Business Scan

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Idaho High-Tech Industry

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Communications & Research

Idaho Department of Labor · C.L. "Butch" Otter, Governor · Roger B. Madsen, Director
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Idaho High Tech Business Scan

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Idaho High Tech Business Scan 2012-2013

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Summary of Key Findings

Comparing pre- and postrecession employment numbers provides solid evidence of the downturn's effect on Idaho's high technology industry. Idaho ranked near the top nationally in employment growth between 2002 and 2007 and then plummeted to 49th from 2007 to 2012. The same thing happened with high-tech occupations regardless of industry.

But there could be improvement in the future. Both industry and occupational projections put Idaho back in the top half of the states by 2020. Economic Modeling Specialists Inc. projects more than a 20 percent increase in Idaho's high-tech industries and over 16 percent in high-tech occupations.

Idaho's high-tech earnings per worker and wages continued to lag nationally. However, when compared to the earnings and wages of all other areas in Idaho, the state did very well. At almost 200 percent, Idaho ranked fourth nationally in its ratio of high-tech earnings per worker to all earnings per worker. Idaho high-tech occupation wages also averaged around 180 percent of all occupation wages.

The concentration of high-tech establishments in the Idaho economy took a significant jump from 2008 as shown in the Idaho Department of Labor High-Tech Business Scan 2010 report, rising from 7.3 percent to 9.2 percent. But while high-tech did add establishments, some 200, the majority of this increased concentration was the result of a decline in all other establishments during the recession.

The economic impact of high technology varied regionally. Fifty-four percent of the 2012 payroll was in southwestern Idaho, the state population center and the home of Micron Technology Inc. That was down nearly a percentage point from 2008, reflecting the region's loss of almost 6 percent of its high-tech industry employment and 9 percent of its high-tech occupation employment. Eastern Idaho was second, benefiting from the Idaho National Laboratory's presence and the spin-off businesses it fosters. That region also topped the wage charts, particularly compared to wages for all occupations. The area's high-tech workers make over twice as much as all workers.

Idaho's percentage of high-tech exports ranked third among the states. The majority of these products went to Asian countries, but France is quickly becoming a major consumer of Idaho's high tech-goods. That nation has increased its purchases from $30.8 million in 2006 to almost $230 million in 2011.

Results by Industry

NATIONAL COMPARISONS

Idaho's high-tech growth over the past decade was mixed. Before the recession began in late 2007, the state's high-tech industries increased employment by over 11 percent. This was less than the majority of surrounding states, but it was strong enough to land Idaho at 16th in the country with more than double the national rate of expansion. Nevada, Wyoming and Utah led the region during this period, increasing high-tech employment between 20 percent and 28 percent and trailing only North Dakota at 30 percent. All of the region's states had stronger growth than the national average between 2002 and 2007.

The recession's toll on Idaho's high-tech employment was apparent. Even though the recession ended in mid-2009, Idaho's high-tech employment was still 5 percent below its precession total. Not only was this counter to the national average increase of almost 4 percent, but it also ranked Idaho near the bottom at 49th ahead of only New Jersey and Delaware. All the states bordering Idaho posted growth since the recession. Only Nevada and Oregon were below the national average, and the rest of the surrounding states ranked in the top 10 led by Montana at fifth with an increase of over 12 percent. Leading the nation was Oklahoma with a 20 percent increase.

But the outlook for Idaho is improved. Economic Modeling Specialists Inc. projects Idaho will increase its high-tech payroll 22 percent between 2012 and 2022. This puts Idaho at 16th in the nation and regionally ahead of Wyoming and Nevada – the only two surrounding states projected to grow more slowly than the national rate of 15.7 percent. Washington, Montana and Utah are in the top 10 with growth rates over 24 percent.

High-tech's industry employment contraction in 2012 was similar to that of 2008 documented in the previous report. High-tech employment was 7.5 percent of all industry employment in 2008 and 7.4 percent in 2012. But this was not the same trend nationally, and that caused Idaho to fall from 29th in 2008 to 33rd in 2012. However, Idaho kept its place among the surrounding states. Washington had the highest concentration regionally in both 2008 and 2012 and ranked third with almost 12 percent of its employment in high-tech. Montana and Nevada switched places between 2008 and 2012, and both recorded small increases in high-tech concentrations but not enough to move them from the bottom of the list at 47th and 48th.

While Idaho's relative high-tech employment did not change much, its concentration of high-tech establishments did. The 2010 report showed 4,700 high-tech establishments in Idaho, which was 7.3 percent of all establishments in 2008. In 2011, Idaho increased to over 4,900 high-tech establishments, or 9.2 percent of all establishments – just below the national average. The increase of 200 establishments was positive, but what drove the higher concentration was the decrease in total establishments from some 65,000 to 54,000, according to EMSI estimates. Regionally, Utah and Nevada ranked in the top 10

nationally. Washington, which has excelled in many metrics, ranked at the bottom of the list regionally and close to the bottom nationally. Only California and Mississippi were lower.

Idaho's high-tech earnings per worker were less than many states at $73,864 to rank 39th. This was almost $3,000 more than recorded in 2008 when Idaho ranked 40th. Washington led surrounding states with average high-tech earnings of $109,146 to rank sixth in the country. That was over $10,000 higher than in 2008.

When compared to each state's average earnings for all workers, however, Idaho's high-tech wages were almost double the overall average of $37,055 to rank fourth nationally. Washington led the region and the nation at 206 percent. But of the six surrounding states Wyoming, Nevada, Utah and Montana all came in below the nation's 191 percent. Appendix 2 has a listing of all states.

Table 1: High Technology Industry Labor Force Metrics for Idaho and Surrounding States — 2012

SIZE			RELATIVE SIZE			RELATIVE GROWTH					
High-Tech Employment to Nation			High-Tech Employment to State			Growth in High-Tech Employment					
Area	Percent	Rank	Area	Percent	Rank	Area	2002-2007	Rank	Area	2007-2012	Rank
National	100.0%	-	Washington	11.7%	3	Nevada	27.9%	2	Montana	12.4%	5
Washington	2.8%	13	Utah	9.6%	13	Wyoming	20.3%	3	Wyoming	11.6%	6
Oregon	1.2%	26	National	9.0%	-	Utah	19.8%	4	Washington	9.2%	8
Utah	1.0%	30	Oregon	8.5%	23	Montana	15.4%	7	Utah	9.0%	9
Nevada	0.6%	35	Idaho	7.4%	33	Washington	13.7%	11	National	3.8%	-
Idaho	0.4%	41	Wyoming	6.9%	40	Idaho	11.4%	16	Nevada	2.1%	29
Montana	0.2%	46	Montana	6.0%	47	Oregon	8.7%	23	Oregon	1.9%	31
Wyoming	0.2%	51	Nevada	5.9%	48	National	5.7%	-	Idaho	-4.9%	49

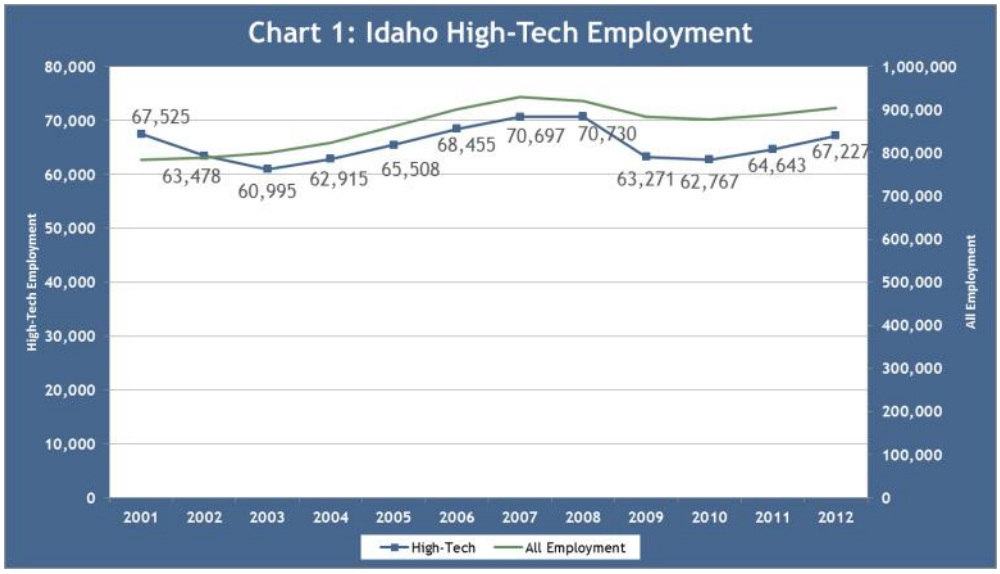
PROJECTED GROWTH			EARNINGS			HIGH-TECH: EARNINGS TO STATE			RELATIVE ESTABLISHMENTS		
Projected Growth of High-Tech Employment			High-Tech Earnings per Worker			EPW Ratio - State High-Tech to State Total			2011 High-Tech Establishments to Total Establishments		
Area	2012-2022	Rank	Area	EPW	Rank	Area	Percent	Rank	Area	Percent	Rank
Washington	25.5%	5	Washington	$109,146	6	Washington	206.0%	1	Utah	12.0%	6
Montana	24.7%	6	National	$95,443	-	Idaho	199.3%	4	Nevada	11.8%	8
Utah	24.4%	7	Oregon	$86,921	21	Oregon	194.6%	9	National	9.3%	-
Oregon	23.1%	12	Wyoming	$81,002	28	National	191.1%	-	Idaho	9.2%	25
Idaho	21.9%	16	Nevada	$79,957	31	Wyoming	178.9%	31	Wyoming	8.9%	28
Wyoming	21.6%	17	Idaho	$73,864	39	Nevada	178.4%	32	Montana	8.7%	30
Nevada	18.9%	22	Utah	$71,813	45	Utah	172.7%	40	Oregon	8.5%	36
National	17.1%	-	Montana	$63,921	50	Montana	170.8%	42	Washington	6.9%	49

Source: EMSI Complete Employment - 2012.3

Idaho Department of Labor High-Tech Business Scan 2012

STATEWIDE ANALYSIS

Employment in Idaho's high-tech industries has followed the general economy the past decade with a few notable changes. The most obvious was from 2001 to 2003 when high-tech industries shed almost 11 percent of their employment. During the same time, Idaho's overall employment grew by over 16,000, or 2 percent. Then in 2008 when statewide employment started to drop due to the recession, high-tech payrolls rose slightly before falling the next year. While the decreases between 2001 and 2003 were generally across the board, the decrease in 2009 mostly came in the manufacture of semiconductors and other electronic components.



Source: EMSI Complete Employment - 2012.3

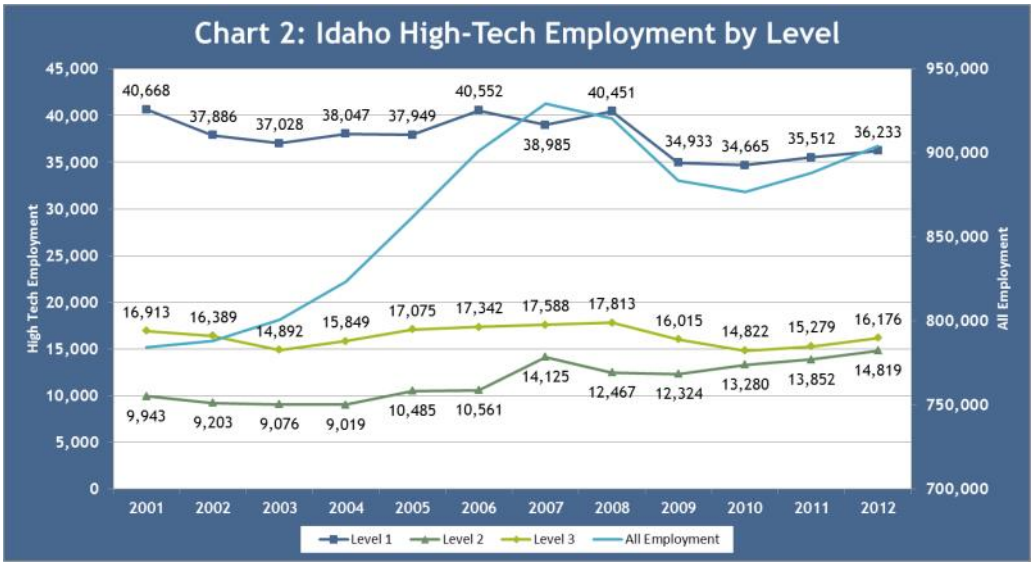
The concentration of high-tech occupations in an industry determines just how high-tech that industry is, and industries[1] with the highest concentration of high-tech occupations make up the majority of Idaho's high-tech industry employment. Unfortunately, employment in these industries is below its 2001 peak. Since 2010, these industries have been steadily growing, adding over 4,400 to their payrolls. EMSI projects that growth to continue but at a slower pace than the other two high-tech levels and the state as a whole. The industries projected to increase the fastest over the next decade are in the level two category. EMSI projects growth of over 47 percent, causing them to surpass the employment of industries in level 3, or the lowest level.

