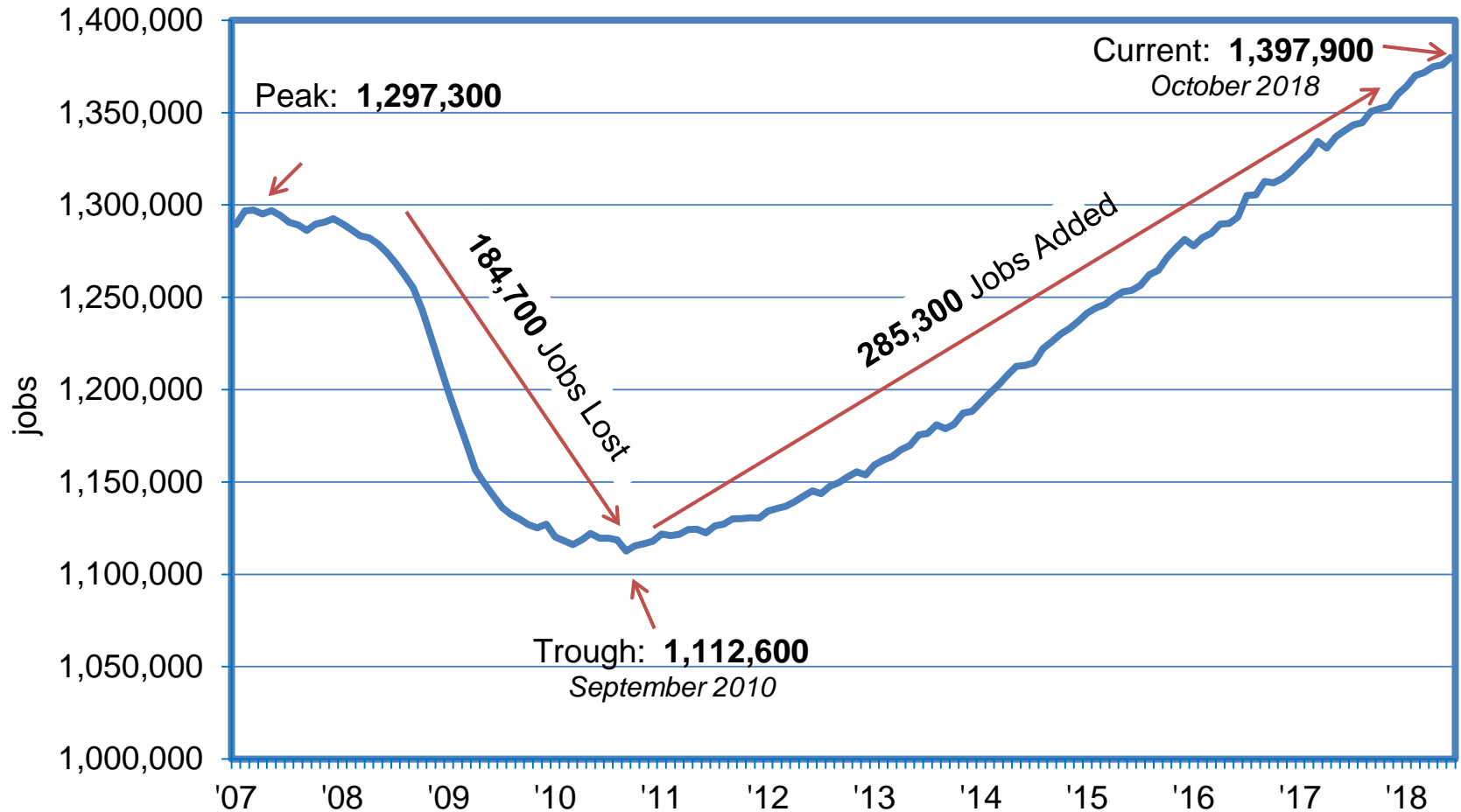# *Aligning Education and Workforce Development in the New Nevada*
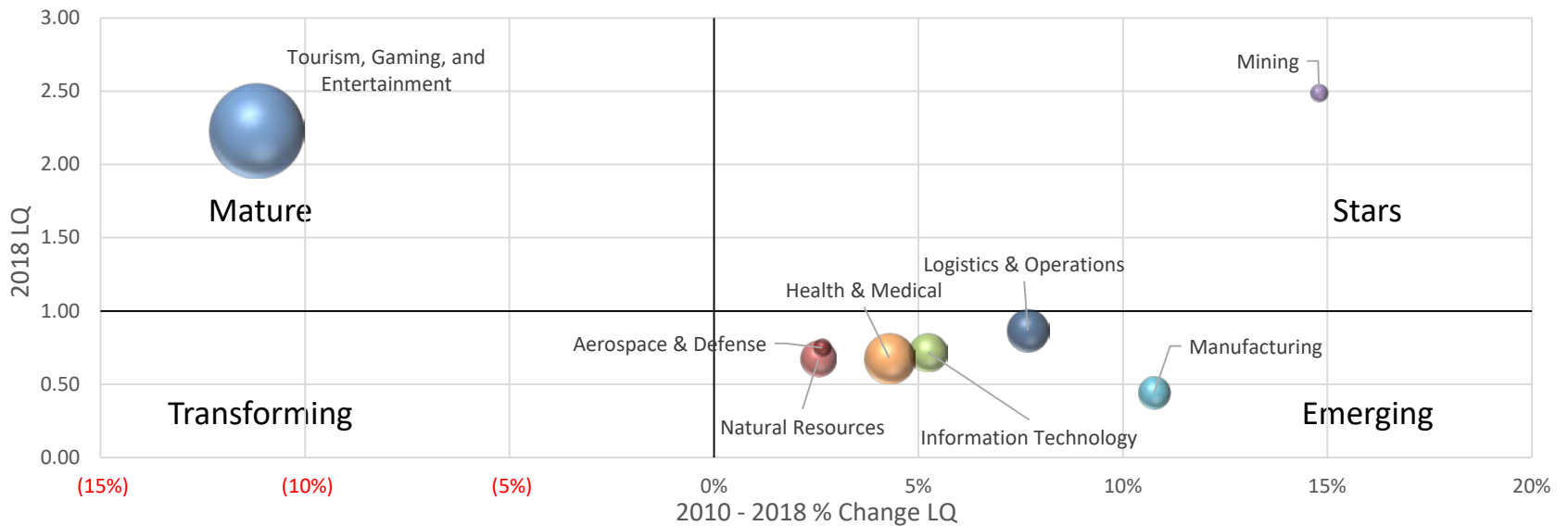
Nevada Governor's Office of
ECONOMIC DEVELOPMENT

