42	Wholesale Trade	7%	3%	3%
44	Retail Trade	3%	9%	10%
48	Transportation and Warehousing	9%	3%	3%
51	Information	1%	2%	2%
52	Finance and Insurance	18%	8%	6%
53	Real Estate and Rental and Leasing	1%	1%	1%
54	Professional, Scientific, and Technical Services	6%	5%	6%
55	Management of Companies and Enterprises	3%	2%	2%
56	Administrative and Support	5%	5%	5%
61	Educational Services	2%	3%	4%
62	Health Care and Social Assistance	5%	18%	15%
71	Arts, Entertainment, and Recreation	0%	2%	2%
72	Accommodation and Food Services	5%	7%	7%
81	Other Services (except Public Administration)	3%	5%	5%
90	Government	10%	14%	13%
99	Unclassified Industry	0%	0%	0%
	Total	100%	100%	100%

Source: EMSI

⁵ It is important to note that the Agriculture, Forestry, Fishing and Hunting industry is both seasonal and highly underreported, therefore, 0% employment share may be an underestimation of the current industry employment.

Location Quotient (LQ) indicates how concentrated a particular industry is compared to a larger geography. LQ is calculated by dividing the percent of jobs within each industry locally by the percent of jobs in the same industry at the national level. A location quotient of at least 1.2 or higher demonstrates that the chosen geography has a strong presence of an industry.

Of all industries within the 4-Town Region, Finance and Insurance has the highest location quotient (LQ)⁶ at 4.00. This is significant, compared to an LQ of 1.99 in the 2-County Region, and 1.55 in the state. Other notable LQs within the 4-Town Region include Transportation and Warehousing at 2.84; Manufacturing at 2.27; and Management of Companies and Enterprises at 2.17.

Table 8: 2017 Location Quotient by Industry, Regional Comparison

2017 Location Quotient by Industry, Regional Comparison				
NAICS (2-digit)	Description	4 -Town Region	2 - County Region	Connecticut
11	Agriculture, Forestry, Fishing and Hunting	0.00	0.18	0.31
21	Mining, Quarrying, and Oil and Gas Extraction	0.03	0.05	0.08
22	Utilities	0.26	0.73	0.86
23	Construction	0.63	0.75	0.85
31	Manufacturing	2.27	1.18	1.10
42	Wholesale Trade	1.68	0.85	0.91
44	Retail Trade	0.31	0.91	1.00
48	Transportation and Warehousing	2.84	0.95	0.77
51	Information	0.47	0.92	0.99
52	Finance and Insurance	4.00	1.99	1.55
53	Real Estate and Rental and Leasing	0.73	0.81	0.86
54	Professional, Scientific, and Technical Services	1.13	0.86	0.98
55	Management of Companies and Enterprises	2.17	1.24	1.23
56	Administrative and Support	0.84	0.82	0.88
61	Educational Services	0.61	1.20	1.68
62	Health Care and Social Assistance	0.43	1.39	1.20
71	Arts, Entertainment, and Recreation	0.27	0.88	1.08
72	Accommodation and Food Services	0.57	0.76	0.82
81	Other Services (except Public Administration)	0.76	0.95	1.08
90	Government	0.66	0.90	0.87
99	Unclassified Industry	0.10	0.06	0.14

Source: EMSI

⁶ Location Quotients are calculated by comparing the industry's share of regional employment with its share of national employment. Suppose that Breweries (NAICS 31212) account for 0.16% of all regional jobs but only 0.015% of all national jobs. The region's LQ for Breweries would then be $(.16 / .015) = 10.67$, meaning that Breweries are nearly 11 times more concentrated in the region than average, according to EMSI.

Overall, average earnings in the 4-Town Region, at \$92,071, are about \$21,000 higher than in the 2-County Region, and about \$16,000 higher than the Connecticut. The 4-Town Region's most prevalent industries by job number include Manufacturing; Finance and Insurance; and Government, all of which have higher than average earnings at \$115,029; \$157,711; and \$95,593 respectively. Additionally, on average, employees within these industries in the 4-Town Region earn more than employees in those same industries in the 2-County Region.

Table 9: 2017 Average Earnings by Industry, Regional Comparison

2017 Average Earnings by Industry, Regional Comparison				
NAICS (2-digit)	Description	4-Town Region	2-County Region	Connecticut
11	Agriculture, Forestry, Fishing and Hunting	\$ -	\$ 33,135	\$ 36,409
21	Mining, Quarrying, and Oil and Gas Extraction	Insf. Data	\$ 93,287	\$ 94,016
22	Utilities	\$ 168,714	\$ 161,726	\$ 158,850
23	Construction	\$ 85,832	\$ 69,783	\$ 63,822
31	Manufacturing	\$ 115,029	\$ 96,002	\$ 100,691
42	Wholesale Trade	\$ 89,187	\$ 85,003	\$ 107,156
44	Retail Trade	\$ 37,111	\$ 36,955	\$ 39,786
48	Transportation and Warehousing	\$ 57,648	\$ 54,010	\$ 58,273
51	Information	\$ 96,317	\$ 108,514	\$ 116,985
52	Finance and Insurance	\$ 157,711	\$ 143,936	\$ 187,947
53	Real Estate and Rental and Leasing	\$ 58,142	\$ 63,958	\$ 67,287
54	Professional, Scientific, and Technical Services	\$ 94,675	\$ 97,125	\$ 105,504
55	Management of Companies and Enterprises	\$ 137,685	\$ 131,528	\$ 179,894
56	Administrative and Support	\$ 48,875	\$ 43,230	\$ 48,860
61	Educational Services	\$ 60,503	\$ 43,647	\$ 59,642
62	Health Care and Social Assistance	\$ 52,572	\$ 59,842	\$ 62,268
71	Arts, Entertainment, and Recreation	\$ 29,132	\$ 24,233	\$ 32,294
72	Accommodation and Food Services	\$ 26,248	\$ 23,144	\$ 25,401
81	Other Services (except Public Administration)	\$ 39,261	\$ 33,673	\$ 32,262
90	Government	\$ 95,593	\$ 88,282	\$ 87,375
99	Unclassified Industry	Insf. Data	\$ 76,072	\$ 98,060
	Overall Average Earnings	\$ 92,071	\$ 71,411	\$ 76,175

Note: Average earnings include wages and supplements

Source: EMSI

Shift Share Analysis

Shift Share Analysis distinguishes the various factors of an industry's employment growth. For example, is the change in jobs attributable to local competitive advantages or disadvantages? Is the growth attributable to overall national employment trends? Or is the industry change dependent on national employment trends? The shift share analysis helps to answer the question of "Why is employment growing or declining in this local industry?" To do this, shift share analysis splits regional job growth into four factors:

- **Industrial Mix Effect** – The industrial mix effect represents the share of regional industry growth explained by the growth of the specific industry at the national level. To arrive at this number, the national growth rate of the total economy is subtracted from the national growth rate of the specific industry, and this growth percentage is applied to the regional jobs in that industry.
- **National Growth Effect** – The national growth effect explains how much of the regional industry's growth is explained by the overall growth of the national economy: if the nation's whole economy is growing, you would generally expect to see some positive change in each industry in your local region (the proverbial "rising tide that lifts all boats" analogy).
- **Expected Change** – This is simply the rate of growth of the particular industry at the national level. Algebraically, the expected change is the sum of the industrial mix and the national growth.
- **Regional Competitive Effect** – The regional competitive effect is the most interesting of the three indicators. It explains how much of the change in a given industry is due to some unique competitive advantage that the region possesses, because the growth cannot be explained by national trends in that industry or the economy as whole. This effect is calculated by taking the total regional growth of the given industry and subtracting the national growth for that same industry. Note that this effect can be positive even as regional employment in the industry declines. This would indicate that regional decline is less than the national decline.

The following three tables show that the 4-Town Region, 2-County Region, and the state overall, all have a negative competitive effect in all industries combined. This may indicate, that in total, the state faces some industry disadvantages that could include demographic shifts or the business environment, which is causing localized job loss.

Within the 4-Town Region, unlike the 2-County Region and the state, the industry of Professional, Scientific, and Technical Services has a small, yet positive competitive affect. This indicates that the 4-Town Region has a small competitive advantage in this 2-digit industry. Professional, Scientific, and Technical Services includes computer and digital based subsectors that are also implicated in growth patterns of other industries, and continuing to strengthen these subsectors could prove beneficial for the regional economy. In total, the 4-Town Region has eight industries showing positive competitive effect, higher than that of the 2-County Region and the state, both of which only have five industries showing a positive competitive effect.

Table 10: 2012-2017 Shift Share All Industries by Competitive Effect, 4-Town Region

2012-2017 Shift Share All Industries by Competitive Effect, 4-Town Region					
NAICS (2-digit)	Description	Ind. Mix Effect	Nat'l Growth Effect	Expected Change	Competitive Effect
81	Other Services (except Public Administration)	(126)	124	(2)	256
55	Management of Companies and Enterprises	66	98	164	111
53	Real Estate and Rental and Leasing	15	41	56	47
62	Health Care and Social Assistance	78	184	262	45
71	Arts, Entertainment, and Recreation	12	15	27	27
54	Professional, Scientific, and Technical Services	143	250	393	15
56	Administrative and Support and Waste Management and Remediation Services	94	185	279	12
99	Unclassified Industry	2	0	2	4
11	Agriculture, Forestry, Fishing and Hunting	0	0	0	0
21	Mining, Quarrying, and Oil and Gas Extraction	(2)	1	(1)	(1)
22	Utilities	(4)	5	1	(16)
23	Construction	127	118	245	(26)
44	Retail Trade	(26)	122	96	(44)
48	Transportation and Warehousing	381	336	717	(67)
51	Information	(13)	41	28	(123)
61	Educational Services	10	65	75	(139)
90	Government	(315)	401	86	(171)
72	Accommodation and Food Services	157	180	337	(185)
42	Wholesale Trade	(157)	289	132	(686)
31	Manufacturing	(380)	744	364	(892)
52	Finance and Insurance	(245)	694	449	(1,449)
	Total for 4-Town Region	(182)	3,894	3,712	(3,282)

Source: EMSI

Table 11: 2012-2017 Shift Share All Industries by Competitive Effect, 2-County Region

2012-2017 Shift Share All Industries by Competitive Effect, 2-County Region					
NAICS (2-digit)	Description	Ind. Mix Effect	Nat'l Growth Effect	Expected Change	Competitive Effect
62	Health Care and Social Assistance	3,892	9,230	13,122	5,708
48	Transportation and Warehousing	1,859	1,642	3,501	1,241
55	Management of Companies and Enterprises	615	912	1,527	596
99	Unclassified Industry	23	3	26	32
21	Mining, Quarrying, and Oil and Gas Extraction	(55)	14	(41)	2
56	Administrative and Support and Waste Management and Remediation Services	1,433	2,831	4,264	(98)
22	Utilities	(145)	178	33	(353)
53	Real Estate and Rental and Leasing	271	775	1,046	(423)
11	Agriculture, Forestry, Fishing and Hunting	(112)	167	55	(556)
71	Arts, Entertainment, and Recreation	699	860	1,559	(836)
61	Educational Services	283	1,792	2,075	(1,018)
54	Professional, Scientific, and Technical Services	1,749	3,061	4,810	(1,097)
42	Wholesale Trade	(1,080)	1,988	908	(1,346)
51	Information	(348)	1,072	724	(1,396)
90	Government	(6,645)	8,442	1,797	(2,196)
23	Construction	2,496	2,315	4,811	(2,639)
72	Accommodation and Food Services	3,311	3,809	7,120	(4,644)
44	Retail Trade	(1,238)	5,773	4,535	(4,882)
31	Manufacturing	(2,988)	5,852	2,864	(4,973)
81	Other Services (except Public Administration)	(3,321)	3,269	(52)	(6,004)
52	Finance and Insurance	(1,786)	5,068	3,282	(7,990)
	Total for 2-County Region	(1,087)	59,053	57,966	(32,876)

Source: EMSI

Table 12: 2012-2017 Shift Share All Industries by Competitive Effect, Connecticut

2012-2017 Shift Share All Industries by Competitive Effect, Connecticut					
NAICS (2-digit)	Description	Ind. Mix Effect	Nat'l Growth Effect	Expected Change	Competitive Effect
81	Other Services (except Public Administration)	(7,192)	7,079	(113)	6,813
61	Educational Services	868	5,496	6,364	4,314
21	Mining, Quarrying, and Oil and Gas Extraction	(184)	47	(137)	95
11	Agriculture, Forestry, Fishing and Hunting	(352)	523	171	68
99	Unclassified Industry	188	25	213	23
22	Utilities	(381)	467	86	(510)
51	Information	(840)	2,589	1,749	(821)
71	Arts, Entertainment, and Recreation	1,986	2,443	4,429	(1,038)
53	Real Estate and Rental and Leasing	701	2,003	2,704	(1,558)
55	Management of Companies and Enterprises	1,624	2,407	4,031	(2,370)
48	Transportation and Warehousing	4,015	3,546	7,561	(2,575)
42	Wholesale Trade	(2,783)	5,125	2,342	(3,531)
56	Administrative and Support and Waste Management and Remediation Services	3,786	7,478	11,264	(3,902)
54	Professional, Scientific, and Technical Services	4,951	8,666	13,617	(7,086)
23	Construction	6,818	6,322	13,140	(7,128)
72	Accommodation and Food Services	8,272	9,517	17,789	(7,609)
44	Retail Trade	(3,187)	14,857	11,670	(9,426)
52	Finance and Insurance	(3,270)	9,279	6,009	(12,668)
31	Manufacturing	(6,744)	13,209	6,465	(13,293)
90	Government	(15,908)	20,210	4,302	(13,561)
62	Health Care and Social Assistance	8,941	21,206	30,147	(18,061)
	Total for Connecticut	1,308	142,496	143,804	(93,823)

Source: EMSI

Emerging Industries

The following table shows the top ten 6-digit industries by historic jobs added, that also fall within either the Professional, Scientific, and Technical Services (NAICS 54) or Management of Companies and Enterprises (NAICS 55). These industries demonstrated a competitive factor in the 4-Town Region over the last five years. Additionally, industries with high job growth over the past five years may indicate that they are emerging industries in the economy with further potential to expand. The industry that showed the highest number of jobs added between 2012 – 2017 was Computer Systems Design Services, adding over 3,600 jobs; followed by Corporate, Subsidiary, and Regional Managing Offices, which added an additional 2,100 jobs. Collectively, these ten industries added over 8,300 jobs in the 2-County Region over the past five years. That amounts to about a third of overall job growth in the 2-County Region between 2012-2017.

Nine of the top ten industries fall within Professional, Scientific, and Technical Services (NAICS 54); the only industry that falls within Management of Companies and Enterprises (NAICS 55) was Corporate, Subsidiary, and Regional Managing Offices, which showed significant growth. Of these industries, Computer Systems Design Services and Industrial Design Services have the highest location quotients at 1.36 and 1.34, respectively. These two industries also grew the most in terms of percentage growth at 121% growth and 151% growth, respectively.

Table 13: Top 10 Industries by Job Growth in Professional, Scientific, and Technical Services (54) & Management of Companies and Enterprises (55) in 2-County Region

Top 10 Industries by Job Growth in Professional, Scientific, and Technical Services (54) & Management of Companies and Enterprises (55) in 2-County Region						
NAICS (6-digit)	Description	2012 Jobs	2017 Jobs	2012 - 2017 Change	2012 - 2017 % Change	2017 Location Quotient
541512	Computer Systems Design Services	3,022	6,682	3,660	121%	1.36
551114	Corporate, Subsidiary, and Regional Managing Offices	11,330	13,460	2,130	19%	1.28
541330	Engineering Services	3,962	4,741	779	20%	1.00
541940	Veterinary Services	1,208	1,648	440	36%	0.89
541611	Administrative Management and General Management Consulting Services	2,005	2,432	427	21%	0.71
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	724	954	230	32%	0.47
541690	Other Scientific and Technical Consulting Services	441	661	220	50%	0.57
541614	Process, Physical Distribution, and Logistics Consulting Services	195	373	178	91%	0.58
541219	Other Accounting Services	1,350	1,517	167	12%	0.85
541420	Industrial Design Services	63	158	95	151%	1.34

Source: EMSI

Occupations

The following two tables display the top 25 occupations by number of 2017 jobs for the 4-Town Region and the 2-County Region. These occupations are displayed at the 3-digit SOC code level.⁷ Occupations can exist in multiple industries. For example, within the 4-Town Region, Business Operations Specialists is the largest occupation, accounting for 2,666 jobs. These 2,666 Business Operations Specialists are dispersed across industries such as Finance and Insurance; Management of Companies and Enterprises; and others. The Business Operations Specialists occupation has declined by 7% over the past five years, losing 191 jobs. The next largest occupations are Material Moving Workers and Motor Vehicle Operators, which employ 2,213 and 2,182 people. Each of these two occupations has grown over the past five years adding 230 and 113 jobs, respectively. Of the top 25 occupations by number of 2017 jobs in the 4-Town Region, 14 of these occupations have shed jobs over the last five years. Conversely, of the 11 occupations that have gained jobs over the past five years, the largest gains include Material Moving Workers adding 230 jobs; Other Personal Care and Service Workers adding 143 jobs; and Motor Vehicle Operators adding 113 jobs.