Table 2: High-Tech Employment Growth by Level for Idaho

	2012	2022	% Growth
Level 1	36,233	41,066	13.3%
Level 2	14,819	21,826	47.3%
Level 3	16,176	19,040	17.7%
High-Tech	67,227	81,932	21.9%
All Employment	903,954	1,065,363	17.9%

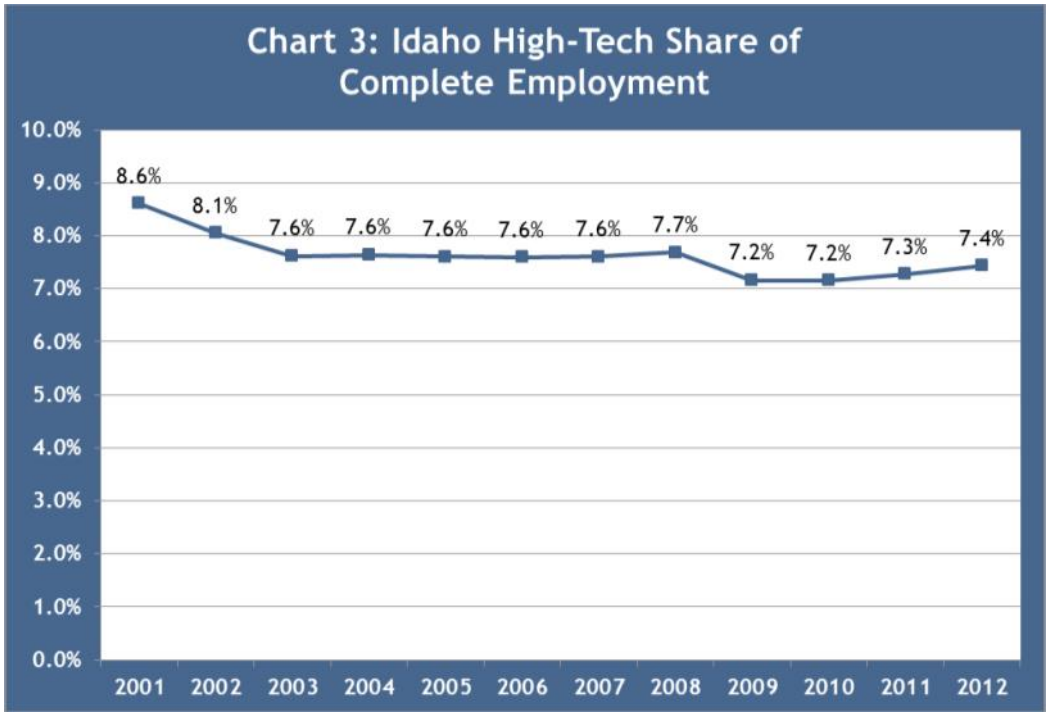
Source: EMSI Complete Employment - 2012.3

[1]Level I- at least five times the average for all industries, or 24.7 percent of total employment.
Level II- 3.0 to 4.9 times the average or 14.8 to 24.7 percent of total employment.
Level III- 2.0 to 2.9 times the average or 9.8 to 14.7 percent of total employment.



Source: EMSI Complete Employment - 2012.3

High-tech industries' share of total employment increased slightly since 2010, but over the past decade it has been on a downward trend. In 2001, high-tech industries contributed 8.6 percent to Idaho's total employment. In 2012, that was down to 7.4 percent. The decline coincided with the decreasing high-tech payrolls overall so while total employment also decreased in 2009, high-tech shed even more jobs proportionally.



Source: EMSI Complete Employment—2012.3

Earnings per worker differs with the high-tech industry concentration level. Those with the highest concentration of high-tech occupations had earnings per worker 12 percent higher than the average of all high-tech workers and 122 percent higher than average of $37,055 for all Idaho workers. Those in the second level had the lowest earnings per worker at $56,285. While this is over $26,000 less than the highest level, it is still 52 percent higher than the all-industry average.

Using a methodology similar to the one used by the Idaho Department of Labor for its Hot Industries list, Idaho's top high-tech industries were selected based on a combination of earnings per worker, percentage growth and numeric growth projected by EMSI. Idaho's top high-tech industry was a residual category, other chemical product and preparation manufacturing. This industry group contains companies primarily producing chemicals that do not fit in other categories. Often they are new, novel or niche companies that are not numerous enough to have a detailed designation. Appendix 3 has a list of Idaho's high-tech industries with employment totals, projected growth and rankings.

Table 3: Earnings per Worker by Level for Idaho

	EPW
Level 1	$82,362
Level 2	$56,285
Level 3	$70,933
All High-Tech	$73,864
All Industries	$37,055

Source: EMSI Complete Employment - 2012.3

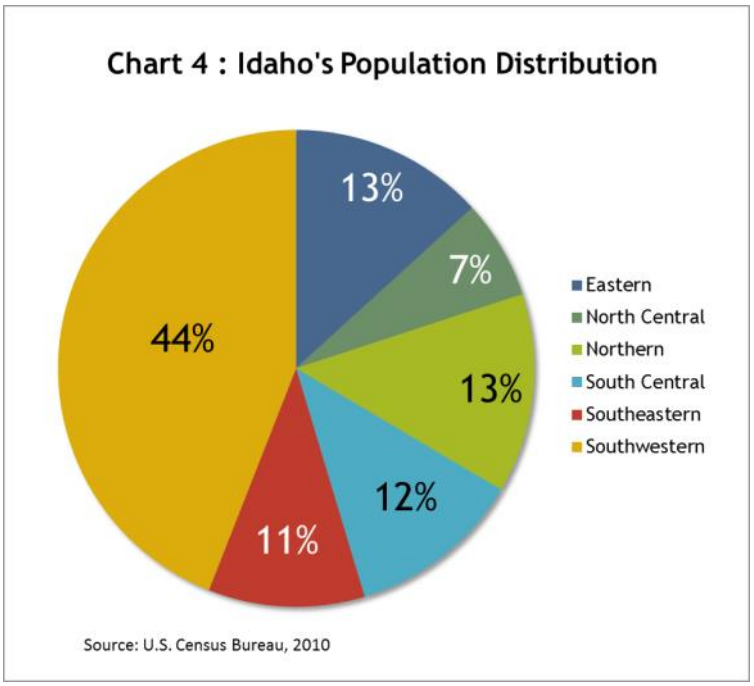
Table 4: Idaho's Top High-Tech Industries

Rank	Industry	2012 Employment	2022 Employment	Growth	EPW
1	Other Chemical Product and Preparation Manufacturing	572	875	53.0%	$105,628
2	Audio and Video Equipment Manufacturing	42	116	173.7%	$99,970
3	Pharmaceutical and Medicine Manufacturing	463	798	72.5%	$72,242
4	Commercial and Service Industry Machinery Manufacturing	696	1133	62.7%	$59,327
5	Computer Systems Design and Related Services	5759	8048	39.7%	$60,624
6	Management, Scientific, and Technical Consulting Services	7959	12618	58.5%	$42,287
7	Electric Power Generation, Transmission and Distribution	2082	2451	17.7%	$108,786
7	Scientific Research and Development Services	7877	9018	14.5%	$95,980
9	Professional and Commercial Equipment and Supplies Merchant Wholesalers	1970	2460	24.9%	$78,269
9	Other Information Services	1114	1744	56.5%	$52,903

Source: EMSI Complete Employment - 2012.3

STATEWIDE ANALYSIS

Idaho's high-tech industry employment varied among the six regions. The southwestern region of the state had by far the most high-tech industry employment, but it also had the most employment in general. Looking at the relative size of the high-tech industry, high-tech employment in the southwestern region was almost 9 percent of total regional employment but ranked second to eastern Idaho, where high-tech accounted for 10.5 percent of all employment. The other regions fell under the statewide average of 7.3 percent with south central Idaho having the lowest ratio at 3.5 percent.

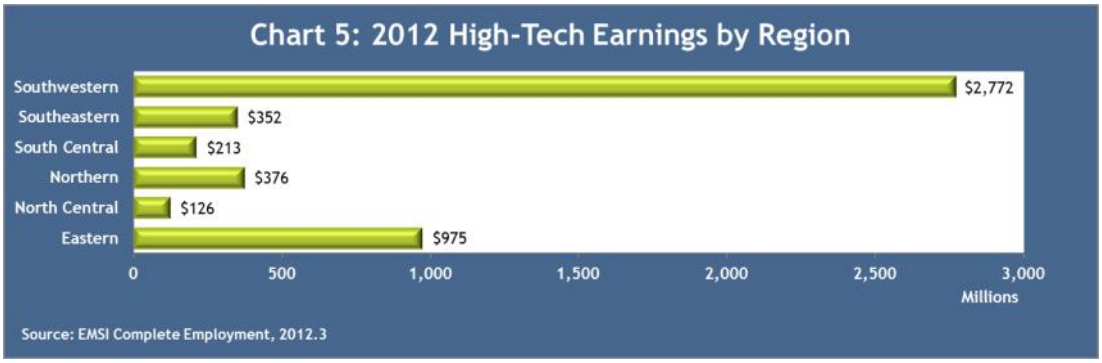


While the ratio was low, that region increased its postrecession high-tech payrolls the fastest at almost 10 percent since 2007. Prior to the recession high-tech employment in south central Idaho rose almost 16 percent. Northern Idaho added jobs the fastest before the recession at over 43 percent. The southwestern region grew the least prior to the recession at just 2.9 percent. High-tech payrolls there declined almost 11 percent since the recession began.

EMSI projects the highest percentage of growth through 2022 in northern and south central Idaho at over 30 percent in both regions. Southwestern Idaho is projected to grow at the slowest rate, 18 percent over the next decade. But even that is higher than the projected growth rate of 17.9 percent for all jobs. And with its already high level of high-tech employment, that growth rate will still concentrate the majority of the state's new high-tech industry jobs of over 6,000 in the region.

Southwestern Idaho also had the highest concentration of high-tech establishments at 9.8 percent, an increase of four-tenths of a percentage point from 2008. The other regions also had increased concentrations. Northern, southeastern and south central Idaho all increased their concentrations by nearly a full percentage point. This activity boosted the state ratio by six-tenths of a point.[2]

Earnings broke down along employment lines with southwestern Idaho having more earnings then the other five regions combined. A far second was eastern Idaho with almost a billion dollars in total earnings.



Earnings per worker was an area where high-tech shined regionally. The eastern and southwestern parts of the state had the highest earnings per worker, between $78,000 and $80,000. The regions at the bottom of the list were still 40 percent higher than the state average earnings per worker for all industries.

Comparing earnings per worker within the regions is even more favorable. The eastern and southeastern regions had earnings-per-worker ratios of over 200 percent. North central Idaho was at the bottom of this list but still had a ratio of over 150 percent.

[2]This number differs from the previous estimate due to the removal of establishments without a defined county of origin. EMSI reports almost 3,000 establishments in this category.

Table 5: High Technology Industry Labor Force Metrics for Idaho's Regions — 2012

SIZE			RELATIVE SIZE			RELATIVE GROWTH					
High-Tech Employment to State			High-Tech Employment to Region			Growth in High-Tech Employment					
Area	Percent	Rank	Area	Percent	Rank	Area	2002-2007	Rank	Area	2007-2012	Rank
STATEWIDE	**100.0%**	**-**	Eastern	10.5%	1	Northern	43.4%	1	South Central	9.8%	1
Southwestern	54.0%	1	Southwestern	8.8%	2	North Central	24.6%	2	Southeastern	2.1%	2
Eastern	18.6%	2	**STATEWIDE**	**7.3%**	**-**	Southeastern	21.5%	3	North Central	0.9%	3
Northern	9.9%	3	Southeastern	5.8%	3	Eastern	19.3%	4	Eastern	-1.6%	4
Southeastern	7.7%	4	Northern	5.6%	4	South Central	15.9%	5	Northern	-1.6%	5
South Central	6.1%	5	North Central	3.9%	5	**STATEWIDE**	**11.2%**	**-**	**STATEWIDE**	**-5.8%**	**-**
North Central	3.7%	6	South Central	3.5%	6	Southwestern	2.9%	6	Southwestern	-10.6%	6

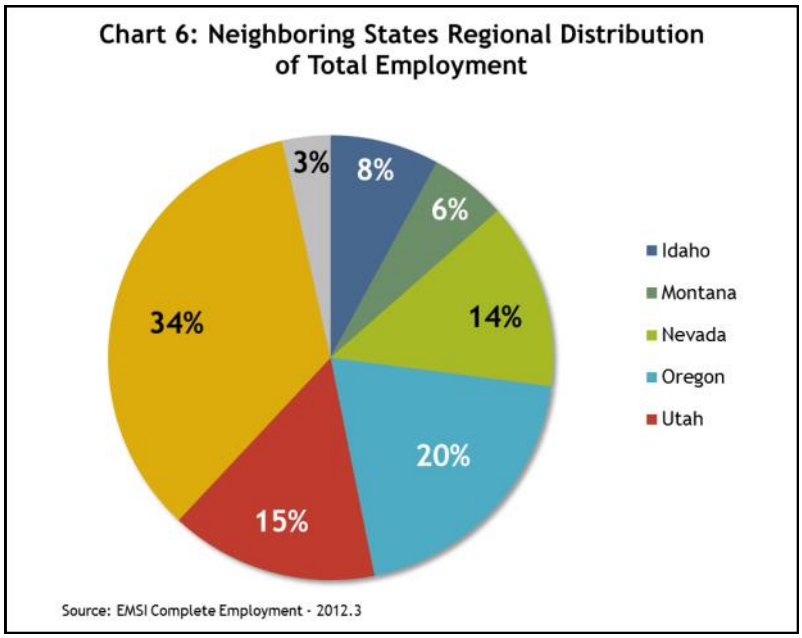
PROJECTED GROWTH			EARNINGS			HIGH-TECH: EARNINGS TO REGION			RELATIVE ESTABLISHMENTS		
Projected Growth of High-Tech Employment			High-Tech Earnings per Worker			EPW Ratio - Region High-Tech to Region Total			High-Tech Establishments to Total Establishments		
Area	2012-2022	Rank	Area	EPW	Rank	Area	Percent	Rank	Area	Percent	Rank
Northern	32.3%	1	Eastern	$79,776	1	Eastern	218.3%	1	Southwestern	9.8%	1
South Central	30.1%	2	Southwestern	$78,286	2	Southeastern	204.1%	2	**STATEWIDE**	**7.9%**	**-**
Eastern	22.7%	3	**STATEWIDE**	**$73,381**	**-**	**STATEWIDE**	**199.2%**	**-**	Eastern	7.7%	2
STATEWIDE	**21.4%**	**-**	Southeastern	$69,749	3	Southwestern	196.4%	3	Northern	7.4%	3
North Central	21.0%	4	Northern	$57,787	4	Northern	169.8%	4	Southeastern	6.1%	4
Southeastern	20.9%	5	South Central	$53,329	5	South Central	163.0%	5	South Central	5.6%	5
Southwestern	18.0%	6	North Central	$52,037	6	North Central	151.8%	6	North Central	4.9%	6

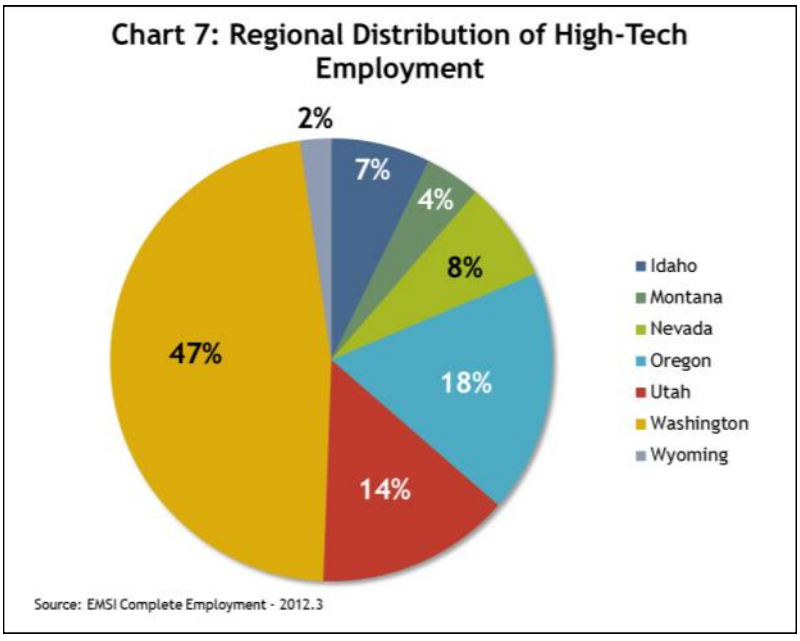
Source: EMSI Complete Employment - 2012.3
Idaho Department of Labor High-Tech Business Scan 2012

Results by Occupation

NATIONAL COMPARISONS

Idaho's comparatively small population means it accounted for only about half a percent of the nation's total high-tech occupations in 2012. But high-tech occupations accounted for 4.1 percent of all Idaho occupational employment, just a fraction below the national concentration to rank 18th among the state. This was up from 2008's concentration of 3.8 percent, which was markedly below the national level.





