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## LMI REPORT

Examine **the labor market of San Bernardino County** and its interactions with local industries.

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## UCR ENGAGEMENT

- Identify **policy recommendations** based on findings
- Provide a research framework as a foundation for **an ongoing conversation** among the workforce development ecosystem actors.

Educational  
Attainment  
Highlight

SHARE OF SAN BERNARDINO COUNTY RESIDENTS WITH BACHELOR’S DEGREE OR HIGHER  
BY GEOGRAPHY

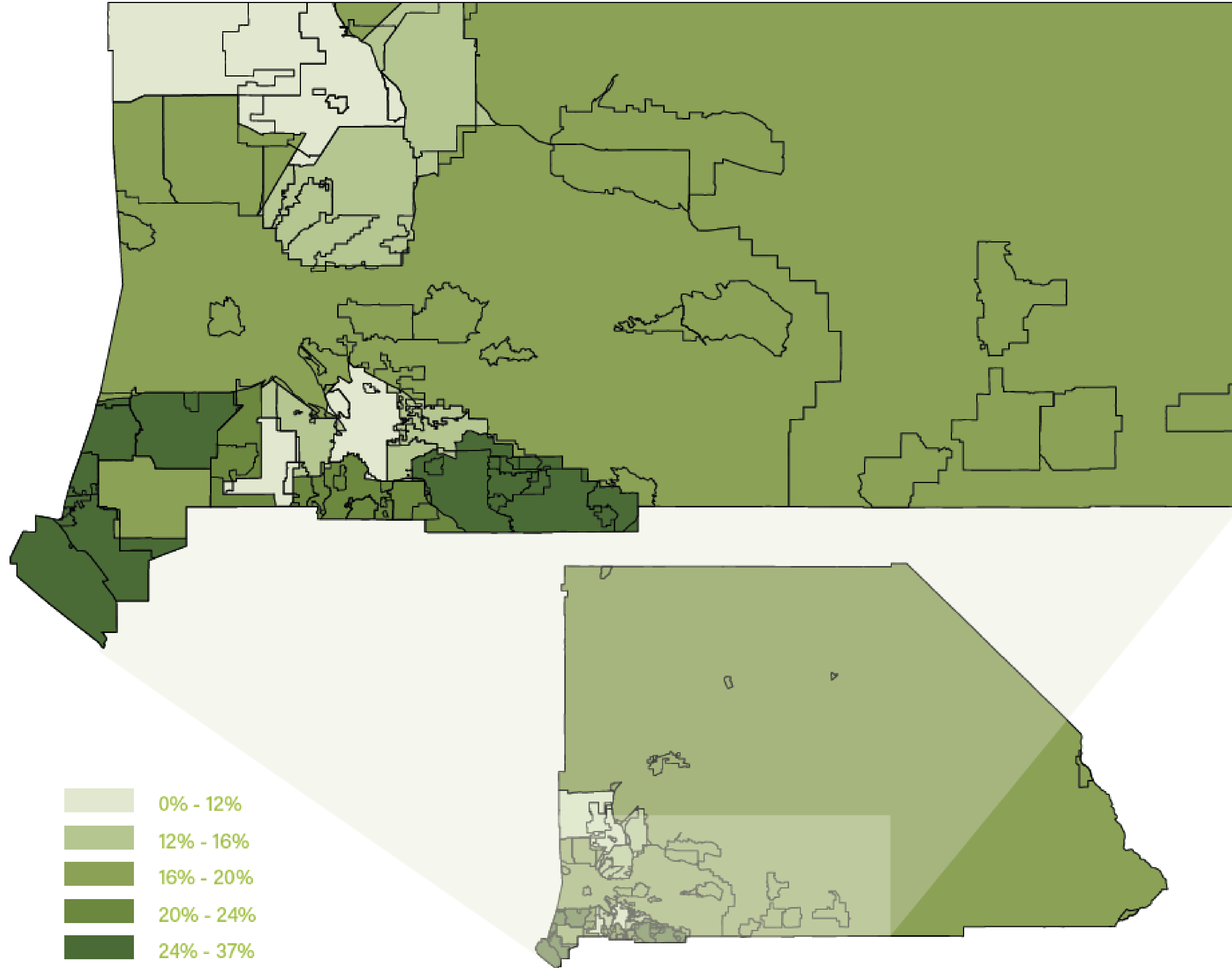
	Less than HS	HS/GED	Some College	Bachelor's Degree	Graduate Degree
CHINO, ONTARIO, RANCHO CUCAMONGA, & UPLAND	16.4	21.5	34.1	18.8	9.1
CITY OF SAN BERNARDINO	31.8	27.2	29.0	8.8	3.2
FONTANA & RIALTO	25.9	29.4	28.4	11.7	4.6
LOMA LINDA, REDLANDS, & YUCAIPA	16.5	21.8	30.4	18.7	12.8
TWENTYNINE PALMS, VICTORVILLE, HESPERIA, & LAKE ARROWHEAD	17.0	30.2	37.9	9.6	5.3
SAN BERNARDINO COUNTY TOTAL	20.1	25.9	33.1	13.8	7.1
LOS ANGELES	20.5	20.7	26.6	21.1	11.1
ORANGE	15.0	17.5	27.0	25.9	14.6
RIVERSIDE	17.5	27.8	32.6	14.4	7.7
CALIFORNIA	16.6	20.7	29.0	21.1	12.6

