



Target Industry Cluster Analysis

Northern Shenandoah Valley Regional Partnership, Virginia



Center for Regional Development
Advancing Collaboration : Energizing Regions

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01 overview

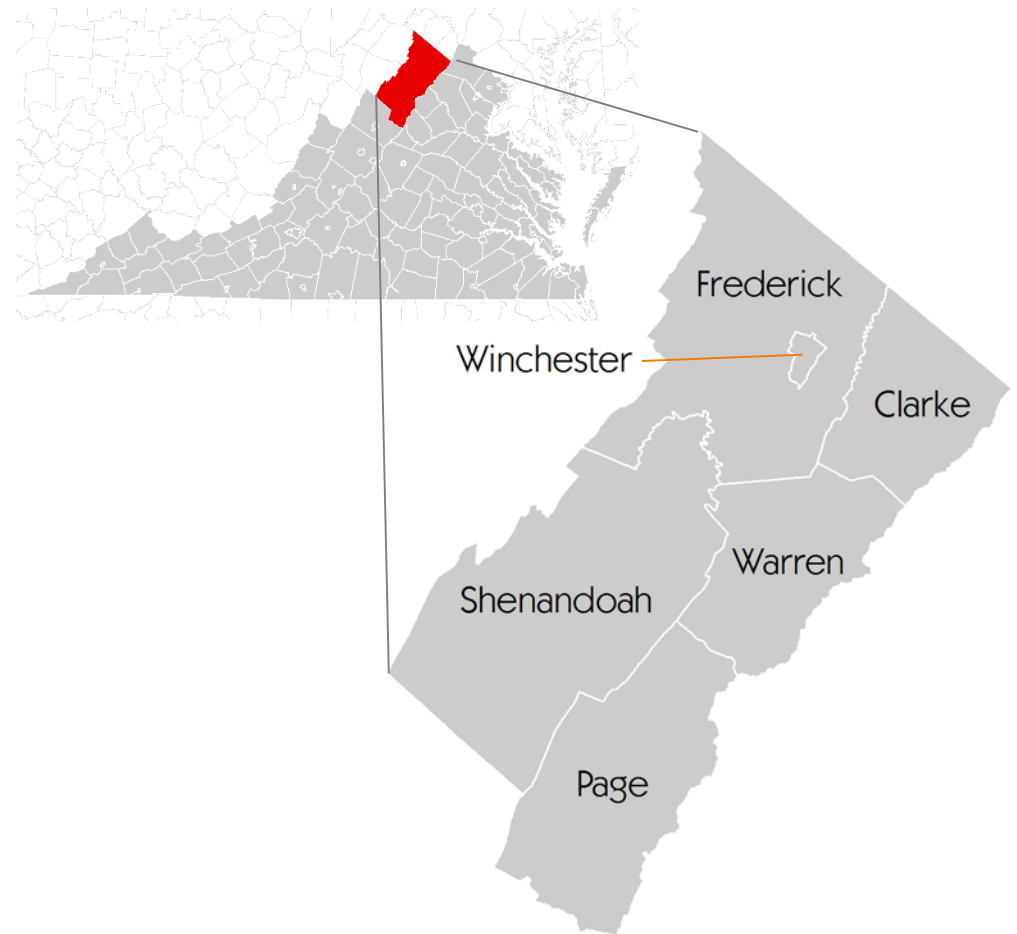
**Northern Shenandoah Valley
Regional Partnership, VA**

Overview

Northern Shenandoah Valley Regional Partnership, VA

Northern Shenandoah Valley Regional Partnership (NSVRP) Region is comprised of six Virginia counties. I-81 crosses the region from south to north and connects to I-70 to the north. I-66 connects the region to Washington, DC.

- Clarke
- Frederick
- Page
- Shenandoah
- Warren
- Winchester



02 target industry clusters

**Agribusiness, Food Processing
And Technology**

**Arts, Entertainment, Recreation
And Visitor Industries**

Biomedical/Biotechnical

Business And Financial Services

Defense And Security

**Education And Knowledge
Creation**

**Information Technology And
Telecommunications**

Shift-Share Analysis by Top Industry Sectors

Agribusiness, Food Processing And Technology Cluster

Industries	Jobs 2014	National Trend, 2009-2014	Industry Trend, 2009-2014	Cumulative Expected Growth	Actual Job Growth, 2009-2014	Regional Performance, 2009-2014
		A	B	C=A+B	D	D-C
Crop Production	1,851	101	-76	25	272	247
Animal Production and Aquaculture	1,149	100	-142	-42	-400	-358
Poultry Processing	811	59	-81	-22	-109	-87
Fruit and Vegetable Canning	664	29	-47	-18	218	236
Fluid Milk Manufacturing	507	17	-24	-7	239	246
All Other Miscellaneous Food Manufacturing	251	7	18	25	148	123
Cookie and Cracker Manufacturing	247	9	-1	8	106	98
Other Snack Food Manufacturing	213	28	49	77	-227	-304
Rendering and Meat Byproduct Processing	168	10	-16	-6	8	14
Meat Processed from Carcasses	138	0	0	0	136	136
Farm and Garden Machinery and Equipment Merchant Wholesalers	135	2	0	2	108	106
Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour	128	4	-4	0	65	65
Soil Preparation, Planting, and Cultivating	126	4	3	7	70	63
Farm Labor Contractors and Crew Leaders	110	8	6	14	-12	-26
Other Animal Food Manufacturing	93	4	-1	3	35	32

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Source: EMSI Class of Worker 2015.4 (QCEW, non-QCEW, self-employed and extended proprietors).