Regionally, Idaho has slightly more high-tech occupational employment then Montana and Wyoming but considerably less than Washington. And even with higher total employment then Idaho, Washington's concentration of high-tech occupations was also greater at over 6 percent to rank third nationally and just a fraction of a percentage point behind Virginia and Massachusetts. At the bottom of the list Nevada – even though it has a similar proportion of the nation's high-tech occupational employment as Idaho – ranked 50th in concentration, just above Mississippi.

Nevada topped the country in prerecession high-tech occupation growth at over 22 percent. But the recession hit Nevada's high-tech sector harder than any other, and 8 percent of the state's high-tech occupational employment disappeared by 2012.

Utah, Washington and Montana all fared well both before and after the recession while Idaho's experience was mixed – solid 8 percent growth before the recession with a loss of over 4 percent during and after the recession. The state dropped from 22nd to 49th nationally.

Looking to the next decade, EMSI projects Idaho's high-tech occupations to grow over 16 percent by 2022. This is four-tenths of a percentage point more than the national rate to move Idaho back to 22nd among the states. Utah and Washington are projected to continue their growth and rank at the top regionally and near the top nationally. Montana is projected to lose some of its momentum, growing just 13 percent for the lowest rate in the region.

The wages being paid for high-tech occupations were some of the lowest in the country. Idaho's average $20.04 an hour starting wage ranked 40th and the average $44.28 an hour at the 90th percentile ranked 43rd nationally. Regionally, the state ranked above Montana at each percentile and above Wyoming at the 50th and 90th percentiles. Washington topped the chart regionally but lost ground to other states in the higher wage categories.

Compared to each state's total wages for all occupations, Idaho ranked better. Going from the 26th place at the 10th, or starting wage, percentile to 17th at the 90th percentile, higher than any other state in the region. Washington also did well but fell below Idaho for top high-tech wage earners. Wyoming and Montana were ranked at the bottom regionally. Appendix 4 has a national ranking by occupation.

Table 6: High Technology Occupation Labor Force Metrics for Idaho and Surrounding States — 2012

SIZE			RELATIVE SIZE			RELATIVE GROWTH						PROJECTED GROWTH		
High-Tech Employment to Nation			High-Tech Employment to State			Growth in High-Tech Employment						Projected High-Tech Occupation Growth		
Area	Percent	Rank	Area	Percent	Rank	Area	2002-2007	Rank	Area	2007-2012	Rank	Area	2012-2022	Rank
National	**100.0%**	**-**	Washington	6.1%	3	Nevada	22.3%	1	Washington	8.4%	3	Utah	26.6%	3
Washington	3.3%	10	Utah	4.2%	14	Utah	17.3%	3	Utah	6.3%	7	Washington	22.1%	8
Oregon	1.2%	24	**Idaho**	**4.1%**	**18**	Wyoming	16.5%	4	Montana	4.3%	11	Oregon	20.7%	12
Utah	1.0%	27	**National**	**4.1%**	**-**	Washington	13.4%	9	**National**	**1.5%**	**-**	**Idaho**	**16.1%**	**22**
Nevada	0.5%	37	Oregon	4.0%	19	Montana	12.3%	10	Wyoming	0.3%	28	Wyoming	16.0%	23
Idaho	**0.5%**	**38**	Montana	3.3%	36	Oregon	8.9%	18	Oregon	-0.2%	29	**National**	**15.7%**	**-**
Montana	0.3%	46	Wyoming	2.9%	41	**Idaho**	**8.0%**	**22**	**Idaho**	**-4.4%**	**49**	Nevada	14.3%	29
Wyoming	0.2%	51	Nevada	2.4%	50	**National**	**5.9%**	**-**	Nevada	-7.7%	51	Montana	13.2%	37

WAGE: TENTH PERCENTILE						WAGE: MEDIAN						WAGE: NINETIETH PERCENTILE					
High-Tech Wage to Total Wage			High-Tech 10th Pct Wage			High-Tech Wage to Total Wage			High-Tech Median Wage			High-Tech Wage to Total Wage			High-Tech 90th Pct Wage		
Area	Percent	Rank	Area	Wage	Rank	Area	Percent	Rank	Area	Wage	Rank	Area	Percent	Rank	Area	Wage	Rank
National	**185.9%**	**-**	Washington	$26.94	2	**National**	**192.3%**	**-**	Washington	$39.10	7	**Idaho**	**185.4%**	**17**	Washington	$56.55	10
Washington	185.9%	6	**National**	**$23.52**	**-**	Washington	187.3%	15	**National**	**$36.40**	**-**	Washington	183.8%	19	**National**	**$55.04**	**-**
Nevada	176.7%	19	Oregon	$22.14	23	**Idaho**	**184.5%**	**21**	Oregon	$33.50	25	**National**	**183.6%**	**-**	Nevada	$48.58	30
Idaho	**175.3%**	**26**	Nevada	$22.07	24	Nevada	181.6%	31	Nevada	$33.01	27	Nevada	179.2%	28	Oregon	$48.31	32
Utah	171.3%	34	Wyoming	$21.00	32	Utah	180.8%	33	Utah	$31.48	33	Oregon	176.7%	36	Utah	$46.67	38
Oregon	170.0%	37	Utah	$20.86	33	Oregon	179.9%	34	**Idaho**	**$29.82**	**42**	Utah	176.6%	37	**Idaho**	**$44.28**	**43**
Wyoming	161.8%	47	**Idaho**	**$20.04**	**40**	Montana	165.7%	48	Wyoming	$29.23	45	Montana	169.9%	42	Wyoming	$41.25	49
Montana	157.8%	49	Montana	$17.60	51	Wyoming	160.1%	50	Montana	$25.90	51	Wyoming	158.2%	49	Montana	$38.94	50

Source: EMSI Complete Employment - 2012.3
Idaho Department of Labor High-Tech Business Scan 2012

REGIONAL ANALYSES

Southwestern Idaho also had the most high-tech occupation employment, again because of its population dominance. But just as with industry concentration, eastern Idaho ranked at the top in high-tech occupation employment concentration. The eastern region also grew the fastest after the recession at almost 6 percent.

The only other region that added high-tech occupations since 2007 was south central Idaho, where high-tech occupations rose 1.6 percent. The other four regions lost from 4.3 percent to 9 percent in the southwestern Idaho. The occupations with the highest loss in these regions were architectural and civil drafters and civil engineers.

Growth in high-tech occupations is projected for all regions, though some more than others. Northern Idaho is projected to add 25 percent more high-tech jobs to lead the state's growth. This region is expected to grow almost three times as fast as north central Idaho, which has the slowest projected growth rate.

Eastern Idaho led the regions in pay at all levels. Ranging from $35.67 an hour at the 10th percentile to $53.55 at the 90th percentile, the region's pay range is noticeably higher than south central Idaho with the lowest range. For all regions, however, high-tech occupations pay two to three times more than all occupations in each area.

Fourteen high-tech occupations are on the Idaho Department of Labor's Hot Jobs list that ranks occupations based on number of jobs in the economy, jobs that are growing the fastest and jobs with the highest pay. The majority of those occupations are in the top half of Hot Jobs.

Table 7: Idaho's Hot Jobs for 2010-2020

Rank	SOC	Title
6	15-1132	Software Developers, Applications
9	15-1142	Network and Computer Systems Administrators
15	17-2141	Mechanical Engineers
16	17-2071	Electrical Engineers
17	15-1121	Computer Systems Analysts
27	11-9041	Engineering Managers
31	17-2112	Industrial Engineers
36	17-2161	Nuclear Engineers
38	15-1179	Information Security Analysts, Web Developers, and
39	11-3021	Computer and Information Systems Managers
40	15-1131	Computer Programmers
41	17-2072	Electronics Engineers, Except Computer
86	17-2081	Environmental Engineers
93	15-1141	Database Administrators

Idaho Department of Labor Long-Term Occupational Projections, 2010-2020

Table 8: High Technology Occupation Labor Force Metrics for Idaho's Regions — 2012

SIZE			RELATIVE SIZE			RELATIVE GROWTH						PROJECTED GROWTH		
High-Tech Employment to State			High-Tech Employment to Region			Growth in High-Tech Employment						Projected High-Tech Occupation Growth		
Area	Percent	Rank	Area	Percent	Rank	Area	2002-2007	Rank	Area	2007-2012	Rank	Area	2012-2022	Rank
STATEWIDE	**100.0%**	**-**	Eastern	5.6%	1	Northern	27.3%	1	Eastern	5.7%	1	Northern	25.4%	1
Southwestern	53.3%	1	Southwestern	4.8%	2	Southeastern	11.3%	2	South Central	1.6%	2	Eastern	18.9%	2
Eastern	17.8%	2	**STATEWIDE**	**4.1%**	**-**	South Central	9.8%	3	Southeastern	-4.3%	3	South Centra	17.9%	3
Northern	8.9%	3	North Central	3.0%	3	**STATEWIDE**	**7.8%**	**-**	Northern	-4.8%	4	**STATEWIDE**	**15.7%**	**-**
South Central	8.8%	4	Northern	2.8%	4	Southwestern	7.0%	4	**STATEWIDE**	**-5.0%**	**-**	Southwestern	13.6%	4
Southeastern	6.1%	5	South Central	2.8%	5	North Central	5.4%	5	North Central	-5.5%	5	Southeastern	12.8%	5
North Central	5.1%	6	Southeastern	2.6%	6	Eastern	0.6%	6	Southwestern	-9.0%	6	North Centra	8.6%	6

WAGE: TENTH PERCENITLE						WAGE: MEDIAN						WAGE: NINETIETH PERCENITLE				
High-Tech Wage to Total Wage			High-Tech 10th Percentile Wage			High-Tech Wage to Total Wage			High-Tech Median Wage			High-Tech Wage to Total Wage			High-Tech 90th Percentile Wage	
Area	Percent	Rank	Area	10 Pct	Rank	Area	Percent	Rank	Area	Median	Rank	Area	Percent	Rank	Area	90 Pct	Rank
Eastern	206.5%	1	Eastern	$23.60	1	Eastern	220.7%	1	Eastern	$35.67	1	Eastern	224.2%	1	Eastern	$53.55	1
Southwest	190.7%	2	Southwest	$21.80	2	Southwest	196.4%	2	Southwest	$31.74	2	Southwest	190.2%	2	Southwest	$45.43	2
STATEWIDE	**175.3%**	**-**	**STATEWIDE**	**$20.04**	**-**	**STATEWIDE**	**184.5%**	**-**	**STATEWIDE**	**$29.82**	**-**	**STATEWIDE**	**185.4%**	**-**	**STATEWIDE**	**$44.28**	**-**
Southeastern	161.9%	3	Southeastern	$18.51	3	Southeastern	171.7%	3	Southeastern	$27.75	3	Southeastern	175.4%	3	Southeastern	$41.88	3
Northern	156.2%	4	Northern	$17.85	4	Northern	159.9%	4	Northern	$25.84	4	Northern	158.7%	4	Northern	$37.90	4
North Central	149.4%	5	North Central	$17.08	5	North Central	145.5%	5	North Central	$23.51	5	North Centra	146.3%	5	North Central	$34.93	5
South Central	139.8%	6	South Central	$15.98	6	South Central	134.7%	6	South Central	$21.77	6	South Centra	138.2%	6	South Central	$33.01	6

Source: EMSI Complete Employment - 2012.3
Idaho Department of Labor High-Tech Business Scan 2012

Occupational Highlights

The two high-tech occupations that ranked the highest on the Hot Jobs list were application software developers and network and computer systems administrators.

SOFTWARE DEVELOPERS, APPLICATIONS

Application software developers accounted for over 1,600 jobs in Idaho. This was more than both Wyoming and Montana combined, but just a fraction of what Washington employed. With over 34,000, Washington has almost 6 percent of the nation's developers. The growth was strong as well, increasing almost 43 percent over the last decade. Idaho's application software developer employment has yet to recover from the most recent recession and was down lightly over the decade.