Source: U.S. Census Bureau, ACS 1-Year PUMS; Analysis by UCR Forecast Center

Source: U.S. Census Bureau, ACS 1-Year PUMS; Analysis by UCR Forecast Center

# Educational Attainment Highlight

PERCENT WITH BACHELOR'S DEGREE  
OR HIGHER



# Cost of Living Highlight

## MEDIAN HOME PRICE BY COUNTY

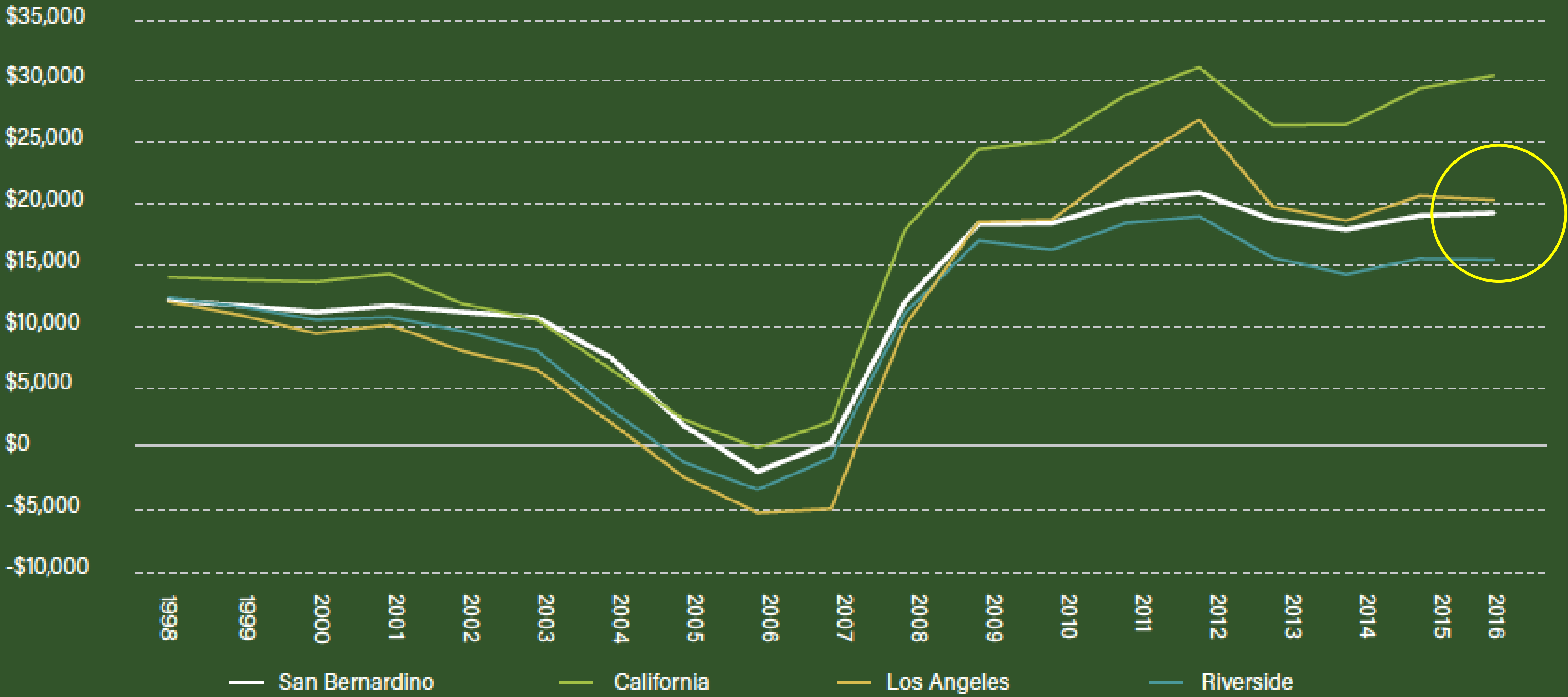
County	Median Home Price	Monthly Mortgage Payment	Property Tax	Annual Cost of Ownership	Real Annual Cost	Wage Share of Cost (%)	Ave. Annual Wage
Los Angeles	614,832	3,036	6,148	42,583	40,502	66.0	64,564
Orange	774,292	3,824	7,743	53,627	51,006	85.5	62,732
Riverside	378,865	1,871	3,789	26,240	24,958	58.2	45,050
San Bernardino	304,895	1,506	3,049	21,117	20,085	44.7	47,212
San Diego	597,377	2,950	5,974	41,374	39,352	66.6	62,146
Ventura	623,979	3,081	6,240	43,217	41,104	79.6	54,322

Source: Core Logic, U.S. Bureau of Labor Statistics; Analysis by UCR Forecast Center

# Cost of Living Highlight

## DISPOSABLE INCOME:

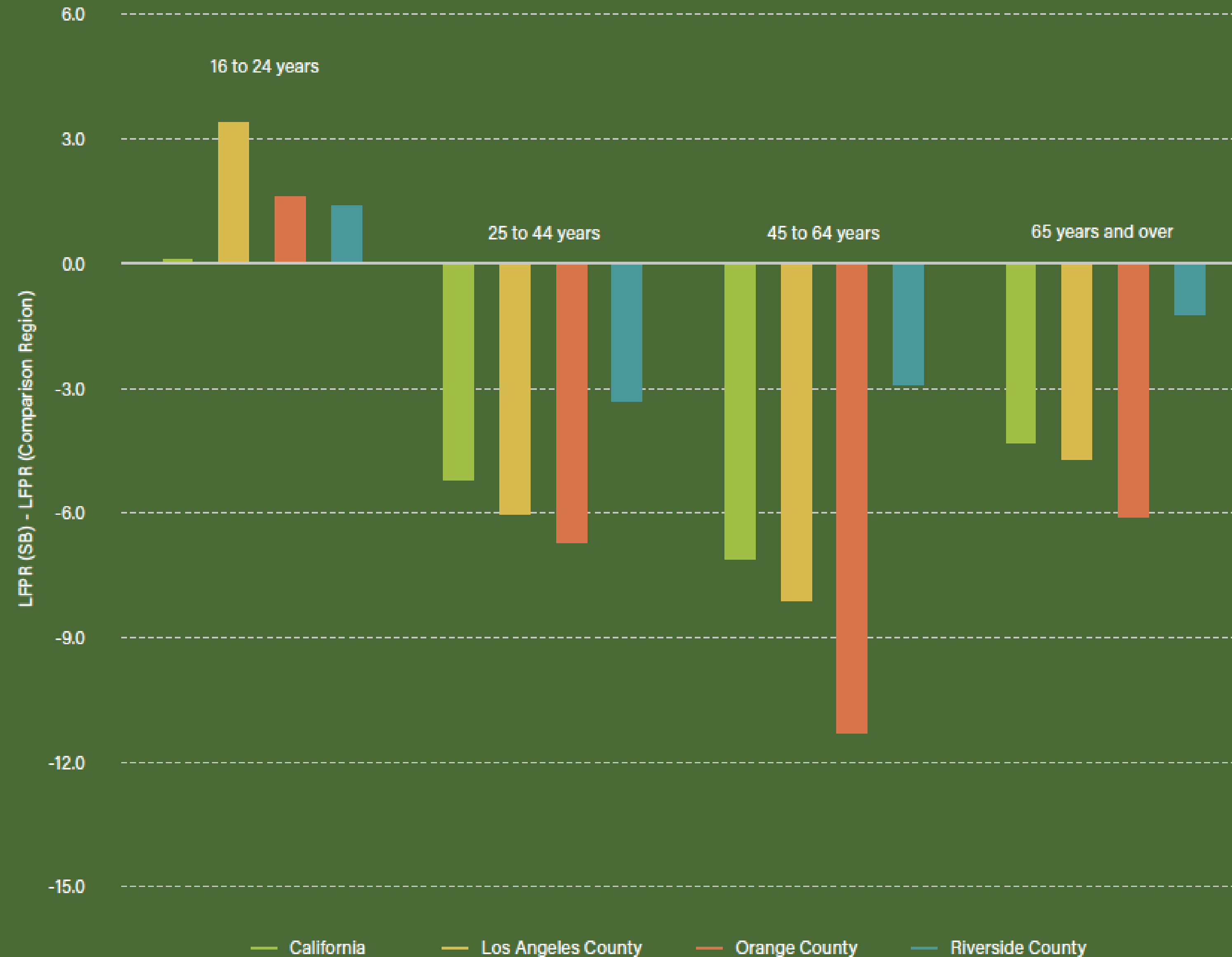
PER CAPITA PERSONAL INCOME LESS OWNERSHIP COST



Source: Core Logic, U.S. Bureau of Labor Statistics; Analysis by UCR Forecast Center

