



NJ Construction Outlook/Best Practices in Workforce Development

Presented to the Associated Builders & Contractors of NJ
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Workforce Trends

New Jersey construction employment will increase 10% between 2004 and 2014

- **Top challenge:**

Fill nearly 18,000 new job openings in the New Jersey construction industry by 2014

- Must address mismatch between skill needs of employers...and skills of job seekers
- Special need to address high-growth jobs, such as Building Equipment Contractors (up 15+%)

Table 1. State of New Jersey Employment Estimates and Projections for Selected NAICS Industries

NAICS	NAICS Title	Employment 2004	Employment 2014	Change: 2004-2014		
				Number	Annual Rate	Total Percent
000000	Total Nonfarm	3,999,100	4,403,200	404,100	1.0	10.1
230000	Construction	165,900	183,600	17,700	1.0	10.6
236000	Construction of Buildings	39,700	43,200	3,500	0.9	8.9
236100	Residential building construction	26,700	28,600	1,900	0.7	7.2
237000	Heavy and Civil Engineering	17,500	18,900	1,400	0.8	8.2
238000	Specialty Trade Contractors	108,600	121,400	12,800	1.1	11.8
238200	Building Equipment Contractors	53,000	61,300	8,300	1.5	15.7

Note: Employment data are rounded to the nearest hundred.
 Percentages and percent changes are based on unrounded data.

Prepared by: New Jersey Department of Labor and Workforce Development
 Labor Market and Demographic Research
 Occupational and Demographic Research
 May 2006

Workforce Trends

- Residential Construction in NJ:
Annual job growth exceeds 5%
2004-2006
- Outpaces growth in Building Construction, Heavy/Civil Engineering, and Specialty Trade Contractors
- Job growth for Building Equipment Contractors also positive since 2004



Table 2. Employment in the Construction Industry in New Jersey, 1996-2005

	NAICS CODE: 23													
	Total Nonfarm Employment		Total Construction Industry Employment		236 Construction of Buildings		2361 Residential Building Construction		237 Heavy and Civil Engineering		238 Specialty Trade Contractors		2382 Building Equipment Contractors	
	Employment (1,000's)	Annual Change	Employment (1,000's)	Annual Change	Employment (1,000's)	Annual Change	Employment (1,000's)	Annual Change	Employment (1,000's)	Annual Change	Employment (1,000's)	Annual Change	Employment (1,000's)	Annual Change
1996	3,638.9		125.0		29.6				15.2		80.1		39.2	
1997	3,724.5	2.4%	131.7	5.4%	30.7	3.7%			15.8	3.9%	85.2	6.4%	40.9	4.3%
1998	3,801.2	2.1%	136.1	3.3%	31.5	2.6%			15.5	-1.9%	89.0	4.5%	42.8	4.6%
1999	3,901.1	2.6%	143.5	5.4%	32.4	2.9%			16.1	3.9%	95.0	6.7%	46.0	7.5%
2000	3,994.5	2.4%	149.5	4.2%	33.6	3.7%			17.1	6.2%	98.8	4.0%	48.6	5.7%
2001	3,997.1	0.1%	158.7	6.2%	35.1	4.5%			18.6	8.8%	104.9	6.2%	52.1	7.2%
2002	3,983.9	-0.3%	162.6	2.5%	36.6	4.3%			18.8	1.1%	107.2	2.2%	53.1	1.9%
2003	3,978.8	-0.1%	160.5	-1.3%	37.6	2.7%	25.3		17.3	-8.0%	105.6	-1.5%	52.1	-1.9%
2004	3,999.1	0.5%	165.9	3.4%	39.7	5.6%	26.7	5.5%	17.5	1.2%	108.6	2.8%	53.0	1.7%
2005	4,043.2	1.1%	168.7	1.7%	41.3	4.0%	28.3	6.0%	17.1	-2.3%	110.3	1.6%	53.4	0.8%
2006 (prelim)	4,077.7	0.9%	171.7	1.8%	42.7	3.4%	30.5	7.7%	16.75	-2.0%	112.2	1.7%	54.2	1.5%
Average Annual Growth		1.1%		3.2%		3.7%		6.4%		1.0%		3.4%		3.3%