Table 9: Neighboring States — 15-1132 Software Developers, Applications - Employment

Area	2002	2012	% Change
Washington	24,015	34,321	42.9%
Utah	4,092	5,388	31.7%
Nevada	1,625	1,924	18.4%
Oregon	7,206	8,419	16.8%
National	**525,832**	**611,772**	**16.3%**
Montana	642	700	9.0%
Idaho	**1,657**	**1,622**	**-2.1%**
Wyoming	300	278	-7.3%

Source: EMSI Complete Employment - 2012.3

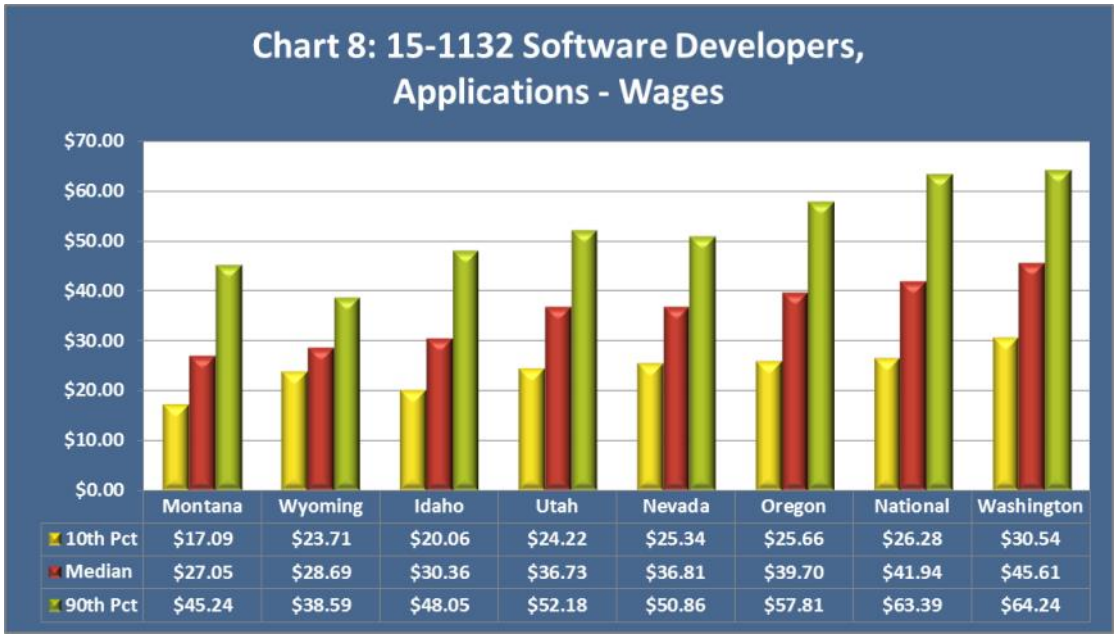
EMSI projects that Idaho will add nearly 30 percent more application developers between 2012 and 2022. This rate is good enough for the third spot in the region behind Montana and Utah. However in terms of total growth, Washington is the regional leader with over 8,500.

Table 10: Neighboring States — 15-1132 Software Developers, Applications - Projected Employment

Area	2012	2022	% Change
Utah	5,388	7,540	39.9%
Montana	700	974	39.1%
Idaho	**1,622**	**2,107**	**29.9%**
Nevada	1,924	2,448	27.2%
Oregon	8,419	10,641	26.4%
Washington	34,321	42,833	24.8%
National	**611,772**	**752,171**	**22.9%**
Wyoming	278	330	18.9%

Source: EMSI Complete Employment - 2012.3

Washington ranked at the top again in wages. It outpaced the rest of the nation in wage levels at the 10th, 50th and 90th percentiles.[3] Idaho wages for application developers ranked near the bottom, but all three levels were well above the state's median wage of $14.51 an hour for all jobs. Wyoming stood out in the region by having a smaller range within the wage percentiles. While those at the bottom of the pay scale outpaced Idaho's level, the rest fell short, especially at the 90th percentile where Wyoming wages for application developers were below the national median wage.



	Montana	Wyoming	Idaho	Utah	Nevada	Oregon	National	Washington
10th Pct	$17.09	$23.71	$20.06	$24.22	$25.34	$25.66	$26.28	$30.54
Median	$27.05	$28.69	$30.36	$36.73	$36.81	$39.70	$41.94	$45.61
90th Pct	$45.24	$38.59	$48.05	$52.18	$50.86	$57.81	$63.39	$64.24

Source: EMSI Complete Employment - 2012.3

Within Idaho, the populous southwestern region still had the most software developers even after losing 14 percent over the last decade. Every other region made employment gains. Northern Idaho made the largest gains, both in number and percentage growth, but the southwestern area's loses were much greater than the rest of the state's gains. That caused the state to show a 4.6 percent decline in software developer employment.

Table 11: Idaho Regions — 15-1132 Software Developers, Applications - Employment

Area	2002	2012	% Change
Northern	96	133	38.5%
Southeastern	68	78	14.7%
South Central	126	137	8.7%
North Central	46	48	4.3%
Eastern	240	245	2.1%
STATEWIDE	**1,621**	**1,546**	**-4.6%**
Southwest	1,046	905	-13.5%

Source: EMSI Complete Employment - 2012.3

[3]The three wage levels were chosen to represent three different employment types – entry level, journeyman and supervisory.

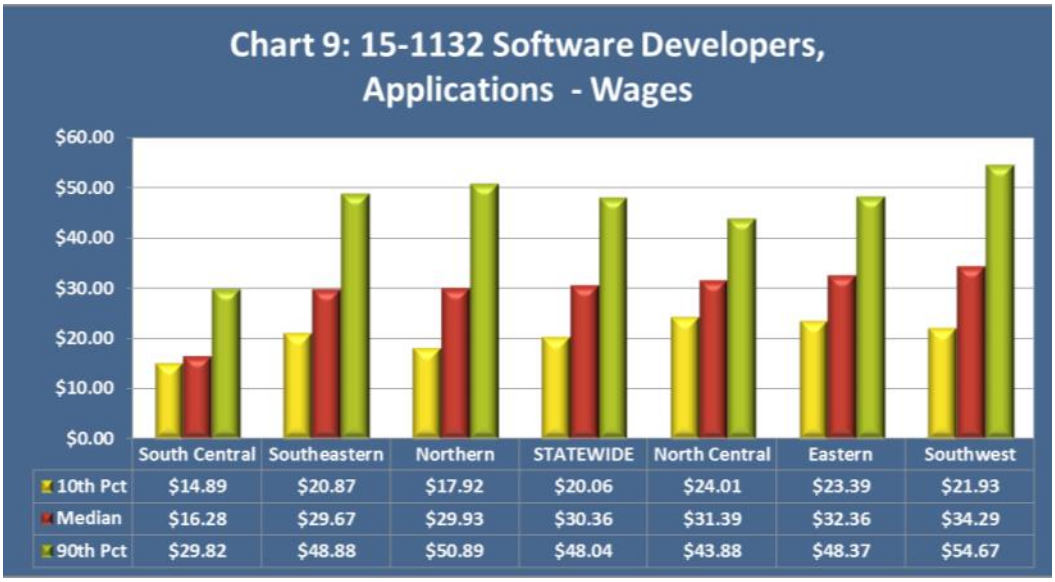
EMSI projections for the next 10 years show solid growth for all the regions of the state. Northern Idaho is forecast to continue its robust growth with an increase of over 56 percent in application developer employment. The southwestern region was ranked near the bottom in projected growth, but it was slated to have the most numeric growth at over 200 new application software developer jobs.

Table 12: Idaho Regions — 15-1132 Software Developers, Applications - Projected Employment

Area	2012	2022	% Change
Northern	133	208	56.4%
Eastern	245	332	35.5%
Southeastern	78	101	29.5%
North Central	48	62	29.2%
STATEWIDE	**1,546**	**1,988**	**28.6%**
Southwest	905	1,118	23.5%
South Central	137	167	21.9%

Source: EMSI Complete Employment - 2012.3

The southwestern region led the state in pay for application developers at the 50th percentile, or median, and the 90th percentile but lagged eastern and north central Idaho in pay at the 10th percentile. The south central region ranked at the bottom by a large margin with its top high-tech earners making less than the statewide median for all high-tech occupations.



Source: EMSI Complete Employment - 2012.3

NETWORK AND COMPUTER SYSTEMS ADMINSTRATORS

Idaho totaled almost 1,300 network and computer systems administrators in 2012. Unlike software developers, network administrators grew more than 16 percent since 2002. Idaho was last in the region for growth but was still ranked above the national average of 15.2 percent. Utah led the region at 29 percent.

Table 13: Neighboring States — 15-1142 Network and Computer Systems Administrators - Employment

Area	2002	2012	% Change
Utah	2,287	2,938	28.5%
Washington	8,119	10,285	26.7%
Wyoming	386	485	25.7%
Montana	733	914	24.7%
Nevada	1,475	1,831	24.2%
Oregon	3,411	3,985	16.8%
Idaho	**1,104**	**1,284**	**16.4%**
National	**331,771**	**382,220**	**15.2%**

Source: EMSI Complete Employment - 2012.3

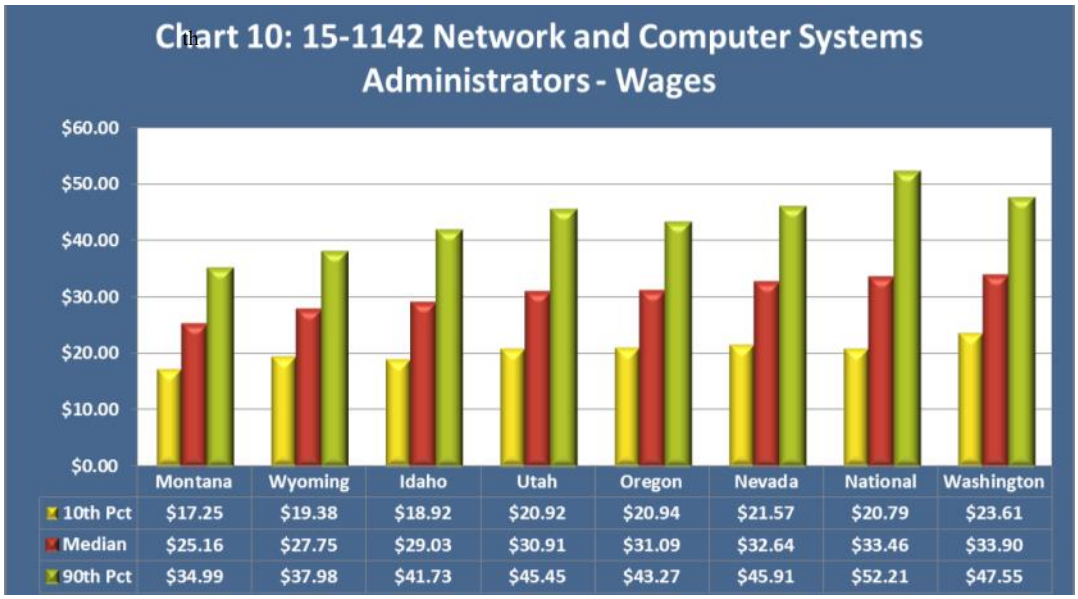
Projecting out to 2022, Idaho jumps to second regionally with a growth rate of almost 35 percent, just behind Utah's 40 percent. Washington with its overall higher employment was expected to hire the most network administrators— nearly 3,000. All states in the region are projected to grow faster than the nation's 23.2 percent rate.

Table 14: Neighboring States — 15-1142 Network and Computer Systems Administrators - Projected Employment

Area	2012	2022	% Change
Utah	2,938	4,192	42.7%
Idaho	**1,284**	**1,733**	**34.9%**
Oregon	3,985	5,182	30.0%
Washington	10,285	13,232	28.7%
Wyoming	485	622	28.4%
Montana	914	1,166	27.5%
Nevada	1,831	2,259	23.4%
National	**382,220**	**470,927**	**23.2%**

Source: EMSI Complete Employment - 2012.3

Wage ranges for network administrators broke out similarly to application software developers. Idaho had some of the lower wages in the region, ranging from $18.97 an hour at the 10th percentile to $41.73 at the 90th. As with application developers though, this was significantly above the state's all-occupations median wage. Washington again outpaced the region and the nation in the 10th and 50th percentiles, but the national 90th percentile wage was almost $5 an hour higher. Montana paid the least at all three levels.



	Montana	Wyoming	Idaho	Utah	Oregon	Nevada	National	Washington
10th Pct	$17.25	$19.38	$18.92	$20.92	$20.94	$21.57	$20.79	$23.61
Median	$25.16	$27.75	$29.03	$30.91	$31.09	$32.64	$33.46	$33.90
90th Pct	$34.99	$37.98	$41.73	$45.45	$43.27	$45.91	$52.21	$47.55

Source: EMSI Complete Employment - 2012.3

As with application software developers, northern Idaho added network administrators at a faster rate than the state as a whole. Unlike software developers though, network administrators registered gains in all six regions since 2002, ensuring positive growth statewide.

Table 15: Idaho Regions— 15-1142 Network and Computer Systems Administrators - Employment

Area	2002	2012	% Change
Northern	96	124	29.2%
South Central	82	100	22.0%
Eastern	127	149	17.3%
STATEWIDE	**1,083**	**1,257**	**16.1%**
Southwest	644	741	15.1%
Southeastern	82	90	9.8%
North Central	52	53	1.9%

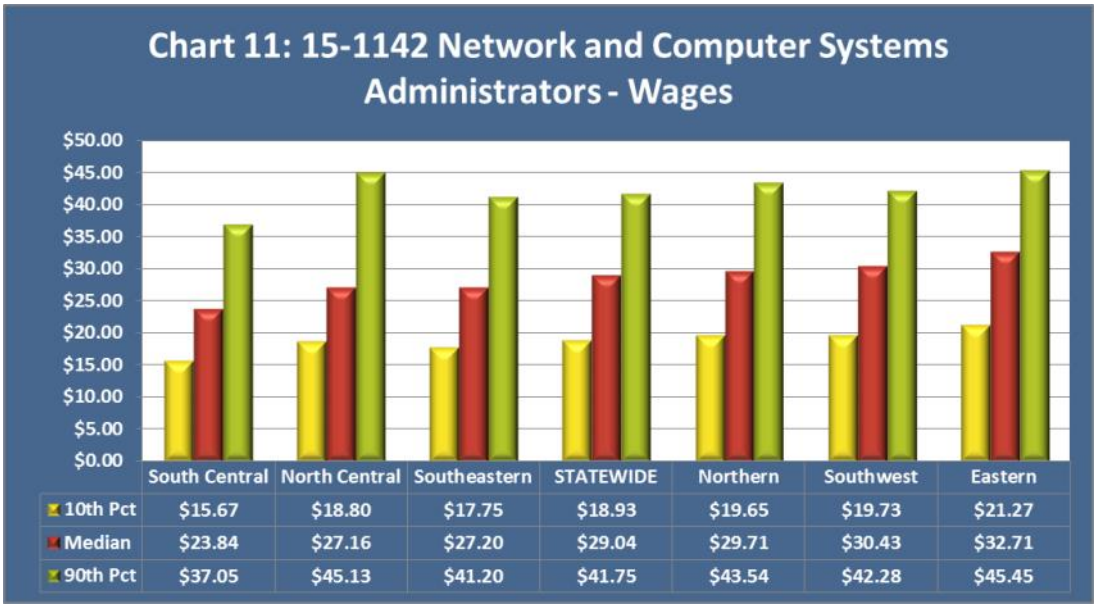
Source: EMSI Complete Employment - 2012.3

Eastern Idaho is projected to increase network administrators the fastest by 2022, more than 40 percent, but the southwestern region will add the largest number at 240.