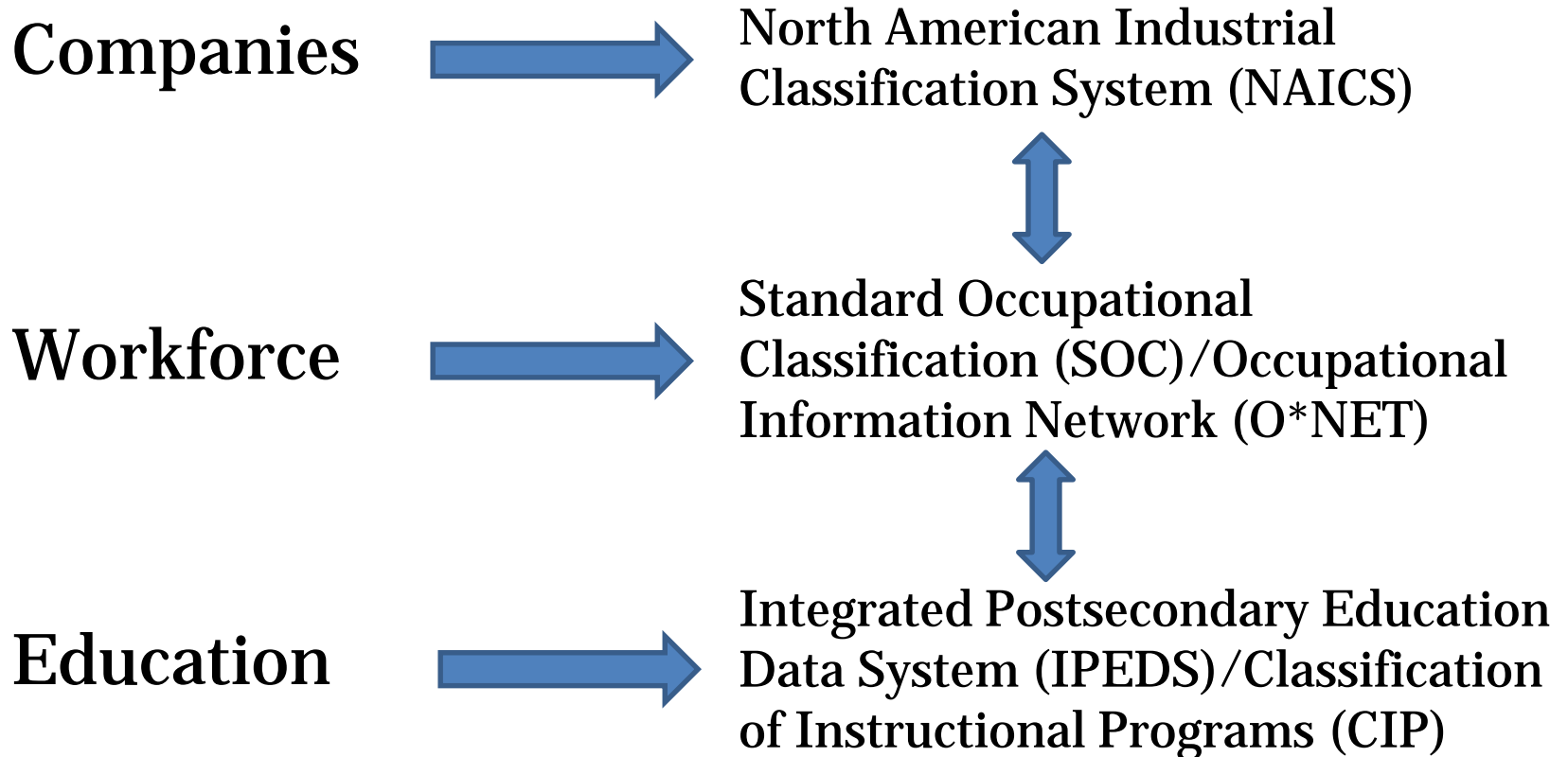# *More Than Eight Years of Consistent Growth Pushes Nevada's Employment to Record Highs*