Top 15 Inputs by Dollars

Agribusiness, Food Processing And Technology Cluster

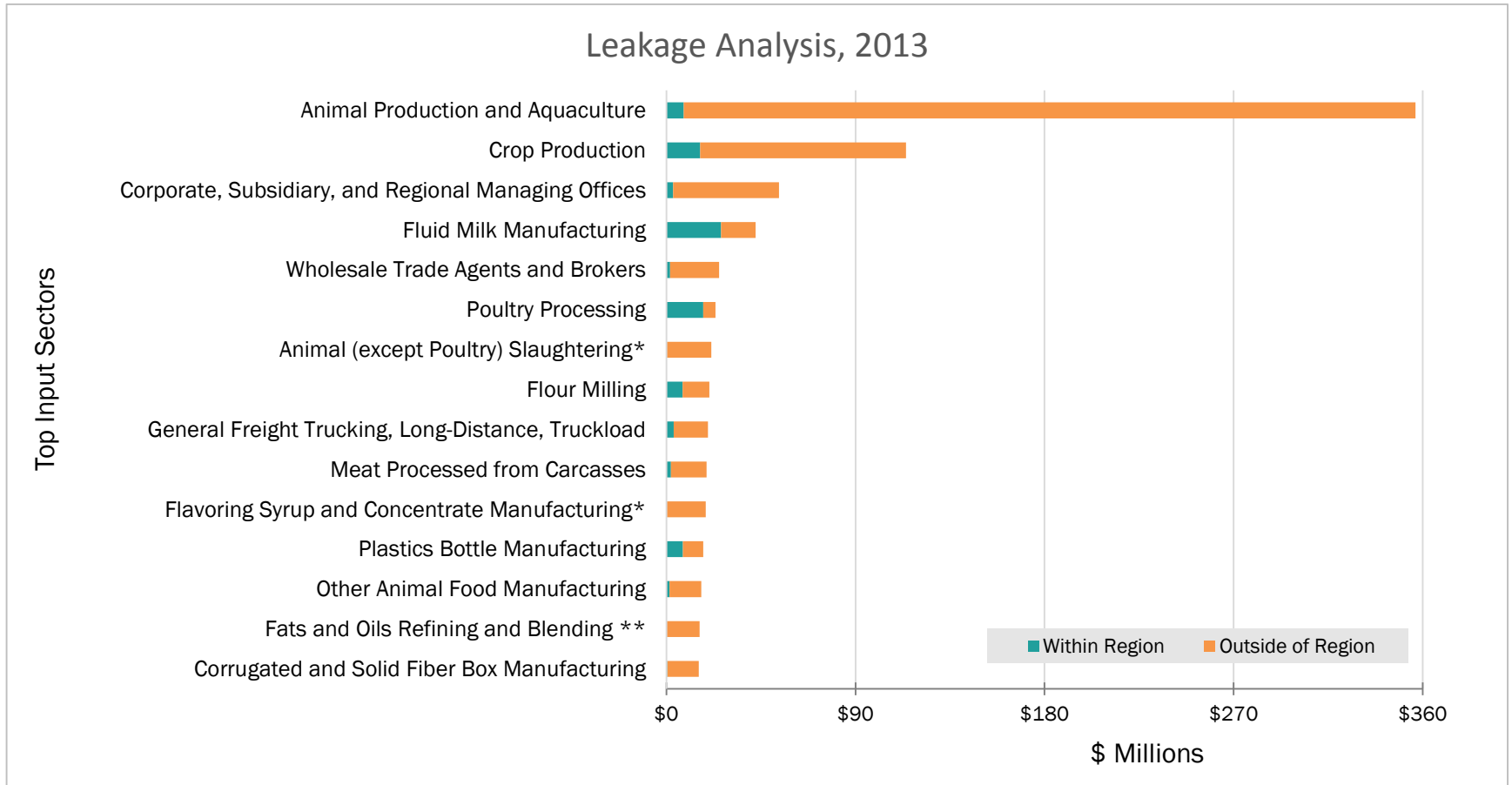
Industries	Estimated Input (\$ Millions), 2013	% In-Region	% Out of Region
Animal Production and Aquaculture	\$356.54	2%	98%
Crop Production	\$114.01	14%	86%
Corporate, Subsidiary, and Regional Managing Offices	\$53.57	6%	94%
Fluid Milk Manufacturing	\$42.45	61%	39%
Wholesale Trade Agents and Brokers	\$25.03	7%	93%
Poultry Processing	\$23.33	75%	25%
Animal (except Poultry) Slaughtering *	\$21.35	0%	100%
Flour Milling	\$20.52	38%	62%
General Freight Trucking, Long-Distance, Truckload	\$19.83	17%	83%
Meat Processed from Carcasses	\$19.10	11%	89%
Flavoring Syrup and Concentrate Manufacturing *	\$18.72	0%	100%
Plastics Bottle Manufacturing	\$17.58	45%	55%
Other Animal Food Manufacturing	\$16.67	9%	91%
Fats and Oils Refining and Blending **	\$15.75	0%	100%
Corrugated and Solid Fiber Box Manufacturing	\$15.48	3%	97%

Note: * industry sector has less than 10 jobs as calculated by EMSI; ** industry sector is not present in the region.

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Top 15 Inputs by Dollars

Agribusiness, Food Processing And Technology Cluster



Note: * industry sector has less than 10 jobs as calculated by EMSI; ** industry sector is not present in the region.

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Source: EMSI Class of Worker 2015.4 (QCEW, non-QCEW, self-employed and extended proprietors).

Top Occupations

Agribusiness, Food Processing And Technology Cluster

Occupations	Jobs 2014	% Change, 2009-2014	Median Hourly Earnings	Entry Level Education
Farmers, Ranchers, and Other Agricultural Managers	2,359	-6%	\$9.6	High school diploma or equivalent
Packaging and Filling Machine Operators and Tenders	449	25%	\$15.5	High school diploma or equivalent
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	416	5%	\$8.9	Less than high school
Laborers and Freight, Stock, and Material Movers, Hand	232	18%	\$11.4	Less than high school
Food Batchmakers	198	9%	\$14.9	High school diploma or equivalent
Meat, Poultry, and Fish Cutters and Trimmers	193	4%	\$11.6	Less than high school
Packers and Packagers, Hand	154	-1%	\$11.8	Less than high school
Industrial Truck and Tractor Operators	144	19%	\$14.9	Less than high school
Food Processing Workers, All Other	134	17%	\$11.9	Less than high school
Inspectors, Testers, Sorters, Samplers, and Weighers	114	28%	\$17.1	High school diploma or equivalent
First-Line Supervisors of Production and Operating Workers	106	14%	\$28.5	Postsecondary non-degree award
Industrial Machinery Mechanics	105	30%	\$21.3	High school diploma or equivalent
Helpers--Production Workers	99	14%	\$11.7	Less than high school
Heavy and Tractor-Trailer Truck Drivers	97	24%	\$18.3	Postsecondary non-degree award
Maintenance and Repair Workers, General	96	16%	\$17.0	High school diploma or equivalent

Note: SOC (Standard Occupation Classification) 5-digit occupations are included by jobs in 2014. Extended proprietors include estimates for underreported self employment, proprietorships, trusts, partnerships and cooperatives.

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Shift-Share Analysis by Top Industry Sectors

Arts, Entertainment, Recreation And Visitor Industries Cluster

Industries	Jobs 2014	National Trend, 2009-2014	Industry Trend, 2009-2014	Cumulative Expected Growth	Actual Job Growth, 2009-2014	Regional Performance, 2009-2014
		A	B	C=A+B	D	D-C
Hotels (except Casino Hotels) and Motels	1,362	94	37	131	-97	-228
Independent Artists, Writers, and Performers	676	31	25	56	192	136
Fitness and Recreational Sports Centers	416	26	21	47	14	-33
Nature Parks and Other Similar Institutions	304	11	12	23	126	103
Golf Courses and Country Clubs	232	19	-6	13	-58	-71
Other Spectator Sports	194	10	-5	5	36	31
All Other Amusement and Recreation Industries	184	11	30	41	8	-33
Motion Picture Theaters (except Drive-Ins)	129	3	-4	-1	78	79
RV (Recreational Vehicle) Parks and Campgrounds	107	5	8	13	26	13
Television Broadcasting	95	4	1	5	32	27
Skiing Facilities	85	0	0	0	85	85
Recreational and Vacation Camps (except Campgrounds)	80	4	4	8	25	17
Bed-and-Breakfast Inns	79	6	3	9	-14	-23
Museums	79	6	9	15	-20	-35
Promoters of Performing Arts, Sports, and Similar Events without Facilities	61	4	13	17	3	-14

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Top 15 Inputs by Dollars

Arts, Entertainment, Recreation And Visitor Industries Cluster

Industries	Estimated Input (\$ Millions), 2013	% In-Region	% Out of Region
Corporate, Subsidiary, and Regional Managing Offices	\$7.19	7%	93%
Lessors of Residential Buildings and Dwellings	\$4.14	38%	62%
Lessors of Nonresidential Buildings (except Miniwarehouses)	\$3.61	36%	64%
Sports Teams and Clubs	\$3.12	12%	88%
Offices of Real Estate Agents and Brokers	\$3.11	42%	58%
Television Broadcasting	\$3.11	65%	35%
Independent Artists, Writers, and Performers	\$2.35	45%	55%
Other Activities Related to Real Estate	\$2.12	44%	56%
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works) *	\$2.00	0%	100%
Advertising Agencies	\$1.95	8%	92%
Offices of Lawyers	\$1.92	17%	83%
Residential Property Managers	\$1.43	33%	67%
Commercial Printing (except Screen and Books)	\$1.33	9%	91%
Radio Stations	\$1.27	83%	17%
Internet Publishing and Broadcasting and Web Search Portals	\$1.25	7%	93%