Table 16: Idaho Regions — 15-1432 Network and Computer Systems Administrators - Projected Employment			
Area	**2012**	**2022**	**% Change**
Eastern	149	211	41.6%
South Central	100	139	39.0%
Northern	124	172	38.7%
STATEWIDE	**1,257**	**1,688**	**34.3%**
Southwest	741	981	32.4%
Southeastern	90	119	32.2%
North Central	53	67	26.4%

Source: EMSI Complete Employment - 2012.3

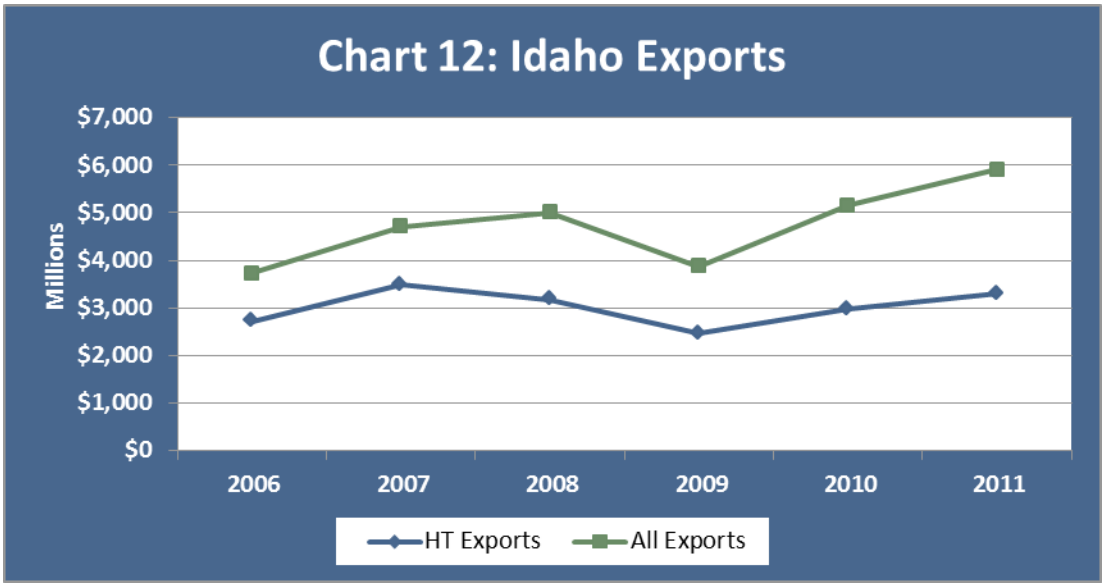
Along with the highest growth rate for network administrators, the eastern region also paid the most at the three wage percentiles. South central Idaho ranked last, but its pay rates for network administrators were not as far from the rest of the state as its pay for software developers.



Source: EMSI Complete Employment - 2012.3

Exports

High technology made up the lion's share of Idaho exports, accounting for almost 74 percent of all exports in 2007. Since then, high-tech's share declined to 56 percent of the total in 2011. The actual value had been increasing though, from a recession low of $2.5 billion in 2009 to $3.3 billion in 2011. This was just slightly under the pre-recession high of $3.5 billion in 2007.



Source: Global Trade Information Services, Inc., Annual Series: 2006 - 2011

Exports are measured by dollar value and tracked based on the Harmonized Tariff Schedule that classifies commodities. Examples of high-tech commodities are "84 Machinery-Computers and Components," which includes computer hardware, and "85 Electrical Machinery," which includes integrated circuits, or computer chips, and micro-assembly components.

Nationally, Idaho ranked third in high-tech's percentage of total exports behind New Hampshire and Vermont at 70 percent each. Looking at the other states in the region, Oregon was the only other state to have a higher percentage of its exports in high-tech goods then the national average of 30.4 percent. Montana, Utah, Wyoming and Washington all came in near the bottom of the list, ranked 43rd or lower. Appendix 5 has a list of state export rankings.

Table 17: Proportion of High-Tech Exports to Total		
Area	Percent	Rank
Idaho	55.8%	3
Oregon	47.3%	10
National	30.2%	-
Nevada	22.3%	33
Montana	16.3%	43
Utah	16.2%	44
Wyoming	13.3%	46
Washington	10.5%	50

Source: Global Trade Information Services, Inc., Annual Series: 2006 - 2011

Of the 147 countries that have purchased high-tech goods produced in Idaho, the most money has been spent by Asian countries. Singapore has by far been Idaho's best high-tech customer, but the majority of its purchases were made before the recession.

Since 2009, Taiwan has become the largest consumer of Idaho's high-tech goods. But that could change if France continues increasing its purchases. While France ranked 10th in total high-tech purchases during the past six years, it has increased its purchasing of Idaho high-tech goods from $30.8 million in 2006 to almost $230 million in 2011. This took France from being 12th in 2006 to fifth in 2011, surpassing Hong Kong as one of Idaho most valuable trading partners.

Table 18: Top Export Countries for Idaho	
Country	6 Year Total
Singapore	$4,281,171,333
Taiwan	$2,620,476,367
China	$2,518,241,215
Korean Republic	$1,847,188,643
Hong Kong	$1,041,824,280
Philippines	$911,169,919
Japan	$877,474,194
Malaysia	$817,752,304
Canada	$678,475,821
France	$635,284,765

Source: Global Trade Information Services, Inc., Annual Series: 2006 - 2011

Appendix 1 — Data Sources

IN-HOUSE DATA

The Idaho Department of Labor has in-house data available for analysis from the Quarterly Census of Employment and Wages, Occupational Employment Statistics, occupational and industry projections and exports. The quarterly census data comes from employers who pay unemployment insurance taxes and are referred to as covered employment data. They provide numbers of establishments, employment and earnings by industry. The Occupational Employment Statistics program develops the wage survey publication. It provides data on employment and wages by occupations and information to determine staffing patterns. Projections are developed statewide and by region for the short term – two years – and the long term – 10 years. Export data by country and by commodity are available from Global Trade Information Services developed in cooperation with the U.S. Census Bureau.

These data allow the Department of Labor to conduct numerous industry and occupational analyses for Idaho and its regions. There are limitations, however. QCEW and OES include only covered jobs, which are about 90 percent of total jobs. There is a lack of readily available information for state-to-state comparisons. There are strict confidentiality rules on the use of both QCEW and OES data. This means that even though Idaho Labor might have data, the information will not be released if there is a chance that an individual or business could be identified.

PURCHASED DATA

Idaho Labor contracts with Economic Modeling Specialists Inc. to obtain industry and occupational estimates for all 50 states. To estimate industry data, EMSI "combines covered employment data from Quarterly Census of Employment and Wages produced by the Department of Labor with total employment data in the Regional Economic Information System published by the U.S. Bureau of Economic Analysis, augmented with County Business Patterns and Nonemployer Statistics published by the U.S. Census Bureau." EMSI bases occupation estimates "on EMSI's industry data and regional staffing patterns taken from the Occupational Employment Statistics program (U.S. Bureau of Labor Statistics). Wage information is partially derived from the American Community Survey" conducted by the U.S. Census Bureau.

EMSI data are not subject to the same confidentiality requirements as the department's in-house data. In some instances in this report, actual QCEW data was replaced with EMSI estimated data to protect the integrity of state and national comparisons by using the same methodology.

DATA SET DIFFERENCES

There are obvious differences between the data sets of Idaho Labor and EMSI because EMSI uses estimates. EMSI's "complete" employment figures are significantly higher than the department's "covered" employment data, which include only employment covered by

the unemployment insurance program. EMSI's "complete" employment estimates also include employment outside the unemployment insurance program like the self-employed and the military, pulling data from a variety of sources including the Census Bureau's American Community Survey.

TYPES OF DATA

Occupation and Industry

High technology in Idaho can be measured by occupation and industry. Occupation data includes employment and wages for specific occupations. For example, "15–1141 database administrators" would count all database administrators whether working in a high-tech industry such as semiconductor manufacturing or an industry not considered high-tech such as a large retailer. Sometimes multiple job titles are grouped in one occupation.

Industry information also tracks employment and earnings along with establishments. But it includes every occupation in the industry, whether it is directly related to the industry or not. For example, data on an establishment identified as part of "Semiconductor and Other Electronic Component Manufacturing" would include not just the actual production workers but all the clerks, secretaries, maintenance personnel and other nonproduction workers. Thus, a high-tech industry will have both high-tech and non-high-tech occupations.

Why have Two Measures?

Occupation information gives what is often referred to as a "workforce oriented" view. This information allows stakeholders such as institutions of higher education to identify occupational shortages or specific occupation needs and to develop career ladders or paths of advancement for a specific career.

Industry information can be useful to economic developers. It provides a wide-angle view of the makeup of an economy and is therefore useful in identifying industry clusters or businesses that may cluster with other similar or supportive industries. This kind of measure allows economic developers to target the identified industries that offer higher wages because, like the high-tech industry, wages can be higher at every occupational level for an entire industry. For businesses willing to relocate entirely rather than move only a few occupations, this wide-angle view can be very useful.

Establishments, Employment, Earnings and Wages

An establishment is a single location for an employer. A single employer may have more than one establishment such as a retailer who may be under one company with several locations around the state. Establishments under one company may be assigned to different industry or North American Industry Classification System codes depending on their specific function.

Employment is a count of people working and does not differentiate between full time, part time or people who work multiple jobs. Earnings, for this business scan, include either EMSI's proprietary earnings per worker calculation, which includes estimated benefits, or

the quarterly census information on total wages paid by employers to employees. Wages for this business scan include EMSI's estimates on median hourly wage, EMSI's estimated 10th and 90th percentile wage, which for this paper provides a proxy for a starting and supervisory wages, and the hourly wage estimates provided by Occupational Employment Statistics.

METHODOLOGY

Defining the high technology sector can be done in a multitude of ways. Relative spending on research and development, the type of product, production processes and occupations involved have all been used as frameworks to measure high technology. Each requires different data – some not immediately available. Of these methods, one stood out as less subjective and more widely used – "High-Technology Employment: A NAICS-Based Update" by Daniel Hecker, a U.S. Bureau of Labor Statistics economist.

This systematic and robust method of defining high technology occupations and industries served as the basis of the taxonomy for this business scan. Information on Hecker's method is in "High-Technology Employment: A NAICS-Based Update" in the *Monthly Labor Review*, *July 2005*.

High Technology Occupation Definition

Hecker defined high technology occupations to include scientific, engineering and technician occupations – occupations that require knowledge generally acquired through post-high school education in some field of technology. These workers can be referred to as technology oriented workers. Hecker identified 71 SOC codes, based on the 2000 Standard Occupational Classification system, as technology oriented occupations.

High Technology Industry Definition

Hecker's taxonomy was based on the intensity of the 71 technology oriented occupations within an Industry. Forty-six industries at the four-digit 2002 North American Industrial Classification System level were identified. For instance, all 46 had a proportion of technology oriented occupations two times the 4.9-percent average for all industries. The three levels are:

- Level I- at least five times the average for all industries, or 24.7 percent of total employment.
- Level II- 3.0 to 4.9 times the average, or 14.8 percent to 24.7 percent of total employment.
- Level III- 2.0 to 2.9 times the average or 9.8 percent to 14.7 percent of total employment

Modified Taxonomy

The taxonomy used for this report is based on Hecker's high technology taxonomy but includes four differences. Originally based on the 2002 NAICS, the modified taxonomy reflects the Census Bureau's 2007 NAICS update. The Idaho Department of Labor made the following changes:

*Level I "5161 Internet Publishing and Broadcasting" moved into 5191

*Level I "5181 ISP's and Web Search Portals" moved into 5191

*Level III "5173 Telecommunications Resellers" moved into 5179 in Level I

*Exclusion of "Federal Government, excluding Postal Service," originally in Level II

Use of Hecker's Taxonomy

Using Hecker's NAICS taxonomy to measure high-tech industry employment requires the assumption that Idaho industries have occupational proportions similar to the nation. In addition to the systematic approach Hecker's taxonomy provided, confidence in the taxonomy also came in 2007 when the Idaho Department of Commerce requested that Idaho Labor test 20 other suspected Idaho high-tech industries during a similar scan. Using the staffing pattern criteria outlined by Hecker, all 20 industries failed to meet the necessary high-tech thresholds. Thus, Hecker's taxonomy was adopted for this business scan.