Table 14: Top 25 Occupations by 2017 Jobs, 4-Town Region

Top 25 Occupations by 2017 Jobs, 3-Digit SOC, 4-Town Region							
SOC (3-digit)	Description	2012 Jobs	2017 Jobs	2012 - 2017 Change	2012-2017 % Change	2017 Location Quotient	Avg. Hourly Earnings
13-1000	Business Operations Specialists	2,857	2,666	(191)	(7%)	1.68	\$35.16
53-7000	Material Moving Workers	1,983	2,213	230	12%	1.49	\$14.96
53-3000	Motor Vehicle Operators	2,069	2,182	113	5%	1.59	\$19.05
13-2000	Financial Specialists	2,145	2,036	(109)	(5%)	2.21	\$39.86
15-1100	Computer Occupations	1,998	2,005	7	0%	1.50	\$40.76
43-4000	Information and Record Clerks	1,973	1,872	(101)	(5%)	1.02	\$17.86
43-9000	Other Office and Administrative Support Workers	1,936	1,769	(167)	(9%)	1.27	\$19.00
17-2000	Engineers	1,705	1,748	43	3%	3.32	\$43.51
11-3000	Operations Specialties Managers	1,708	1,685	(23)	(1%)	3.02	\$62.26
43-5000	Material Recording, Scheduling, Dispatching, and Distributing Workers	1,537	1,518	(19)	(1%)	1.17	\$18.36
51-4000	Metal Workers and Plastic Workers	1,445	1,397	(48)	(3%)	2.31	\$22.11
41-3000	Sales Representatives, Services	1,392	1,264	(128)	(9%)	1.83	\$37.61
51-9000	Other Production Occupations	1,260	1,204	(56)	(4%)	1.45	\$19.77
43-6000	Secretaries and Administrative Assistants	1,212	1,157	(55)	(5%)	0.89	\$23.00
51-2000	Assemblers and Fabricators	1,197	1,154	(43)	(4%)	2.05	\$18.19
35-3000	Food and Beverage Serving Workers	1,078	1,151	73	7%	0.49	\$11.45
11-1000	Top Executives	1,157	1,140	(17)	(1%)	1.41	\$66.76
47-2000	Construction Trades Workers	961	1,062	101	11%	0.61	\$24.64
25-2000	Preschool, Primary, Secondary, and Special Education School Teachers	1,059	1,051	(8)	(1%)	0.80	\$35.86
11-9000	Other Management Occupations	991	1,020	29	3%	0.93	\$50.32
41-2000	Retail Sales Workers	961	1,005	44	5%	0.36	\$13.08
43-3000	Financial Clerks	1,071	990	(81)	(8%)	0.95	\$20.40
37-2000	Building Cleaning and Pest Control Workers	843	909	66	8%	0.70	\$14.33
39-9000	Other Personal Care and Service Workers	718	861	143	20%	0.66	\$12.62
49-9000	Other Installation, Maintenance, and Repair Occupations	821	852	31	4%	0.87	\$24.89

Source: EMSI

⁷ The Standard Occupational Classification (SOC) system is a federal statistical standard used by agencies to classify workers into occupational categories for collecting, calculating, or disseminating data. For more information please see: <https://www.bls.gov/soc/>

In the 2-County Region, top occupations include Retail Sales Workers with 38,499 people; followed by Health Diagnosing and Treating Practitioners, which employs 31,968 people; and Food and Beverage Serving Workers employing 30,134 people. Of these three occupations, Health Diagnosing and Treating Practitioners, as well as Food and Beverage Serving Workers, have grown over the past five years, adding 1,494 and 1,583 jobs. Occupations with the largest job growth include Other Personal Care and Service Workers, adding nearly 4,782 jobs over the past five years, and Nursing, Psychiatric, and Home Health Aides adding an additional 3,065 jobs. The majority of the occupations, 84%, have grown over the past five years.

Table 15: Top 25 Occupations by 2017 Jobs, 2-County Region

Top 25 Occupations by 2017 Jobs, 3-Digit SOC, 2-County Region							
SOC (3-digit)	Description	2012 Jobs	2017 Jobs	2012 - 2017 Change	2012-2017 % Change	2017 Location Quotient	Avg. Hourly Earnings
41-2000	Retail Sales Workers	38,514	38,499	(15)	(0%)	0.89	\$13.08
29-1000	Health Diagnosing and Treating Practitioners	30,474	31,968	1,494	5%	1.20	\$52.07
35-3000	Food and Beverage Serving Workers	28,551	30,134	1,583	6%	0.83	\$11.68
39-9000	Other Personal Care and Service Workers	24,300	29,082	4,782	20%	1.42	\$12.88
13-1000	Business Operations Specialists	27,811	27,593	(218)	(1%)	1.11	\$34.61
43-4000	Information and Record Clerks	26,387	26,681	294	1%	0.93	\$17.95
43-9000	Other Office and Administrative Support Workers	24,243	23,712	(531)	(2%)	1.09	\$18.30
25-2000	Preschool, Primary, Secondary, and Special Education School Teachers	23,007	23,135	128	1%	1.12	\$33.15
53-3000	Motor Vehicle Operators	19,046	21,393	2,347	12%	1.00	\$18.37
43-6000	Secretaries and Administrative Assistants	21,127	21,281	154	1%	1.04	\$21.94
43-5000	Material Recording, Scheduling, Dispatching, and Distributing Workers	20,886	21,227	341	2%	1.05	\$18.07
15-1100	Computer Occupations	19,800	21,146	1,346	7%	1.01	\$39.87
47-2000	Construction Trades Workers	19,158	20,330	1,172	6%	0.75	\$24.14
37-2000	Building Cleaning and Pest Control Workers	20,329	19,288	(1,041)	(5%)	0.95	\$14.82
21-1000	Counselors, Social Workers, and Other Community and Social Service Specialists	17,135	19,197	2,062	12%	1.85	\$23.79
13-2000	Financial Specialists	18,009	18,284	275	2%	1.27	\$39.15
11-9000	Other Management Occupations	17,039	17,652	613	4%	1.02	\$43.72
53-7000	Material Moving Workers	16,247	17,419	1,172	7%	0.75	\$14.83
31-1000	Nursing, Psychiatric, and Home Health Aides	13,117	16,182	3,065	23%	1.30	\$14.20
11-3000	Operations Specialties Managers	15,235	15,864	629	4%	1.81	\$60.61
29-2000	Health Technologists and Technicians	15,185	15,825	640	4%	1.04	\$26.26
11-1000	Top Executives	14,959	15,470	511	3%	1.23	\$64.77
43-3000	Financial Clerks	15,922	15,459	(463)	(3%)	0.94	\$19.80
51-4000	Metal Workers and Plastic Workers	15,147	14,690	(457)	(3%)	1.56	\$21.42
35-2000	Cooks and Food Preparation Workers	13,314	13,746	432	3%	0.85	\$13.09

Source: EMSI

Education Pipeline

One significant component of the region's workforce system is the number of colleges and universities graduating skilled students each year. In 2016, the ten regional colleges and universities listed below, graduated over 13,500 students. Central Connecticut State University had the highest number of graduates at just under 2,500. This University offers 100 undergraduate majors in more than 80 fields of study. Additionally, it offers 41 academic fields for graduate study. The University enrolls 12,500 students and of that, about 10,000 are undergraduates, and 2,400 as graduate students. These colleges and universities show that there is a skilled and educated talent pool in the region that can be incentivized to stay and work in the region post-graduation.

Table 16: 2-County Region College Graduates, 2016

2- County Region College Graduates, 2016	
School	Total Graduates
Central Connecticut State University	2,493
University of Hartford	1,935
Westfield State University	1,660
American International College	1,327
Western New England University	1,119
Springfield Technical Community College	1,051
Holyoke Community College	1,044
Springfield College	998
Manchester Community College	979
Bay Path University	940

Source: EMSI

Workforce Skills

To understand what workforce skills are in-demand across the 2-County Region, we can look at the frequency in which job seekers requested that applicants have specific skills over the past five-year period. The following two tables show the most frequently requested skills by job seekers from 2012-2017, specifically by reviewing the percentage of job advertisements that include the specific skill. We can look at the requested skills in terms of hard skills, which are generally more technical and specific to an occupation, as well as soft skills (also known as common skills), which are generally more overarching skills that span many occupations.

As shown below, soft skills are more frequently requested than hard skills, with the most frequently requested skill being Management, showing up in 29% of job advertisements. The most frequently requested hard skills include Merchandising and Nursing, both appearing in 6% of job advertisements.

Similarly, to understand specific credentials (such as degrees, certifications, etc.) that are in-demand within the region, we can look at the most frequently requested qualifications as well. Six of the top ten most frequently requested qualifications are some type of nursing credential. However, the most frequently requested credential is a Commercial Driver's License (CDL), showing up in over 112,500 job advertisements.

Table 17: Most Frequently Requested Hard Skills by Job Seekers in the 2-County Region, 2012-2017

Most Frequently Requested Hard Skills by Job Seekers in the 2-County Region	
Skill	Frequency in Postings
Merchandising	6%
Nursing	6%
Selling Techniques	5%
Accounting	4%
Restaurant Operation	3%
Microsoft Access	3%
Warehousing	2%
Purchasing	2%
Auditing	2%
Customer Satisfaction	2%

Source: EMSI

Table 18: Most Frequently Requested Soft Skills by Job Seekers in the 2-County Region, 2012-2017

Most Frequently Requested Soft Skills by Job Seekers in the 2-County Region	
Skill	Frequency in Postings
Management	29%
Sales	17%
Communications	14%
Customer Service	14%
Operations	12%
Leadership	11%
Innovation	7%
Problem Solving	6%
Driving	5%
Presentations	5%

Source: EMSI

Table 19: Most Frequently Requested Qualifications by Job Seekers in the 2-County Region, 2012-2017

Most Frequently Requested Qualifications by Job Seekers in the 2-County Region	
Qualification	Postings with Qualification
Commercial Driver's License (CDL)	112,590
Registered Nurse	75,548
Nurse Practitioner	22,168
Licensed Practical Nurse	21,015
Master Of Business Administration (MBA)	15,760
Advanced Practice Registered Nurse	9,245
Certified Public Accountant	8,518
Certified Nursing Assistant	7,445
Licensed Clinical Social Worker (LCSW)	4,582
Licensed Vocational Nurses	4,440

More

Bradley Development League Target Industry Clusters

Target Clusters Overview

After data collection, background research, discussions with the League's Board of Directors and Operations Committee, in addition to interviews with the CEO of the MetroHartford Alliance and a representative from Foreign Trade Zone #71, Camoin Associates developed the Bradley Development League's target industry clusters. A detailed overview of the target industry selection process can be found in Appendix B. The following profiles cover the target clusters researched for the Bradley Development League, including (1) **Finance, Insurance, and Technology**, and (2) **Aviation Related Design and Manufacturing**.

While it is true that examining quantitative industry data demonstrates job decreases and a loss of competitiveness in subsectors related to the target industry clusters over the last five years, these industry clusters are absolutely vital to the region's economic stability. The region is a resource hub and knowledge base for the insurance sector and the products manufactured in the aviation and aerospace sector have considerable value and contribute to the region's total economic output (sales). These are industries that are both in transition, turning to technology to advance productivity, increase customer satisfaction and improve the quality of their products. Job losses do not always reflect a downturn in the industry. In manufacturing, job losses have occurred at the lower-skilled positions, while middle-skilled and highly technical positions are in high demand by employers. This shifting workforce is required to manage the technology driving today's manufacturing processes. For the Bradley Development League to remain leaders in these two industry clusters, the League and other regional EDOs must be able to support businesses in this time of transition.

We analyzed the **Finance, Insurance, and Technology**, and **Aviation Related Design and Manufacturing** clusters in the context of the 2-County Region, including Hartford County, CT and Hampden County, MA. Understanding the surrounding workforce in the 2-County Region can help make inferences regarding the potential and existing labor market. Each cluster is explained in greater detail within each respective section; analysis includes NAICS, associated jobs, historic and projected job growth, as well as an analysis of occupations, wages, and required credentials.



Collectively, these two clusters accounted for over 116,000 jobs within the 2-County Region in 2017, which is about 15% of all jobs across all industries within the two counties. The larger cluster in terms of jobs is Insurance, Finance, and Technology with over 78,000 jobs in 2017, accounting for 10% of all industry jobs in the 2-County Region. Collectively, the two clusters have shown historical growth over the past five years that is greater than overall job growth in the 2-County Region as a whole. Cumulatively, the two target clusters added nearly 6,300 jobs, a 6% increase among subsectors in the target clusters.

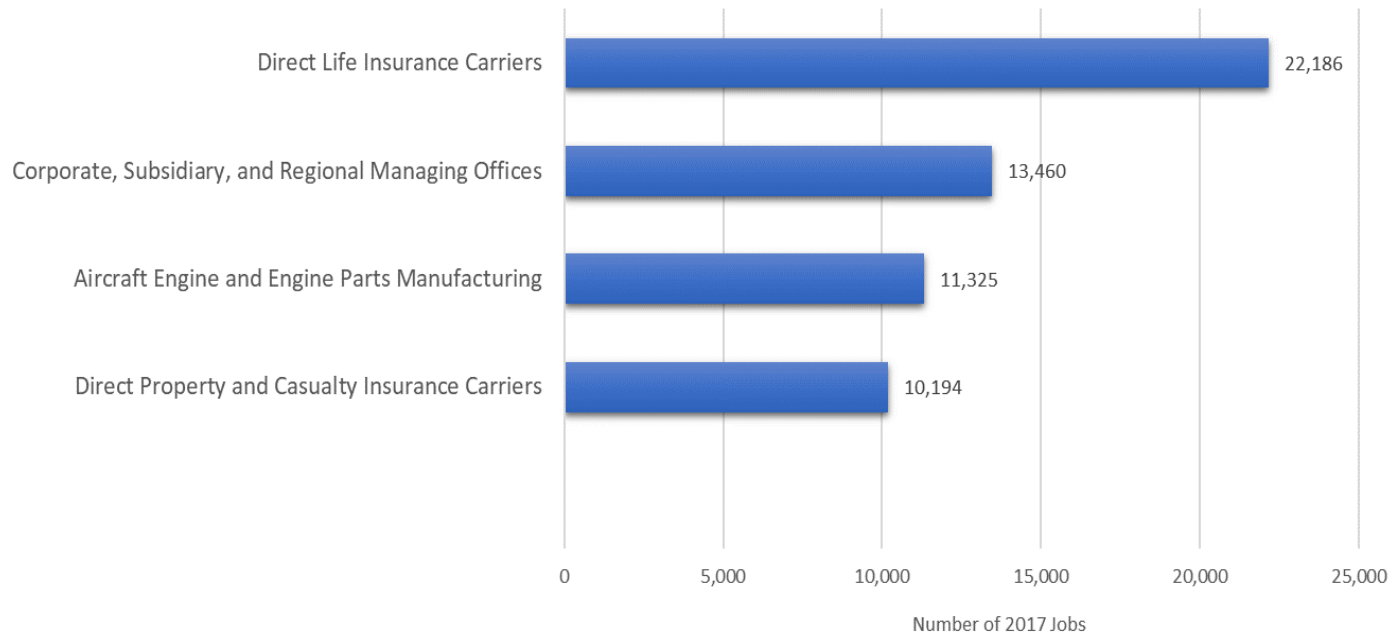
Overview of Clusters by 2017 Jobs, 2-County Region							
Cluster	2012 Jobs	2017 Jobs	2022 Jobs	2012 - 2017 Change	2012 - 2017 % Change	2017 - 2022 Change	2017 - 2022 % Change
Insurance, Finance & Technology	73,752	78,338	80,200	4,586	6%	1,862	2%
Aviation Related Design and Manufacturing	36,267	37,974	38,655	1,707	5%	681	2%
Clusters	110,019	116,312	118,855	6,293	6%	2,543	2%
All Industries in 2-County Region	749,773	774,347	793,586	24,574	3%	19,239	2%

Source: EMSI

Of the two clusters, the four industries accounting for the highest number of jobs in 2017 include Direct Property and Casualty Insurance Carriers (NAICS 524113), employing over 22,000 people; followed by Corporate, Subsidiary, and Regional Managing Offices (NAICS 551114), employing nearly 13,500 people; Aircraft Engine and Engine Parts Manufacturing (NAICS 336412), employing over 11,300 people; and Direct Property and Casualty Insurance Carriers (NAICS 524126), employing nearly 10,200 people. Three of these industries fall within the Insurance, Finance, and Technology Cluster, whereas Aircraft Engine and Engine Parts Manufacturing falls within the Aviation Related Design and Manufacturing Cluster. These four industries are the only industries within the target clusters employing over 10,000 people.