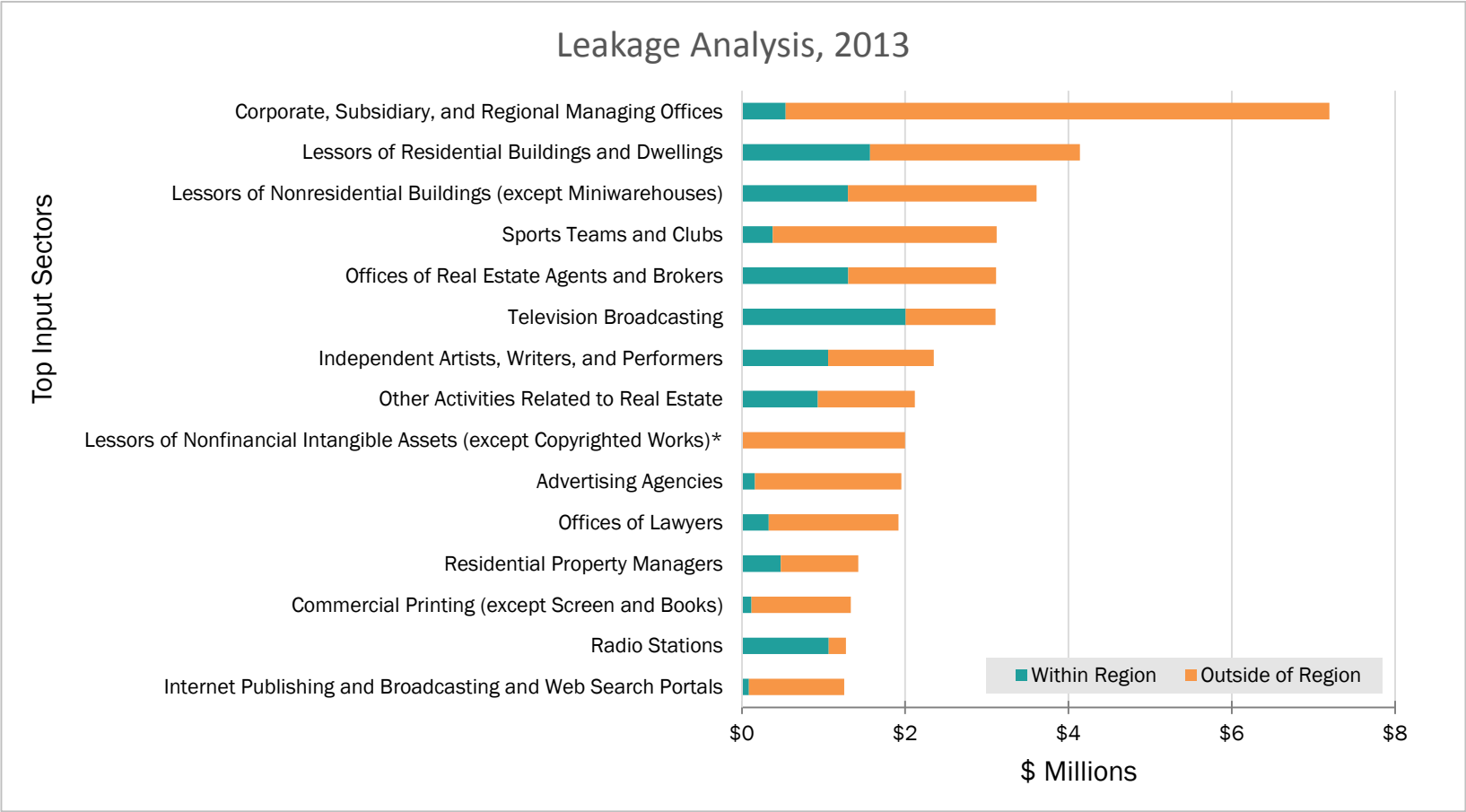
Note: * industry sector has less than 10 jobs as calculated by EMSI.

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Source: EMSI Class of Worker 2015.4 (QCEW, non-QCEW, self-employed and extended proprietors).

Top 15 Inputs by Dollars

Arts, Entertainment, Recreation And Visitor Industries Cluster



Note: * industry sector has less than 10 jobs as calculated by EMSI.

Top Occupations

Arts, Entertainment, Recreation And Visitor Industries Cluster

Occupations	Jobs 2014	% Change, 2009-2014	Median Hourly Earnings	Entry Level Education
Maids and Housekeeping Cleaners	368	-5%	\$8.8	Less than high school
Hotel, Motel, and Resort Desk Clerks	251	-9%	\$8.9	High school diploma or equivalent
Musicians and Singers	235	34%	\$14.4	High school diploma or equivalent
Writers and Authors	203	32%	\$15.0	Bachelor's degree
Fitness Trainers and Aerobics Instructors	202	3%	\$16.0	High school diploma or equivalent
Lodging Managers	145	-3%	\$13.7	High school diploma or equivalent
Waiters and Waitresses	139	-3%	\$8.7	Less than high school
Amusement and Recreation Attendants	131	11%	\$9.3	Less than high school
Fine Artists, Including Painters, Sculptors, and Illustrators	117	23%	\$7.7	High school diploma or equivalent
Maintenance and Repair Workers, General	113	5%	\$17.0	High school diploma or equivalent
Coaches and Scouts	96	12%	\$12.8	Bachelor's degree
Cashiers	91	34%	\$8.6	Less than high school
Landscaping and Groundskeeping Workers	89	17%	\$9.9	Less than high school
Tour Guides and Escorts	86	34%	\$11.1	High school diploma or equivalent
Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	67	86%	\$8.3	Less than high school

Note: SOC (Standard Occupation Classification) 5-digit occupations are included by jobs in 2014. Extended proprietors include estimates for underreported self employment, proprietorships, trusts, partnerships and cooperatives.

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Shift-Share Analysis by Top Industry Sectors

Biomedical/Biotechnical Cluster

Industries	Jobs 2014	National Trend, 2009-2014	Industry Trend, 2009-2014	Cumulative Expected Growth	Actual Job Growth, 2009-2014	Regional Performance, 2009-2014
		A	B	C=A+B	D	D-C
General Medical and Surgical Hospitals	3,866	287	-188	99	-605	-704
Nursing Care Facilities (Skilled Nursing Facilities)	866	61	-57	4	-82	-86
Continuing Care Retirement Communities	591	27	51	78	178	100
Pharmacies and Drug Stores	454	28	-35	-7	14	21
Home Health Care Services	424	26	68	94	22	-72
Assisted Living Facilities for the Elderly	419	28	44	72	-13	-85
Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	390	2	-1	1	365	364
Residential Intellectual and Developmental Disability Facilities	240	11	2	13	75	62
Freestanding Ambulatory Surgical and Emergency Centers	210	6	21	27	124	97
Residential Mental Health and Substance Abuse Facilities	155	7	8	15	51	36
In-Vitro Diagnostic Substance Mfg.	130	1	1	2	122	120
Cosmetics, Beauty Supplies, and Perfume Stores	100	7	14	21	-16	-37
Medical Laboratories	72	1	2	3	60	57
Optical Goods Stores	62	3	3	6	19	13
Outpatient Mental Health and Substance Abuse Centers	60	1	2	3	45	42

section 02

Top 15 Inputs by Dollars

Biomedical/Biotechnical Cluster

Industries	Estimated Input (\$ Millions), 2013	% In-Region	% Out of Region
Corporate, Subsidiary, and Regional Managing Offices	\$22.97	13%	87%
Direct Property and Casualty Insurance Carriers	\$15.82	16%	84%
Lessors of Residential Buildings and Dwellings	\$15.13	61%	39%
Lessors of Nonresidential Buildings (except Miniwarehouses)	\$13.20	63%	37%
Offices of Lawyers	\$12.43	39%	61%
Direct Health and Medical Insurance Carriers **	\$11.51	0%	100%
Offices of Real Estate Agents and Brokers	\$11.38	62%	38%
Temporary Help Services	\$10.72	85%	15%
Direct Life Insurance Carriers *	\$10.35	0%	100%
Investment Advice	\$10.15	62%	38%
Biological Product (except Diagnostic) Manufacturing **	\$8.58	0%	100%
Administrative Management and General Management Consulting Services	\$7.98	52%	48%
Other Activities Related to Real Estate	\$7.74	70%	30%
In-Vitro Diagnostic Substance Manufacturing	\$7.70	35%	65%
Office Administrative Services	\$7.12	44%	56%