# LFPR Highlight

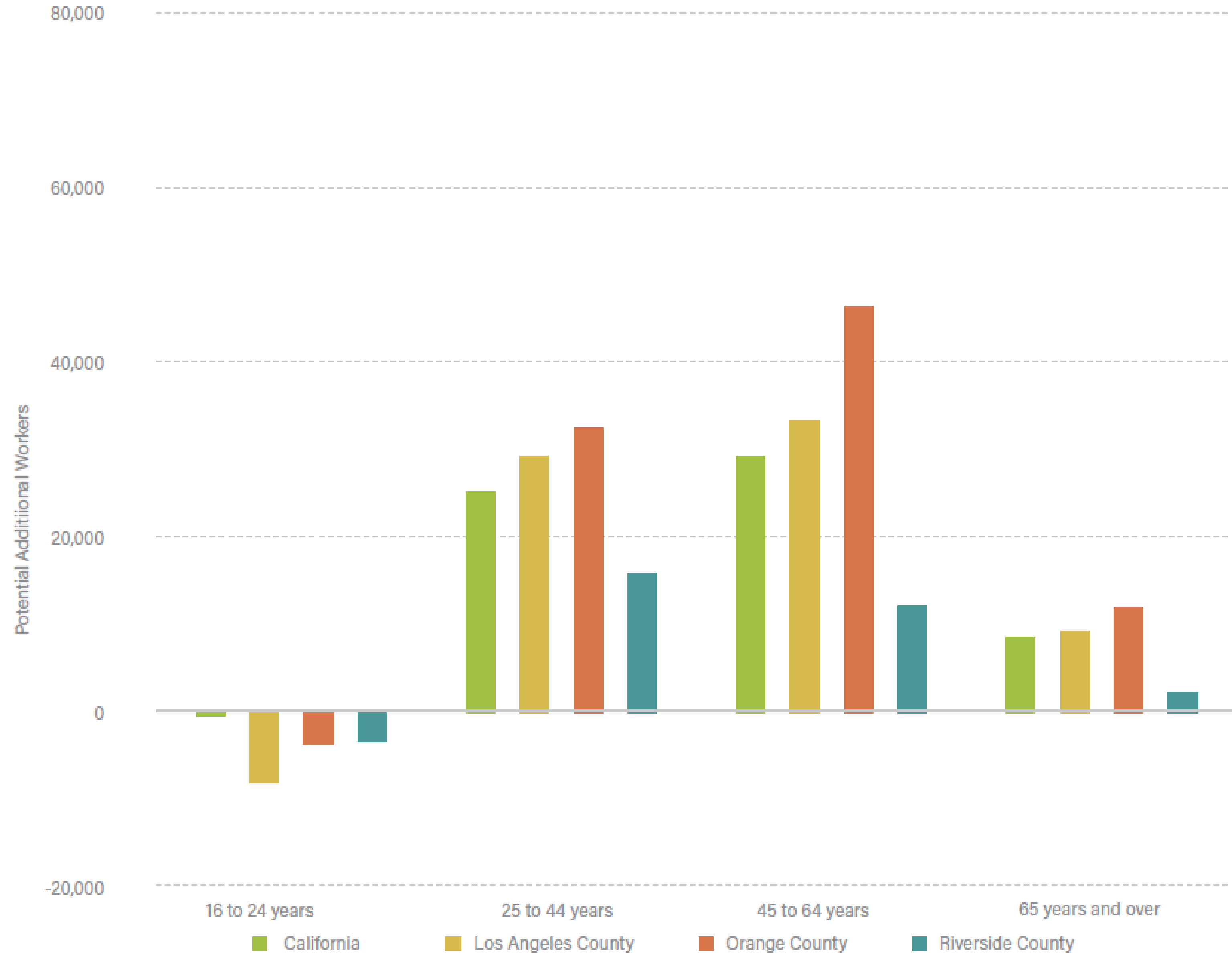
LABOR FORCE PARTICIPATION RATE DIFFERENCE  
BY AGE GROUP, 2017, SAN BERNARDINO COUNTY VS. COMPARISON REGIONS



Source: U.S. Census Bureau, American Community Survey 1-Year PUMS; Analysis by UCR Forecast Center

# LFPR Highlight

## IF SAN BERNARDINO COUNTY HAD THESE REGIONS' LFPR INSTEAD THEORETICAL NUMBER OF ADDITIONAL WORKERS

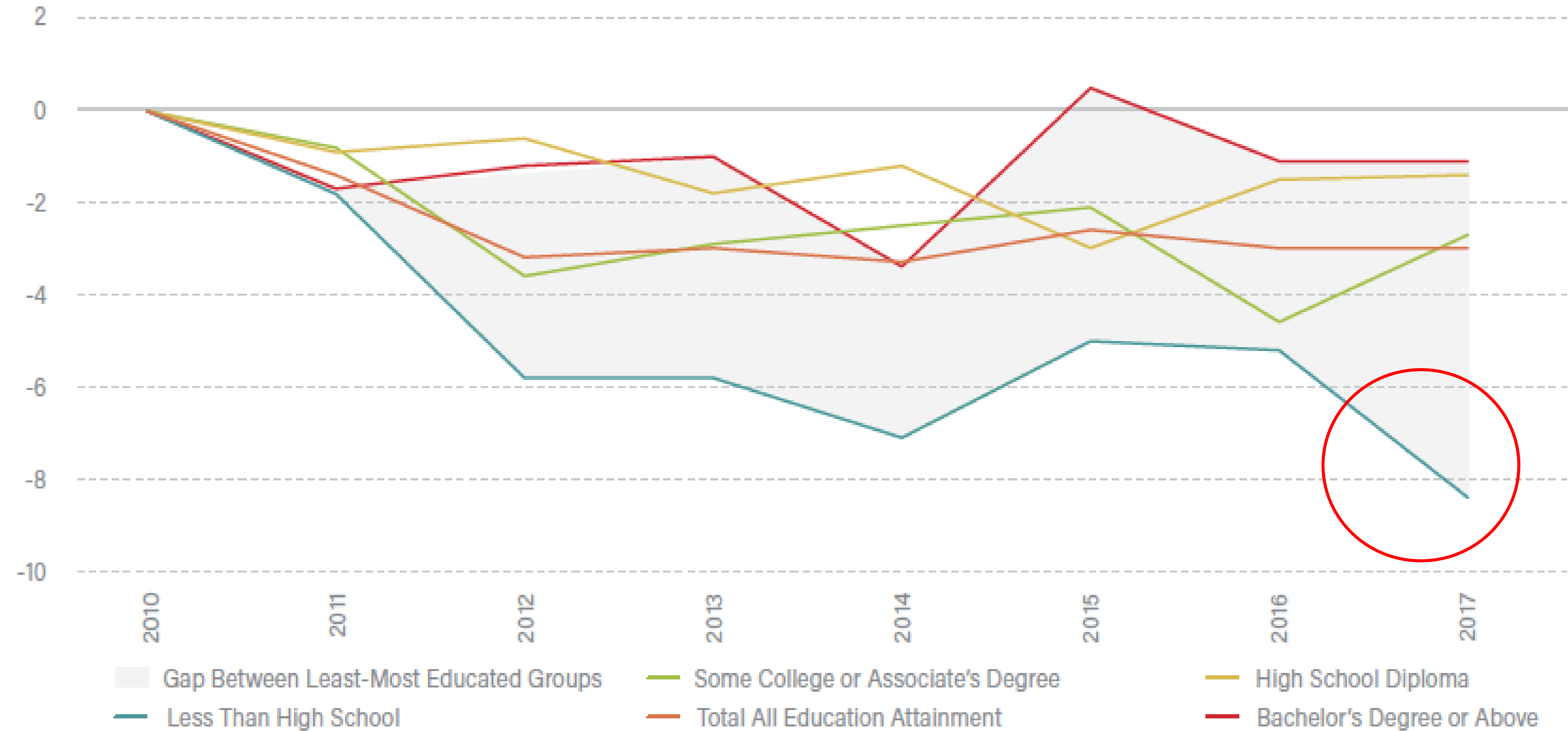


Source: U.S. Census Bureau, American Community Survey 1-Year PUMS; Analysis by UCR Forecast Center