Of the four largest industries by 2017 jobs mentioned above, two have shown historical growth between 2012 and 2017. Corporate, Subsidiary, and Regional Managing Offices added over 2,100 jobs, a 19% increase in employment; and Direct Property and Casualty Insurance Carriers added nearly 230 jobs, a 2% increase. However, only Corporate, Subsidiary, and Regional Managing Offices is projected to continue growing over the next five years to 2022, projected to add another 1,200 jobs, a 9% increase.

Industries with Highest Number of 2017 Jobs Among Clusters, 2-County Region



Source: EMSI

Insurance, Finance, and Technology Cluster



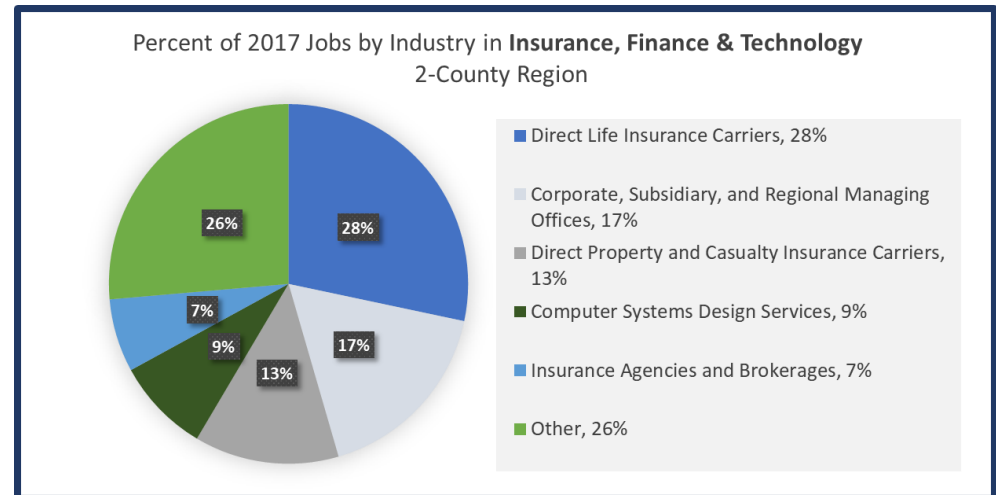
Cluster Overview

The Insurance, Finance, and Technology Cluster consists of 27 specific 6-digit NAICS code industries, all of which fall under the broader industries of Finance and Insurance (NAICS 52); Information (NAICS 51); Professional, Scientific, and Technical Services (NAICS 54); and Management of Companies and Enterprises (NAICS 55). The Finance and Insurance (NAICS 52) sector comprises 16 of the 27 6-digit industries, or nearly 60% of the cluster. This industry is defined by establishments primarily engaged in financial transactions (transactions involving the creation, liquidation, or change in ownership of financial assets) and/or in facilitating financial transactions.⁸

The Insurance, Finance, and Technology cluster is a combination of industries that captures the intersection of subsectors in both

Insurance and Finance, as well as **Information Technology**. Together, these industries represent the Financial Technology (“Fintech”) industry, defined as the use of computer programs and other technology used to support or enable banking and financial services. Information technology advancements are, and will continue to be, a major driver of the U.S. economy, and the insurance industry is no exception. It is critical that this cluster represent the creation of technology that will help insurance-related businesses succeed. The specific 6-digit industries chosen to create the Insurance, Finance, and Technology cluster that are best-suited for the Bradley Development League were informed by regional industry strengths that can be fostered, as well as an understanding of the future trajectory of these industries.

The cluster is comprised of 27 of the total 993 6-digit NAICS codes, or 2.7%, of all 6-digit industries in the 2-County Region. Despite only comprising 2.7% of NAICS codes, the cluster accounts for 29% of total GRP. Additionally, this cluster contains Direct Life Insurance Carriers, which is the fifth largest 6-digit industry in the 2-County Region, and individually contributes to 13.3% of total GRP. This subsector also has an extremely high location quotient, 18.82, showing the specialized nature of the subsector in the 2-County Region. Although about half of the industries in the Finance, Insurance, and Technology cluster have shed jobs over the past five years, it remains an important regional employer. 10% of total regional employment comes from industries within this cluster. Additionally, employment in this cluster produces earnings that are double that of average earnings across all industries. Together, these factors demonstrate that this industry is a strong pillar in the region’s economic activity. Monitoring industry trends will be key to making sure this industry remains a high performer and employers can find the skill base they need to succeed.



⁸ Bureau of Labor Statistics Industry definitions

Economic Performance

In total, the cluster accounted for just over 78,300 jobs in 2017. Of those jobs, the 6-digit industries that contributed the largest number of employees include Direct Life Insurance Carriers (NAICS 524113), employing over 22,000 people, or 28% of the cluster. This is followed by Corporate, Subsidiary, and Regional Managing Offices (NAICS 551114), and Direct Property and Casualty Insurance Carriers (NAICS 524126), collectively employing over 23,600 people, or 30% of the cluster.

Insurance, Finance & Technology Cluster, 2-County Region								
NAICS (6-Digit)	Description	2012 Jobs	2017 Jobs	2022 Jobs	2012 - 2017 Change	2012 - 2017 % Change	2017 - 2022 Change	2017 - 2022 % Change
524113	Direct Life Insurance Carriers	24,721	22,186	19,454	(2,535)	(10%)	(2,732)	(12%)
551114	Corporate, Subsidiary, and Regional Managing Offices	11,330	13,460	14,629	2,130	19%	1,169	9%
524126	Direct Property and Casualty Insurance Carriers	9,965	10,194	10,191	229	2%	(3)	(0%)
541512	Computer Systems Design Services	3,022	6,682	8,739	3,660	121%	2,057	31%
524210	Insurance Agencies and Brokerages	4,734	5,154	5,190	420	9%	36	1%
524114	Direct Health and Medical Insurance Carriers	4,270	3,497	3,482	(773)	(18%)	(15)	(0%)
523920	Portfolio Management	928	3,428	4,460	2,500	269%	1,032	30%
541611	Administrative Management and General Management Consulting Services	2,005	2,432	2,795	427	21%	363	15%
541511	Custom Computer Programming Services	3,686	2,179	1,749	(1,507)	(41%)	(430)	(20%)
511210	Software Publishers	815	1,584	2,049	769	94%	465	29%
523930	Investment Advice	1,122	1,402	1,614	280	25%	212	15%
524292	Third Party Administration of Insurance and Pension Funds	1,102	1,345	1,428	243	22%	83	6%
541519	Other Computer Related Services	1,070	1,022	1,116	(48)	(4%)	94	9%
518210	Data Processing, Hosting, and Related Services	981	804	544	(177)	(18%)	(260)	(32%)
524130	Reinsurance Carriers	1,057	730	561	(327)	(31%)	(169)	(23%)
524298	All Other Insurance Related Activities	642	725	884	83	13%	159	22%
541513	Computer Facilities Management Services	885	641	529	(244)	(28%)	(112)	(17%)
524291	Claims Adjusting	595	359	268	(236)	(40%)	(91)	(25%)
519130	Internet Publishing and Broadcasting and Web Search Portals	107	186	215	79	74%	29	16%
524128	Other Direct Insurance (except Life, Health, and Medical) Carriers	28	133	175	105	375%	42	32%
517919	All Other Telecommunications	84	65	42	(19)	(23%)	(23)	(35%)
522320	Financial Transactions Processing, Reserve, and Clearinghouse Activities	98	64	58	(34)	(35%)	(6)	(9%)
524127	Direct Title Insurance Carriers	124	41	18	(83)	(67%)	(23)	(56%)
523991	Trust, Fiduciary, and Custody Activities	19	19	11	0	0%	(8)	(42%)
519190	All Other Information Services	37	<10	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data
525910	Open-End Investment Funds	303	0	0	(303)	(100%)	0	0%
525990	Other Financial Vehicles	19	0	0	(19)	(100%)	0	0%
	Total for Insurance, Finance & Technology Cluster	73,752	78,338	80,200	4,586	6%	1,862	2%
	Total for all Industries in 2-County Region	749,773	774,347	793,586	24,574	3%	19,239	2%

Source: EMSI

Within the 2-County Region of Hartford, CT and Hampden, MA, the industry cluster was comprised of 78,338 jobs in 2017. This is a 6% increase, an addition of 4,600 jobs, since 2012. The industry is projected to grow by another 2,000 jobs in the coming five years, experiencing smaller but still notable growth, a 2% increase. Historic job growth specific to the cluster is larger than total job growth in all industries in the 2-County Region. Projected growth in the cluster matches that of the 2-County Region, adding an additional 19,000 jobs over the next five years, 2% increase. Overall, the Insurance, Finance, and Technology Cluster accounts for 10% of all 2017 jobs in the 2-County Region.

Of all industries within the Insurance, Finance, and Technology Cluster, the most substantial gains in number of jobs are projected to occur in Computer Systems Design Services (NAICS 541512); Corporate, Subsidiary, and Regional Managing Offices (NAICS 551114); and Portfolio Management (NAICS 523920), which are projected to add 2,000; 1,300; and 1,000 jobs, respectively. Cumulatively, these three industries are projected to add over 4,250 jobs to the region, more than total cluster growth projections. Of the Insurance, Finance, and Technology industries, Direct Title Insurance Carriers (NAICS 524127) and Reinsurance Carriers (NAICS 524130) have the highest average earnings per job at nearly \$193,000 and \$185,000, respectively; this is compared to the total industry cluster average of \$143,000. The average earnings within this cluster are double that of the average earnings for all industries in the region, at \$71,000. Lowest average earnings in the cluster are associated with the Trust, Fiduciary, and Custody Activities (NAICS 523991), at just over \$68,500, which is less than half the average earnings in the cluster, but just about \$3,000 lower than average earnings throughout all industries.

The two industries with the highest number of payrolled business locations in 2017 include Insurance Agencies and Brokerages (NAICS 524210) and Computer Systems Design Services (NAICS 541512), with 699 and 636 business, respectively. Cumulatively, these two industries account for over 1,300 business locations, or 43% of all business locations in the 2-County Region. **Computer Systems Design Services** (NAICS 541512), with 636 business, also shows substantial historic and projected growth, adding 3,600 jobs between 2012 and 2017; and projected to add 2,000 jobs between 2017 and 2022. This industry has a location quotient (LQ) of 1.36, demonstrating that there may be some competitive advantage. **This shows that the expansion of computer systems and technology-related services is spanning more industries as the economy becomes increasingly technologically advanced and connected. This is particularly important in the context of Fintech because these projections show that the 2-County Region has the capacity and labor force to foster growth in a key industry within Fintech.**

The industry with the highest number of jobs, **Direct Life Insurance Carriers**, has an extremely high location quotient at 18.82. This industry is also the largest contributor to Gross Regional Product (GRP) within the 2-County Region, adding nearly \$13.6 billion, or 45% of total cluster GRP. Other industries with notably high LQs include Reinsurance Carriers at 5.81; Direct Property and Casualty Insurance Carriers at 4.34; and Portfolio Management at 3.14. The Direct Property and Casualty Insurance Carriers industry is also the second largest contributor to GRP, adding \$5.7 billion, or nearly 20% of total cluster GRP.

Insurance, Finance & Technology Cluster, 2-County Region						
NAICS (6-Digit)	Description	2017 Jobs	Avg. Earnings Per Job	Location Quotient	2017 Business Locations	2017 GRP
524113	Direct Life Insurance Carriers	22,186	\$ 166,173	18.82	56	\$ 13,585,002,927
551114	Corporate, Subsidiary, and Regional Managing Offices	13,460	\$ 130,969	1.28	297	\$ 2,072,469,852
524126	Direct Property and Casualty Insurance Carriers	10,194	\$ 163,783	4.34	78	\$ 5,704,381,012
541512	Computer Systems Design Services	6,682	\$ 133,762	1.36	636	\$ 1,061,601,976
524210	Insurance Agencies and Brokerages	5,154	\$ 108,574	1.12	699	\$ 892,911,407
524114	Direct Health and Medical Insurance Carriers	3,497	\$ 115,012	1.96	15	\$ 1,522,618,105
523920	Portfolio Management	3,428	\$ 162,917	3.14	120	\$ 1,157,365,434
541611	Administrative Management and General Management Consulting Services	2,432	\$ 119,070	0.71	261	\$ 365,534,184
541511	Custom Computer Programming Services	2,179	\$ 101,538	0.48	274	\$ 394,091,349
511210	Software Publishers	1,584	\$ 134,904	0.89	100	\$ 486,141,279
523930	Investment Advice	1,402	\$ 158,165	1.31	211	\$ 521,483,759
524292	Third Party Administration of Insurance and Pension Funds	1,345	\$ 89,839	1.38	70	\$ 176,785,341
541519	Other Computer Related Services	1,022	\$ 110,327	1.70	28	\$ 156,465,504
518210	Data Processing, Hosting, and Related Services	804	\$ 98,939	0.53	45	\$ 146,558,822
524130	Reinsurance Carriers	730	\$ 184,711	5.81	16	\$ 458,803,562
524298	All Other Insurance Related Activities	725	\$ 126,293	1.66	56	\$ 146,628,531
541513	Computer Facilities Management Services	641	\$ 113,248	1.79	19	\$ 99,768,022
524291	Claims Adjusting	359	\$ 85,751	0.98	39	\$ 59,982,311
519130	Internet Publishing and Broadcasting and Web Search Portals	186	\$ 135,104	0.17	51	\$ 55,573,058
524128	Other Direct Insurance (except Life, Health, and Medical) Carriers	133	\$ 115,700	1.81	4	\$ 53,490,118
517919	All Other Telecommunications	65	\$ 68,529	0.44	7	\$ 20,802,270
522320	Financial Transactions Processing, Reserve, and Clearinghouse Activities	64	\$ 117,522	0.10	15	\$ 14,765,673
524127	Direct Title Insurance Carriers	41	\$ 192,558	0.13	9	\$ 28,041,544
523991	Trust, Fiduciary, and Custody Activities	19	\$ 75,933	0.19	4	\$ 18,032,545
525910	Open-End Investment Funds	0	\$ -	0.00	-	\$ -
525990	Other Financial Vehicles	0	\$ -	0.00	-	\$ 923,288,529
519190	All Other Information Services	<10	Insf. Data	0.07	3	\$ 1,729,787
	Total for Insurance, Finance & Technology Cluster	78,338	\$ 142,778		3,110	\$ 30,122,587,114
	Total for all Industries in 2-County Region	774,347	\$ 71,411		45,651	\$ 102,514,006,822

Source: EMSI

Cluster Occupation Data

The top 20 5-digit SOC occupations by 2017 jobs are shown in the table to the right. Within the 27 total industries of the Finance, Insurance, and Technology Cluster, these 20 occupations employ the highest number of people. Six of the 20 5-digit SOC occupations fall under the broader occupation category of Office and Administrative Support Occupations (SOC 43); an additional six occupations fall under Business and Financial Operations Occupations (SOC 13); and four fall under Computer and Mathematical Occupations (SOC 15).

More specifically, Insurance Sales Agents; and Customer Service Representatives have the highest number of jobs, employing 5,900 and 4,600 people, respectively. Insurance Sales Agents have shown historical decline, shedding over 300 jobs between 2012 and 2017, a loss of 5%. Conversely, Customer Service Representatives have grown marginally over the same period.

Of the top 20 occupations, 16, or 80%, have shown job growth over the past five years; with the most growth in Software Developers, Applications, which added nearly 470 jobs over the past five years; this is followed by Computer and Information Systems Managers adding 320 jobs. In total, the top 20 occupations have added over 2,800 jobs over the past five years, with 11 occupations adding over 100 jobs each. The top two growth occupations fall within technology-related industries, showing regional ability to foster growth in technologically advanced occupations, which would be necessary to support a strong Fintech ecosystem.