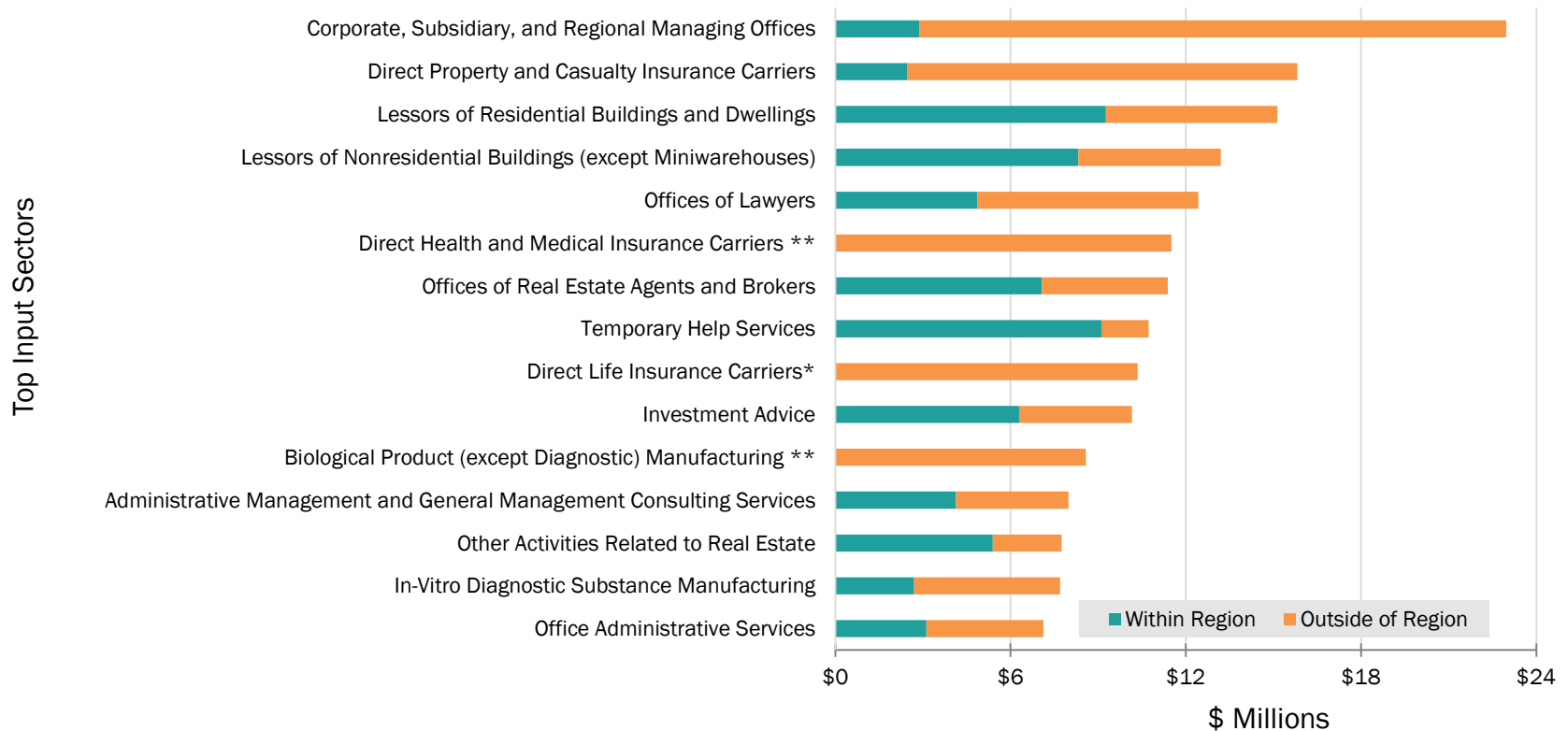
Note: * industry sector has less than 10 jobs as calculated by EMSI; ** industry sector is not present in the region.

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Top 15 Inputs by Dollars

Biomedical/Biotechnical Cluster

Leakage Analysis, 2013



Note: * industry sector has less than 10 jobs as calculated by EMSI; ** industry sector is not present in the region.

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Top Occupations

Biomedical/Biotechnical Cluster

Occupations	Jobs 2014	% Change, 2009-2014	Median Hourly Earnings	Entry Level Education
Registered Nurses	1,286	-10%	\$25.6	Associate's degree
Nursing Assistants	985	-2%	\$10.8	Postsecondary non-degree award
Personal Care Aides	414	21%	\$8.9	Less than high school
Licensed Practical and Licensed Vocational Nurses	312	2%	\$18.6	Postsecondary non-degree award
Home Health Aides	227	5%	\$9.6	Less than high school
Maids and Housekeeping Cleaners	183	-3%	\$8.8	Less than high school
Pharmacy Technicians	162	1%	\$13.9	High school diploma or equivalent
Pharmacists	152	0%	\$56.6	Doctoral or professional degree
Cashiers	142	0%	\$8.6	Less than high school
Retail Salespersons	140	9%	\$10.5	Less than high school
Food Servers, Nonrestaurant	131	7%	\$9.0	Less than high school
Office Clerks, General	128	4%	\$13.3	High school diploma or equivalent
Medical and Health Services Managers	107	-4%	\$37.9	Bachelor's degree
Radiologic Technologists	99	-5%	\$27.6	Associate's degree
Customer Service Representatives	92	16%	\$15.4	High school diploma or equivalent

Note: SOC (Standard Occupation Classification) 5-digit occupations are included by jobs in 2014. Extended proprietors include estimates for underreported self employment, proprietorships, trusts, partnerships and cooperatives.

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Shift-Share Analysis by Top Industry Sectors

Business And Financial Services Cluster

Industries	Jobs 2014	National Trend, 2009-2014	Industry Trend, 2009-2014	Cumulative Expected Growth	Actual Job Growth, 2009-2014	Regional Performance, 2009-2014
		A	B	C=A+B	D	D-C
Commercial Printing (except Screen and Books)	994	62	-205	-143	33	176
Other Activities Related to Real Estate	793	49	-1	48	31	-17
Lessors of Nonresidential Buildings (except Miniwarehouses)	652	39	42	81	49	-32
Insurance Agencies and Brokerages	541	38	24	62	-57	-119
Investment Advice	480	25	-18	7	86	79
Administrative Management and General Management Consulting Services	476	27	28	55	49	-6
Portfolio Management	473	22	109	131	128	-3
Lessors of Miniwarehouses and Self-Storage Units	452	23	31	54	88	34
Engineering Services	371	20	-11	9	52	43
Other Accounting Services	364	22	-18	4	20	16
Offices of Lawyers	363	25	-28	-3	-21	-18
Computer Systems Design Services	331	15	41	56	91	35
Residential Property Managers	279	17	41	58	11	-47
Offices of Certified Public Accountants	235	13	-4	9	38	29
Custom Computer Programming Services	203	12	27	39	20	-19