## LFPR Highlight

### LFPR, San Bernardino County, Ages 25-64

LFPR DOWN FOR ALL EDUCATIONAL ATTAINMENT GROUPS BUT MORE SEVERE FOR LESS EDUCATED PEOPLE

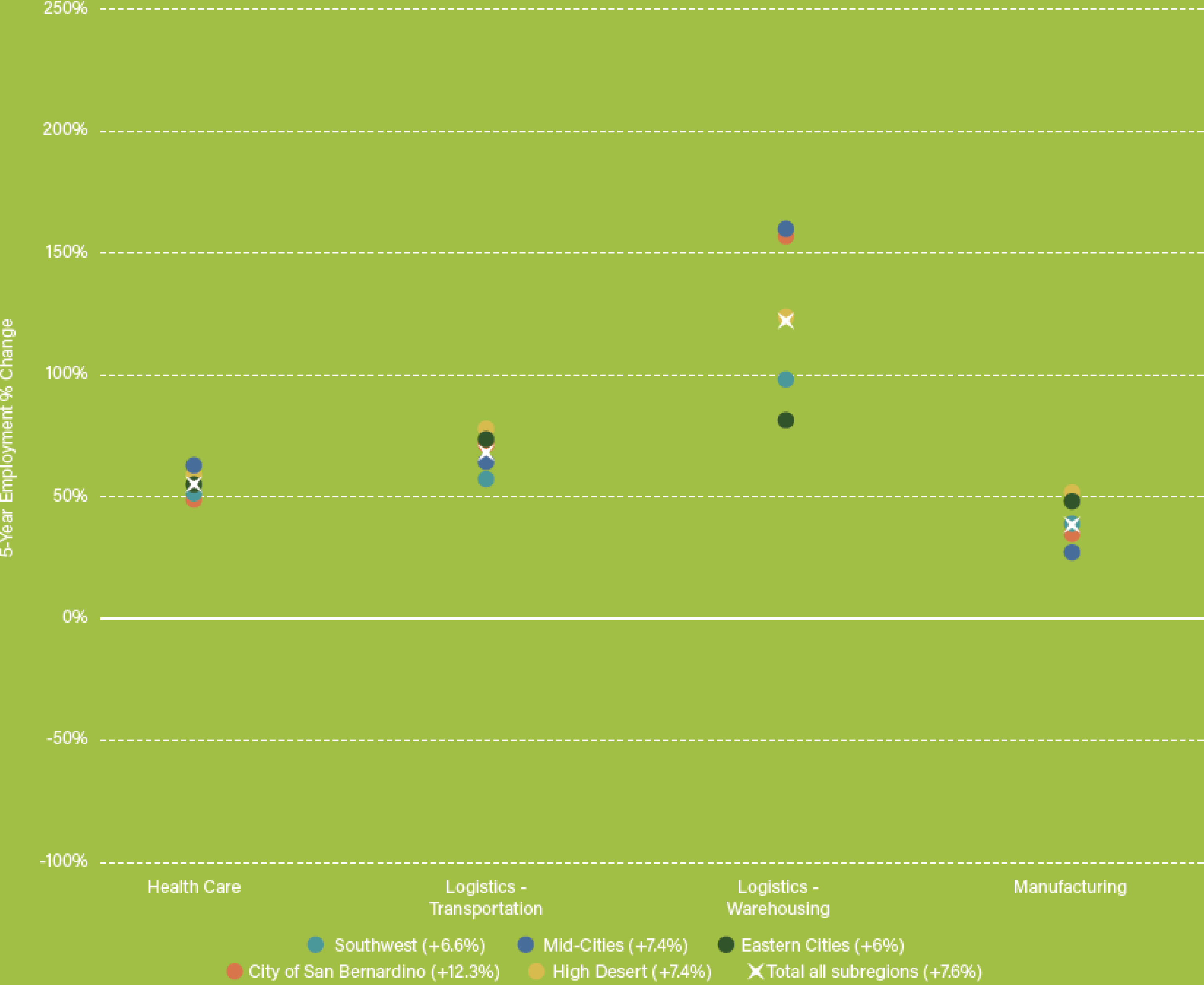


Source: U.S. Census Bureau, ACS 1-Year PUMS; Analysis by UCR Forecast Center



# Integrated Industry Analysis

COUNTY RESIDENTS 5-YEAR (2017 VS. 2012)  
EMPLOYMENT GROWTHS BY INDUSTRY AND SUBREGIONS

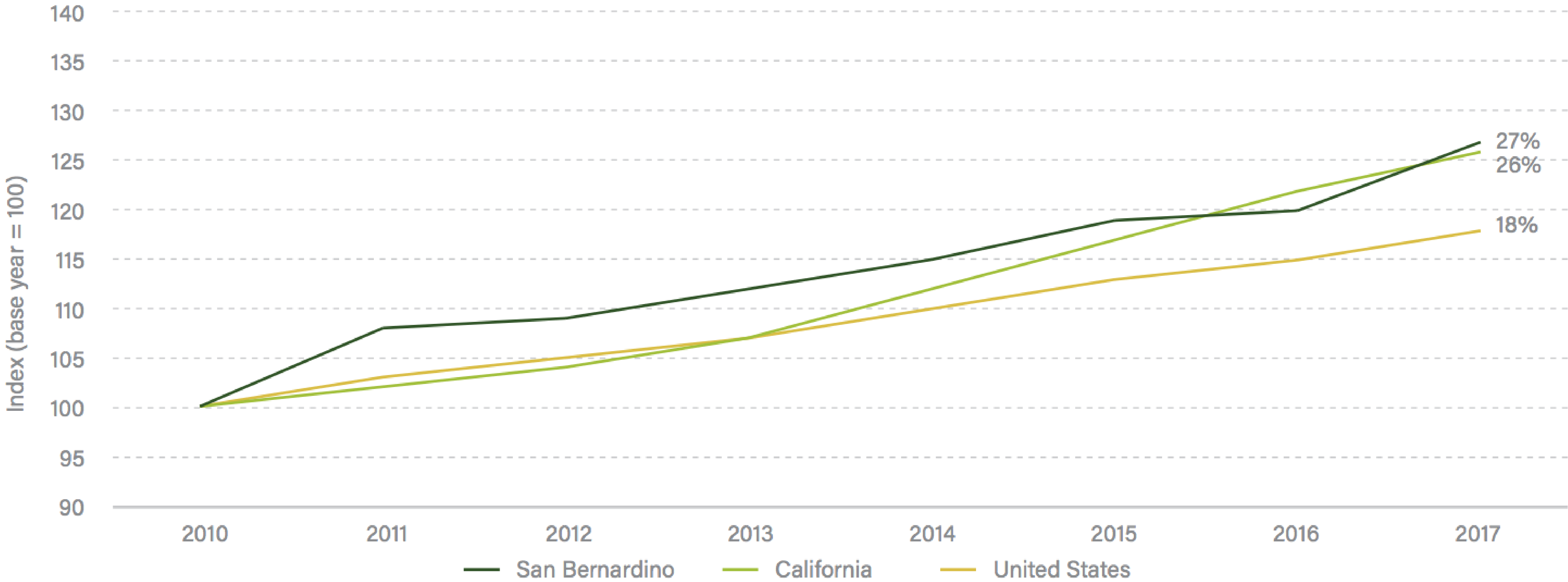


Source: Census Bureau, American Community Survey 1-Year PUMS; Analysis by UCR Forecast Center