Source: Bureau of Labor Statistics, Current Employment Statistics

Workforce Trends

High-Demand Construction Jobs
(2004-2014) include:

- Carpenters 3,600
- Electricians 2,500
- Plumbers/Pipefitters 2,150
- Painters/Maintenance 1,150



Table 3. Employment Estimates and Projections by Selected Detail Occupation, 2004 and 2014 - New Jersey Occupations with 1,000 or more New Jersey Employment

SOC Code	Occupational Title	2004		2014		Change:2004-2014		Annual Average Job Openings			Education/Training Requirements
		Number	Percent	Number	Percent	Number	Percent	Total	Growth	Replacement	
00-0000	Total, All Occupations	4,321,650	100.0%	4,732,600	100.0%	411,000	9.5%	149,540	48,150	101,390	
47-0000	Construction and Extraction Occupations	180,100	4.2%	198,100	4.2%	18,050	10.0%	5,390	1,810	3,580	
47-1000	Supervisors, Construction and Extraction Workers	17,900	0.4%	19,500	0.4%	1,650	9.2%	470	160	300	
47-1011	First-Line Supervisors/Managers of Construction Trades and Extraction Workers	17,900		19,500	0.4%	1,650	9.2%	470	160	300	Work experience in a related occupation
47-2000	Construction Trades Workers	135,100	3.1%	148,700	3.1%	13,600	10.1%	3,850	1,360	2,490	
47-2031	Carpenters	33,300		36,900		3,600	10.7%	900	360	540	Long-term on-the-job training
47-2111	Electricians	20,150		22,700		2,500	12.5%	650	250	400	Long-term on-the-job training
47-2061	Construction Laborers	17,700		18,100		400	2.2%	270	40	240	Moderate-term on-the-job training
47-2152	Plumbers, Pipefitters, and Steamfitters	13,250		15,400		2,150	16.3%	520	220	310	Long-term on-the-job training
47-2141	Painters, Construction and Maintenance	10,650		11,800		1,150	10.7%	280	120	160	Moderate-term on-the-job training
47-2073	Operating Engineers and Other Construction Equipment Operators	7,150		7,850		750	10.3%	260	70	180	Moderate-term on-the-job training
47-2021	Brickmasons and Blockmasons	5,300		5,700		400	7.4%	120	40	80	Long-term on-the-job training
47-2211	Sheet Metal Workers	4,500		5,000		450	10.1%	160	50	110	Long-term on-the-job training
47-2051	Cement Masons and Concrete Finishers	3,000		3,350		350	11.8%	100	40	60	Moderate-term on-the-job training
47-2181	Roofers	2,800		3,100		300	11.1%	100	30	70	Moderate-term on-the-job training
47-2081	Drywall and Ceiling Tile Installers	2,050		2,200		150	6.9%	60	10	40	Moderate-term on-the-job training
47-2221	Structural Iron and Steel Workers	2,000		2,200		150	8.5%	60	20	40	Long-term on-the-job training
47-2041	Carpet Installers	1,900		2,050		100	5.8%	40	10	30	Moderate-term on-the-job training
47-2131	Insulation Workers, Floor, Ceiling, and Wall	1,450		1,450		0	1.4%	50	0	40	Moderate-term on-the-job training
47-2151	Pipelayers	1,450		1,600		150	9.5%	50	10	30	Moderate-term on-the-job training
47-2121	Glaziers	1,400		1,500		100	7.8%	40	10	30	Long-term on-the-job training
47-2071	Paving, Surfacing, and Tamping Equipment Operators	1,300		1,550		250	18.7%	40	20	20	Moderate-term on-the-job training
47-2161	Plasterers and Stucco Masons	1,100		1,200		100	8.0%	30	10	20	Long-term on-the-job training
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	1,000		1,050		100	7.8%	20	10	20	Moderate-term on-the-job training
47-3000	Helpers, Construction Trades	11,900	0.3%	12,950	0.3%	1,050	9.0%	610	110	490	
47-3012	Helpers-Carpenters	3,450		3,850		400	11.0%	180	40	140	Short-term on-the-job training
47-3013	Helpers-Electricians	2,450		2,550		100	4.2%	110	10	100	Short-term on-the-job training
47-3011	Helpers-Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	2,050		2,250		200	10.2%	110	20	80	Short-term on-the-job training
47-3015	Helpers-Pipelayers, Plumbers, Pipefitters, and Steamfitters	1,950		2,250		350	17.0%	110	30	80	Short-term on-the-job training
47-3019	Helpers, Construction Trades, All Other	1,050		1,050		-50	-3.5%	40	0	40	Short-term on-the-job training
47-4000	Other Construction and Related Workers	14,200	0.3%	15,850	0.3%	1,650	11.5%	440	170	270	
47-4051	Highway Maintenance Workers	5,800		6,450		650	11.5%	150	70	80	Moderate-term on-the-job training
47-4011	Construction and Building Inspectors	4,300		4,800		500	11.9%	150	50	100	Work experience in a related occupation
47-4041	Hazardous Materials Removal Workers	1,300		1,500		250	17.9%	60	20	30	Moderate-term on-the-job training
47-4099	Construction and Related Workers, All Other	1,000		1,000		0	0.5%	20	0	20	Moderate-term on-the-job training
47-5000	Extraction Workers	1,000	0.0%	1,100	0.0%	100	7.8%	30	10	20	