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Top 15 Inputs by Dollars

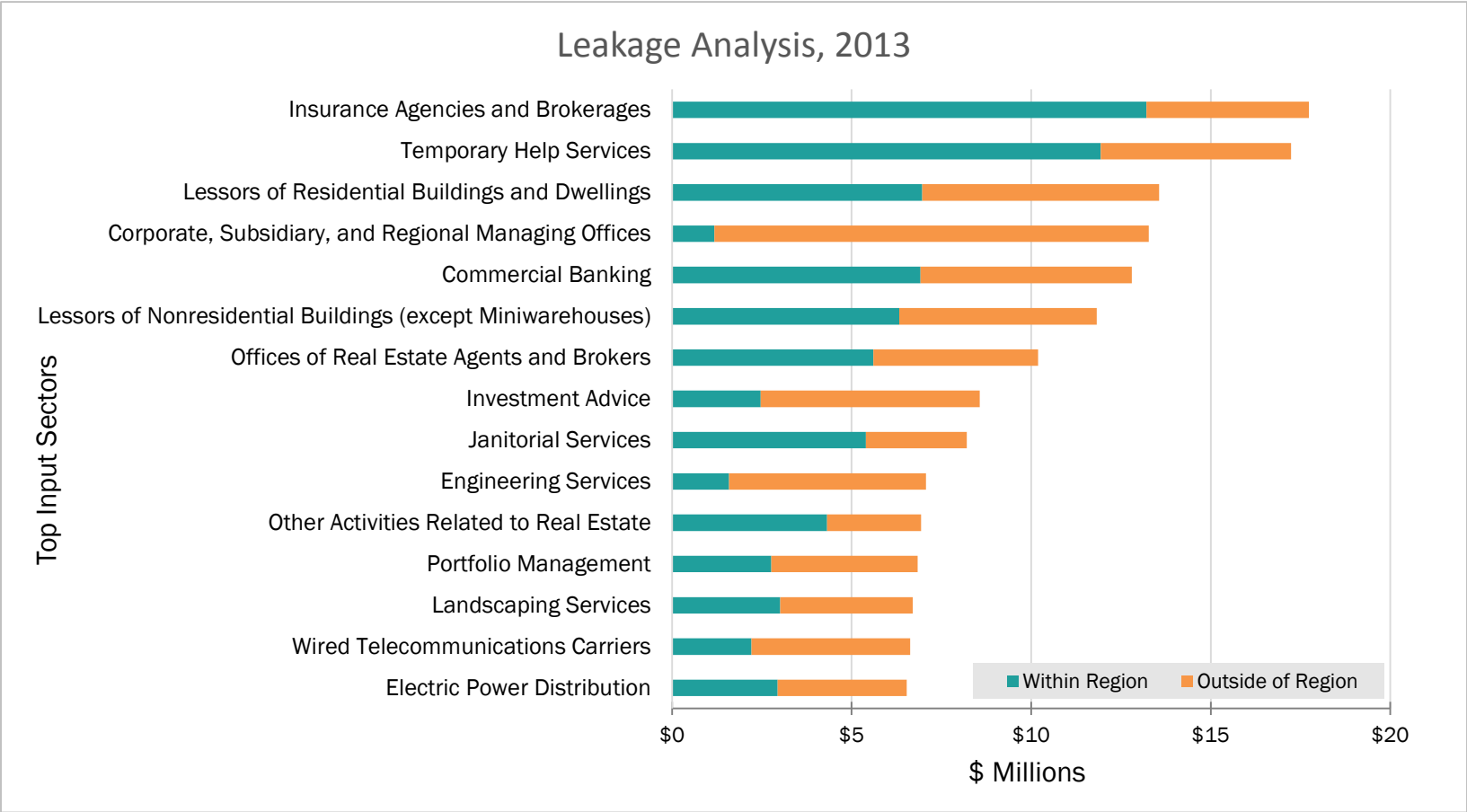
Business And Financial Services Cluster

Industries	Estimated Input (\$ Millions), 2013	% In-Region	% Out of Region
Insurance Agencies and Brokerages	\$17.73	74%	26%
Temporary Help Services	\$17.23	69%	31%
Lessors of Residential Buildings and Dwellings	\$13.56	51%	49%
Corporate, Subsidiary, and Regional Managing Offices	\$13.27	9%	91%
Commercial Banking	\$12.80	54%	46%
Lessors of Nonresidential Buildings (except Miniwarehouses)	\$11.83	53%	47%
Offices of Real Estate Agents and Brokers	\$10.19	55%	45%
Investment Advice	\$8.56	29%	71%
Janitorial Services	\$8.21	66%	34%
Engineering Services	\$7.07	22%	78%
Other Activities Related to Real Estate	\$6.94	62%	38%
Portfolio Management	\$6.84	40%	60%
Landscaping Services	\$6.70	45%	55%
Wired Telecommunications Carriers	\$6.63	33%	67%
Electric Power Distribution	\$6.54	45%	55%

section 02

Top 15 Inputs by Dollars

Business And Financial Services Cluster



section 02

Source: EMSI Class of Worker 2015.4 (QCEW, non-QCEW, self-employed and extended proprietors).

Top Occupations

Business And Financial Services Cluster

Occupations	Jobs 2014	% Change, 2009-2014	Median Hourly Earnings	Entry Level Education
Real Estate Sales Agents	1,170	3%	\$15.9	High school diploma or equivalent
Personal Financial Advisors	638	30%	\$35.4	Bachelor's degree
Accountants and Auditors	456	9%	\$29.8	Bachelor's degree
Insurance Sales Agents	428	-12%	\$19.0	High school diploma or equivalent
Property, Real Estate, and Community Association Managers	423	18%	\$18.1	High school diploma or equivalent
Management Analysts	393	3%	\$33.9	Bachelor's degree
Securities, Commodities, and Financial Services Sales Agents	343	-2%	\$22.6	Bachelor's degree
Real Estate Brokers	306	3%	\$22.7	High school diploma or equivalent
Customer Service Representatives	240	15%	\$15.4	High school diploma or equivalent
Bookkeeping, Accounting, and Auditing Clerks	224	11%	\$16.2	High school diploma or equivalent
Lawyers	205	4%	\$43.4	Doctoral or professional degree
Printing Press Operators	202	4%	\$16.3	High school diploma or equivalent
Office Clerks, General	187	7%	\$13.3	High school diploma or equivalent
Managers, All Other	164	31%	\$21.5	High school diploma or equivalent
Appraisers and Assessors of Real Estate	136	1%	\$18.9	Bachelor's degree

Note: SOC (Standard Occupation Classification) 5-digit occupations are included by jobs in 2014. Extended proprietors include estimates for underreported self employment, proprietorships, trusts, partnerships and cooperatives.

section 02

Shift-Share Analysis by Top Industry Sectors

Defense And Security Cluster

Industries	Jobs 2014	National Trend, 2009-2014	Industry Trend, 2009-2014	Cumulative Expected Growth	Actual Job Growth, 2009-2014	Regional Performance, 2009-2014
		A	B	C=A+B	D	D-C
Federal Government, Military	752	48	-60	-12	0	12
Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	390	2	-1	1	365	364
Power and Communication Line and Related Structures Construction	347	3	8	11	300	289
Computer Systems Design Services	331	15	41	56	91	35
Other Personal and Household Goods Repair and Maintenance	241	13	10	23	36	13
Custom Computer Programming Services	203	12	27	39	20	-19
Security Guards and Patrol Services	161	13	10	23	-49	-72
Motor Vehicle Supplies and New Parts Merchant Wholesalers	57	4	2	6	-7	-13
Security Systems Services (except Locksmiths)	42	4	5	9	-18	-27
Other Computer Related Services	39	2	-4	-2	5	7
Investigation Services	31	10	-21	-11	-131	-120
Motor Vehicle Parts (Used) Merchant Wholesalers	20	2	-2	0	-7	-7
Locksmiths	20	1	-1	0	-2	-2
Computer Facilities Management Services	17	1	1	2	-4	-6
Automobile and Other Motor Vehicle Merchant Wholesalers	10	0	0	0	4	4