# Integrated Industry Analysis: Transportation

## LOGISITCS - TRANSPORTATION EMPLOYMENT GROWTH

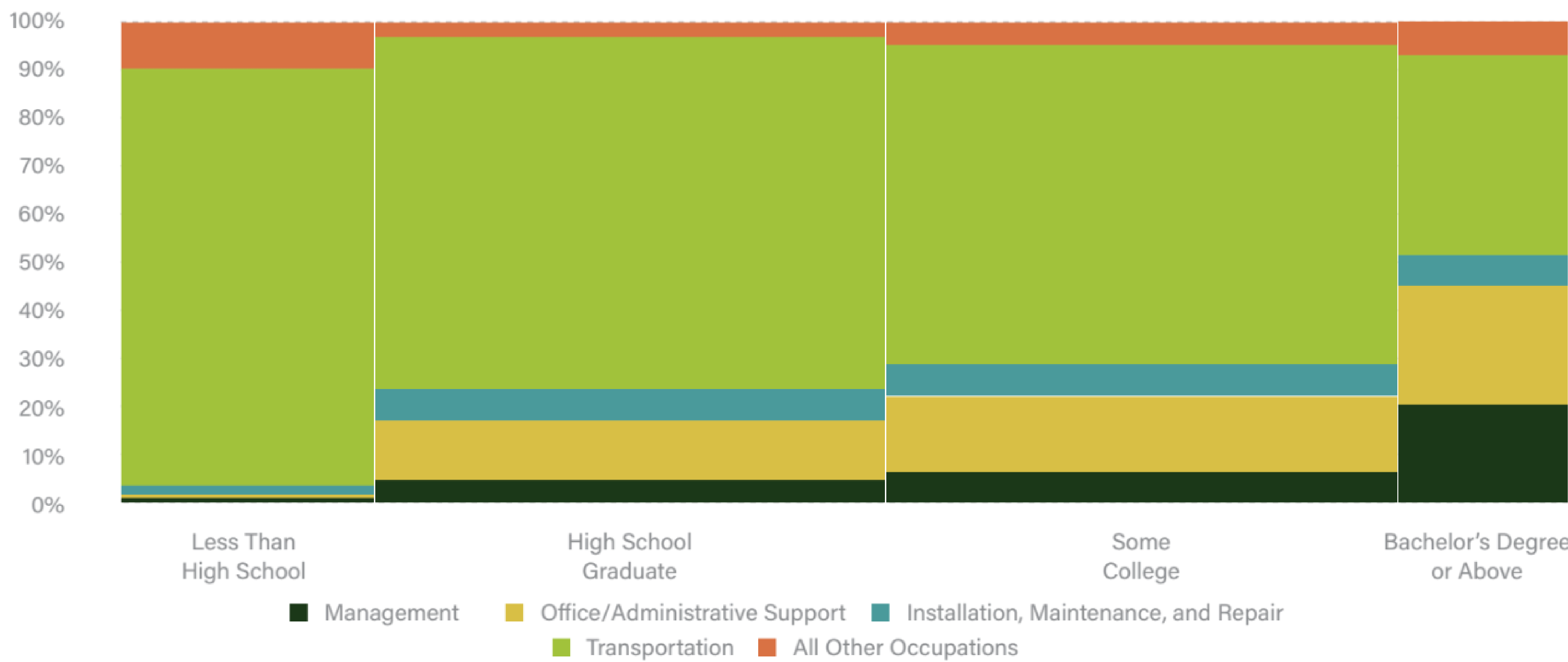
2010 - 2017



Source: Quarterly Census of Employment and Wages; Analysis by UCR Forecast Center

# Integrated Industry Analysis: Transportation

**LOGISTICS - TRANSPORTATION INDUSTRY:**  
OCCUPATIONAL PROFILE AND EDUCATIONAL ATTAINMENT COUNTY RESIDENTS, 2017

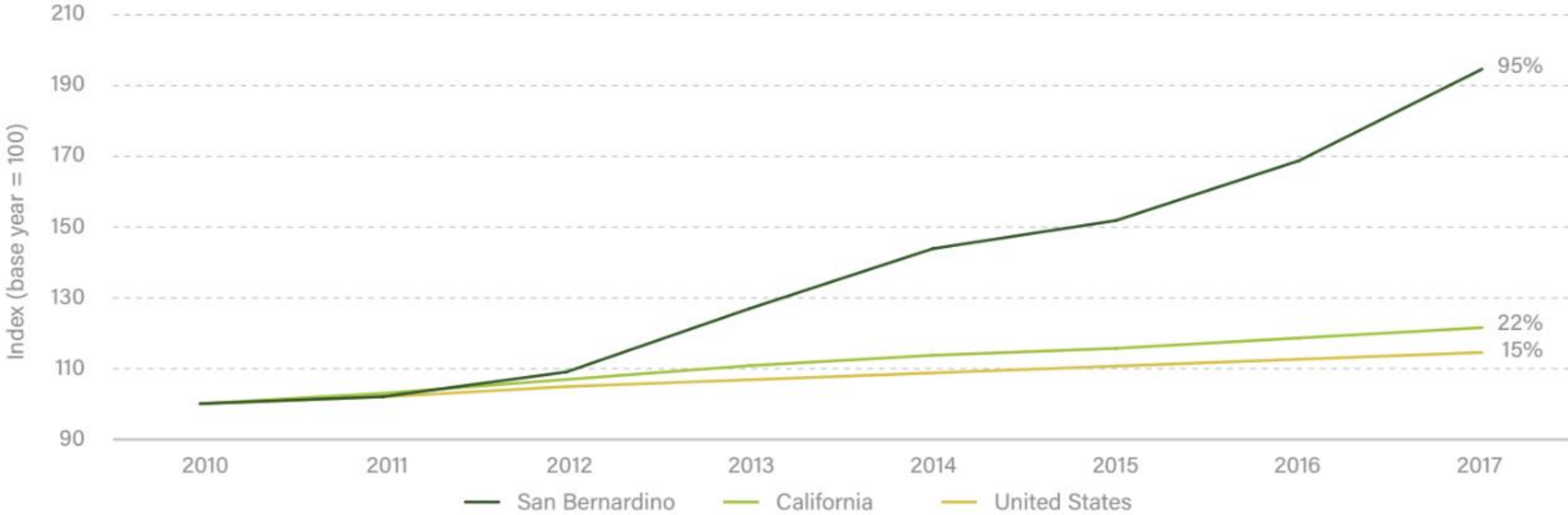


Source: Census Bureau, American Community Survey 1-Year PUMS; Analysis by UCR Forecast Center