Peak: **1,297,300**

Current: **1,397,900**
October 2018

184,700 Jobs Lost

285,300 Jobs Added

Trough: **1,112,600**
September 2010

jobs

1,400,000
1,350,000
1,300,000
1,250,000
1,200,000
1,150,000
1,100,000
1,050,000
1,000,000

'07 '08 '09 '10 '11 '12 '13 '14 '15 '16 '17 '18

Nevada's Diversifying Economy

Bubble size represents 2018 jobs in each sector

Sector	2018 Jobs	2010 LQ	2018 LQ	Percent Change LQ
Mining	14,696	2.16	2.48	15%
Manufacturing	50,813	0.40	0.44	11%
Logistics & Operations	86,823	0.81	0.87	8%
Information Technology	70,218	0.68	0.72	5%
Health & Medical	122,143	0.65	0.68	4%
Aerospace & Defense	15,314	0.73	0.75	3%
Natural Resources	61,580	0.65	0.67	3%
Tourism, Gaming, and Entertainment	435,054	2.51	2.23	(11%)

Using Data and Information to Align Economic and Workforce Development

- GOED developed data driven framework to provide guidance to education and workforce development that strategically aligns with the Governors New Nevada plan and economic development priorities.
  - By Target Sector and Region
- Being used by:
  - Career and Technical Education
  - OWINN
    - Sector Councils and GWDB (in-demand occupations and certifications and credentials of value)
    - State Apprenticeship Council
    - Occupational Licensing Consortium
  - Grant funding including OSIT STEM Workforce Challenge Grants and Perkins Grants
  - Lifeworks/New Skills for Youth Grant
  - LVGEA Workforce Blueprint Report
  - EDAWN Workforce Consortium
  - National University
  - NSHE and the Chancellors Workforce Advisory Group

The Economic and Workforce Information and Data Pipeline

Companies → North American Industrial Classification System (NAICS)

Workforce → Standard Occupational Classification (SOC)/Occupational Information Network (O*NET)

Education → Integrated Postsecondary Education Data System (IPEDS)/Classification of Instructional Programs (CIP)

Top 20 High Demand Occupation Groups in the State

Typical Entry Level Education/On-The-Job Training

Bachelor's degree	
Associate's degree/Postsecondary non-degree award	
High school diploma/Postsecondary non-degree award with OJT	
High school diploma/Less than high school with OJT	