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Top 15 Inputs by Dollars

Defense And Security Cluster

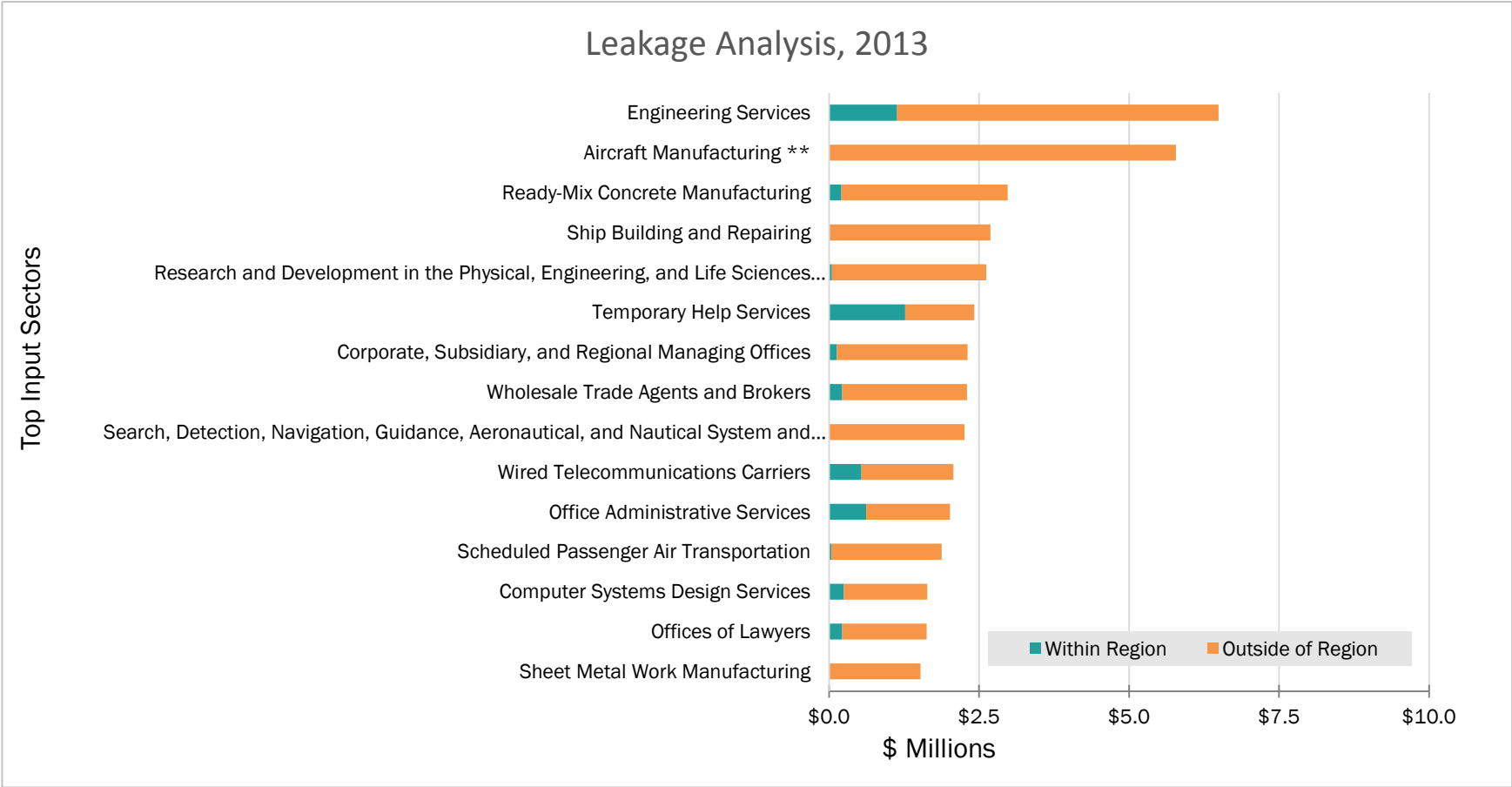
Industries	Estimated Input (\$ Millions), 2013	% In-Region	% Out of Region
Engineering Services	\$6.49	18%	82%
Aircraft Manufacturing **	\$5.78	0%	100%
Ready-Mix Concrete Manufacturing	\$2.98	7%	93%
Ship Building and Repairing	\$2.69	1%	99%
Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	\$2.62	2%	98%
Temporary Help Services	\$2.42	53%	47%
Corporate, Subsidiary, and Regional Managing Offices	\$2.31	6%	94%
Wholesale Trade Agents and Brokers	\$2.30	9%	91%
Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing **	\$2.26	0%	100%
Wired Telecommunications Carriers	\$2.07	26%	74%
Office Administrative Services	\$2.01	31%	69%
Scheduled Passenger Air Transportation	\$1.88	2%	98%
Computer Systems Design Services	\$1.64	15%	85%
Offices of Lawyers	\$1.63	13%	87%
Sheet Metal Work Manufacturing	\$1.53	1%	99%

Note: ** industry sector is not present in the region.

section 02

Top 15 Inputs by Dollars

Defense And Security Cluster



Note: ** industry sector is not present in the region.

section 02

Source: EMSI Class of Worker 2015.4 (QCEW, non-QCEW, self-employed and extended proprietors).

Top Occupations

Defense And Security Cluster

Occupations	Jobs 2014	% Change, 2009-2014	Median Hourly Earnings	Entry Level Education
Military occupations	752	0%	\$15.8	N/A
Security Guards	136	-54%	\$13.0	High school diploma or equivalent
Telecommunications Line Installers and Repairers	72	929%	\$29.1	High school diploma or equivalent
Computer Systems Analysts	60	28%	\$32.3	Bachelor's degree
Software Developers, Applications	54	38%	\$39.3	Bachelor's degree
Construction Laborers	47	683%	\$13.0	Less than high school
Tailors, Dressmakers, and Custom Sewers	45	-4%	\$10.7	Less than high school
Web Developers	45	45%	\$19.7	Associate's degree
Software Developers, Systems Software	45	67%	\$44.0	Bachelor's degree
Electrical Power-Line Installers and Repairers	43	378%	\$32.6	High school diploma or equivalent
Office Clerks, General	39	117%	\$13.3	High school diploma or equivalent
Computer User Support Specialists	39	39%	\$22.0	Some college, no degree
Computer Programmers	35	-10%	\$28.5	Bachelor's degree
General and Operations Managers	34	127%	\$45.7	Bachelor's degree
Managers, All Other	32	0%	\$21.5	High school diploma or equivalent

Note: SOC (Standard Occupation Classification) 5-digit occupations are included by jobs in 2014. Extended proprietors include estimates for underreported self employment, proprietorships, trusts, partnerships and cooperatives.

section 02

Shift-Share Analysis by Top Industry Sectors

Education And Knowledge Creation Cluster

Industries	Jobs 2014	National Trend, 2009-2014	Industry Trend, 2009-2014	Cumulative Expected Growth	Actual Job Growth, 2009-2014	Regional Performance, 2009-2014
		A	B	C=A+B	D	D-C
Colleges, Universities, and Professional Schools	1,141	69	33	102	63	-39
Newspaper Publishers	174	14	-68	-54	-52	2
Sports and Recreation Instruction	165	8	17	25	35	10
Fine Arts Schools	79	4	3	7	20	13
Periodical Publishers	72	7	-23	-16	-35	-19
Educational Support Services	65	4	3	7	-4	-11
Exam Preparation and Tutoring	63	7	-1	6	-41	-47
Professional and Management Development Training	60	2	0	2	36	34
Automobile Driving Schools	44	3	-3	0	2	2
Libraries and Archives	36	1	-3	-2	16	18
Other Technical and Trade Schools	30	3	-4	-1	-20	-19
All Other Miscellaneous Schools and Instruction	26	2	4	6	-1	-7
Book Publishers	18	1	-4	-3	-4	-1
Internet Publishing and Broadcasting and Web Search Portals	17	1	7	8	7	-1
Flight Training	14	0	0	0	13	13