* Average Annual New Jobs will not equal annualized "Employment Change" since , for declining occupations , new jobs are tabulated as zero since no net job growth is projected, while the employment change is based solely on the difference between 2004 and 2014 employment totals.

Prepared by: New Jersey Department of Labor and Workforce Development
Labor Market and Demographic Research
Occupational and Demographic Research
May 2006

Note: Occupational data include estimates of self-employed and unpaid family workers and are not directly comparable to the industry employment total. Totals may not add due to rounding. Employment data are rounded to the nearest fifty and job openings are rounded to the nearest ten. Percentages and percent changes are based on unrounded data.

Other Workforce Challenges

- Skill requirements are increasing...and changing rapidly
- Absence of a regular “pipeline” for new talent
- School/Parent bias toward four-year college option...overlooking promising apprenticeships/career paths in construction
- Aging incumbent workforce
- Loss of institutional knowledge as veteran workers retire



Workforce Development = Economic Development



A skilled workforce is essential to the economic future of ABC member companies...BUT...

Young adults lack accurate, accessible, and easy-to-understand information about workplace **skills**

Such information is also needed by parents, teachers, and counselors

Underemployed workers, current employees, and displaced job seekers also lack up-to-date information

3 Key Elements for Success

- 1) **RESEARCH** specific skill needs & work trends affecting key industries (*Ready for the Job*)
- 2) Share career information widely through an affordable, easy-to-understand **HIGH-TECH** Web-based system (*www. NJNextStop.org*)
- 3) Build **HIGH-TOUCH** business-education partnerships to inform students, parents, teachers, & school counselors; align curricula with employer needs (*Career Connections*)

Ready for the Job

Industries Covered by the Research

Reports on the workforce and
emerging skill needs of
11 industries:

Construction

Information Technology

Manufacturing

Transportation/Logistics

Retail

Public Health/Emergency Preparedness

Finance

Health Care

Tourism/Hospitality

Utilities/Infrastructure

Port-Related Industries



Ready for the Job

Cross-Industry Skills



Math & Technology Skills

Communications & Teamwork

Problem Solving & Critical Thinking

Entrepreneurship & Business Skills

Ready for the Job

Cross-Industry Skills

- Language/Literacy skills...with more bilingual employees
- Specific “technical literacy” within your industry
- Computer literacy/keyboard ability
- Attitude/employability/ diversity skills

Ready for the Job

Construction Occupations

Key Skills

- Laborers
- Iron & Steel Workers
- Carpenters
- Electricians
- Plumbers/Pipefitters
- Brick/Blockmasons
- Cost Estimators
- Construction Managers
- Installation/Repair
- Problem Solving
- Operation & Control
- Equipment Selection
- Math/Engineering
- Systems Evaluation
- Communications
- Critical Thinking
- Teamwork