Top 20 Occupations by 2017 Jobs within Insurance, Finance & Technology Cluster 2-County Region					
SOC (5-digit)	Description	2012 Jobs	2017 Jobs	2012 - 2017 Change	2012 - 2017 % Change
41-3021	Insurance Sales Agents	5,947	5,627	(320)	(5%)
43-4051	Customer Service Representatives	4,564	4,601	37	1%
43-9041	Insurance Claims and Policy Processing Clerks	3,625	3,447	(178)	(5%)
13-1031	Claims Adjusters, Examiners, and Investigators	3,488	3,387	(101)	(3%)
11-3031	Financial Managers	3,070	3,274	204	7%
15-1132	Software Developers, Applications	2,186	2,654	468	21%
11-1021	General and Operations Managers	2,403	2,648	245	10%
13-2053	Insurance Underwriters	2,722	2,525	(197)	(7%)
13-1111	Management Analysts	2,305	2,400	95	4%
43-1011	First-Line Supervisors of Office and Administrative Support Workers	1,978	2,084	106	5%
15-1121	Computer Systems Analysts	1,806	2,008	202	11%
11-3021	Computer and Information Systems Managers	1,637	1,957	320	20%
13-2011	Accountants and Auditors	1,701	1,877	176	10%
43-9061	Office Clerks, General	1,663	1,737	74	4%
13-2051	Financial Analysts	1,459	1,693	234	16%
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1,422	1,646	224	16%
15-1151	Computer User Support Specialists	1,385	1,594	209	15%
15-1131	Computer Programmers	1,405	1,498	93	7%
13-1161	Market Research Analysts and Marketing Specialists	1,197	1,356	159	13%
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1,300	1,330	30	2%

Source: EMSI

Of the same top 20 occupations by jobs in 2017, 13 are projected to grow over the next five years, a smaller portion of the cluster compared to historical growth figures. Cumulatively, the growing occupations will add over 1,400 new jobs over the next five years within the Insurance, Finance, and Technology Cluster. Software Developers, Applications is the occupation projected to add the most jobs over the coming five years, adding 388 jobs, followed by Computer and Information Systems Managers and Computer Systems Analysts, which are projected to add about 400 jobs, cumulatively.

Top 20 Occupations by 2017 Jobs within Insurance, Finance & Technology Cluster 2-County Region					
SOC (5-digit)	Description	2017 Jobs	2022 Jobs	2017 - 2022 Change	2017 - 2022 % Change
41-3021	Insurance Sales Agents	5,627	5,373	(254)	(5%)
43-4051	Customer Service Representatives	4,601	4,608	7	0%
43-9041	Insurance Claims and Policy Processing Clerks	3,447	3,293	(154)	(4%)
13-1031	Claims Adjusters, Examiners, and Investigators	3,387	3,289	(98)	(3%)
11-3031	Financial Managers	3,274	3,229	(45)	(1%)
15-1132	Software Developers, Applications	2,654	3,042	388	15%
11-1021	General and Operations Managers	2,648	2,734	86	3%
13-2053	Insurance Underwriters	2,525	2,266	(259)	(10%)
13-1111	Management Analysts	2,400	2,458	58	2%
43-1011	First-Line Supervisors of Office and Administrative Support Workers	2,084	2,095	11	1%
15-1121	Computer Systems Analysts	2,008	2,205	197	10%
11-3021	Computer and Information Systems Managers	1,957	2,158	201	10%
13-2011	Accountants and Auditors	1,877	1,953	76	4%
43-9061	Office Clerks, General	1,737	1,744	7	0%
13-2051	Financial Analysts	1,693	1,756	63	4%
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1,646	1,721	75	5%
15-1151	Computer User Support Specialists	1,594	1,737	143	9%
15-1131	Computer Programmers	1,498	1,456	(42)	(3%)
13-1161	Market Research Analysts and Marketing Specialists	1,356	1,453	97	7%
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1,330	1,284	(46)	(3%)

Source: EMSI

The occupations paying the highest median hourly wages include Computer and Information Systems Managers, who earn \$61/hr; Financial Managers, who earn \$56/hr; and General and Operations Managers, who earn \$52/hr. All three of these occupations require a Bachelor's degree or higher as entry-level education, as well as five years minimum work experience. Eleven of the top 20 occupations, or 11%, require a Bachelor's degree or higher as entry-level education, including the top ten highest-paying occupations. An additional seven, or 35%, of the top 20 occupations require a high school diploma or equivalent; six of which do not require any previous work experience. This data indicates that the occupations hiring people within the Insurance, Finance, and Technology Cluster are accommodating to a range of education and skill levels; some portions of the cluster's occupations require administrative and clerical skills, whereas other portions of cluster occupations require analytical and managerial skills.

Top 20 Occupations by 2017 Jobs within Insurance, Finance & Technology Cluster
2-County Region

SOC (5-digit)	Description	Median Hourly Earnings	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
11-3021	Computer and Information Systems Managers	\$ 60.56	Bachelor's degree	5 years +	None
11-3031	Financial Managers	\$ 56.33	Bachelor's degree	5 years +	None
11-1021	General and Operations Managers	\$ 52.10	Bachelor's degree	5 years +	None
15-1132	Software Developers, Applications	\$ 43.74	Bachelor's degree		None
15-1121	Computer Systems Analysts	\$ 41.40	Bachelor's degree		None
13-1111	Management Analysts	\$ 39.13	Bachelor's degree	< 5 years	None
13-2051	Financial Analysts	\$ 37.15	Bachelor's degree		None
15-1131	Computer Programmers	\$ 36.80	Bachelor's degree		None
13-2053	Insurance Underwriters	\$ 33.80	Bachelor's degree		Moderate-term
13-2011	Accountants and Auditors	\$ 32.73	Bachelor's degree		None
13-1031	Claims Adjusters, Examiners, and Investigators	\$ 32.21	High school diploma or equivalent		Long-term
41-3021	Insurance Sales Agents	\$ 28.70	High school diploma or equivalent		Moderate-term
13-1161	Market Research Analysts and Marketing Specialists	\$ 28.43	Bachelor's degree		None
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$ 27.56	High school diploma or equivalent	< 5 years	None
15-1151	Computer User Support Specialists	\$ 25.28	Some college, no degree		None
43-9041	Insurance Claims and Policy Processing Clerks	\$ 22.37	High school diploma or equivalent		Moderate-term
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$ 20.06	Some college, no degree		Moderate-term
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$ 19.55	High school diploma or equivalent		Short-term
43-4051	Customer Service Representatives	\$ 17.32	High school diploma or equivalent		Short-term
43-9061	Office Clerks, General	\$ 16.88	High school diploma or equivalent		Short-term

Note: Cells left blank indicate no entry level education, work previous work experience required, or no on-the-job training required

Source: EMSI

Economywide Occupations

Taking a closer look at the top 20 occupations by number of 2017 jobs within the Insurance, Finance, and Technology Cluster in the 2-County Region, we can see how many other jobs are associated with these occupations throughout other industries in the economy, as well as jobs added, job openings, and replacement jobs within each occupation across the entire Bradley Development League economy. In other words, not all 2017 jobs shown are necessarily employed within the Insurance, Finance, and Technology Cluster, but could be employed by any industry in the 2-County Region economy.

Additionally, understanding replacement demand is a vital component when analyzing the greater economy and workforce. Replacement demand is defined as workers retiring or otherwise leaving the workforce, which can include career changes and death. Replacement demand occurs due to workers permanently leaving an occupation and leaving a potential unfilled position. This is an important workforce indicator because even if a cluster is not showing rapid growth in terms of jobs or size, replacement demand can still be increasing. Therefore, a stagnant or declining industry in terms of overall job numbers could be experiencing high levels of replacement demand due to workers exiting the workforce.

Five of the top 20 occupations, or 25%, display 100% replacement demand (Insurance Underwriters; Claims Adjusters, Examiners, and Investigators; Insurance Claims and Policy Processing Clerks; Bookkeeping, Accounting, and Auditing Clerks and Computer Programmers). This indicates that for

Top 20 Occupations by 2017 Jobs within Insurance, Finance & Technology Cluster					
SOC (5-digit)	Description	Total 2017 Jobs*	Total Annual Openings	Total Annual Replacement Jobs	% Replacement Jobs
43-9061	Office Clerks, General	14,934	1,789	1,746	98%
43-4051	Customer Service Representatives	14,117	1,833	1,790	98%
11-1021	General and Operations Managers	14,028	1,163	1,129	97%
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	13,766	1,520	1,473	97%
43-1011	First-Line Supervisors of Office and Administrative Support Workers	10,040	1,014	981	97%
43-3031	Bookkeeping, Accounting, and Auditing Clerks	8,398	907	905	100%
13-2011	Accountants and Auditors	7,377	701	651	93%
11-3031	Financial Managers	6,618	477	475	99%
41-3021	Insurance Sales Agents	5,660	527	521	99%
13-1111	Management Analysts	4,829	434	410	94%
15-1132	Software Developers, Applications	3,932	340	259	76%
13-1031	Claims Adjusters, Examiners, and Investigators	3,637	291	291	100%
43-9041	Insurance Claims and Policy Processing Clerks	3,564	346	346	100%
15-1151	Computer User Support Specialists	3,559	303	263	87%
11-3021	Computer and Information Systems Managers	3,306	286	245	86%
15-1121	Computer Systems Analysts	3,227	261	210	81%
13-1161	Market Research Analysts and Marketing Specialists	3,153	342	307	90%
13-2051	Financial Analysts	2,587	233	217	93%
13-2053	Insurance Underwriters	2,556	193	193	100%
15-1131	Computer Programmers	2,231	138	137	100%
	Total	131,518	13,096	12,550	96%

*Total 2017 jobs indicate all jobs throughout the 2-County economy per occupation, therefore not all jobs shown are employed within the Insurance, Finance & Technology Cluster, and instead can be employed within any industry

Source: EMSI

many occupations, there are additional opportunities and needs for employees to fill open positions beyond that of job growth and that these openings will occur due to people leaving the occupations. Ensuring that the workforce can satisfy this replacement demand will be critical.

Cluster Businesses

A selection of employers operating both within the League's region, and within Insurance, Finance, and Technology are shown below. The business that employs the most people is Hartford Financial Service Group, located in Windsor. It is a branch of the company and employs 2,000. However, this industry shows a wide variety of firms, ranging from self-employed operators to major regional employers.

Insurance, Finance and Technology Related Businesses in the 4-Town Region			
Company Name	Location	Description	Location Employees
Hartford Financial Svc Group	Windsor	Insurance and Employee Benefit Provider	2,000
Voya Financial	Windsor	Retirement, Investment, Employee Benefit Management	1,730
SS& C Technologies Inc	Windsor	Headquarters office for company that provides technology and services for investment and financial services firms worldwide	500
Cigna	Windsor	IT Operation for health insurance provider	500
Sun Life Financial	Windsor	Group Insurance Benefit Provider	400
Cigna	Windsor	Data Center for health insurance provider	400
Travelers Industrial Hygiene Lab	Windsor	Laboratory for Insurance company	100
Markel	Windsor	Holding company for insurance, reinsurance and investment	90
Vantis Life Insurance Co	Windsor	Insurance Agencies & Brokerages	90
AIX Hanover Insurance	Windsor	Program Business Specialty Insurance	80
Travelers Claims University	Windsor	Training and professional development center for insurance claim agents	80
Virtusa Polaris	Windsor	Custom Computer Programming Services	75
Milliman	Windsor	Provider of actuarial and related services	70
Great American Insurance Co	Windsor	Specialty property and casualty insurance provider	60
Vertafore	Windsor	Custom Computer Programming Services for insurance Industry	60
UPS Capital Business Credit	Windsor	Business financing and Insurance	50
New York Life	Windsor	Insurance Agencies & Brokerages	50
Allstate Insurance	East Granby	Insurance Agencies & Brokerages	11
Ameriprise Financial	Suffield	Investment Advice	6
First National Bank-Suffield	East Granby	Commercial Banking	6
Mcneilus Co	East Granby	Insurance Agencies & Brokerages	5
Dilorenzo Financial Group	Suffield	Insurance Agencies & Brokerages	4
John V Dilorenzo Insurance	Suffield	Insurance Agencies & Brokerages	4
Healthmarkets Insurance-Judy	East Granby	Insurance Agencies & Brokerages	4
Healthmarkets Insurance-Steven	East Granby	Insurance Agencies & Brokerages	4
New England Insurance Svc	East Granby	Insurance Agencies & Brokerages	4
TJB Financial Svc Inc	East Granby	Investment Advice	4
Stone Insurance Of Suffield	Suffield	Insurance Agencies & Brokerages	3
Bland P A & Assoc	Suffield	Insurance Agencies & Brokerages	3
Eilers Insurance Assoc	East Granby	Insurance Agencies & Brokerages	3
Edward Jones	Suffield	Investment Advice	2
Ameritas Group	East Granby	All Other Misc Ambulatory Health Care Services	2
Sawicki Agency	East Granby	Insurance Agencies & Brokerages	2
Utter, George S Agt	East Granby	Insurance Agencies & Brokerages	2
Insurance Marketing Corp	East Granby	Insurance Agencies & Brokerages	1
Paul E Smith Insurance	East Granby	Insurance Agencies & Brokerages	1

Source: Provided by Bradley Development League member towns

Listed edited for clarity

Emerging National and Regional Trends in Insurance, Finance, and Technology

Connecticut has a historic legacy in the insurance industry. The capital city, Hartford, is home to several insurance agencies' headquarters and maintains the reputation of the "Insurance Capital of the World." Travelers Insurance, one of the most prominent personal insurance providers in the country, has its largest office in the country in Hartford, CT. Health care insurance powerhouse, Aetna, calls Hartford home for its headquarters. In addition, several other insurance agencies including Nationwide, Allstate, State Farm, Hartford Financial Services Group, and other small insurance agencies are also located in the surrounding region. Traditionally, these companies have led development of new products and services in the industry. However, as advanced analytics infiltrate the Insurance, Finance, and Technology cluster, it is important that Connecticut, through regional economic development organizations, fosters a business environment that is conducive to technology uptake and can be integrated into company's operations.

Overall, rising interest rates, strong financial markets, and shifting technology trends will drive growth in the Insurance, Finance, and Technology cluster. The cluster's largest industries include *Life Insurance & Annuities and Property and Casualty and Direct Insurance*, both of which are projected to grow at the national level. Life Insurance & Annuities in the US is projected to grow at an annualized rate of 2.4% to \$1.1 trillion in 2022.⁹ Larger operators in this industry are expected to consolidate through mergers and acquisitions, which will in turn increase efficiency. At the same time, smaller companies will infiltrate niche markets within the Life Insurance & Annuities industry. Niche insurance markets include focusing on specific industries such as temporary staffing companies, school districts, nursing homes, contractors, family farms, etc. Similarly, Property Casualty and Direct Insurance is projected to grow at an annualized rate of 1.6% to \$668.1 billion through 2022. Technology changes such as system upgrades and cloud computing have enabled operators to decrease expenses, while mitigating risk.

Insurance and financial services companies have been leveraging Fintech to enhance customer experience by offering peer-to-peer lending mobile applications for finding offices/agents, becoming educated on insurance needs, tracking financials and investments, and asserting risk management techniques. More recently, Insurtech or the collaboration of the insurance and technology industries, has developed to increase efficiency and promote technology solutions within the market through implementing predictive analytics, and ultra-customized solutions. In 2017, Startupbootcamp, an Insurtech accelerator, was launched in Hartford, CT.¹⁰ The Insurtech accelerator aims to draw talent and additional insurance



⁹ IBIS Report: 54411A Life Insurance & Annuities in the US

¹⁰ Insurance Journal "Startupbootcamp Launches Insurtech Accelerator in Hartford" September 2017

technology to the Greater Hartford region, as well as promote collaboration among the entrepreneurial community, fostering future growth in the area's Insurance, Finance, and Technology cluster.

Insurance companies are also venturing into the world of blockchain technology to further drive efficiency and security of personal data. Blockchain technology is an advanced data management system that can standardize, store, and share financial, health, and credit information. Blockchain technology can help to reduce fraudulent claims by verifying contracts on the blockchain; this in turn, will increase the speed of claim transactions. Additionally, through sharing information, blockchain can help offer more personalized insurance coverage to consumers.