# Integrated Industry Analysis: Warehousing

## LOGISTICS -

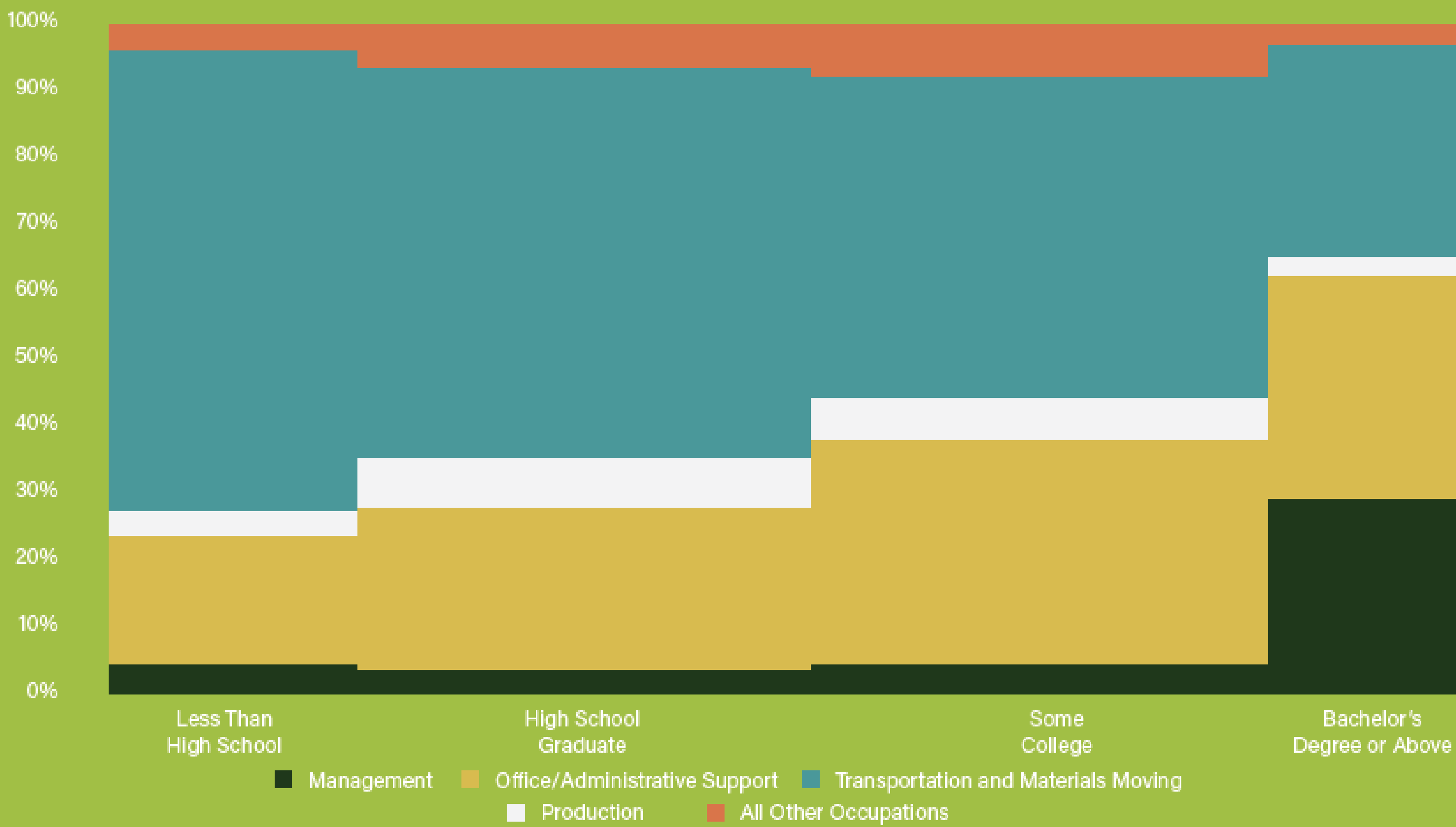
### WAREHOUSE EMPLOYMENT GROWTH



Source: Quarterly Census of Employment and Wages.

# Integrated Industry Analysis: Warehousing

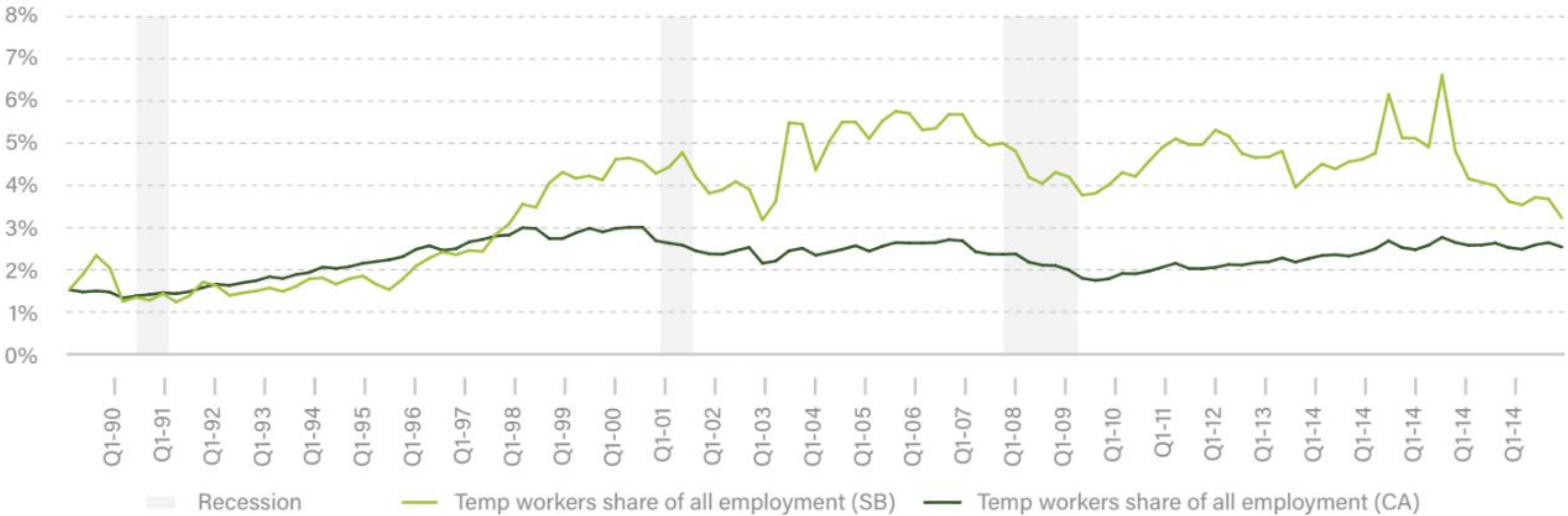
LOGISTICS - WAREHOUSE INDUSTRY:  
OCCUPATIONAL PROFILE AND EDUCATIONAL ATTAINMENT COUNTY RESIDENTS, 2017



Source: Census Bureau, American Community Survey 1-Year PUMS; Analysis by UCR Forecast Center

# Integrated Industry Analysis: Warehousing

**TEMP HELP SERVICES WORKERS AS PERCENTAGE OF**  
TOTAL PRIVATE EMPLOYMENT SAN BERNARDINO COUNTY VS. CALIFORNIA

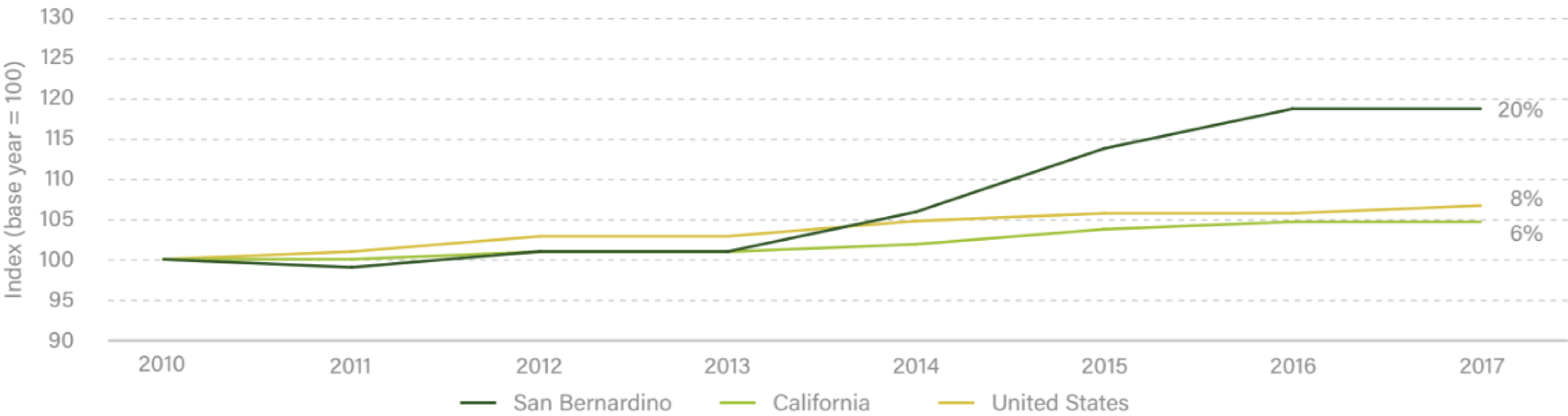


Source: Census Bureau, American Community Survey 1-Year PUMS; Analysis by UCR Forecast Center