Appendix 2 — High-Tech Industry Labor Force Metrics

Total High Technology Industry Labor Force Metrics for all 50 States and the District of Columbia - 2012

SIZE			RELATIVE SIZE			RELATIVE GROWTH					
High-Tech Employment to Nation			High-Tech Employment in State			Growth in High-Tech Employment			Growth in High-Tech Employment		
Area	Percent	Rank	Area	Percent	Rank	Area	2002-2007	Rank	Area	2007-2012	Rank
National	100.0%		Virginia	12.5%	1	North Dakota	29.4%	1	Oklahoma	20.0%	1
California	13.6%	1	Massachusetts	12.4%	2	Nevada	27.9%	2	North Dakota	15.8%	2
Texas	9.8%	2	Washington	11.7%	3	Wyoming	20.3%	3	Texas	15.7%	3
New York	5.5%	3	Colorado	11.3%	4	Utah	19.8%	4	Louisiana	12.9%	4
Florida	4.8%	4	California	10.7%	5	Hawaii	15.9%	5	Montana	12.4%	5
Illinois	4.1%	5	Maryland	10.7%	6	New Mexico	15.8%	6	Wyoming	11.6%	6
Pennsylvania	4.0%	6	Texas	10.5%	7	Montana	15.4%	7	South Dakota	10.1%	7
Virginia	3.8%	7	Kansas	10.4%	8	South Carolina	14.8%	8	Washington	9.2%	8
Ohio	3.6%	8	New Jersey	10.0%	9	Florida	14.5%	9	Utah	9.0%	9
Massachusetts	3.3%	9	District of Columbia	9.9%	10	Virginia	14.1%	10	West Virginia	9.0%	10
New Jersey	3.2%	10	Connecticut	9.8%	11	Washington	13.7%	11	South Carolina	8.7%	11
Georgia	2.9%	11	Oklahoma	9.6%	12	Texas	12.6%	12	Kentucky	8.5%	12
North Carolina	2.9%	12	Utah	9.6%	13	Iowa	12.3%	13	Maryland	8.1%	13
Washington	2.8%	13	New Hampshire	9.5%	14	District of Columbia	11.7%	14	Alaska	7.6%	14
Michigan	2.7%	14	Minnesota	9.5%	15	Arizona	11.7%	15	Colorado	7.1%	15
Maryland	2.3%	15	New Mexico	9.3%	16	Idaho	11.4%	16	Vermont	6.5%	16
Colorado	2.3%	16	National	9.0%	-	Maryland	11.3%	17	North Carolina	5.7%	17
Minnesota	2.0%	17	Pennsylvania	9.0%	17	Oklahoma	11.2%	18	Mississippi	5.0%	18
Arizona	1.8%	18	Illinois	8.9%	18	Rhode Island	11.0%	19	Virginia	4.7%	19
Wisconsin	1.7%	19	Ohio	8.7%	19	Alabama	10.3%	20	Pennsylvania	3.9%	20
Missouri	1.7%	20	North Carolina	8.7%	20	South Dakota	10.2%	21	District of Columbia	3.9%	21
Indiana	1.6%	21	Georgia	8.7%	21	North Carolina	9.2%	22	National	3.8%	-
Tennessee	1.4%	22	Arizona	8.7%	22	Oregon	8.7%	23	Ohio	3.3%	22
Connecticut	1.4%	23	Oregon	8.5%	23	Kentucky	8.3%	24	Tennessee	2.8%	23
Oklahoma	1.3%	24	Delaware	8.4%	24	Wisconsin	8.2%	25	Arkansas	2.8%	24
Louisiana	1.3%	25	Michigan	8.3%	25	Arkansas	7.7%	26	Iowa	2.4%	25
Oregon	1.2%	26	Wisconsin	8.2%	26	Nebraska	7.6%	27	Massachusetts	2.4%	26
Kansas	1.2%	27	Rhode Island	8.1%	27	New Hampshire	7.3%	28	New York	2.3%	27
South Carolina	1.1%	28	Missouri	8.0%	28	Mississippi	6.6%	29	Wisconsin	2.2%	28
Alabama	1.1%	29	Vermont	7.9%	29	National	5.7%	-	Nevada	2.1%	29
Utah	1.0%	30	New York	7.8%	30	Pennsylvania	5.6%	30	Nebraska	2.1%	30
Kentucky	1.0%	31	Louisiana	7.7%	31	Colorado	5.2%	31	Oregon	1.9%	31
Iowa	0.7%	32	Florida	7.6%	32	Alaska	5.0%	32	California	1.8%	32
Arkansas	0.7%	33	Idaho	7.4%	33	New Jersey	4.8%	33	Florida	1.6%	33
New Mexico	0.6%	34	West Virginia	7.3%	34	Indiana	4.4%	34	Minnesota	1.6%	34
Nevada	0.6%	35	South Carolina	7.2%	35	Kansas	4.3%	35	Georgia	1.5%	35
Mississippi	0.6%	36	Alabama	7.2%	36	Ohio	4.3%	36	Kansas	0.8%	36
District of Columbia	0.5%	37	Alaska	7.1%	37	Missouri	4.1%	37	Arizona	0.4%	37
Nebraska	0.5%	38	Arkansas	7.0%	38	Minnesota	4.0%	38	Illinois	0.1%	38
New Hampshire	0.5%	39	Indiana	7.0%	39	Tennessee	3.8%	39	Michigan	0.0%	39
West Virginia	0.4%	40	Wyoming	6.9%	40	West Virginia	3.8%	40	Indiana	-0.1%	40
Idaho	0.4%	41	Nebraska	6.6%	41	Louisiana	3.7%	41	Rhode Island	-1.1%	41
Rhode Island	0.3%	42	Kentucky	6.5%	42	Maine	1.9%	42	Connecticut	-2.3%	42
Maine	0.3%	43	Tennessee	6.2%	43	Illinois	1.3%	43	New Hampshire	-2.4%	43
Delaware	0.3%	44	North Dakota	6.1%	44	Georgia	0.8%	44	Missouri	-2.6%	44
Hawaii	0.3%	45	Mississippi	6.1%	45	New York	0.2%	45	Alabama	-2.8%	45
Montana	0.2%	46	Iowa	6.0%	46	Vermont	0.0%	46	New Mexico	-2.8%	46
North Dakota	0.2%	47	Montana	6.0%	47	California	-0.3%	47	Maine	-3.2%	47
Vermont	0.2%	48	Nevada	5.9%	48	Connecticut	-2.0%	48	Hawaii	-4.6%	48
Alaska	0.2%	49	Maine	5.7%	49	Massachusetts	-2.1%	49	Idaho	-4.9%	49
South Dakota	0.2%	50	South Dakota	5.2%	50	Michigan	-5.3%	50	New Jersey	-5.2%	50
Wyoming	0.2%	51	Hawaii	4.8%	51	Delaware	-17.5%	51	Delaware	-6.0%	51

Source: EMSI Complete Employment - 2012.3

Appendix 2 — High-Tech Industry Labor Force Metrics (cont.)

Total High Technology Industry Labor Force Metrics for all 50 States and the District of Columbia - 2012

PROJECTED GROWTH			RELATIVE EARNIGS			HIGH-TECH: EARNINGS TO STATE			RELATIVE ESTABLISHMENTS		
Projected Growth of High-Tech Employment			High-Tech Earnings per Worker			EPW Ratio- State High-Tech to State Total			2011 High-Tech Establishments to Total Establishments		
Area	2012-2022	Rank	Area	EPW	Rank	Area	Percent	Rank	Area	Percent	Rank
North Dakota	64.4%	1	Massachusetts	$119,760	1	Washington	206.0%	1	Delaware	17.8%	1
Virginia	30.7%	2	New Jersey	$114,569	2	California	201.8%	2	District of Columbia	16.2%	2
Louisiana	28.0%	3	California	$113,646	3	Colorado	201.7%	3	Colorado	14.3%	3
District of Columbia	28.0%	4	Connecticut	$112,535	4	Idaho	199.3%	4	Virginia	13.5%	4
Washington	25.5%	5	District of Columbia	$110,008	5	North Carolina	199.0%	5	Maryland	13.3%	5
Montana	24.7%	6	Washington	$109,146	6	Texas	197.9%	6	Utah	12.0%	6
Utah	24.4%	7	New York	$107,060	7	Virginia	196.2%	7	New Hampshire	11.8%	7
Rhode Island	23.8%	8	Virginia	$105,381	8	Massachusetts	196.0%	8	Nevada	11.8%	8
South Carolina	23.6%	9	Delaware	$101,731	9	Oregon	194.6%	9	Illinois	11.3%	9
Iowa	23.6%	10	Colorado	$99,018	10	Minnesota	194.2%	10	Arizona	11.2%	10
Florida	23.4%	11	Texas	$98,926	11	New Jersey	193.6%	11	Massachusetts	11.1%	11
Oregon	23.1%	12	Illinois	$98,503	12	Delaware	193.5%	12	New Jersey	11.0%	12
Texas	22.8%	13	Maryland	$96,967	13	Missouri	192.5%	13	Texas	10.8%	13
Oklahoma	22.6%	14	Pennsylvania	$96,323	14	Pennsylvania	191.9%	14	Florida	10.8%	14
Nebraska	22.0%	15	Minnesota	$96,104	15	Georgia	191.5%	15	North Carolina	10.7%	15
Idaho	21.9%	16	National	$95,443	-	National	191.1%	-	Georgia	10.6%	16
Wyoming	21.6%	17	Alaska	$94,748	16	Indiana	190.6%	16	New Mexico	10.2%	17
Mississippi	21.0%	18	New Hampshire	$89,479	17	Arkansas	188.6%	17	Minnesota	10.0%	18
Maryland	20.6%	19	North Carolina	$88,167	18	Alabama	188.2%	18	Vermont	10.0%	19
California	19.4%	20	Michigan	$87,481	19	Louisiana	185.4%	19	Rhode Island	9.8%	20
Georgia	19.1%	21	Georgia	$86,977	20	Illinois	185.3%	20	Oklahoma	9.7%	21
Nevada	18.9%	22	Oregon	$86,921	21	New Hampshire	184.0%	21	Kansas	9.7%	22
Colorado	18.6%	23	Rhode Island	$85,783	22	Michigan	183.9%	22	Connecticut	9.5%	23
South Dakota	18.5%	24	Missouri	$84,570	23	South Carolina	183.6%	23	National	9.3%	-
Alabama	17.9%	25	Ohio	$84,020	24	Vermont	183.5%	24	Indiana	9.2%	24
Kansas	17.7%	26	Indiana	$83,660	25	Ohio	182.1%	25	Idaho	9.2%	25
Kentucky	17.2%	27	Arizona	$83,537	26	Arizona	182.1%	26	Ohio	9.1%	26
National	17.1%	-	Louisiana	$82,729	27	Wisconsin	181.9%	27	South Carolina	9.0%	27
Hawaii	16.9%	28	Wyoming	$81,002	28	New Mexico	181.8%	28	Wyoming	8.9%	28
Vermont	16.2%	29	Alabama	$80,347	29	Connecticut	181.0%	29	Tennessee	8.7%	29
North Carolina	15.6%	30	Wisconsin	$80,069	30	Nebraska	179.6%	30	Montana	8.7%	30
Alaska	15.1%	31	Nevada	$79,957	31	Wyoming	178.9%	31	Maine	8.7%	31
Tennessee	14.4%	32	New Mexico	$76,891	32	Nevada	178.4%	32	Hawaii	8.7%	32
Arkansas	14.3%	33	Hawaii	$76,642	33	Florida	176.3%	33	Louisiana	8.6%	33
New Mexico	14.1%	34	Tennessee	$76,571	34	Kansas	176.1%	34	Alabama	8.6%	34
Massachusetts	13.7%	35	Vermont	$76,127	35	Maryland	175.9%	35	Pennsylvania	8.5%	35
West Virginia	13.2%	36	Florida	$76,014	36	Mississippi	174.9%	36	Oregon	8.5%	36
Michigan	13.0%	37	Arkansas	$75,606	37	Rhode Island	174.6%	37	Nebraska	8.3%	37
Illinois	12.7%	38	Kansas	$75,596	38	Alaska	173.4%	38	Kentucky	8.1%	38
New Hampshire	12.6%	39	Idaho	$73,864	39	Tennessee	172.9%	39	Michigan	7.8%	39
Indiana	11.4%	40	North Dakota	$73,704	40	Utah	172.7%	40	Alaska	7.8%	40
Minnesota	11.4%	41	Nebraska	$73,384	41	Iowa	171.7%	41	New York	7.8%	41
Arizona	11.4%	42	South Carolina	$73,079	42	Montana	170.8%	42	Wisconsin	7.4%	42
Ohio	10.4%	43	Oklahoma	$72,323	43	Kentucky	168.7%	43	West Virginia	7.3%	43
Connecticut	10.0%	44	Iowa	$72,296	44	New York	168.2%	44	Missouri	7.3%	44
Missouri	8.8%	45	Utah	$71,813	45	Oklahoma	167.9%	45	South Dakota	7.1%	45
New York	8.6%	46	Kentucky	$71,693	46	Maine	167.6%	46	Iowa	7.1%	46
Wisconsin	7.1%	47	West Virginia	$70,487	47	Hawaii	166.5%	47	North Dakota	7.0%	47
Delaware	6.8%	48	Maine	$67,561	48	South Dakota	166.4%	48	Arkansas	7.0%	48
Pennsylvania	6.7%	49	Mississippi	$66,313	49	West Virginia	163.4%	49	Washington	6.9%	49
Maine	5.6%	50	Montana	$63,921	50	North Dakota	163.0%	50	California	6.8%	50
New Jersey	5.4%	51	South Dakota	$63,002	51	District of Columbia	118.3%	51	Mississippi	6.8%	51