Ready for the Job

Construction Occupations

Identify:

- Industry's high-demand jobs and skill areas.
- CORE skills common to most high-demand jobs.
- SPECIFIC skills critical to particular jobs.
- Critical terms that represent "basic literacy" for workers in your industry.
- Career paths that show that lower-paid entry-level jobs can lead to higher wages and benefits.
- Similar skill sets in other industries.



new jersey

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www.NJNextStop.org



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Put Yourself in Demand

- Focus Industry
- construction
 - finance
 - manufacturing
 - utilities/infrastructure
 - transportation and logistics
 - information technology
 - health care
 - tourism
 - emerging industries

Welcome!

You demand great things for yourself. And as candidates for tomorrow's work force, employers will demand great things from you. Want to know the skills you'll need to succeed in leading New Jersey industries? Then you have made an essential stop along your path of career prep.


At njnextstop.org, find out what New Jersey's employers are saying about jobs and careers growing right here in the Garden State. Get vital details about industries, types of jobs, and the cutting-edge career paths that combine many of your talents.

[learn more](#)



Real People

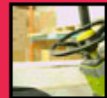
Name: Stephanie Clemente
Education: Immaculata High School
HomeTown: Somerville
Occupation: Nurse in Training



Lifeline

Hop on a Forklift And Dig Into Your Future

Job prospects in the building trades look good, even if you would rather spin a test tube than a cement mixer. Angelos Tofiles of



new jersey Next Stop...Your Career

Put Yourself In Demand

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Focus Industry

- construction
- finance
- manufacturing
- utilities/infrastructure
- transportation and logistics
- information technology
- health care
- tourism
- emerging industries
- what's new
- read the full reports

Register with NJ Next Stop

Email:

Occupation: First-Line Supervisor/Managers of Mechanics, Installers, and Repairers

Summary

Industry : [Utilities/Infrastructure](#)
Career Path: [Management/Supervision](#)

These are the go-to guys or girls. First-line supervisors of mechanics, installers and repairers oversee and coordinate the work of front-line skilled and trade workers. They also manage work sites to make sure that work methods and procedures are kept on schedule and within budget. First-line supervisors also coordinate personnel actions for mechanics, installers and repairers such as training, performance evaluations, promotions, transfers and disciplinary measures. Often, first-line supervisors must work with union representatives to solve problems and coordinate work activities. Workers in this category also conduct pre-job research on a work site to detect environmental hazards. First-line supervisors must interpret blueprints and job orders and inspect completed work to make sure it conforms to standards.

First-line supervisors need sharp business and accounting skills to monitor project budgets. They must also be able to communicate well and to convey accurate information to labor and skilled workers, union representatives and multiple project partners. These workers must also have a thorough understanding of

At A Glance

Mean Annual Wages	\$59,210
Est. Number Employed 2002	12,700
Proj. Number Employed 2012	14,000
Percent Change 2002-2012	10.1%
Annual Openings	450

Required Degree

High school diploma

Preferred Degree

Bachelor's - Business Management, Engineering

Required Credential

2-4 years on-the-job experience

Other Jobs in the Career Path

- [Construction Managers](#)
- [First-Line Supervisors and Managers - Construction Trades and Extraction Workers](#)
- [Computer and Information](#)

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Search

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New Jersey Next Stop

Occupation Quick Search

To search for an occupation please select from the criteria below.

Industry: Construction Career Path: All Education Level: All

Search

10 Records Returned

Occupation	Industry	Career Path	Education	Average Salary	Occupation Growth
Construction Managers	Construction	Management/Supervision	Bachelor's Degree or Higher Required	\$84,560	10.3%
First-Line Supervisors and Managers - Construction Trades and Extraction Workers	Construction	Management/Supervision	Bachelor's Degree or Higher Required	\$62,380	7.3%
Structural Iron and Steel Workers	Construction	Labor and Skilled Trade	Some Training or Education Required After High School	\$59,515	11.5%
Cost Estimators	Construction	Analytical Work	Bachelor's Degree or Higher Required	\$56,060	13.8%
Electricians	Construction	Labor and Skilled Trade	Some Training or Education Required After High School	\$52,420	12.1%
Brick Masons and Block Masons	Construction	Labor and Skilled Trade	Some Training or Education Required After High School	\$50,535	9.1%