Creating an environment with the necessary infrastructure, funding, and public policy that allows entrepreneurs to test ideas will be vital to developing and pioneering technologies. This requires establishing an appropriate pipeline for entrepreneurs to take their ideas from inception to startup to acceleration to commercialization. Connecticut continues to encourage insurance startup companies. In April 2018, three tech startup companies announced moves to Hartford, Connecticut. Boundless, Aureus Analytics, and Pentation Analytics were offered free office space at Upward Hartford, a co-working space, and a \$25,000 grant in return for their move.¹¹

Furthermore, for companies within the Insurance, Finance, and Technology cluster to succeed they must invest in and integrate technology solutions, differentiate their services from competitors, personalize models, integrate new data and remain cognizant of technology in other realms. Barriers to growth and development of the Insurance, Finance, and Technology cluster include rising consumer expectations, IT security, and shifting business models. Large capital costs can serve as a barrier for companies to enter the market.

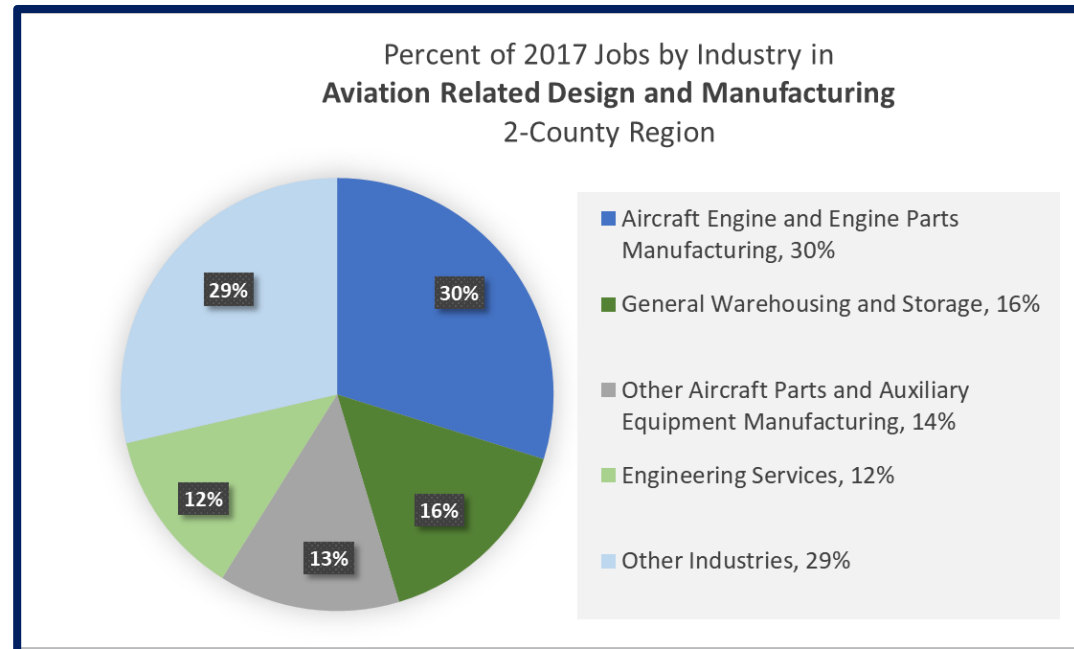
¹¹ Hartford Courant "Three Insurance Tech Startups Announce Moves to Hartford" April 2018

Aviation Related Design and Manufacturing Cluster



Cluster Overview

The Aviation Related Design and Manufacturing Cluster consists of 29 specific 6-digit NAICS code industries, the majority of which fall under the broader industries of Manufacturing (NAICS 31-33); Wholesale Trade (NAICS 42); and Professional, Scientific, and Technical Services (NAICS 54). In identifying the Aviation Related Design and Manufacturing Cluster, we have paid particular focus to all aspects of aviation related design and manufacturing within these much broader clusters. In general, these industries are related to the designing, engineering, and technical services associated with manufacturing airplanes, and related airplane components such as engines and turbines. The specific 6-digit industries chosen to create the cluster that is best suited for the Bradley Development League was informed by both current industry strengths in the regional economy, as well as unique regional assets and positioning, such as BDL, FTZ #71, and location to population centers.



In total, the cluster accounted for just under 38,000 jobs in 2017. Of those jobs, the 6-digit industries that contributed the largest number of employees include Aircraft Engine and Engine Parts Manufacturing (NAICS 336412), which employs over 11,300 people or 30% of the cluster. This is followed by General Warehousing and Storage (NAICS 493110) and Other Aircraft Parts and Auxiliary Equipment Manufacturing (NAICS 336413), which cumulatively employs over 11,000 people.

The Aviation Related Design and Manufacturing cluster is a highly specialized market that requires high-quality materials and proximity to transportation nodes to be successful; all of which are assets within the 2-County Region. The cluster is a notable contributor to the gross regional product, or GRP, of the 2-County Region, contributing 7.3% of total GRP. The cluster is comprised of 29 of the total 993 6-digit NAICS codes, or 2.9% of all 6-digit industries in the 2-County Region. Additionally, this cluster contains Aircraft Engine and Engine Parts Manufacturing, which is an

important niche industry for the region. This subsector employs over 11,000 people in the 2-County Region and has a location quotient of 29.32, implying that the League has highly specialized resources in this industry that are not found in other parts of the country. Supporting job growth in this cluster will generate significant economic activity across the League, as employment in this cluster produces earnings that are double that of average earnings across all industries. Despite job losses in some subsectors, this cluster is well-suited to utilize, support and grow regional assets, as this is an industry that has a global reach and is anticipated to grow based on increasing international demand for aviation materials and products.

Economic Performance

In total, the industry cluster was comprised of 37,974 jobs in 2017; this is a 5% increase from 36,267 jobs in 2012. Continuing with the trend of historical growth, the industry is projected to grow by nearly 700 jobs in the coming five years, a 2% increase. Of the 27 industries, 15 industries, or 56% of the cluster, have shown historical decline, shedding between 15 and 700 jobs. This pattern stays the same regarding projected growth, whereas 15 industries either remain stagnant or shed jobs. Of all industries within the cluster, the most substantial gain in number of jobs is projected to occur in General Warehousing and Storage (NAICS 493110), projected to add almost 800 additional jobs, a 13% increase. This is followed by the projected addition of over 500 jobs in Engineering Services (NAICS 541330), a 12% increase. Other Scientific and Technical Consulting Services (NAICS 541690) and Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology) (NAICS 541715), are the only other two industries projected to add over 100 jobs; cumulatively adding nearly 300 over the next five years.

Of the Aviation Related Design and Manufacturing Cluster industries, Aircraft Manufacturing (NAICS 336411) has the highest average earnings per job at under \$165,000; followed by Switchgear and Switchboard Apparatus Manufacturing (NAICS 335313) earning over \$151,000; both earnings are compared to the total industry average of \$109,000. The average earnings in this cluster are nearly \$38,000 higher than that of all industries in the 2-County Region. Aircraft Manufacturing (NAICS 336411) has a notably low location quotient (LQ) at 0.22, showing a lack of regional concentration. **Aircraft Engine and Engine Parts Manufacturing (NAICS 336412)** has an extremely high LQ at 29.32; this industry also employs the most people in the cluster, accounting for over 11,300 jobs in 2017. Despite high employment and high LQ, this industry has shed jobs over the past five years and is projected to continue shedding jobs over the next five years. However, this industry continues to be the largest contributor to GRP. It added nearly \$3 billion (or nearly 40% of total cluster GRP) to the cluster total in 2017. Other Aircraft Parts and Auxiliary Equipment Manufacturing (NAICS 336413) is also a notable contributor to GRP adding \$1.5 billion or nearly 20% of total.

Engineering Services (NAICS 541330), an industry projected to show healthy growth of the next five years, is also responsible for the highest number of payrolled business locations in 2017 within the Aviation Related Design and Manufacturing Cluster. The industry accounts for 220 business locations, or 23% of total cluster business locations. It is a modest contributor to GRP adding \$540 million. However, this industry has an immaterial LQ of 1.00, showing that it is not particularly concentrated within the 2-County Region.

Aviation Related Design and Manufacturing Cluster, 2-County Region								
NAICS (6-Digit)	Description	2012 Jobs	2017 Jobs	2022 Jobs	2012 - 2017 Change	2012 - 2017 % Change	2017 - 2022 Change	2017 - 2022 % Change
336412	Aircraft Engine and Engine Parts Manufacturing	11,816	11,325	10,819	(491)	(4%)	(506)	(4%)
493110	General Warehousing and Storage	4,070	5,906	6,692	1,836	45%	786	13%
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	5,136	5,138	5,098	2	0%	(40)	(1%)
541330	Engineering Services	3,962	4,741	5,293	779	20%	552	12%
423830	Industrial Machinery and Equipment Merchant Wholesalers	1,845	1,943	1,989	98	5%	46	2%
333611	Turbine and Turbine Generator Set Units Manufacturing	1,780	1,063	668	(717)	(40%)	(395)	(37%)
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	724	954	1,093	230	32%	139	15%
488190	Other Support Activities for Air Transportation	692	803	812	111	16%	9	1%
541690	Other Scientific and Technical Consulting Services	441	661	818	220	50%	157	24%
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables	452	593	660	141	31%	67	11%
332912	Fluid Power Valve and Hose Fitting Manufacturing	535	526	512	(9)	(2%)	(14)	(3%)
423840	Industrial Supplies Merchant Wholesalers	537	522	512	(15)	(3%)	(10)	(2%)
325211	Plastics Material and Resin Manufacturing	609	497	453	(112)	(18%)	(44)	(9%)
332312	Fabricated Structural Metal Manufacturing	431	484	502	53	12%	18	4%
541990	All Other Professional, Scientific, and Technical Services	531	472	491	(59)	(11%)	19	4%
541614	Process, Physical Distribution, and Logistics Consulting Services	195	373	463	178	91%	90	24%
334516	Analytical Laboratory Instrument Manufacturing	301	329	387	28	9%	58	18%
335921	Fiber Optic Cable Manufacturing	318	328	317	10	3%	(11)	(3%)
336411	Aircraft Manufacturing	647	245	108	(402)	(62%)	(137)	(56%)
332991	Ball and Roller Bearing Manufacturing	182	208	207	26	14%	(1)	(0%)
335313	Switchgear and Switchboard Apparatus Manufacturing	286	206	155	(80)	(28%)	(51)	(25%)
423860	Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers	171	203	229	32	19%	26	13%
333249	Other Industrial Machinery Manufacturing	182	149	120	(33)	(18%)	(29)	(19%)
333618	Other Engine Equipment Manufacturing	176	126	101	(50)	(28%)	(25)	(20%)
332911	Industrial Valve Manufacturing	55	69	71	14	25%	2	3%
541340	Drafting Services	125	67	42	(58)	(46%)	(25)	(37%)
333914	Measuring, Dispensing, and Other Pumping Equipment Manufacturing	60	40	40	(20)	(33%)	0	0%
332919	Other Metal Valve and Pipe Fitting Manufacturing	0	0	<10	Insf. Data	Insf. Data	Insf. Data	Insf. Data
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	<10	0	0	Insf. Data	Insf. Data	0	0%
	Total for Aviation Related Design and Manufacturing Cluster	36,267	37,974	38,655	1,707	5%	681	2%
	Total for all Industries in 2-County Region	749,773	774,347	793,586	24,574	3%	19,239	2%

Aviation Related Design and Manufacturing Cluster, 2-County Region						
NAICS (6-Digit)	Description	2017 Jobs	Avg. Earnings Per Job	Location Quotient	2017 Business Locations	2017 GRP
336412	Aircraft Engine and Engine Parts Manufacturing	11,325	\$ 138,335	29.32	55	\$ 2,906,081,866
493110	General Warehousing and Storage	5,906	\$ 51,628	1.42	52	\$ 369,149,365
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	5,138	\$ 132,675	9.83	44	\$ 1,490,113,139
541330	Engineering Services	4,741	\$ 96,566	1.00	220	\$ 540,997,105
423830	Industrial Machinery and Equipment Merchant Wholesalers	1,943	\$ 102,271	1.32	158	\$ 431,103,294
333611	Turbine and Turbine Generator Set Units Manufacturing	1,063	\$ 147,068	7.84	8	\$ 242,452,770
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	954	\$ 141,925	0.47	39	\$ 154,074,575
488190	Other Support Activities for Air Transportation	803	\$ 92,726	1.47	17	\$ 102,081,191
541690	Other Scientific and Technical Consulting Services	661	\$ 85,401	0.57	103	\$ 80,202,276
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables	593	\$ 89,213	2.01	16	\$ 62,595,844
332912	Fluid Power Valve and Hose Fitting Manufacturing	526	\$ 77,951	3.12	6	\$ 78,304,277
423840	Industrial Supplies Merchant Wholesalers	522	\$ 85,430	1.21	53	\$ 95,836,240
325211	Plastics Material and Resin Manufacturing	497	\$ 127,378	1.78	6	\$ 288,231,250
332312	Fabricated Structural Metal Manufacturing	484	\$ 84,489	1.13	11	\$ 54,219,592
541990	All Other Professional, Scientific, and Technical Services	472	\$ 41,211	0.40	52	\$ 124,717,527
541614	Process, Physical Distribution, and Logistics Consulting Services	373	\$ 67,070	0.58	37	\$ 30,754,508
334516	Analytical Laboratory Instrument Manufacturing	329	\$ 103,399	1.91	7	\$ 81,954,499
335921	Fiber Optic Cable Manufacturing	328	\$ 116,896	6.19	4	\$ 84,988,449
336411	Aircraft Manufacturing	245	\$ 164,994	0.22	1	\$ 71,016,959
332991	Ball and Roller Bearing Manufacturing	208	\$ 79,563	1.66	6	\$ 27,983,336
335313	Switchgear and Switchboard Apparatus Manufacturing	206	\$ 151,476	1.29	2	\$ 52,790,419
423860	Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers	203	\$ 106,577	1.29	22	\$ 47,694,299
333249	Other Industrial Machinery Manufacturing	149	\$ 75,800	0.56	15	\$ 15,187,828
333618	Other Engine Equipment Manufacturing	126	\$ 84,679	0.60	1	\$ 17,349,766
332911	Industrial Valve Manufacturing	69	\$ 87,089	0.58	1	\$ 11,540,214
541340	Drafting Services	67	\$ 70,656	0.78	7	\$ 5,922,491
333914	Measuring, Dispensing, and Other Pumping Equipment Manufacturing	40	\$ 80,970	0.29	1	\$ 8,288,414
332919	Other Metal Valve and Pipe Fitting Manufacturing	<10	Insf. Data	0.01	-	\$ 329,497
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	0	\$ -	0.00	-	\$ 1,962,841
	Total for Aviation Related Design and Manufacturing Cluster	37,974	\$ 108,968		941	\$ 7,477,923,831
	Total for all Industries in 2-County Region	774,347	\$ 71,411			\$ 102,514,006,822

Source: EMSI

Cluster Occupations Data

The top 20, 5-digit SOC occupations by 2017 jobs are shown in the table to the right. Within the total industries of the Aviation Related Design and Manufacturing Cluster, these 20 specific occupations employ the highest number of people. The majority of these occupations fall under the broader occupational categories of Production Occupations (SOC 51); Architecture and Engineering Occupations (SOC 17); and Office and Administrative Support Occupations (SOC 43).

Laborers and Freight, Stock, and Material Movers, Hand (SOC 53-7062) has the highest number of jobs by far, employing over 1,900 people in 2017. This occupation has also shown the most notable growth over the past five years, gaining nearly 500 jobs between 2012-2017, a 34% increase.

Of the top 20 occupations, nine or 45%, have shown job growth over the past five years. Cumulatively these nine growing occupations added nearly 1,200 jobs over the past five years. The most significant growth from Laborers and Freight, Stock, and Material Movers, Hand (SOC 53-7062) adding nearly 500 this is followed by; Packers and Packagers, Hand (SOC 53-7064); Stock Clerks and Order Fillers (SOC-43-5081); and Civil Engineers (SOC 17-2051), each of these three industries adding about 150 jobs each. Conversely, the most notable job losses occurred within Machinists (SOC 51-4041) losing 81 jobs; followed by Team Assemblers (SOC 51-2092) losing 78 jobs.