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Top 15 Inputs by Dollars

Education And Knowledge Creation Cluster

Industries	Estimated Input (\$ Millions), 2013	% In-Region	% Out of Region
Lessors of Residential Buildings and Dwellings	\$4.80	74%	26%
Lessors of Nonresidential Buildings (except Miniwarehouses)	\$4.18	77%	23%
Offices of Real Estate Agents and Brokers	\$3.61	72%	28%
Other Activities Related to Real Estate	\$2.45	82%	18%
Natural Gas Distribution *	\$2.07	19%	81%
Residential Property Managers	\$1.65	65%	35%
Corporate, Subsidiary, and Regional Managing Offices	\$1.46	17%	83%
Commercial Printing (except Screen and Books)	\$1.35	12%	88%
All Other Professional, Scientific, and Technical Services	\$1.33	42%	58%
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works) *	\$1.31	0%	100%
Lessors of Miniwarehouses and Self-Storage Units	\$1.02	71%	29%
Nonresidential Property Managers	\$1.01	67%	33%
Wired Telecommunications Carriers	\$0.88	42%	58%
Internet Publishing and Broadcasting and Web Search Portals	\$0.87	15%	85%
Electric Power Distribution	\$0.77	53%	47%

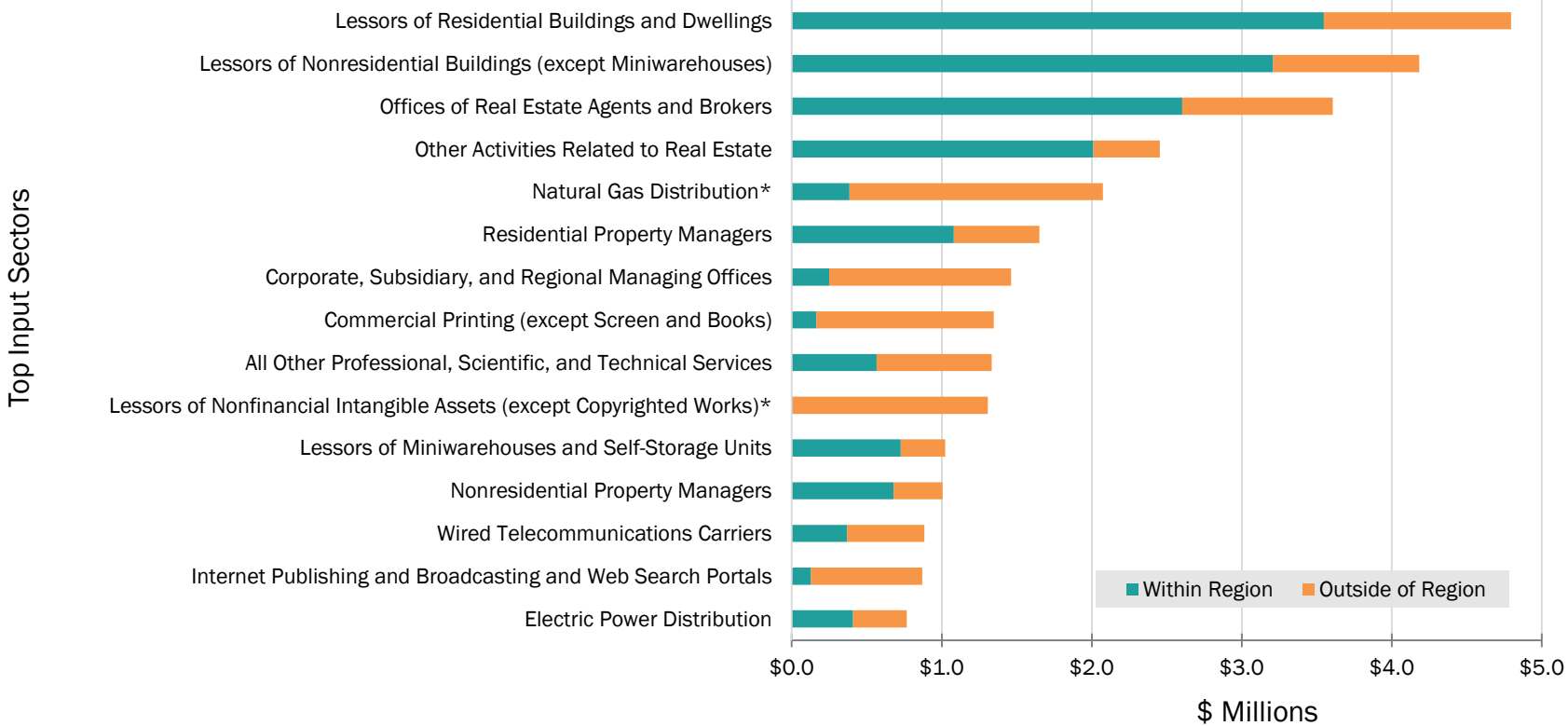
Note: * industry sector has less than 10 jobs as calculated by EMSI.

section 02

Top 15 Inputs by Dollars

Education And Knowledge Creation Cluster

Leakage Analysis, 2013



Note: * industry sector has less than 10 jobs as calculated by EMSI.

section 02

Top Occupations

Education And Knowledge Creation Cluster

Occupations	Jobs 2014	% Change, 2009-2014	Median Hourly Earnings	Entry Level Education
Postsecondary Teachers	526	16%	\$25.3	Doctoral or professional degree
Self-Enrichment Education Teachers	174	-2%	\$16.7	High school diploma or equivalent
Teachers and Instructors, All Other	138	-3%	\$19.7	Bachelor's degree
Coaches and Scouts	98	11%	\$12.8	Bachelor's degree
Office Clerks, General	68	-4%	\$13.3	High school diploma or equivalent
Education Administrators, Postsecondary	51	2%	\$35.9	Master's degree
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	48	-6%	\$15.3	High school diploma or equivalent
Editors	42	-18%	\$19.5	Bachelor's degree
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	28	0%	\$10.7	Less than high school
Managers, All Other	28	33%	\$21.5	High school diploma or equivalent
Writers and Authors	24	0%	\$15.0	Bachelor's degree
Advertising Sales Agents	20	-29%	\$19.7	High school diploma or equivalent
Fitness Trainers and Aerobics Instructors	20	25%	\$16.0	High school diploma or equivalent
Educational, Guidance, School, and Vocational Counselors	18	0%	\$25.2	Master's degree
First-Line Supervisors of Office and Administrative Support Workers	18	-10%	\$21.5	High school diploma or equivalent

Note: SOC (Standard Occupation Classification) 5-digit occupations are included by jobs in 2014. Extended proprietors include estimates for underreported self employment, proprietorships, trusts, partnerships and cooperatives.