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Focus Industry

- construction
- finance
- manufacturing
- utilities/infrastructure
- transportation and logistics
- information technology
- health care
- tourism
- emerging industries
- read the full reports

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Focus Industry

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Construction

Summary

Forget baseball caps and bandanas. Hard hats are the headgear of choice around New Jersey these days. New Jersey's construction industry is thriving, injecting billions of dollars in economic activity into the state. We're talking about an industry that employed more than 164,000 workers in 2003. Future job opportunities in this industry are promising, as the demand for construction services is expected to grow. The current boom is due in part to large public investments, particularly the New Jersey School Construction Program, which has been valued at \$8.6 billion over the next ten years. That buys a whole lot of chalk.

Jobs in the construction area fall into three primary career paths. The Labor and Skilled Trade career path includes such jobs as carpenters, electricians, plumbers, masons, steel and iron workers, and laborers. The Analytical career path includes cost estimators, while the Management/Supervision career path includes construction managers and first-line supervisors. New Jersey employers hope to see several qualities in their construction workers, including math skills, occupational safety skills and the ability to work as a team to complete a complex construction job. As with most industries, construction work is kicking it up a notch technologically, which requires that construction workers adapt and upgrade their skills.

Industry News
click

Career Paths & Key Occupations

Career Paths

- [Analytical Work](#)
- [Management/Supervision](#)
- [Labor and Skilled Trade](#)

Occupations

- [Brick Masons and Block Masons](#)
- [Construction Laborers](#)
- [Construction Managers](#)
- [Cost Estimators](#)
- [Electricians](#)
- [First-Line Supervisors and Managers - Construction Trades and Extraction Workers](#)
- [Plumbers](#)
- [Operating Engineers](#)
- [Construction Carpenters](#)
- [Structural Iron and Steel Workers](#)

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New Jersey Next Stop

emerging industries

read the full reports

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At-A-Glance

Below is a quick statistical overview of the Construction industry.

New Jersey Statistics

	Building Construction	Heavy Construction	Special Trade Contractors
Number employed (2003)	34,420	19,040	110,830
Average Weekly Earnings (2003)	\$929	\$988	\$899
Projected Growth in Employment from 2000-2010	6.5%	11.9%	9%

Top Construction Management Firms

1. Washington Group International Princeton, NJ	2. Foster Wheeler Clinton, NJ
3. Skanska USA Building Parsippany, NJ	4. Conti Enterprises South Plainfield, NJ
5. Burns and Roe Group Oradell, NJ	6. Edwards and Kelcey Morristown, NJ
7. Raimondo Construction Fort Lee, NJ	8. Bovis Lend Lease Princeton, NJ
9. EPIC Management Piscataway, NJ	10. Damon G. Douglas Cranford, NJ

Ranking Criteria

The list ranks the top New Jersey-based companies with the following ranking criteria

- N.J. Employees

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High-TECH Outreach

- *SKILL WEB SITE* O*NET online.onetcenter.org
Detailed skill profiles for numerous construction jobs
- *INDUSTRY WEB SITE* GettingIntoEnergy.com
Example of how an industry can use cutting-edge video presentations to create excitement about jobs it offers young people (produced by KidzOnline)
- *STATE/REGIONAL WEB SITE* www.nycareerzone.org
Targeted geographic area