Top 20 Occupations by 2017 Jobs within Aviation Related Design and Manufacturing Cluster 2-County Region					
SOC (5-digit)	Description	2012 Jobs	2017 Jobs	2012 - 2017 Change	2012 - 2017 % Change
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	1,421	1,907	486	34%
17-2141	Mechanical Engineers	1,275	1,357	82	6%
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,268	1,224	(44)	(3%)
17-2112	Industrial Engineers	1,185	1,159	(26)	(2%)
51-4041	Machinists	1,068	987	(81)	(8%)
17-2011	Aerospace Engineers	916	863	(53)	(6%)
17-2051	Civil Engineers	693	834	141	20%
11-1021	General and Operations Managers	745	823	78	10%
51-2092	Team Assemblers	793	715	(78)	(10%)
43-5081	Stock Clerks and Order Fillers	557	700	143	26%
11-9041	Architectural and Engineering Managers	664	679	15	2%
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	733	671	(62)	(8%)
15-1133	Software Developers, Systems Software	627	617	(10)	(2%)
51-1011	First-Line Supervisors of Production and Operating Workers	620	582	(38)	(6%)
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	571	578	7	1%
43-5071	Shipping, Receiving, and Traffic Clerks	490	567	77	16%
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	561	542	(19)	(3%)
43-5061	Production, Planning, and Expediting Clerks	545	541	(4)	(1%)
53-7064	Packers and Packagers, Hand	372	521	149	40%
49-3011	Aircraft Mechanics and Service Technicians	529	510	(19)	(4%)

Source: EMSI

Nine of the top 20 occupations are also projected to continue growing over the next five years. The industry projected to add the most jobs is Laborers and Freight, Stock, and Material Movers, Hand (SOC 53-7062), projected to add over 200 jobs; this industry also added the most jobs over the past years. Another industry projected to add a substantial number of jobs is Civil Engineers (SOC 17-2011) adding over 90 jobs. Conversely, most notable jobs declines include Machinists (SOC 51-4041); Inspectors, Testers, Sorters, Samplers, and Weighers (SOC 51-9061); and Team Assemblers (SOC 51-2092), all three of which are projected to shed about 45 jobs.

The occupations paying the highest median hourly wages include Architectural and Engineering Managers (SOC 11-9041), earning nearly \$65 an hour; General and Operations Managers (SOC 11-1021), earning \$52; and Aerospace Engineers (SOC 17-2011), earning \$50. All three of these occupations require a Bachelor's degree or higher as entry-level education. Additionally, Architectural and Engineering Managers (SOC 11-9041); and General and Operations Managers (SOC 11-1021) require an additional 5 years minimum work experience.

Eight of the top 20 occupations, or 40%, require a Bachelor's degree or higher as entry-level education, including the seven highest-paying occupations. Nine of the 20 occupations, or 45%, require a high school diploma or equivalent; these occupations fall to the bottom of the median hourly earnings scale; all nine require either less than five years previous work experience or short- to long-term on-the-job training. This data indicates that the occupations hiring people within the Aviation Related Design and Manufacturing cluster require high levels of education, skills, and expertise.

Top 20 Occupations by 2017 Jobs within Aviation Related Design and Manufacturing Cluster 2-County Region					
SOC (5-digit)	Description	2017 Jobs	2022 Jobs	2017 - 2022 Change	2017 - 2022 % Change
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	1,907	2,121	214	11%
17-2141	Mechanical Engineers	1,357	1,419	62	5%
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,224	1,179	(45)	(4%)
17-2112	Industrial Engineers	1,159	1,145	(14)	(1%)
51-4041	Machinists	987	942	(45)	(5%)
17-2011	Aerospace Engineers	863	821	(42)	(5%)
17-2051	Civil Engineers	834	927	93	11%
11-1021	General and Operations Managers	823	854	31	4%
51-2092	Team Assemblers	715	671	(44)	(6%)
43-5081	Stock Clerks and Order Fillers	700	746	46	7%
11-9041	Architectural and Engineering Managers	679	682	3	0%
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	671	640	(31)	(5%)
15-1133	Software Developers, Systems Software	617	612	(5)	(1%)
51-1011	First-Line Supervisors of Production and Operating Workers	582	554	(28)	(5%)
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	578	586	8	1%
43-5071	Shipping, Receiving, and Traffic Clerks	567	590	23	4%
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	542	525	(17)	(3%)
43-5061	Production, Planning, and Expediting Clerks	541	530	(11)	(2%)
53-7064	Packers and Packagers, Hand	521	581	60	12%
49-3011	Aircraft Mechanics and Service Technicians	510	494	(16)	(3%)

Source: EMSI

Top 20 Occupations by 2017 Jobs within Aviation Related Design and Manufacturing Cluster
2-County Region

SOC (5-digit)	Description	Median Hourly Earnings	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
11-9041	Architectural and Engineering Managers	\$ 64.62	Bachelor's degree	5 years +	
11-1021	General and Operations Managers	\$ 52.10	Bachelor's degree	5 years +	
17-2011	Aerospace Engineers	\$ 50.46	Bachelor's degree		
15-1133	Software Developers, Systems Software	\$ 46.28	Bachelor's degree		
17-2112	Industrial Engineers	\$ 40.71	Bachelor's degree		
17-2051	Civil Engineers	\$ 40.06	Bachelor's degree		
17-2141	Mechanical Engineers	\$ 39.20	Bachelor's degree		
49-3011	Aircraft Mechanics and Service Technicians	\$ 31.64	Postsecondary nondegree award		
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	\$ 31.09	Bachelor's degree		Moderate-term
51-1011	First-Line Supervisors of Production and Operating Workers	\$ 29.91	High school diploma or equivalent	< 5 years	
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$ 27.99	High school diploma or equivalent		Moderate-term
51-4041	Machinists	\$ 23.35	High school diploma or equivalent		Long-term
43-5061	Production, Planning, and Expediting Clerks	\$ 23.02	High school diploma or equivalent		Moderate-term
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	\$ 22.55	High school diploma or equivalent		Moderate-term
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$ 21.05	High school diploma or equivalent		Moderate-term
43-5071	Shipping, Receiving, and Traffic Clerks	\$ 16.01	High school diploma or equivalent		Short-term
51-2092	Team Assemblers	\$ 14.84	High school diploma or equivalent		Moderate-term
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$ 13.58	No formal educational credential		Short-term
53-7064	Packers and Packagers, Hand	\$ 12.05	No formal educational credential		Short-term
43-5081	Stock Clerks and Order Fillers	\$ 11.68	High school diploma or equivalent		Short-term

Note: Cells left blank indicate no entry level education, work previous work experience required, or no on-the-job training required

Source: EMSI

Economywide Occupations

Taking a closer look at the top 20 occupations by number of 2017 jobs within the Aviation Related Design and Manufacturing Cluster in the 2-County Region, we can see how many other jobs are associated with these occupations throughout other industries in the economy, as well as subsequent jobs added, job openings, and replacement jobs within each occupation across the entire 2-County Region economy. In other words, not all 2017 occupations shown are employed within the Aviation Related Design and Manufacturing Cluster, and instead can be employed within any industry in the 2-County Region. Additionally, understanding replacement demand is an important component when analyzing the greater economy and workforce. Replacement demand is defined as workers retiring or otherwise leaving the workforce, which can include career changes and death. In other words, replacement demand occurs due to workers permanently leaving an occupation and leaving a potentially unfilled position. This is an important workforce indicator because even if a cluster is not showing rapid growth in terms of jobs or size, replacement demand can still be increasing. Therefore, a stagnant or declining industry in terms of job numbers could be experiencing high levels of replacement demand because people can still be exiting the workforce.

Top 20 Occupations by 2017 Jobs within Aviation Related Design and Manufacturing Cluster All Industries in 2-County Region					
SOC (5-digit)	Description	Total 2017 Jobs*	Total Annual Openings	Total Annual Replacement Jobs	% Replacement Jobs
11-1021	General and Operations Managers	14,028	1,163	1,129	97%
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	10,467	1,515	1,439	95%
43-5081	Stock Clerks and Order Fillers	9,616	1,242	1,218	98%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	5,588	556	556	100%
51-2092	Team Assemblers	4,191	478	478	100%
51-4041	Machinists	4,167	432	419	97%
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	3,436	403	402	100%
51-1011	First-Line Supervisors of Production and Operating Workers	3,338	315	315	100%
53-7064	Packers and Packagers, Hand	3,256	501	488	98%
43-5071	Shipping, Receiving, and Traffic Clerks	3,030	298	297	100%
17-2141	Mechanical Engineers	2,488	165	156	94%
15-1133	Software Developers, Systems Software	2,350	174	151	87%
17-2112	Industrial Engineers	2,148	137	137	100%
43-5061	Production, Planning, and Expediting Clerks	1,888	189	188	99%
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	1,803	153	152	100%
17-2051	Civil Engineers	1,671	144	122	85%
11-9041	Architectural and Engineering Managers	1,397	97	95	98%
17-2011	Aerospace Engineers	925	53	53	100%
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	677	68	68	99%
49-3011	Aircraft Mechanics and Service Technicians	650	49	48	98%
	Total	77,116	8,131	7,911	97%

**Total 2017 jobs indicate all jobs throughout the Bradley Development League 4-Town Regional economy per occupation, therefore not all jobs shown are employed within the Aviation Related Design and Manufacturing Cluster, and instead can be employed within any industry*

Source: EMSI

Across the county's economy, these top 20 occupations employ over 77,000 people. Eight of the top 20 occupations demonstrate 100% job openings due to replacement demand. This indicates that for many occupations there are additional opportunities and needs for employees to fill the open positions beyond that of job growth, which will occur due to people leaving the occupations. Aerospace Engineers (SOC 17-2011) specifically are projected to shed over 40 jobs over the next five years, however with a replacement demand percentage at 100%, it is important to ensure positions are still able to be filled by qualified workers. In other words, ensuring the workforce can support the number of people leaving the occupation will be critical, despite the lack of job growth.

Cluster Businesses

A select list of businesses operating both within the 4-Town Region and within the Aviation Related Cluster are shown on the following pages. The list shows the variety of subsectors that are intertwined in the cluster. The business that employs the most people is UTC Aerospace Systems, which is located in Windsor Locks. This location of UTC Aerospace Systems undertakes aerospace systems design and manufacturing of electronics parts and employs 800 people. Aerospace Engineering Related companies also employ a substantial proportion of individuals involved in this cluster. Quest Global Engineer and Belcan, both located in Windsor, employ 500 and 450 people, respectively. Note that the following is not a comprehensive list of firms related to this cluster, but is meant to display the significant employment figures throughout the League region.

Aviation Related Design and Manufacturing Businesses in Bradley Development League Region

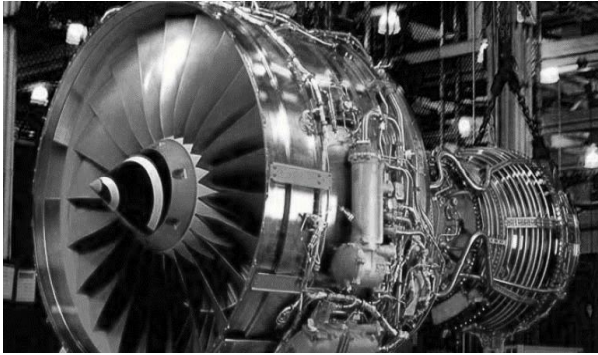
Company Name	Location	Primary Description	Employees
AIRPORT RELATED			
TLD Ace Corp	Windsor	Aircraft Ground Support Production	350
Eaton Crouse-Hinds Airport Light Prd	Windsor	Airport Lighting Design and Production	70
AEROSPACE MANUFACTURING RELATED			
UTC Aerospace Systems Hamilton Substrand	Windsor Locks	Aerospace systems design and manufacturing (electronics, climate, etc.)	800
Rockbestos-Suprenant Cable	East Granby	Fiber Optic Cable Manufacturing	350
Barnes Aerospace	Windsor	Aircraft Engine Parts Manufacturing	190
Mb Aerospace East Granby LP	East Granby	Search Detection & Navigation Instruments	180
Aero Gear Inc	Windsor	Speed Changer, Indl High-Speed Drive & Gear Mfg	130
Chromalloy	Windsor	Aircraft Engine Repair & Engine Parts Manufacturing	120
Triumph Actuation Systems	Windsor	Design and production of aircraft components	110
Arcor Laser Services	Suffield	Welding, drilling, cutting and marking for Aerospace	100
Coors Tek Inc	East Granby	Gypsum Product Manufacturing	70
Acceleron Inc	East Granby	All Other Misc General Purpose Machinery Mfg	49
Cbs Manufacturing Co	East Granby	Other Aircraft Parts & Auxiliary Equipment Mfg	45
Curtiss-Wright Surface Tech	Windsor	Shot Peening	30
Praxair Inc	Suffield	Industrial glass producer	30
Service Steel Aerospace Corp	Windsor	Metal Service Ctrs & Other Metal Merchant Whls	20
Nemfi Pfs	Windsor	Metal Service Ctrs & Other Metal Merchant Whls	20
Standard Bellows Co.	Windsor Locks	Precision welding, manufacturing	20
MetFin -Shotblast Systems, Metal Finish Equipment/Supply	Suffield	All Other Misc General Purpose Machinery Mfg	20
Rolled Alloys Inc	Windsor	Metal Service Ctrs & Other Metal Merchant Whls	10
A E Petsche Co	Windsor	Electrical Apparatus/Wiring Supls/Rel Equip Whlsrs	10
Haynes International Inc	Windsor	Metal Service Ctrs & Other Metal Merchant Whls	10
Rapidex	Windsor	Machine Shops	10
Astro Aircom	Windsor	Machine Shops	10
Quick Turn Machine Inc.	Windsor Locks	Precision machining	10
United Gear & Machine	Suffield	Machine Shops	10
Pine Meadow Machine Company	Windsor Locks	Machining, repair	6
Allen Precision LLC	Windsor Locks	Manufacturing, machining, repair	3
CnD Manufacturing Co. LLC	Windsor Locks	Machining, repair	2
AEROSPACE RELATED LOGISTICS			
AAR Parts Trading	Windsor	Aerospace Product and Parts Manufacturing	20
Kaman Industrial Technologies	Windsor	Search Detection & Navigation Instruments	10

AEROSPACE ENGINEERING RELATED			
Quest Global Engineering	Windsor	Engineering	500
Belcan	Windsor	Engineering and technical staffing	450
AIR CARGO RELATED			
UPS Mail Innovations	Windsor	Custom handling of air mail	100
Mainfreight	Windsor	Shipping services including air freight	20
SEKO Logistics	Windsor	Shipping services including air freight	20
International Transfer Service	Windsor	Shipping services including air freight	20
All Crate	Windsor	Freight crating service	20
Emo Trans USA Inc	Windsor	Shipping services including air freight	10
MANUFACTURING SUPPORT			
Taylor & Fenn Co	Windsor	Iron Foundries	150
Nuferm	East Granby	Specialty Optical Fiber	150
Galasso Materials LLC	East Granby	Ready-Mix Concrete Manufacturing	150
Robert E Morris Co	Windsor	Industrial Machinery & Equipment Merchant Whlsrs	80
Haas Factory Outlet	Windsor	Construction Machinery Manufacturing	30
Fischer Technology Inc	Windsor	Manufacturer of measurement and analysis instruments	20
AKO Inc	Windsor	Torque wrench calibration systems manufacturer	10
Morris Group Inc	Windsor	Industrial Machinery & Equipment Merchant Whlsrs	10

Source: Bradley Development League

*Blank cells represent data that is unavailable at this time

**List was edited for clarity



Recent and Emerging National Trends

Nationally, the Aircraft Engine and Engine Parts Manufacturing industry, a significant driver of the Aviation Design Manufacturing Cluster, generated \$240.4 billion in annual revenue in 2017. The industry is projected to grow at an annualized rate of 0.8% to \$249.6 billion in revenue by 2022.¹² Over the last five years, defense spending has declined as a key driver as the national defense budget has become more constrained, placing excess emphasis on the commercial segment of the Aircraft Engine and Engine Parts Manufacturing industry. However, the federal budget for 2018 and 2019 invests 54% of the federal discretionary budget toward military spending.¹³ This increase in military spending represents a growth opportunity for the Aircraft Engine and Engine Parts manufacturing industry. The success of this industry is due in part to

rising demand for global air travel and replacement of aging fleet inventory with newer planes. Establishments that are able to adapt the latest technologies and internal processes will remain competitive. Specifically, the aviation design manufacturing industry has been utilizing the internet of things (IoT)¹⁴ to detect defects, enhance production efficiency and facilitate data collection and reporting.