Source: EMSI Complete Employment - 2012.3

Appendix 3 — Idaho's High-Tech Industries

Idaho's High-Tech Industries						
Rank	Industry	2012 Employment	2022 Employment	Change	% Change	EPW
1	Other Chemical Product and Preparation Manufacturing	572	875	303	53.0%	$105,628
2	Audio and Video Equipment Manufacturing	42	116	74	173.7%	$99,970
3	Pharmaceutical and Medicine Manufacturing	463	798	336	72.5%	$72,242
4	Commercial and Service Industry Machinery Manufacturing	696	1133	437	62.7%	$59,327
5	Computer Systems Design and Related Services	5759	8048	2288	39.7%	$60,624
6	Management, Scientific, and Technical Consulting Services	7959	12618	4659	58.5%	$42,287
7	Electric Power Generation, Transmission and Distribution	2082	2451	369	17.7%	$108,786
7	Scientific Research and Development Services	7877	9018	1141	14.5%	$95,980
9	Professional and Commercial Equipment and Supplies Merchant Wholesalers	1970	2460	490	24.9%	$78,269
9	Other Information Services	1114	1744	630	56.5%	$52,903
11	Management of Companies and Enterprises	6638	7305	667	10.0%	$94,578
12	Architectural, Engineering, and Related Services	6692	8002	1310	19.6%	$58,909
13	Pipeline Transportation of Natural Gas	66	91	25	36.9%	$101,223
14	Oil and Gas Extraction	1263	2069	806	63.8%	$19,572
15	Data Processing, Hosting, and Related Services	780	1170	390	50.0%	$44,131
15	Other Transportation Equipment Manufacturing	214	499	286	133.9%	$36,303
17	Wired Telecommunications Carriers	3556	4686	1130	31.8%	$47,061
18	Industrial Machinery Manufacturing	481	678	197	41.0%	$57,653
18	Petroleum and Coal Products Manufacturing	56	65	9	15.9%	$145,763
18	Aerospace Product and Parts Manufacturing	337	450	113	33.5%	$62,977
21	Facilities Support Services	909	1290	381	41.9%	$36,056
22	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	548	629	81	14.7%	$75,598
22	Other telecommunications	1015	1436	421	41.5%	$35,810
24	Software Publishers	475	551	75	15.8%	$69,478
25	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufactu	94	134	39	41.7%	$52,584
25	Engine, Turbine, and Power Transmission Equipment Manufacturing	30	38	8	26.1%	$74,398
25	Manufacturing and Reproducing Magnetic and Optical Media	18	27	8	46.3%	$54,778
28	Communications Equipment Manufacturing	184	239	55	29.9%	$56,989
29	Satellite Telecommunications	71	111	40	56.5%	$24,553
30	Electrical Equipment Manufacturing	373	392	19	5.2%	$74,485
31	Other General Purpose Machinery Manufacturing	420	486	66	15.8%	$55,548
32	Pipeline Transportation of Crude Oil	5	1	-3	-69.9%	$167,658
33	Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	1239	1216	-23	-1.9%	$89,170
34	Computer and Peripheral Equipment Manufacturing	2880	2209	-671	-23.3%	$120,831
35	Semiconductor and Other Electronic Component Manufacturing	8616	7491	-1125	-13.1%	$102,801
36	Paint, Coating, and Adhesive Manufacturing	32	34	2	7.2%	$49,639
37	Basic Chemical Manufacturing	137	86	-51	-37.0%	$74,190
38	Forest Nurseries and Gathering of Forest Products	55	44	-11	-19.7%	$40,498
39	Securities and Commodity Exchanges	37	30	-7	-19.8%	$32,191
40	Electronic and Precision Equipment Repair and Maintenance	732	655	-77	-10.5%	$32,017
41	Wireless Telecommunications Carriers (except Satellite)	719	547	-172	-23.9%	$35,692
42	Timber Tract Operations	22	11	-11	-51.1%	$26,683

Source: EMSI Complete Employment - 2012.3

Appendix 4 – High-Tech Occupation Labor Force Metrics

Total High Technology Occupation Labor Force Metrics for all 50 States - 2012

SIZE

High-Tech Employment to Nation

Area	Percent	Rank
National	100.0%	-
California	13.8%	1
Texas	8.6%	2
New York	5.4%	3
Florida	4.4%	4
Virginia	4.3%	5
Pennsylvania	3.9%	6
Massachusetts	3.7%	7
Illinois	3.6%	8
Ohio	3.5%	9
Washington	3.3%	10
Michigan	3.3%	11
New Jersey	3.2%	12
North Carolina	2.8%	13
Georgia	2.7%	14
Maryland	2.7%	15
Colorado	2.4%	16
Minnesota	2.2%	17
Arizona	1.9%	18
Missouri	1.8%	19
Wisconsin	1.8%	20
Indiana	1.7%	21
Tennessee	1.5%	22
Connecticut	1.3%	23
Oregon	1.2%	24
Alabama	1.2%	25
South Carolina	1.2%	26
Utah	1.0%	27
Oklahoma	1.0%	28
Kentucky	0.9%	29
Louisiana	0.9%	30
Kansas	0.9%	31
Iowa	0.9%	32
District of Columbia	0.7%	33
New Mexico	0.6%	34
Nebraska	0.6%	35
Arkansas	0.5%	36
Nevada	0.5%	37
Idaho	0.5%	38
New Hampshire	0.5%	39
Mississippi	0.4%	40
Delaware	0.4%	41
West Virginia	0.3%	42
Maine	0.3%	43
Hawaii	0.3%	44
Rhode Island	0.3%	45
Montana	0.3%	46
Alaska	0.3%	47
North Dakota	0.2%	48
Vermont	0.2%	49
South Dakota	0.2%	50
Wyoming	0.2%	51

RELATIVE SIZE

High-Tech Employment In State

Area	Percent	Rank
Virginia	6.4%	1
Massachusetts	6.3%	2
Washington	6.1%	3
District of Columbia	5.8%	4
Maryland	5.6%	5
Colorado	5.3%	6
Delaware	5.0%	7
California	4.9%	8
Minnesota	4.6%	9
New Jersey	4.5%	10
Michigan	4.5%	11
Connecticut	4.4%	12
Arizona	4.3%	13
Utah	4.2%	14
New Hampshire	4.2%	15
Texas	4.1%	16
Alaska	4.1%	17
Idaho	4.1%	18
National	4.1%	-
Oregon	4.0%	19
New Mexico	4.0%	20
Pennsylvania	3.9%	21
Vermont	3.9%	22
Ohio	3.9%	23
North Carolina	3.8%	24
Missouri	3.7%	25
Wisconsin	3.7%	26
Georgia	3.7%	27
Rhode Island	3.6%	28
Kansas	3.6%	29
Illinois	3.5%	30
New York	3.5%	31
Alabama	3.4%	32
Nebraska	3.3%	33
Indiana	3.3%	34
South Carolina	3.3%	35
Montana	3.3%	36
Oklahoma	3.2%	37
Florida	3.2%	38
Iowa	3.1%	39
North Dakota	3.1%	40
Wyoming	2.9%	41
Tennessee	2.9%	42
Maine	2.8%	43
Kentucky	2.8%	44
South Dakota	2.7%	45
West Virginia	2.6%	46
Arkansas	2.6%	47
Louisiana	2.5%	48
Hawaii	2.5%	49
Nevada	2.4%	50
Mississippi	2.2%	51

RELATIVE GROWTH

Growth in High-Tech Employment

Area	2002-2007	Rank
Nevada	22.3%	1
North Dakota	20.4%	2
Utah	17.3%	3
Wyoming	16.5%	4
New Mexico	16.1%	5
Virginia	16.0%	6
Arizona	14.3%	7
Hawaii	13.6%	8
Washington	13.4%	9
Montana	12.3%	10
Texas	12.3%	11
Florida	11.2%	12
Alaska	10.6%	13
North Carolina	10.4%	14
Alabama	10.0%	15
South Carolina	9.8%	16
Iowa	9.5%	17
Oregon	8.9%	18
Maryland	8.7%	19
Oklahoma	8.1%	20
District of Columbia	8.0%	21
Idaho	8.0%	22
Wisconsin	7.1%	23
South Dakota	7.1%	24
Arkansas	7.0%	25
Missouri	6.7%	26
National	5.9%	-
Rhode Island	5.5%	27
Nebraska	5.2%	28
Kansas	5.2%	29
Mississippi	5.1%	30
Colorado	5.0%	31
Kentucky	4.9%	32
New Hampshire	4.9%	33
Louisiana	4.7%	34
Minnesota	4.5%	35
Tennessee	4.4%	36
Georgia	4.0%	37
Pennsylvania	3.8%	38
California	3.4%	39
New Jersey	3.4%	40
Indiana	2.9%	41
Vermont	2.7%	42
West Virginia	2.4%	43
Ohio	1.8%	44
New York	1.7%	45
Massachusetts	1.2%	46
Maine	0.3%	47
Illinois	0.2%	48
Connecticut	-0.2%	49
Delaware	-4.1%	50
Michigan	-7.0%	51

Growth in High-Tech Employment

Area	2007-2012	Rank
North Dakota	17.0%	1
Maryland	8.4%	2
Washington	8.4%	3
Alaska	7.6%	4
Virginia	7.4%	5
Texas	7.3%	6
Utah	6.3%	7
District of Columbia	5.5%	8
South Carolina	5.4%	9
Massachusetts	5.1%	10
Montana	4.3%	11
Vermont	4.2%	12
Colorado	3.4%	13
Oklahoma	3.3%	14
West Virginia	3.1%	15
South Dakota	2.9%	16
Pennsylvania	2.3%	17
Iowa	2.3%	18
Kentucky	2.2%	19
Georgia	1.7%	20
New York	1.6%	21
North Carolina	1.6%	22
National	1.5%	-
California	1.4%	23
Minnesota	1.3%	24
Ohio	1.3%	25
Nebraska	1.1%	26
Wisconsin	0.4%	27
Wyoming	0.3%	28
Oregon	-0.2%	29
Louisiana	-0.3%	30
Indiana	-0.5%	31
Tennessee	-0.6%	32
Delaware	-1.0%	33
Arkansas	-1.2%	34
Rhode Island	-1.7%	35
Arizona	-2.3%	36
Illinois	-2.3%	37
Maine	-2.4%	38
Missouri	-2.5%	39
Hawaii	-2.6%	40
Connecticut	-3.0%	41
New Hampshire	-3.6%	42
Kansas	-3.7%	43
Michigan	-4.0%	44
New Jersey	-4.1%	45
Alabama	-4.1%	46
Mississippi	-4.1%	47
Florida	-4.3%	48
Idaho	-4.4%	49
New Mexico	-4.5%	50
Nevada	-7.7%	51

Source: EMSI Complete Employment - 2012.3

APPENDIX 4 — HIGH-TECH OCCUPATION LABOR FORCE METRICS (CONT.)

Total High Technology Occupation Labor Force Metrics for all 50 States - 2012

WAGE: TENTH PERCENTILE

High-Tech Wage to Total Wage

Area	Percent	Rank
Virginia	192.5%	1
New Mexico	189.0%	2
Alabama	188.3%	3
Texas	188.0%	4
North Carolina	186.8%	5
National	185.9%	-
Washington	185.9%	6
California	184.6%	7
Georgia	182.6%	8
Kansas	182.5%	9
Minnesota	180.5%	10
Michigan	179.8%	11
Iowa	178.3%	12
Missouri	177.8%	13
Delaware	177.6%	14
Oklahoma	177.4%	15
South Carolina	177.3%	16
New Hampshire	177.3%	17
Louisiana	176.7%	18
Nevada	176.7%	19
Maryland	176.5%	20
Colorado	176.2%	21
Rhode Island	175.9%	22
Arizona	175.8%	23
Ohio	175.5%	24
New Jersey	175.3%	25
Idaho	175.3%	26
Indiana	173.9%	27
Hawaii	172.8%	28
Massachusetts	172.5%	29
Kentucky	172.4%	30
Mississippi	172.3%	31
Pennsylvania	172.2%	32
Illinois	171.8%	33
Utah	171.3%	34
Arkansas	171.3%	35
Wisconsin	170.7%	36
Oregon	170.0%	37
Maine	170.0%	38
Tennessee	169.6%	39
Alaska	168.2%	40
Nebraska	167.8%	41
Connecticut	167.3%	42
Florida	166.9%	43
New York	165.9%	44
Vermont	165.5%	45
West Virginia	163.9%	46
Wyoming	161.8%	47
South Dakota	158.9%	48
Montana	157.8%	49
North Dakota	156.5%	50
District of Columbia	144.2%	51

High-Tech 10th Pct Wage

Area	10 Pct	Rank
District of Columbia	$28.40	1
Washington	$26.94	2
California	$26.73	3
New Jersey	$26.65	4
Massachusetts	$26.57	5
Virginia	$25.82	6
Connecticut	$25.42	7
Alaska	$25.38	8
Delaware	$25.33	9
Maryland	$25.22	10
Rhode Island	$24.69	11
New Hampshire	$24.56	12
Minnesota	$24.38	13
Texas	$23.86	14
New York	$23.58	15
Colorado	$23.56	16
National	$23.52	-
New Mexico	$22.96	17
North Carolina	$22.84	18
Michigan	$22.35	19
Arizona	$22.29	20
Illinois	$22.16	21
Pennsylvania	$22.15	22
Oregon	$22.14	23
Nevada	$22.07	24
Georgia	$21.99	25
Hawaii	$21.95	26
Alabama	$21.94	27
Kansas	$21.86	28
Ohio	$21.61	29
Louisiana	$21.40	30
Vermont	$21.09	31
Wyoming	$21.00	32
Utah	$20.86	33
Wisconsin	$20.84	34
Maine	$20.81	35
Iowa	$20.79	36
Missouri	$20.75	37
Oklahoma	$20.70	38
Indiana	$20.55	39
Idaho	$20.04	40
Florida	$20.03	41
Tennessee	$19.99	42
South Carolina	$19.88	43
Nebraska	$19.70	44
Kentucky	$19.65	45
Arkansas	$19.13	46
South Dakota	$19.08	47
Mississippi	$18.81	48
North Dakota	$18.77	49
West Virginia	$18.05	50
Montana	$17.60	51

WAGE: MEDIAN

High-Tech Wage to Total Wage

Area	Percent	Rank
Texas	204.0%	1
Virginia	203.8%	2
Alabama	202.8%	3
North Carolina	200.9%	4
New Mexico	198.4%	5
Georgia	195.2%	6
California	195.0%	7
Oklahoma	194.0%	8
South Carolina	193.8%	9
National	192.3%	-
Louisiana	191.7%	10
Kansas	190.4%	11
Colorado	189.6%	12
Missouri	189.2%	13
Arizona	187.4%	14
Washington	187.3%	15
New Hampshire	187.0%	16
Tennessee	186.7%	17
Delaware	186.2%	18
Nebraska	185.4%	19
Maryland	184.5%	20
Idaho	184.5%	21
Iowa	184.3%	22
Ohio	183.4%	23
Rhode Island	183.3%	24
New Jersey	183.2%	25
Mississippi	183.0%	26
Florida	182.3%	27
Michigan	182.2%	28
Minnesota	181.8%	29
Arkansas	181.6%	30
Nevada	181.6%	31
Kentucky	181.3%	32
Utah	180.8%	33
Oregon	179.9%	34
Indiana	179.1%	35
Illinois	178.0%	36
Pennsylvania	178.0%	37
Massachusetts	176.6%	38
West Virginia	174.6%	39
Wisconsin	174.3%	40
Vermont	174.3%	41
Hawaii	173.8%	42
North Dakota	171.9%	43
Maine	171.9%	44
Connecticut	170.6%	45
New York	170.6%	46
Alaska	167.4%	47
Montana	165.7%	48
South Dakota	165.5%	49
Wyoming	160.1%	50
District of Columbia	137.3%	51

High-Tech Median

Area	Median	Rank
District of Columbia	$44.76	1
California	$41.96	2
Virginia	$41.77	3
New Jersey	$40.78	4
Massachusetts	$40.63	5
Maryland	$40.08	6
Washington	$39.10	7
Delaware	$38.17	8
Connecticut	$38.14	9
Texas	$37.69	10
Colorado	$37.56	11
New York	$37.42	12
Rhode Island	$37.34	13
Alaska	$36.60	14
National	$36.40	-
New Hampshire	$36.40	15
Minnesota	$35.66	16
North Carolina	$35.01	17
Illinois	$34.95	18
Arizona	$34.55	19
New Mexico	$34.41	20
Georgia	$34.36	21
Pennsylvania	$34.08	22
Alabama	$33.78	23
Michigan	$33.50	24
Oregon	$33.50	25
Ohio	$33.15	26
Nevada	$33.01	27
Missouri	$32.68	28
Kansas	$32.63	29
Louisiana	$32.53	30
Hawaii	$32.47	31
Oklahoma	$32.27	32
Utah	$31.48	33
Tennessee	$31.47	34
Florida	$31.38	35
South Carolina	$31.30	36
Vermont	$31.21	37
Nebraska	$31.20	38
Wisconsin	$31.10	39
Iowa	$30.89	40
Indiana	$30.81	41
Idaho	$29.82	42
Kentucky	$29.80	43
Maine	$29.56	44
Wyoming	$29.23	45
North Dakota	$28.96	46
Arkansas	$28.71	47
Mississippi	$28.03	48
West Virginia	$28.02	49
South Dakota	$25.93	50
Montana	$25.90	51

Source: EMSI Complete Employment - 2012.3

APPENDIX 4 — HIGH-TECH OCCUPATION LABOR FORCE METRICS (CONT.)