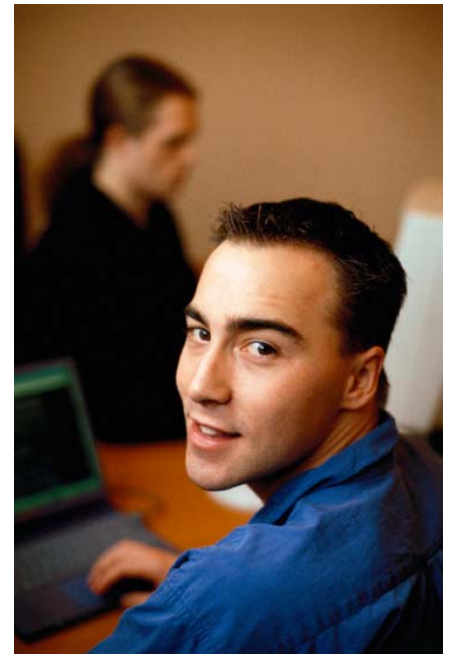
Career Connections High-TOUCH Outreach

A Steering Committee of top business and education groups convened to:

Educate students, parents, teachers, and school counselors about career options;

Showcase successful business/education partnerships; and

Promote the use of online career information resources.



Career Connections

Keys to Successful Partnerships

Employer-led, with focus on industry needs

Identify specific skills and credentials

Link required skills to curricula

Offer “real world” work experience

Reach out to high schools, even for advanced jobs

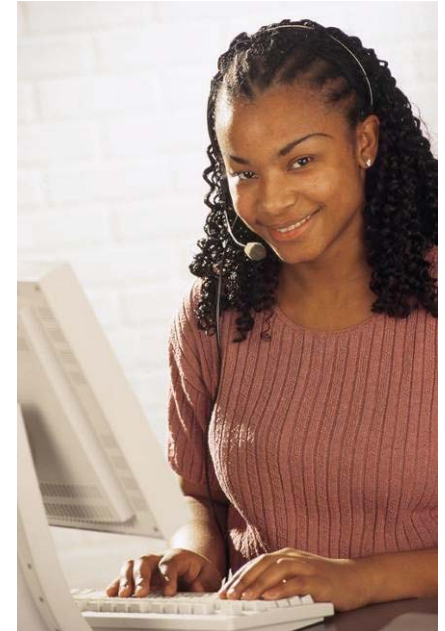
Evaluate and make improvements



Career Connections Successful Partnerships

Potential Partners

- High schools-Teachers, Counselors, PTOs
- Vocational-Technical schools
- Community Colleges
- Workforce Investment Boards
- Industry Associations/Chambers of Commerce
- Faith-based organizations/Nonprofits



Best Practices

GOAL = Industry-led Solutions
Regional Implementation

Develop a common **CORE industry curriculum** so that small employers can share the expense of local training

Capture **institutional knowledge** from older workers prior to retirement

Pair **employees nearing retirement** with new hires / apprentices

Train **“Near Misses”** -- job candidates who come close to passing the company’s entry-level skills test



Best Practices

- Define multiple **Career Pathways** that build upon the industry's core skills
- Expand incumbent worker training to include **non-technical skills**:
Leadership, Communications / Writing, Customer Service and Problem Solving
- Recruit from **non-traditional sources**, such as people with disabilities
- Recruit from the **military** via state Transition Assistance Programs at www.dol.gov/vets, www.hirevetsfirst.gov, and "At Your Service" -- www.dodtransportal.dod.mil

Best Practices

- **Promote updated industry image** as one **which** is cool, modern, interesting, challenging and “makes a difference”
- **Host annual High School briefing & hands-on tours** for region’s best vocational-technical Jr/Sr students with faculty partners, demonstrating the latest technology and projects
- **Offer Summer Student Internship** to shadow best workers in high-demand jobs

Best Practices

- **Create model Career Academy** within local high school, using other industry examples (See *The Career Academy Toolkit* by Sandy Mittelsteadt at www.acteonline.org)
- Create **customized Supervisory Training** for workers promoted from within
- Create **industry-wide online career resource** similar to www.GetIntoEnergy.com (utilities)

Best Practices

- **Promote a local talent “pipeline”** linking high schools, vo-tech, and community colleges through articulation agreements

Utilities – Mercer County College (NJ)/ Trenton High

Health Care – Union County Vo-Tech (NJ) / Union County College / Rutgers University

- **Educate policymakers** about how the failure to meet your workforce needs will impact OTHER industry sectors
- **Establish a permanent state industry advisory board,** as part of an ongoing Economic Development strategy



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