Half of costs related to manufacturing aircrafts are attributed to software systems and data, while the other half is related to actual materials.¹⁵ Materials that are used in the manufacturing of aircrafts are typically light weight, highly specific strengths, heat resistant, crack resistant, and corrosion resistant. These seemingly damage resistant materials are often made of aluminum, steel, titanium and composite materials such as fiberglass. Operators have begun innovating aircraft materials to create lighter, cheaper materials that further reduce costs in aircraft manufacturing. Fiber metal laminates have become increasingly popular in the industry due to their high strength and low weight compared to other metallic structures.¹⁶ Less fiber metal laminate material is required, which results in reduced input costs. In Connecticut, Pratt & Whitney has partnered with Additive Manufacturing Innovation Center to advance manufacturing technologies towards turbine components for jet engines. This includes creating additive processes to transform powdered titanium into solid integrated pieces.¹⁷ Additionally, researchers have begun integrating sensors into materials to identify damage, internal strain, and heat within materials.

Internet of Things (IoT):

The interconnection via the internet of computing devices that are embedded in everyday objects, enabling them to send and receive data. For example, Pratt & Whitney's Geared Turbo Fan engine is equipped with 5,000 sensors that transmit up to 10 GB of data per second.

¹² IBIS Report 33641A: Aircraft, Engine & Parts Manufacturing in the US

¹³ National Priorities Project "Congress Strikes a Deal for 54% Military Spending in Federal Budget" Feb 2018

¹⁴ Aviation Week "Internet of Aircraft Things: An Industry Set to Be Transformed" Jan 2016

¹⁵ Exilva "The Future of Aerospace, and its Demand for New Materials" July 2017

¹⁶ The Atlas Group "Latest Materials Used for Aircraft Manufacturing"

¹⁷ University of Connecticut School of Engineering "Pratt & Whitney Addictive Manufacturing"

Currently, 8.1% of the Aircraft Engine and Engine Parts Manufacturing establishments in the United States are located in New England, and Connecticut contains the majority of those establishments.¹⁸ Connecticut aviation manufacturing companies such as Pratt & Whitney, Sikorsky Aircraft, and Electric Boat are projected to ramp up production, creating a demand for an additional 13,000 skilled workers by the end of 2018.¹⁹ Goodwin College, located in East Hartford, is helping to address the shortage of workers by offering career training opportunities and certificate programs. Educational requirements for these positions range from certificate programs that can be completed within six months to associate, bachelors and graduate degrees.

Furthermore, Pratt & Whitney, an East Hartford jet engine maker, expanded its supply base in April of 2018 by announcing contracts with five suppliers to provide maintenance on its geared turbofan engines including Bloomfield-based Turbine Controls, South Windsor's TWIN Manufacturing Co., Manchester-based AdChem Manufacturing Technologies Inc., StandardAero and Lewis & Saunders.²⁰ Additionally, Pratt & Whitney has contracted with JetBlue Airways to provide gear turbofan engines to both A32neo and A321neo models.

This subsector of manufacturing requires support from a variety of industries, including General Warehousing and Storage. As production ramps up in aircraft manufacturing, storing components for shipments will also be necessary. Nationally, this industry is expected to grow at an annualized rate of 2.8% from 2017 to 2022.²¹ Industry growth has been attributed to increases in consumer spending, specifically e-commerce, and manufacturing output. This has led to increased industry wages and rental costs which has subsequently cut into industry profits. Operators have been increasingly investing in technology to track, monitor, and increase productivity and efficiency. Aside from growing along with manufacturing production, warehousing as its own industry continues to expand in the region. Amazon is expanding its presence in Connecticut by building an 855,000-square foot fulfillment center in North Haven. The fulfillment center is projected to create approximately 2,000 jobs and be fully operational May 2019.²²

¹⁸ IBIS Report 33641A: Aircraft, Engine & Parts Manufacturing in the US

¹⁹ Hartford Courant "State Must Gear Up to Fill Thousands of Jobs" February 2018

²⁰ Hartford Business "Pratt taps CT manufactures for expanded engine repair supplier chain" April 2018

²¹ IBIS Report 49311: Public Storage & Warehousing in the US

²² News 8 "Work Underway on North Haven Amazon Fulfillment Center" February 2018

Final Recommendations

Research conducted by IEDC's Economic Development Research Partners (EDRP) found that the highest performing EDOs nationally are utilizing economic data and other information to identify and select industries in which to target their economic development efforts and finite resources. These targets are not broad, but rather subsectors that the EDO has determined their region has a competitive advantage in. Once specific sectors are identified, these EDOs develop Business Retention & Expansion (BR&E), Marketing & Attraction, Entrepreneurial, Innovation and Workforce programs/initiatives and others to support those targets.

This Target Industry Analysis has identified **Aviation Related Design and Manufacturing** and **Insurance, Finance, and Technology** as two ideal targets for economic development focus for the Bradley Development League. More specifically, the Bradley Development League should focus its brand and efforts on subsectors surrounding **aircraft engine components manufacturing and insurance technology, data centers, cyber security and other industry IT related departments**. The following recommendations were developed for the Bradley Development League to support its targets:

Strategic Partnerships & Organizational Capacity

1. Strengthen the League's partnership with the MetroHartford Alliance and its CEO.

Also identified in IEDC EDRP research as a characteristic of a high performing EDO is its desire to partner with other stakeholder entities that share its economic development objectives. The new MetroHartford Alliance CEO, David Griggs, previously worked for the Greater Minneapolis St. Paul Partnership (Greater MSP). Greater MSP has been an EDRP member and a recognized national leader, if not *the* leader, in target industry identification and development strategy. David is considered the architect of that region's successful targeted industry effort. During the interview conducted with David on behalf of this project, he identified Aerospace and Financial Services as targets of the Alliance's future economic development efforts.

The Alliance is likely to establish a strategic effort to support both the Aviation Manufacturing and Insurance, Finance and Technology industries within the region. These efforts may include lead generation, trade show attendance, site selector familiarization visits, regional branding, targeted BR&E and use of a CRM tool and foster critical state and federal partnerships. Critical to the League's coordinated economic development industry focus will be its partnership with the Alliance. The League should look to become the Alliance's early partner in supporting the program's and initiatives that will soon be developed by that organization to garner the attention of existing and new investment in Aviation Related Design and Manufacturing and Insurance, Finance and Technology.

Initial actions should include:

- ✓ Invite the Alliance CEO and eventually new State economic development leaders (post Fall 2018 election) to a presentation of the League's Target Industry Analysis to discuss its focus on the Aviation Related Design and Manufacturing and Finance, Insurance and Technology.
- ✓ Provide the Alliance CEO with a tour of the League's commercial and industrial sites, existing target sector businesses, the Bradley International Airport and other key economic assets that support the target sectors and the economic vitality of the region.

- ✓ Determine how the Alliance and the League will work to coordinate and partner on targeted industry economic development efforts.
- ✓ Utilize the capacity of the MetroHartford Alliance where possible to support the League's economic development objectives to eliminate the need for additional capacity.

2. Establish relationships and partnerships with all entities providing workforce training and education programs that support the target clusters.

Economic development officials are increasingly becoming the facilitator of workforce solutions, often bringing educators, training providers and business leaders together to identify skill deficiencies, pipeline problems and most importantly, potential solutions. To achieve this, the League should identify existing stakeholders in this realm. For example: K-12 schools, Workforce Investment Boards, community college and university training providers and others. Together, representatives from these stakeholders should begin to understand the education and skills development programs they are able to provide and the role they are already playing in the region for the industry targets. Simultaneously, BR&E efforts should focus on target industry workforce and other needs.

Initial actions should include:

- ✓ Inventory existing workforce and education training providers that provide programs for the targeted industry occupations.
- ✓ Establish/enhance relationships with those providers and learn about the relevant programs offered.
- ✓ Through the BR&E process (see below), inventory common workforce issues within the target sectors.
- ✓ Look to facilitate solutions between League businesses and training providers.

3. Establish relationships and partnerships with regional/state target industry trade associations.

Trade and industry associations are often at the forefront of identifying the critical public policy issues most important to their members continued national and global competitiveness. Understanding these issues and supporting their efforts to address the state, regional or even local policy/regulatory barriers will allow the League communities to stand out as a partner, support its brand, and provide a positive environment between each of the Towns and their industry participants.

Initial actions should include:

- ✓ Inventory existing state and regional target industry associations and trade groups.
- ✓ Understand key public policy and other issues that these associations are attempting to resolve.
- ✓ Where possible, provide support and assistance in the resolution of barriers.

4. Enlist the member towns of the Bradley Development League and other regional organizations to build capacity for implementation of Target Industry Analysis recommendations.

The financial reality for EDOs needing to accomplish more tasks with no additional resources is being partially overcome through shared resources via partnerships. Effective EDOs belong to regional organizations and have developed broad networks across their respective states and regions with stakeholders, as well as public and private entities. The Bradley Development League represents a partnership among the neighboring towns, the Bradley International Airport, the Alliance and others.

Assuming it is not likely that additional capacity can be added, it will be necessary for the League members to continue to cooperate and coordinate shared activities.

Initial actions should include:

- ✓ Each of the League towns should incorporate the relevant recommendations of this report into their existing strategic plans and formally adopt recommendations where necessary. This would also include any future adopted branding. The process of doing so allows for communicating with and informing elected leaders and stakeholders of the planned focus.
- ✓ Utilize the Bradley Development League's Operational Committee, the respective member town economic development representatives and the new Bradley International Airport Economic Development Director to coordinate the implementation of the target cluster recommendations.

5. Formalize the entity that will be responsible for the oversight of implementation of the Target Industry Analysis recommendations.

Strategy execution is difficult as it requires buy in and leadership. The League's Operational Committee is the logical organizational structure that should lead this plan's execution. However, it is crucial that that designation be formalized, and that one individual be charged with its oversight.

Initial actions should include:

- ✓ Determining what, if any, formal League organizational modifications may be needed to insure the successful oversight and execution of these recommendations.
- ✓ Establish working groups or committees as needed.
- ✓ Designate a lead person responsible for plan implementation.

Marketing & Attraction

The pooling of resources to market a region is one of the two most common economic development activities an EDO undertakes. New business attraction typically entails marketing and promotion of the community and its sites to outside business and development interests. If done well, this promotional effort has an established brand objective, along with programs targeting businesses that are within, or a part of, an existing supply chain or industry sector that has been identified as competitive relative to other regions.

Investments in attraction efforts typically involve industry tradeshow attendance, lead generation and/or developing relationships with site selectors and conducting familiarization tours. While these efforts are increasingly becoming the responsibility of regional organizations that have the financial resources needed to achieve meaningful results, they also typically engage member community economic development leaders.

1. Establish a dual brand for the Bradley Development League as an ideal location for both Aviation Related Design and Manufacturing and Insurance, Finance and Technology companies.

When most cities, towns, counties and regions look to create brand recognition, they have difficulty remaining focused. Instead, their branding attempt becomes broad and non-distinguishable from the thousands of others around the country and globe. Regions that lack focus often try to portray themselves as a great place to live and work, or to locate to establish a business. Typical high performing EDOs, however, are recognized for their ability to create a unique brand, one that focuses on its sector

targets. Their message and initiatives focus on a brand supported by the competitive advantages that make their region ideal for their target industries. Rather than point to the size of the labor pool or proximity to markets, for example, they quantify the applicable target industry labor force skillsets or identify the key regional assets that the target sectors require. For example, access to an airport, major suppliers, other businesses within the industry, among other factors.

Initial actions should include:

- ✓ Continue to refine a League profile focused on providing business, workforce, location, infrastructure and other information related to Aviation Related Design and Manufacturing and Insurance, Finance, and Technology sectors. This would include related labor pool data, highway, rail and air accessibility, the prevalence of existing businesses within the target clusters, etc.
- ✓ Develop a League tag line that conveys its desire to attract targeted businesses.
- ✓ Communicate the brand to target industry, state economic development and elected leaders.

2. Establish a marketing campaign targeted to aircraft engine product manufacturing.

Based on the economic data, aircraft engine manufacturing continues to be a significant employer in the region and within the League towns. This industry is also predicted to remain strong for the next decade. Leading these efforts with the Bradley International Airport and the Connecticut Airport Authority will further develop deeper relationships in the aviation and aerospace industries and connect valuable expertise and resources from each partner.

Initial actions should include:

- ✓ Attend a minimum of one aviation trade show annually. Ideally, this would be done in partnership with the MetroHartford Alliance. Existing Connecticut aviation/aerospace/aircraft engine manufacturers and suppliers attend trade shows regularly. In fact, many are already being called upon by EDOs located elsewhere in the country.

The purpose of these shows is threefold:

1. They are ideal for understanding and becoming knowledgeable about an industry and its trends. Successful economic development professionals become industry experts so that they can provide meaningful assistance to their companies.
2. They are useful in developing relationships with prospective companies that may have an interest in expansion or relocation.
3. The visibility of the League's towns by existing CT companies that attend these shows sends a strong message about your interest in supporting their industry and conveys your brand.

The more well-known trade shows include:

[American Contract Manufacturers Show \(AmCon-Seattle\)](#) – this show features aviation suppliers and contract manufacturing services from throughout Canada and the US. Attendees typically have opportunities to network with Design, Engineering, Prototyping, Machining, Fabricating, Forming, Finishing, Assembly and Electrical/Electronic Manufacturing Service companies.

[Paris Air Show](#) – as one of the more well know annual air shows in the world, this event attracts aerospace manufacturers and suppliers from around the globe. While State representatives have attended this event in prior years, a more aggressive effort to recruit firms by showcasing the strengths of the aerospace industry in the League region will make a stronger case in business attraction efforts.

- ✓ Engage a lead generation company to identify new business attraction opportunities in the aviation manufacturing and insurance services sectors. Lead generation firms identify companies with a known interest or plans for expansion or relocation. These firms are solely responsible for providing leads and coordinating meetings with business prospects. Ideally, the League would partner with the MetroHartford Alliance in this effort.

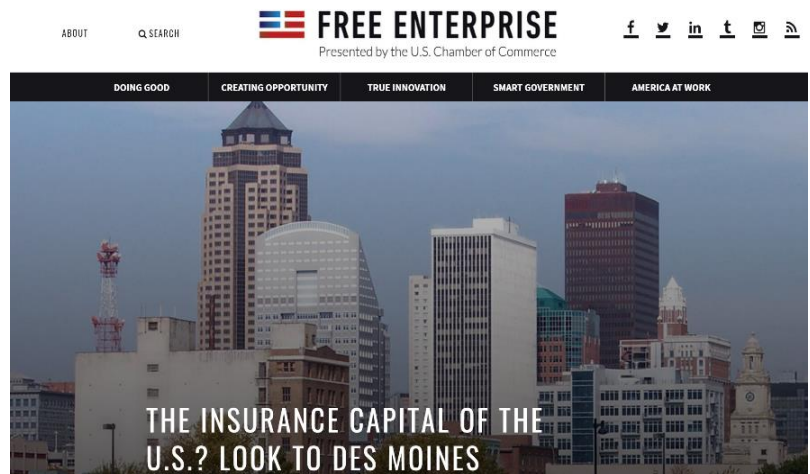
3. Establish a marketing campaign targeted to insurance company data centers, cyber security and other IT support divisions.

The competition for insurance company relocation and expansion projects has become increasingly intense in the last two decades. Today Charlotte, San Antonio, Columbus, Des Moines and other cities are aggressively competing for new insurance company facility investment. Simultaneously, the State of Connecticut has become a high cost location by comparison to other states. Furthermore, the data strongly suggests that the State, region and League towns are losing competitive advantage at an alarming rate. In fact, between 2012 and 2017 Finance & Insurance (NAICS 52) lost the most competitive ground of all industries for the State, region and League towns.

However, there is reason to believe that there are insurance support services that may still find the Hartford region a competitive location. Data centers for all industries are growing as records become digitized and saved to cloud storage. In addition, securing this information has become a critical focus of insurance companies attempting to protect their customers' data. Key to these data center and IT locations is infrastructure (namely broadband), low cost power and proximity to corporate headquarters. While the region may be unable to compete on power costs, it does provide benefits to prospective companies. Its broadband infrastructure is likely similar to other regions (with the exception of northern Virginia) and the Hartford area is already home to numerous insurance company headquarters. Additionally, it has the workforce and education system of the highly skilled IT and cyber security labor needed.

Initial actions should include:

- ✓ Inventory and explore the existing CT university and community college programs that provide IT, data center and cyber security education and training.



An image from an economic development website run by the US Chamber of Commerce shows Des Moines as an Insurance industry leader.

- ✓ Explore programs offered in other regions such as George Mason University and Northern Virginia community colleges.
- ✓ Work with the MetroHartford Alliance to become a lead partner in its efforts to support the attraction and expansion of insurance companies with the League's focus on attracting insurance data centers, cyber security and other IT related facilities.
- ✓ Engage a lead generation company to identify new business attraction opportunities in the insurance services sectors with a focus on those looking to expand or locate a data center and/or IT or cyber security division.