# Integrated Industry Analysis: Manufacturing

## MANUFACTURING

### EMPLOYMENT GROWTH

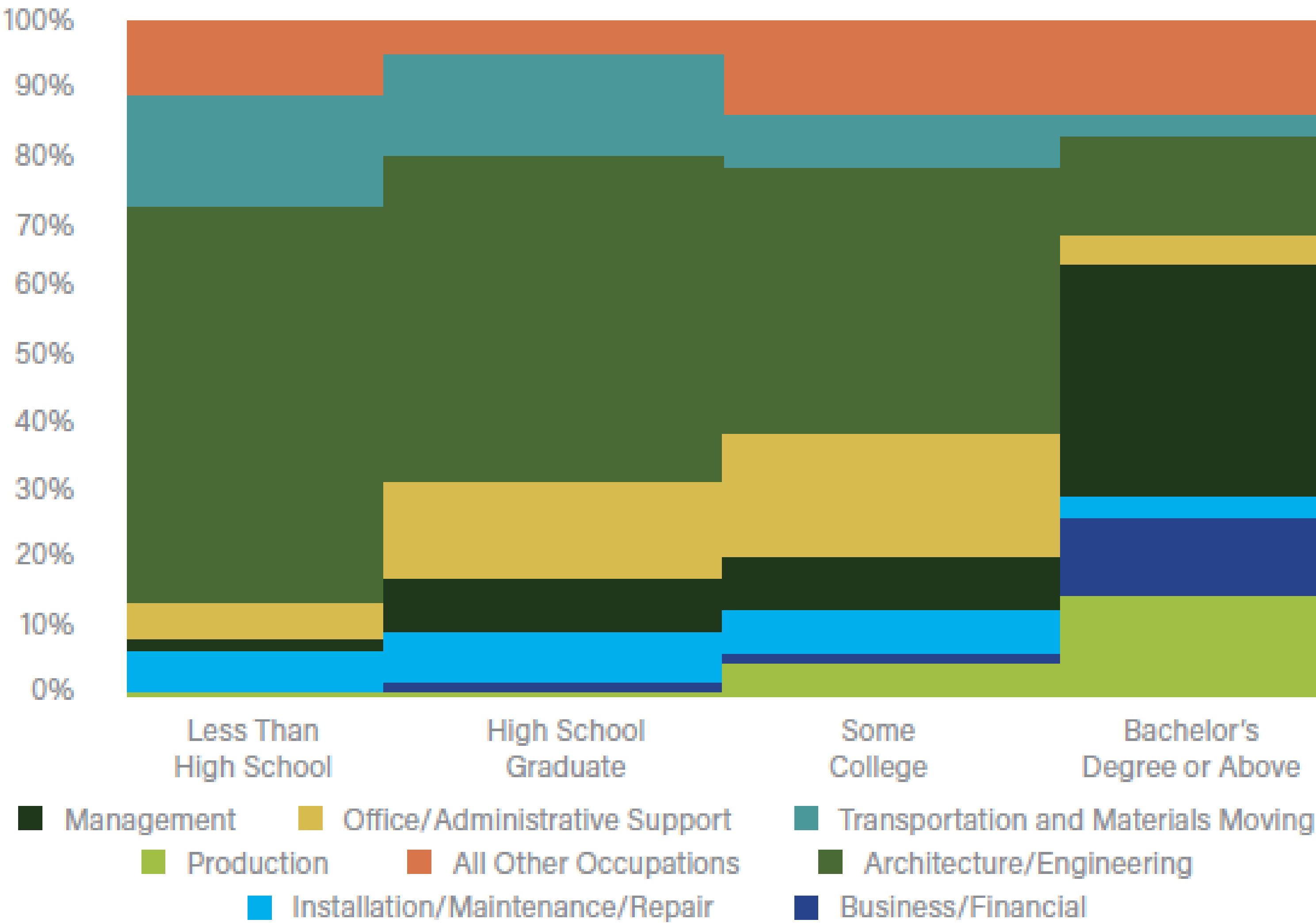


Source: Quarterly Census of Employment and Wages.



# Integrated Industry Analysis: Manufacturing

**MANUFACTURING INDUSTRY:**  
OCCUPATIONAL PROFILE AND EDUCATIONAL ATTAINMENT COUNTY RESIDENTS, 2017



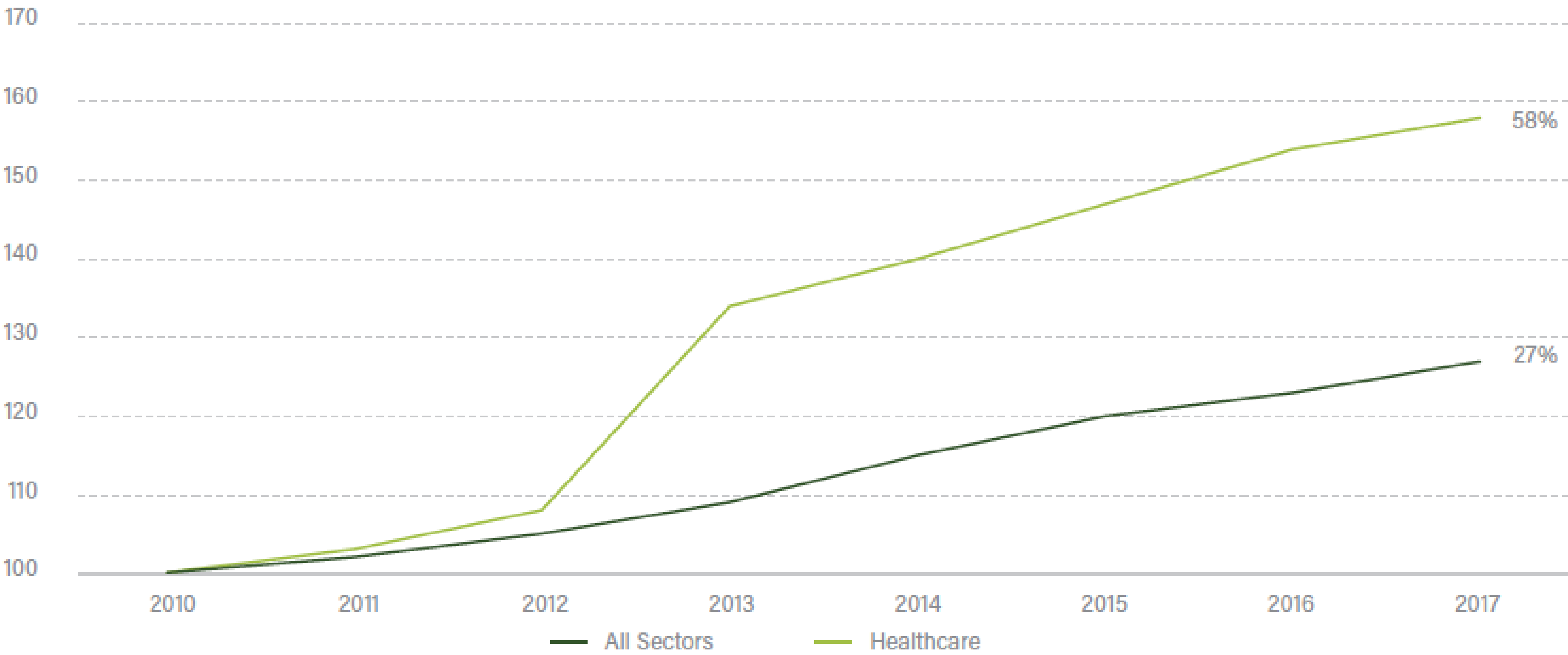
Source: Census Bureau, American Community Survey 1-Year PUMS; Analysis by UCR Forecast Center