Description	Rank	Jobs	Jobs Above or Below National Average	Avg. Hourly Earnings
Health Diagnosing and Treating Practitioners	1	36,880	(9,966)	$48.85
Health Technologists and Technicians	2	19,002	(7,818)	$25.26
Other Production Occupations	3	12,017	(10,889)	$16.83
Construction Trades Workers	4	55,574	6,468	$21.95
Other Installation, Maintenance, and Repair Occupations	5	29,753	2,397	$22.39
Metal Workers and Plastic Workers	6	7,065	(10,112)	$18.07
Engineers	7	6,685	(8,002)	$42.11
Business Operations Specialists	8	30,678	(11,782)	$29.79
Other Management Occupations	9	28,830	(1,475)	$34.88
Computer Occupations	10	18,890	(17,733)	$35.43
Counselors and Social Workers	11	11,839	(6,563)	$23.50
Material Moving Workers	12	39,357	(2,288)	$14.26
Information and Record Clerks	13	55,001	3,514	$15.65
Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	14	15,731	86	$21.84
Preschool, Primary, Secondary, and Special Education School Teachers	15	26,722	(9,775)	$23.95
Drafters, Engineering Technicians, and Mapping Technicians	16	4,880	(1,434)	$27.89
Financial Specialists	17	19,454	(6,639)	$30.34
Life Scientists	18	1,203	(1,421)	$33.89
Art and Design Workers	19	7,086	(139)	$19.53
Textile, Apparel, and Furnishings Workers	20	5,616	(114)	$12.07

Statewide and Regional Rankings

Occupation Description	New State Rank	Southern NV Rank	Northern NV Rank	Northeastern NV Rank
Health Diagnosing and Treating Practitioners	1	1	1	1
Health Technologists and Technicians	2	2	3	4
Other Production Occupations	3	3	2	6
Construction Trades Workers	4	4	4	3
Other Installation, Maintenance, and Repair Occupations	5	5	5	2
Metal Workers and Plastic Workers	6	6	7	9
Engineers	7	7	6	5
Business Operations Specialists	8	8	8	8
Other Management Occupations	9	9	9	7
Computer Occupations	10	10	10	15
Counselors and Social Workers	11	11	11	17
Material Moving Workers	12	13	12	10
Information and Record Clerks	13	12	13	13
Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	14	14	16	14
Preschool, Primary, Secondary, and Special Education School Teachers	15	15	14	21
Drafters, Engineering Technicians, and Mapping Technicians	16	18	15	12
Financial Specialists	17	16	17	24
Life Scientists	18	17	19	16
Art and Design Workers	19	19	20	29
Textile, Apparel, and Furnishings Workers	20	20	22	38
Operations Specialties Managers	21	22	21	20
Material Recording, Scheduling, Dispatching, and Distributing Workers	22	23	18	19
Social Scientists and Related Workers	23	24	31	26
Electrical and Electronic Equipment Mechanics, Installers, and Repairers	24	25	23	23
Extraction Workers	25	26	24	11
Life, Physical, and Social Science Technicians	26	21	30	18
Assemblers and Fabricators	27	28	25	40
Other Office and Administrative Support Workers	28	29	26	30
Other Healthcare Support Occupations	29	27	28	25
Media and Communication Workers	30	30	32	35

Identifying Skills Within NSHE Top 10+1 In-Demand Occupations for Nevada

- Software Developers
- Mechanical Engineers
- Nursing
- Network & Computer Systems Analysts & Administrators
- Industrial Machinery Mechanics

- Industrial Engineers
- Medical & Clinical Laboratory Technologists
- Civil Engineering
- HVAC
- Electrical Engineers
- Teachers

*The Occupational Information Network (O*NET)*

- Overview
    - O*NET Resource Center is sponsored by the U.S. Department of Labor, Employment & Training Administration
    - Central to O*NET is a comprehensive database containing information on hundreds of standardized and occupation-specific descriptors
    - The database is continually updated by surveying a broad range of workers from each occupation
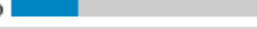
- Anatomy of an occupation (Content Model)
    - The O*NET Content Model describes the unique characteristics of each occupation based on the unique mix of knowledge, skills, and abilities (KSA's) for that occupation
    - KSA's are identified by measurable descriptors that take into account the day-to-day aspects of each occupation and the qualifications and interests of the typical worker

- Based on the Standard Occupational Classification (SOC) taxonomy
- Real-world information is collected from job incumbents and occupation experts on 974 occupations to keep up with the changing occupational landscape

An Example: Application Software Developers

O*NET Occupation	Median Hourly Earnings	2010 Jobs	2018 Jobs	2010-2018 Change	Compatibility Index
Database Architects (15-1199.06)	$32.28	1,482	3,004	1,522	95
Computer Systems Analysts (15-1121.00)	$39.26	1,931	2,166	235	95
Computer Systems Engineers/Architects (15-1199.02)	$32.28	1,482	3,004	1,522	94
Software Quality Assurance Engineers and Testers (15-1199.01)	$32.28	1,482	3,004	1,522	93
Web Developers (15-1134.00)	$22.46	712	1,072	360	93
Data Warehousing Specialists (15-1199.07)	$32.28	1,482	3,004	1,522	92
Database Administrators (15-1141.00)	$41.25	554	697	143	91
Computer Programmers (15-1131.00)	$35.08	2,095	1,709	-386	91
Computer Network Architects (15-1143.00)	$49.90	506	771	265	91
Web Administrators (15-1199.03)	$32.28	1,482	3,004	1,522	90