Business Retention & Expansion

1. Develop a cooperative business visitation program for the two target industry clusters and their respective suppliers. This program would establish a list of known businesses within Aviation Related Design and Manufacturing and Insurance, Finance and Technology sectors located within the League member towns.

Business Retention & Expansion ("BR&E") is the second of the two most common initiatives EDOs undertake to strengthen economies. A BR&E program requires periodic meetings with local businesses to understand their needs, along with any barriers or issues that may impede growth, such as infrastructure, workforce, sites, regulations, permitting, etc. Many are utilizing a formal Customer Relationship Management ("CRM") tool to record data, convert it to business and industry information, analyze it over time and feed intelligence into the organization's marketing and attraction program.

Initial actions should include:

- ✓ Develop a complete inventory of target industry businesses within the towns.
- ✓ Develop a realistic schedule of business visitation.
- ✓ Develop a questionnaire to be used by all the League partners to ensure consistency.
- ✓ Utilize a CRM system to allow the League partners to easily share information and better understand both sectors and the common issues businesses may be attempting to resolve (emerging industry trends, work force, state policies and regulation, etc.). Look to the Alliance for a possible CRM tool or other information management system.
- ✓ Regularly communicate and inform each of the 4-Towns on new information about each target industry, as well as identify cooperative solutions to common problems.

2. Work closely with the Capitol Region Council of Governments (CROG) as their Comprehensive Economic Development Strategy (CEDS) moves to completion and recommendations for their target industry clusters are finalized.

CROG is currently in the process of a CEDS with an anticipated completion date of December 2018. While the League should continue to solidify their target industry clusters and promote them accordingly, it will also be beneficial to connect with stakeholders of the target industries established in the CEDS process. In addition to partnering on the target industry clusters identified in this report, aligning the target industries from the CEDS with the emerging industries that demonstrate growing competitive advantage in the 4-Town Region is another opportunity to draw on regional resources and partner with an EDO that has similar economic development objectives.

Initial actions should include:

- ✓ Reach out to CRCOG to discuss BRE efforts for specific industries. It may be beneficial to work with CRCOG surrounding the emerging industries in the League region, depending on the priorities established in the CEDS.
- ✓ Devise MOU that establishes an understanding of each party's role and responsibilities in business retention efforts.

Sites & Incentives

The availability of sites and buildings, as well as incentives are critical to incentivizing investment attraction. Through its partnership with the Connecticut Economic Resource Center (CERC), the League appears to have an inventory of available sites. However, considering this target industry study's findings and recommendations, these listings may need to be examined and updated. In addition, there appears to be opportunities to further promote the Foreign Trade Zone (FTZ) advantages for manufacturers as well as create additional incentives through the new state Tax Increment Financing (TIF) program.

1. Update the existing Sites and Building portion of the Bradley Development League website to provide information specific to target industry clusters.

While site selectors consider a range of factors in locating new businesses, the availability of a site that contains adequate infrastructure and connections to other industry resources is imperative. The Bradley Development League website already contains relatively comprehensive search engine for sites in the region. However, tailoring the search feature or a layer on the map to indicate which sites are well suited for subsectors in the target industry clusters will further help the League specialize in its offerings to businesses in those clusters. Understanding the nuances of each parcel's zoning, potential incentives, labor pool, and infrastructure capacity will prepare the League to make the case for why businesses should choose this region over any other one in the country.

Initial actions should include:

- ✓ Work with CERC to understand what is possible in terms of adding layers of information on the existing mapping structure.
- ✓ Create a specialized information section, tab or task bar for the target industry clusters to highlight the availability of space in these sectors. Present this information prominently on the front page of the League's website.
- ✓ Formalize information presented for sites, especially for sites that are relevant to the target industry clusters.

2. Enhance the promotion of the FTZ to local leaders and most importantly to the League's Aviation Manufacturing companies that are likely doing business internationally.

Member towns have the advantage of offering the benefits of a Foreign Trade Zone to businesses that manufacturer products that entail the production or assembly of goods made from foreign based materials/parts. The Greater Hartford Foreign Trade Zone offers importers and exporters the advantages of operating in the US while also providing certain exclusions from federal duties. Operating within a foreign trade zone offers the duty and tax relief if the final product is exported from the US.

Initial actions should include:

- ✓ During the BR&E visitations, inform businesses of the FTZ advantages specific to their trade.
- ✓ Continue to promote the FTZ to state, regional and local economic development leaders.

3. Develop a uniform incentive page across the League region that would offer economic benefits to those new and expanding businesses that support further development of both the Aviation Related Design and Manufacturing supply chain and Insurance, Finance and Technology businesses.

Incentives for each cluster grouping should mitigate the risks of business expansion or business start-up costs. The incentives should focus on industry or economic tools that local governments have control of and can guarantee to business prospects. One example of an incentive that could be included as an option is Tax Increment Financing (TIF). The State of Connecticut recently modified its TIF program and this economic development tool can provide a significant benefit for development that results in increased assessment of property. TIF can provide substantial tax advantages for the target industry businesses that need to invest in property, especially those like data centers that require significant investment resulting in higher property values.

To create a competitive advantage, the TIF incentives should be focused on the very specific targets of qualified aviation and aerospace manufacturing product and service providers, and insurance company data centers, as well as insurance company cyber security and IT related investments. This incentive would apply to investments in real property and buildings leading to the creation of jobs, increased property assessment and tax receipts to one or more of the League taxing jurisdictions.

Other incentives for qualified businesses may alleviate abatement costs, help employers find qualified workers, or otherwise help businesses overcome hurdles.

Initial actions should include:

- ✓ Determine the greatest hurdles that face businesses in expansion or start-up phases and identifying corresponding local incentives that could mitigate these challenges.
- ✓ Discussion among four-member towns on ability to coordinate incentive package across jurisdictional lines.
- ✓ Educating member towns on the TIF legislation.
- ✓ Establishing a Targeted Industry TIF District Plan.

Appendix A: Target Industry Clusters by 6-digit NAICS

Aviation Related Design and Manufacturing Cluster NAICS	
NAICS	Description
325211	Plastics Material and Resin Manufacturing
332312	Fabricated Structural Metal Manufacturing
332911	Industrial Valve Manufacturing
332912	Fluid Power Valve and Hose Fitting Manufacturing
332919	Other Metal Valve and Pipe Fitting Manufacturing
332991	Ball and Roller Bearing Manufacturing
333249	Other Industrial Machinery Manufacturing
333611	Turbine and Turbine Generator Set Units Manufacturing
333618	Other Engine Equipment Manufacturing
333911	Pump and Pumping Equipment Manufacturing
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables
334516	Analytical Laboratory Instrument Manufacturing
335313	Switchgear and Switchboard Apparatus Manufacturing
335921	Fiber Optic Cable Manufacturing
336411	Aircraft Manufacturing
336412	Aircraft Engine and Engine Parts Manufacturing
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing
423830	Industrial Machinery and Equipment Merchant Wholesalers
423840	Industrial Supplies Merchant Wholesalers
423860	Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers
488190	Other Support Activities for Air Transportation
493110	General Warehousing and Storage
541330	Engineering Services
541340	Drafting Services
541614	Process, Physical Distribution, and Logistics Consulting Services
541690	Other Scientific and Technical Consulting Services
541712	Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)
541990	All Other Professional, Scientific, and Technical Services

Insurance, Finance & Technology Cluster NAICS

NAICS	Description
511210	Software Publishers
517919	All Other Telecommunications
518210	Data Processing, Hosting, and Related Services
519130	Internet Publishing and Broadcasting and Web Search Portals
519190	All Other Information Services
522320	Financial Transactions Processing, Reserve, and Clearinghouse Activities
523920	Portfolio Management
523930	Investment Advice
523991	Trust, Fiduciary, and Custody Activities
524113	Direct Life Insurance Carriers
524114	Direct Health and Medical Insurance Carriers
524126	Direct Property and Casualty Insurance Carriers
524127	Direct Title Insurance Carriers
524128	Other Direct Insurance (except Life, Health, and Medical) Carriers
524130	Reinsurance Carriers
524210	Insurance Agencies and Brokerages
524291	Claims Adjusting
524292	Third Party Administration of Insurance and Pension Funds
524298	All Other Insurance Related Activities
525910	Open-End Investment Funds
525990	Other Financial Vehicles
541511	Custom Computer Programming Services
541512	Computer Systems Design Services
541513	Computer Facilities Management Services
541519	Other Computer Related Services
541611	Administrative Management and General Management Consulting Services
551114	Corporate, Subsidiary, and Regional Managing Offices



Appendix B: Methodology - Target Industry Selection Process

Step 1. Industry Research

Using prior research, industries conducive to locating near or adjacent to primary commercial/cargo airports were first identified. Our research was driven by the understanding that the Bradley Development Airport (BDL) is a key asset to the region and the greatest opportunities for generating economic activity will likely be driven by building on resources associated with the airport. While there are differing scholarly conclusions on the exact measurable role that airports play in economic development, it is clear from the research that commercial/cargo airports facilitate growth in specific industries of a region's economy. Below is a sampling of resources referenced to develop a comprehensive understanding of the role airport facilities play:

- *Airport Area Economic Development Model*, presented at the PTRC International Transport Conference
- *Aerotropolis*, John D. Kasarda
- *Airports and Economic Development*, Rich K. Green
- *Airline Traffic and Urban Economic Development*, Jan K. Brueckner

Briefly, the findings from this research concluded:

- Airports are modern economic development drivers that facilitate growth in clusters of industries that benefit from close proximity to transportation hubs. In a global economy, it is imperative to be able to import specialized goods from anywhere in the world, in addition to being able to export product across the country or across international borders.
- Airports tend to support an ecosystem of industries and at various levels of concentration. These industry clusters can be identified as:

Very high concentration: Industries most likely to be found in close proximity to a commercial/cargo airport include: Air transportation services, car rental, freight forwarding, aerospace equipment, manufacturers of optical instruments and lenses, manufacturers of communications equipment, and manufacturers of electrical distribution equipment.

High concentration: Other industries that are likely to be found near commercial/cargo airport include: Manufacturers of electric and electronic equipment, manufacturers of specialty chemical products, public warehousing, manufacturers of instruments, measure and control, air transportation services, specialty fabricated metal products, mailing and delivery, and wholesaling of pharmaceutical products.

Moderate concentration: Other common industries include: manufacturers of converted paper products, manufacturers of electronic components, manufacturers of medical instruments and supplies, manufacturers of specialty plastic parts, buses and taxis, building services, hotels, and car parking.

Increasing concentration: Travel agent, public warehousing, specialty machinery, mailing and related services, computer data processing services.

Industry Clusters

From our research, we determined that it was possible to allocate industries in the airport ecosystem into three distinct clusters. These clusters included related or complementary subsectors. Broadly they included:

1. **Manufacturing, warehousing and related:** In particular, manufacturing activities that produce *high value/low weight* products. For example, computer chips, medical devices or the production of other technology related products like fiber optic cable. These items are small, lightweight, and can be transported via plane. This cluster of industries also includes warehousing related subsectors that may store manufactured components until they are ready for transport.
2. **Transportation specific:** This includes transportation modes, like freight trucking that takes cargo flown in via plane to other locations in the region, and transportation related to passenger travel at the airport such as buses and taxis.
3. **Services related to the airport:** These are the ancillary services the support airport activities. This includes hotels, motels, restaurants, car rental services, gas stations and travel agents.

Step 2. Regional Overview

Based on the research identifying the likely industry clusters around commercial/cargo airport facilities noted above, we then looked to determine the prevalence of those industries within the Bradley International Airport region. In addition, industry data was gathered to better understand the economic context in which the study area resides in the broader region. This information was used to understand the economic makeup of the Bradley Development League communities and the build the Regional Profile.

Step 3. Industry Cluster Data Analysis

Based on the previous research, we created a comprehensive list of 6-digit NAICS codes that apply to airport related economic development that was used for quantitative analysis in our primary data source, Economic Modeling Specialists Inc. (EMSI).²³ The list of 229 NAICS codes was developed for consideration within the three broader clusters. Note that each cluster in the table to the right is diverse and the subsectors presented are examples.

Industry Cluster Name	Prominent Subsectors	NAICS Code
Manufacturing, warehousing, and related	Aircraft Engine and Engine Parts Manufacturing	336412
	Other Aircraft Parts and Auxiliary Equipment Manufacturing	336413
	Aircraft Manufacturing	336411
	General Warehousing and Storage	493110
Transportation specific (except manufacturing)	General Freight Trucking, Long-Distance, Truckload	484121
	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	811310
	Couriers and Express Delivery Services	492110
Services related to the airport (except transportation)	Hotels (except Casino Hotels) and Motels	721110
	Passenger Car Rental	532111

We then developed a strategic list of six criteria within four categories that were used to further narrow down the list of 229 NAICS codes to identify the specific subsectors that demonstrate competitiveness

²³ The North American Classification Standard (NAICS) codes are used to identify industries in this analysis. The standard is maintained by the US Census Bureau and is used by Federal statistical agencies in classifying business establishments. Under this standard, industries are organized into 2-digit through 6-digit levels. 2-digit codes show the highest aggregate NAICS code level representing broad categories such as “retail,” whereas 6-digit industry codes present a finer level of detail like “fruit and vegetable markets.”

factors that the League can capitalize on. Each industry received preference for each criterion it meets. If an industry meets at least three of our six criteria, it was flagged for further investigation.

The following criteria were used to evaluate the potential target industries:

1. Location Quotient – Industry Competitiveness

By examining the Location Quotient (LQ) of an industry we can see how concentrated that industry is within its geographic boundaries compared to the nation. The higher the LQ, the more concentrated an industry is as compared to the United States as a whole. An LQ of less than 1 typically means an industry is importing from other areas to meet its needs; an LQ equal to or greater than one typically means an industry is meeting its needs internally and may be producing surplus that can be used in other geographic locations. Typically, only values above 1.2 are meaningful in LQ analysis. Thought of differently, an LQ is also an indicator of an industry's competitiveness compared to other geographies. Region's with industries that have a high LQ are considered to have certain factors that have contributed to its competitiveness. Those factors are likely to include skilled labor pool, available infrastructure and/or proximity to market.

For this indicator, our analysis looks at LQ by 6-digit NAICS industry within the Bradley Development League 4-town as well as the 2-county geographies. Industries that meet or exceed a LQ of 1.2 within the region and/or study area are preferred.

2. Size of Industry – by jobs

For an industry target to have the potential to have a meaningful impact on an economy, it must be relatively large when compared to other industries and/or to the overall economy. The significance of an industry is typically measured in the form of establishments, employment, wages and sales (also referred to as Gross Product or output). Wages total wages can be a function of total jobs, although they are also influenced by the average wages paid within an industry. For that reason, employment was one of two measures used to qualify an industries significance in impacting the study area's overall economy. To meet one of two size criterion, an industry must employ more than 100 employees, based on 2017 jobs.

3. Size of Industry – by Gross Regional Product

Gross Regional Product of an industry is the sum of all sales of businesses within that industry. Because Gross Regional Product greatly impacts both wages and tax payments to jurisdictions, this measure was also selected as a criterion for identifying potential industry targets. In the review of industries, those with is a GRP greater than \$20M were also determined to be of significance to the Bradley Development League economy.

4. Job Growth – Historical & Projected Growth

The likely job growth of an industry is also an important criterion in identifying potential industry targets. The intention of this measure is to allow for preference of industries that are most likely to grow jobs and thus wages. Past performance and projected growth are both used to assess likely future growth. To evaluate past and future industry performance we examined job change in the periods between 2012-2017 and 2017-2022. If an industry added more than one job in the five-year period between 2012-2017, it receives a preference. In addition, if it is projected to add more than one job between 2017-2022, then it receives an additional preference.

The above evaluation criteria were used to identify those industries that are most likely to provide the Bradley Development League towns with the greatest opportunity for attracting new businesses, investment and jobs, and even more importantly retaining those businesses that are already located around near the airport.

Refinement of Target Industries

After a joint meeting with the Bradley Development League's Board of Directors and Operations Committee on April 10, 2018, we furthered considered other industries that have strong regional presence that would be viable contenders for target industries. The primary industry that arose to the top of consideration was Insurance related activities. Based on Camoin Associates' understanding of the insurance industry and the role that it plays in Hartford region's economy, an industry cluster comprising insurance, finance and technology subsectors was developed. Further refinement based on the criteria listed above and additional research led to the finalization of the two target clusters:

- 1) Aviation Related Design and Manufacturing
- 2) Insurance, Finance and Technology