section 02

Shift-Share Analysis by Top Industry Sectors

Information Technology And Telecommunications Cluster

Industries	Jobs 2014	National Trend, 2009-2014	Industry Trend, 2009-2014	Cumulative Expected Growth	Actual Job Growth, 2009-2014	Regional Performance, 2009-2014
		A	B	C=A+B	D	D-C
Electrical Contractors and Other Wiring Installation Contractors	490	37	-26	11	-81	-92
Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	390	2	-1	1	365	364
Computer Systems Design Services	331	15	41	56	91	35
Custom Computer Programming Services	203	12	27	39	20	-19
Wired Telecommunications Carriers	184	18	-29	-11	-105	-94
Other Management Consulting Services	103	4	-8	-4	47	51
Motor and Generator Manufacturing	78	2	-3	-1	51	52
Other Electronic Parts and Equipment Merchant Wholesalers	63	1	-2	-1	46	47
Telecommunications Resellers	59	5	-34	-29	-13	16
Other Electronic Component Manufacturing	51	3	-3	0	5	5
Computer Terminal and Other Computer Peripheral Equipment Manufacturing	43	3	-13	-10	-2	8
Software Publishers	41	3	8	11	-5	-16
Other Computer Related Services	39	2	-4	-2	5	7
Data Processing, Hosting, and Related Services	36	4	3	7	-24	-31
Research and Development in the Social Sciences and Humanities	31	1	-1	0	9	9

section 02

Top 15 Inputs by Dollars

Information Technology And Telecommunications Cluster

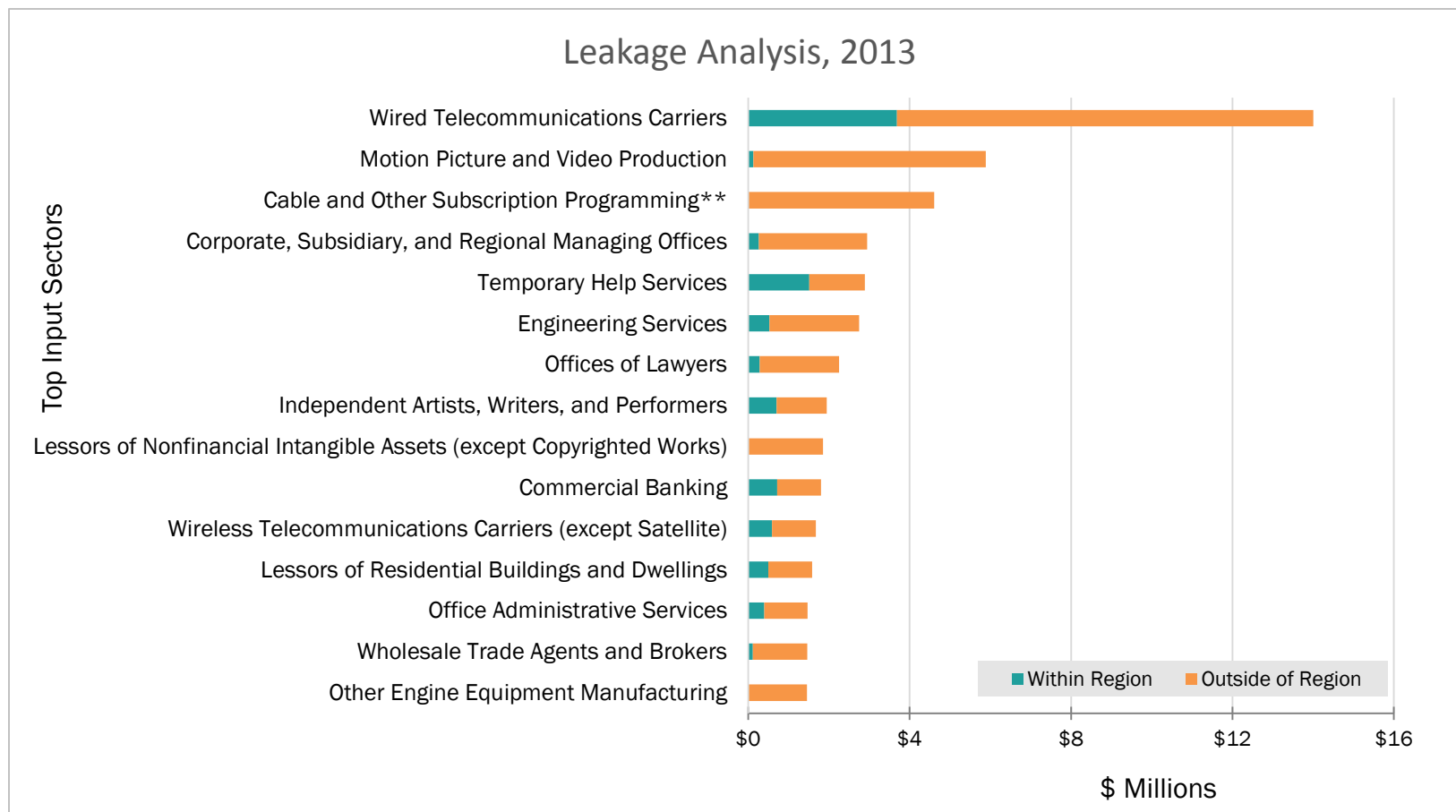
Industries	Estimated Input (\$ Millions), 2013	% In-Region	% Out of Region
Wired Telecommunications Carriers	\$14.01	26%	74%
Motion Picture and Video Production	\$5.88	2%	98%
Cable and Other Subscription Programming **	\$4.61	0%	100%
Corporate, Subsidiary, and Regional Managing Offices	\$2.94	9%	91%
Temporary Help Services	\$2.89	52%	48%
Engineering Services	\$2.75	19%	81%
Offices of Lawyers	\$2.25	13%	87%
Independent Artists, Writers, and Performers	\$1.94	36%	64%
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)*	\$1.85	0%	100%
Wireless Telecommunications Carriers (except Satellite)	\$1.67	35%	65%
Lessors of Residential Buildings and Dwellings	\$1.59	31%	69%
Office Administrative Services	\$1.47	27%	73%
Wholesale Trade Agents and Brokers	\$1.46	8%	92%
Other Engine Equipment Manufacturing*	\$1.45	0%	100%
Administrative Management and General Management Consulting Services	\$1.45	20%	80%

Note: * shows less than 10 jobs; ** industry sector is not present in the region.

section 02

Top 15 Inputs by Dollars

Information Technology And Telecommunications Cluster



Note: ** industry sector is not present in the region.

section 02

Source: EMSI Class of Worker 2015.4 (QCEW, non-QCEW, self-employed and extended proprietors).

Top Occupations

Information Technology And Telecommunications Cluster

Occupations	Jobs 2014	% Change, 2009-2014	Median Hourly Earnings	Entry Level Education
Electricians	141	-25%	\$19.4	High school diploma or equivalent
Customer Service Representatives	68	6%	\$15.4	High school diploma or equivalent
Software Developers, Applications	68	28%	\$39.3	Bachelor's degree
Computer Systems Analysts	65	12%	\$32.3	Bachelor's degree
Sales Representatives, Services, All Other	62	-3%	\$20.4	High school diploma or equivalent
Helpers--Electricians	58	-12%	\$15.3	High school diploma or equivalent
Software Developers, Systems Software	57	39%	\$44.0	Bachelor's degree
Web Developers	55	34%	\$19.7	Associate's degree
Management Analysts	52	27%	\$33.9	Bachelor's degree
Construction Laborers	51	28%	\$13.0	Less than high school
Computer User Support Specialists	50	19%	\$22.0	Some college, no degree
Telecommunications Line Installers and Repairers	48	-35%	\$29.1	High school diploma or equivalent
Managers, All Other	46	10%	\$21.5	High school diploma or equivalent
Carpenters	44	0%	\$14.7	High school diploma or equivalent
Office Clerks, General	44	47%	\$13.3	High school diploma or equivalent

Note: SOC (Standard Occupation Classification) 5-digit occupations are included by jobs in 2014. Extended proprietors include estimates for underreported self employment, proprietorships, trusts, partnerships and cooperatives.

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