Total High Technology Occupation Labor Force Metrics for all 50 States - 2012

WAGE: NINETIETH PERCENTILE						PROJECTED GROWTH		
High-Tech Wage to Total Wage			High-Tech 90th Percentile			Projected Growth of High-Tech Employment		
Area	Percent	Rank	Area	90th Pct	Rank	Area	2012-2022	Rank
Texas	209.8%	1	Virginia	$64.32	1	North Dakota	50.3%	1
Alabama	201.9%	2	California	$63.47	2	Virginia	29.5%	2
North Carolina	201.5%	3	District of Columbia	$62.53	3	Utah	26.6%	3
Oklahoma	199.4%	4	Maryland	$61.26	4	District of Columbia	24.3%	4
New Mexico	198.6%	5	Massachusetts	$61.18	5	Rhode Island	24.2%	5
Louisiana	197.9%	6	New Jersey	$61.14	6	Louisiana	22.4%	6
Virginia	197.8%	7	Texas	$59.49	7	Mississippi	22.4%	7
South Carolina	192.9%	8	New York	$59.01	8	Washington	22.1%	8
Kansas	190.7%	9	Delaware	$57.60	9	South Carolina	21.7%	9
Georgia	189.5%	10	Washington	$56.55	10	Iowa	21.6%	10
California	188.4%	11	Connecticut	$56.19	11	Nebraska	20.8%	11
New Hampshire	188.2%	12	Colorado	$56.06	12	Oregon	20.7%	12
Mississippi	188.2%	13	National	$55.04	-	Florida	20.4%	13
Delaware	187.0%	14	New Hampshire	$53.92	13	Maryland	19.4%	14
Nebraska	186.3%	15	Alaska	$53.85	14	Georgia	19.3%	15
Arizona	185.9%	16	Illinois	$53.84	15	Texas	19.0%	16
Idaho	185.4%	17	Rhode Island	$53.70	16	California	18.6%	17
Colorado	185.3%	18	North Carolina	$53.03	17	Kentucky	18.6%	18
Washington	183.8%	19	Pennsylvania	$52.90	18	Alabama	18.4%	19
Missouri	183.7%	20	Arizona	$52.13	19	Arkansas	16.8%	20
National	183.6%	-	New Mexico	$51.93	20	North Carolina	16.5%	21
Vermont	183.4%	21	Minnesota	$51.75	21	Idaho	16.1%	22
Maryland	183.4%	22	Georgia	$51.61	22	Wyoming	16.0%	23
Tennessee	182.2%	23	Alabama	$50.09	23	South Dakota	15.9%	24
Florida	181.8%	24	Oklahoma	$50.02	24	National	15.7%	-
Iowa	181.7%	25	Louisiana	$49.88	25	Kansas	15.5%	25
New Jersey	180.9%	26	Kansas	$49.48	26	New Mexico	15.3%	26
Kentucky	180.9%	27	Missouri	$49.11	27	Vermont	15.1%	27
Nevada	179.2%	28	Michigan	$48.78	28	New Hampshire	14.4%	28
Arkansas	178.9%	29	Ohio	$48.67	29	Nevada	14.3%	29
Pennsylvania	178.7%	30	Nevada	$48.58	30	Oklahoma	14.0%	30
Ohio	178.1%	31	Vermont	$48.37	31	Colorado	13.9%	31
Rhode Island	177.9%	32	Oregon	$48.31	32	Massachusetts	13.5%	32
Minnesota	177.2%	33	Florida	$47.68	33	Indiana	13.4%	33
West Virginia	177.2%	34	South Carolina	$47.07	34	West Virginia	13.3%	34
Indiana	176.8%	35	Hawaii	$47.04	35	Tennessee	13.3%	35
Oregon	176.7%	36	Tennessee	$46.91	36	Hawaii	13.2%	36
Utah	176.6%	37	Nebraska	$46.76	37	Montana	13.2%	37
Illinois	172.9%	38	Utah	$46.67	38	Alaska	12.9%	38
Michigan	172.5%	39	Indiana	$46.17	39	Minnesota	12.7%	39
Massachusetts	171.7%	40	Kentucky	$45.18	40	Illinois	12.2%	40
South Dakota	170.7%	41	Iowa	$45.16	41	Ohio	11.0%	41
Montana	169.9%	42	Wisconsin	$44.99	42	Connecticut	10.1%	42
Maine	169.6%	43	Idaho	$44.28	43	Delaware	8.8%	43
Wisconsin	168.0%	44	West Virginia	$43.17	44	Arizona	8.7%	44
Hawaii	167.9%	45	North Dakota	$42.66	45	Missouri	7.6%	45
North Dakota	166.8%	46	Mississippi	$42.58	46	Wisconsin	7.6%	46
Connecticut	165.7%	47	Maine	$42.49	47	New York	7.2%	47
New York	164.8%	48	Arkansas	$42.42	48	Pennsylvania	7.2%	48
Wyoming	158.2%	49	Wyoming	$41.25	49	Maine	6.9%	49
Alaska	157.7%	50	Montana	$38.94	50	Michigan	6.2%	50
District of Columbia	124.1%	51	South Dakota	$37.06	51	New Jersey	5.1%	51

Source: EMSI Complete Employment - 2012.3

Appendix 5 — High-Tech Exports by State

2011 Porportion of High-Tech Exports to Total		
Area	**Percent**	**Rank**
New Hampshire	70.0%	1
Vermont	70.0%	2
Idaho	**55.8%**	**3**
New Mexico	55.6%	4
Massachusetts	53.4%	5
Wisconsin	52.2%	6
Colorado	51.9%	7
Oklahoma	50.7%	8
Arizona	47.8%	9
Oregon	47.3%	10
Minnesota	47.1%	11
California	45.7%	12
Tennessee	41.6%	13
Florida	39.0%	14
Illinois	37.2%	15
Maine	34.9%	16
Texas	33.7%	17
North Carolina	32.2%	18
National	**30.2%**	**-**
Pennsylvania	29.3%	19
Ohio	28.9%	20
Virginia	28.6%	21
Connecticut	28.5%	22
Indiana	28.4%	23
Maryland	27.8%	24
South Carolina	27.6%	25
South Dakota	27.3%	26
Iowa	27.0%	27
North Dakota	26.9%	28
Georgia	26.3%	29
Kentucky	24.4%	30
Michigan	23.0%	31
Nebraska	22.9%	32
Nevada	22.3%	33
New Jersey	21.6%	34
Missouri	20.9%	35
Arkansas	20.7%	36
Rhode Island	19.8%	37
New York	19.4%	38
District of Columbia	19.0%	39
Kansas	18.6%	40
Delaware	18.4%	41
Mississippi	16.8%	42
Montana	16.3%	43
Utah	16.2%	44
Unspecified	13.6%	45
Wyoming	13.3%	46
Puerto Rico	13.2%	47
Alabama	13.0%	48
West Virginia	11.8%	49
Washington	10.5%	50
Hawaii	9.7%	51
Louisiana	3.3%	52
Alaska	1.2%	53
Virgin Islands	0.2%	54

Source: Global Trade Information Services, Inc., Annual Series: 2006 - 2011

Appendix 6 — Standard Occupational Classifications

Standard Occupational Classifications (SOC): High Technology			
SOC	SOC Title	SOC	SOC Title
11-3021	Computer and information systems managers	17-3021	Aerospace engineering and operations technicians
11-9041	Engineering managers	17-3022	Civil engineering technicians
11-9121	Natural sciences managers	17-3023	Electrical and electronic engineering technicians
15-1011	Computer and information scientists, research	17-3024	Electromechanical technicians
15-1021	Computer programmers	17-3025	Environmental engineering technicians
15-1031	Computer software engineers, applications	17-3026	Industrial engineering technicians
15-1032	Computer software engineers, systems software	17-3027	Mechanical engineering technicians
15-1041	Computer support specialists	17-3031	Surveying and mapping technicians
15-1051	Computer systems analysts	19-1011	Animal scientists
15-1061	Database administrators	19-1012	Food scientists and technologists
15-1071	Network and computer systems administrators	19-1013	Soil and plant scientists
15-1081	Network systems and data communications analysts	19-1021	Biochemists and biophysicists
15-2011	Actuaries	19-1022	Microbiologists
15-2021	Mathematicians	19-1023	Zoologists and wildlife biologists
15-2031	Operations research analysts	19-1031	Conservation scientists
15-2041	Statisticians	19-1032	Foresters
15-2091	Mathematical technicians	19-1041	Epidemiologists
17-2011	Aerospace engineers	19-1042	Medical scientists, except epidemiologists
17-2021	Agricultural engineers	19-2011	Astronomers
17-2031	Biomedical engineers	19-2012	Physicists
17-2041	Chemical engineers	19-2021	Atmospheric and space scientists
17-2051	Civil engineers	19-2031	Chemists
17-2061	Computer hardware engineers	19-2032	Materials scientists
17-2071	Electrical engineers	19-2041	Environmental scientists and specialists, including health
17-2072	Electronics engineers, except computer	19-2042	Geoscientists, except hydrologists and geographers
17-2081	Environmental engineers	19-2043	Hydrologists
17-2111	Health and safety engineers, except mining safety engineers and inspectors	19-4011	Agricultural and food science technicians
17-2112	Industrial engineers	19-4021	Biological technicians
17-2121	Marine engineers and naval architects	19-4031	Chemical technicians
17-2131	Materials engineers	19-4041	Geological and petroleum technicians
17-2141	Mechanical engineers	19-4051	Nuclear technicians
17-2151	Mining and geological engineers, including mining safety engineers	19-4091	Environmental science and protection technicians, including health
17-2161	Nuclear engineers	19-4092	Forensic science technicians
17-2171	Petroleum engineers	19-4093	Forest and conservation technicians
17-3011	Architectural and civil drafters		
17-3012	Electrical and electronics drafters		
17-3013	Mechanical drafters		

APPENDIX 7 - NAICS: HIGH-TECH TAXONOMY

North American Industry Classification System: High Technology Taxonomy		
Level	**4-Digit NAICS**	**Title**
I	3254	Pharmaceutical and Medicine Manufacturing
I	3341	Computer and Peripheral Equipment Manufacturing
I	3342	Communications Equipment Manufacturing
I	3344	Semiconductor and Other Electronic Component Manufacturing
I	3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing
I	3364	Aerospace Product and Parts Manufacturing
I	5112	Software Publishers
I	5161	Internet Publishing and Broadcasting*
I	5179	Other Telecommunications
I	5181	ISP's and Web Search Portals**
I	5182	Data Processing, Hosting, and Related Services
I	5191	Other Information Services
I	5413	Architectural, Engineering, and Related Services
I	5415	Computer Systems Design and Related Services
I	5417	Scientific Research and Development Services
II	1131	Timber Tract Operations
II	1132	Forest Nurseries and Gathering of Forest Products
II	2111	Oil and Gas Extraction
II	2211	Electric Power Generation, Transmission and Distribution
II	3251	Basic Chemical Manufacturing
II	3252	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing
II	3332	Industrial Machinery Manufacturing
II	3333	Commercial and Service Industry Machinery Manufacturing
II	3343	Audio and Video Equipment Manufacturing
II	3346	Manufacturing and Reproducing Magnetic and Optical Media
II	4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers
II	5416	Management, Scientific, and Technical Consulting Services
III	3241	Petroleum and Coal Products Manufacturing
III	3253	Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing
III	3255	Paint, Coating, and Adhesive Manufacturing
III	3259	Other Chemical Product and Preparation Manufacturing
III	3336	Engine, Turbine, and Power Transmission Equipment Manufacturing
III	3339	Other General Purpose Machinery Manufacturing
III	3353	Electrical Equipment Manufacturing
III	3369	Other Transportation Equipment Manufacturing
III	4861	Pipeline Transportation of Crude Oil
III	4862	Pipeline Transportation of Natural Gas
III	4869	Other Pipeline Transportation
III	5171	Wired Telecommunications Carriers
III	5172	Wireless Telecommunications Carriers (except Satellite)
III	5173	Telecommunications Resellers***
III	5174	Satellite Telecommunications
III	5211	Monetary Authorities-Central Bank
III	5232	Securities and Commodity Exchanges
III	5511	Management of Companies and Enterprises
III	5612	Facilities Support Services
III	8112	Electronic and Precision Equipment Repair and Maintenance

* 5161 rolled into 51913 after 2007 NAICS Update

** 5181 rolled into 5191 after 2007 NAICS Update

*** 5173 rolled into 5179 after 2007 NAICS Update