Top 15 Application Software Developer Knowledge Competency Descriptors

	Knowledge	Importance
96	Computers and Electronics	99
75	Engineering and Technology	76
71	Mathematics	65
62	English Language	69
60	Design	58
50	Customer and Personal Service	51
47	Telecommunications	45
44	Administration and Management	38
40	Education and Training	29
26	Personnel and Human Resources	20
26	Communications and Media	29
24	Sales and Marketing	17
21	Psychology	9
18	Law and Government	16
15	Geography	14

Top 15 Application Software Developer Skill Competency Descriptors

	Skill	Importance
68	Programming	75
64	Systems Evaluation	72
61	Systems Analysis	72
61	Troubleshooting	47
59	Judgment and Decision Making	69
59	Complex Problem Solving	66
57	Critical Thinking	66
55	Reading Comprehension	53
54	Speaking	56
54	Mathematics	47
54	Operations Analysis	63
54	Monitoring	50
54	Active Listening	53
52	Active Learning	50
52	Technology Design	50

Top 15 Application Software Developer Ability Competency Descriptors

	Ability	Importance
59	Oral Comprehension	56
57	Oral Expression	66
57	Near Vision	69
57	Problem Sensitivity	72
57	Inductive Reasoning	72
57	Deductive Reasoning	72
57	Written Comprehension	60
57	Mathematical Reasoning	60
55	Written Expression	53
55	Information Ordering	69
55	Fluency of Ideas	66
55	Originality	56
55	Category Flexibility	63
52	Number Facility	50
46	Speech Recognition	53

Business IT Ecosystems Top 25 In-Demand Occupations

Description	Sector Council Adjusted Rank	Jobs	Jobs Above or Below National Average	Avg. Hourly Earnings
Software Developers, Applications	1	1,518	(2,524)	$43.01
Computer Systems Analysts	2	777	(1,177)	$38.29
Network and Computer Systems Administrators	3	419	(494)	$37.23
Software Developers, Systems Software	4	531	(1,272)	$40.25
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	5	228	(274)	$36.41
Electrical Engineers	6	76	(86)	$42.21
Business Operations Specialists, All Other	7	600	(214)	$28.77
Computer User Support Specialists	8	1,414	(812)	$23.16
Engineers, All Other	9	73	(50)	$44.56
Computer Network Architects	10	262	(353)	$44.62
Compliance Officers	11	113	(23)	$29.57
Managers, All Other	12	534	111	$32.26
Operations Research Analysts	13	74	(102)	$36.20
Web Developers	14	555	(192)	$24.05
Management Analysts	15	420	(256)	$31.12
Sales Engineers	16	117	(99)	$48.47
Computer and Information Systems Managers	17	451	(475)	$53.62
Information Security Analysts	18	161	(148)	$36.60
Computer Hardware Engineers	19	92	(202)	$39.07
Computer Occupations, All Other	20	609	2	$30.89
Computer Network Support Specialists	21	425	(309)	$28.53
Computer Programmers	22	1,055	(269)	$36.98
Database Administrators	23	216	(74)	$36.44
Computer, Automated Teller, and Office Machine Repairers	24	136	12	$17.52
Computer Operators	25	90	(25)	$20.84

Aggregated Skills for Top 25 In-Demand Information Technologies Occupations

Skills	Importance		Skills	Importance
Critical Thinking	71		Mathematics	46
Active Listening	69		Programming	44
Reading Comprehension	69		Operations Analysis	44
Speaking	65		Negotiation	44
Complex Problem Solving	64		Management of Personnel Resources	43
Judgment and Decision Making	62		Quality Control Analysis	42
Writing	62		Operation Monitoring	41
Active Learning	58		Troubleshooting	34
Systems Analysis	58		Technology Design	32
Monitoring	58		Science	29
Systems Evaluation	54		Management of Material Resources	27
Coordination	54		Management of Financial Resources	26
Social Perceptiveness	54		Operation and Control	23
Time Management	53		Equipment Selection	21
Persuasion	49		Repairing	15
Service Orientation	48		Equipment Maintenance	15
Instructing	47		Installation	14
Learning Strategies	46			

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