# Integrated Industry Analysis: Healthcare

## HEALTHCARE AND TOTAL EMPLOYMENT GROWTH, SAN BERNARDINO COUNTY

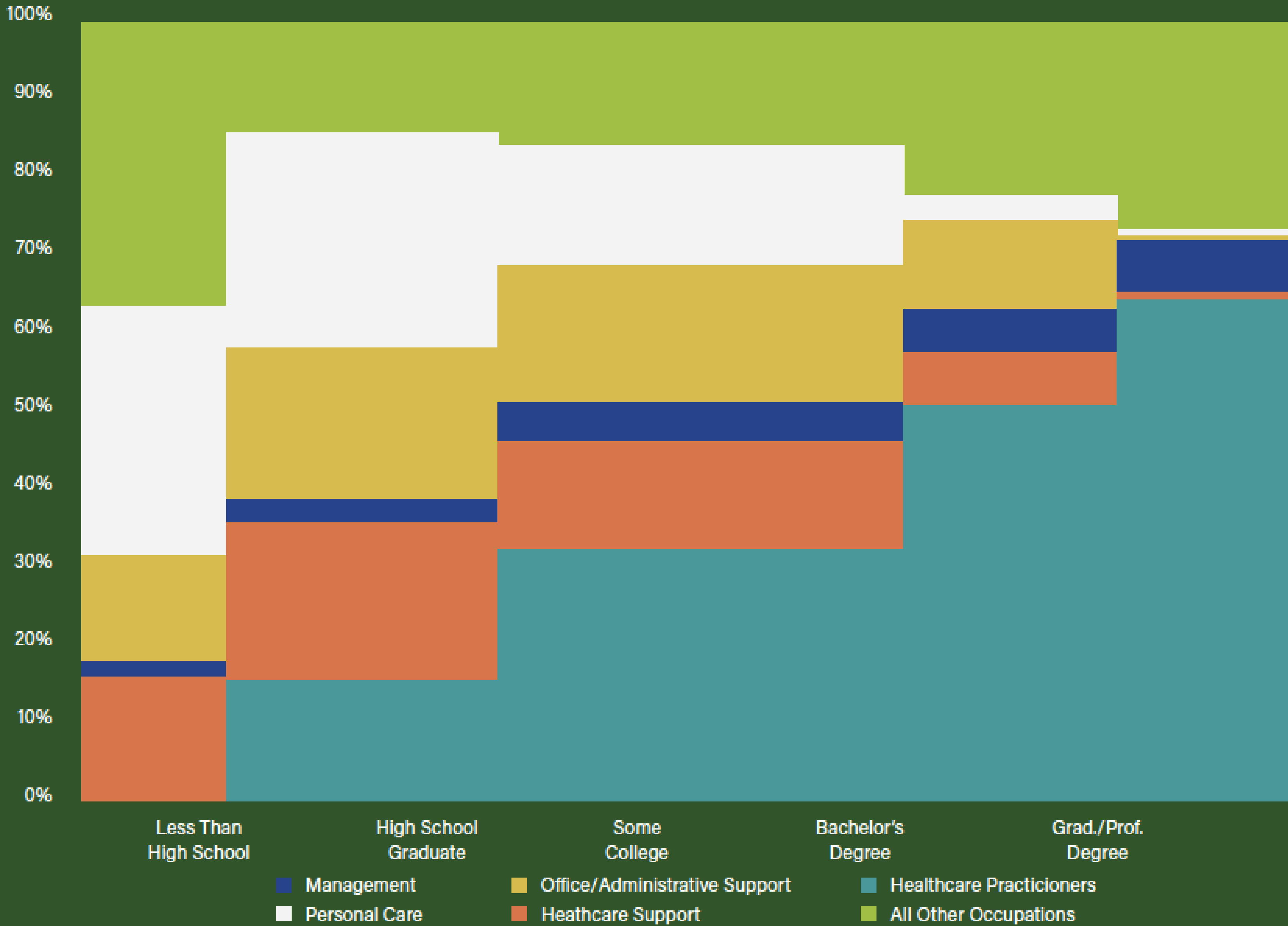
2010 TO 2017



Source: Quarterly Census of Employment and Wages; Analysis by UCR Forecast Center

# Integrated Industry Analysis: Healthcare

HEALTHCARE INDUSTRY: OCCUPATIONAL PROFILE  
AND EDUCATIONAL ATTAINMENT COUNTY RESIDENTS, 2017

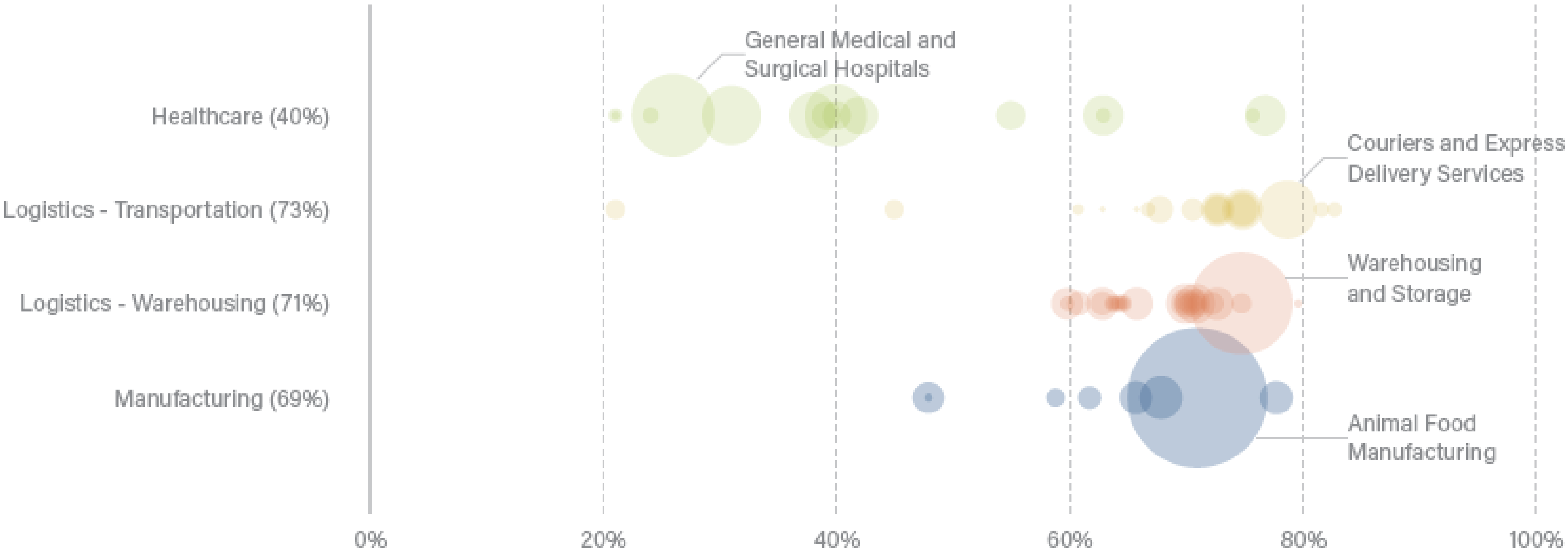


Source: Census Bureau, American Community Survey 1-Year PUMS; Analysis by UCR Forecast Center

# Integrated Industry Analysis: Automation

## AUTOMATION PROBABILITY

BY INDUSTRY CLUSTER



Source: NESTA; Analysis by UCR Forecast Center. Note: Bubble size corresponds to employment size in 2017

*“**Workforce Development** is the coordination of public and private-sector policies and programs that provides individuals with opportunities for a sustainable livelihood and helps firms achieve exemplary goals, consistent with the regional context.”*



## Individual

Workforce development organizations or bodies thinking about economic growth from the perspective of the individual are focused on improving **the economic security of individual** members of a community or geographic jurisdiction.



## Organization or Firm

The organization-focused approach to workforce development is primarily focused on training workers for **the needs of specific employers as they strategize** to remain competitive globally.



## Region

The regional or community-oriented approach is most closely aligned with a regional economic development approach to workforce development and aims to educate and train individuals to sustain a **broader competitive economic environment**.



Organizations like REDF advocate for models such as employment-based social enterprise to solve for the unemployment rate of vulnerable communities. REDF's impact study indicated wrap around support services were linked to **increased self-sufficiency and life stability** and moreover found to be an overall **fiscal benefit to taxpayers**.



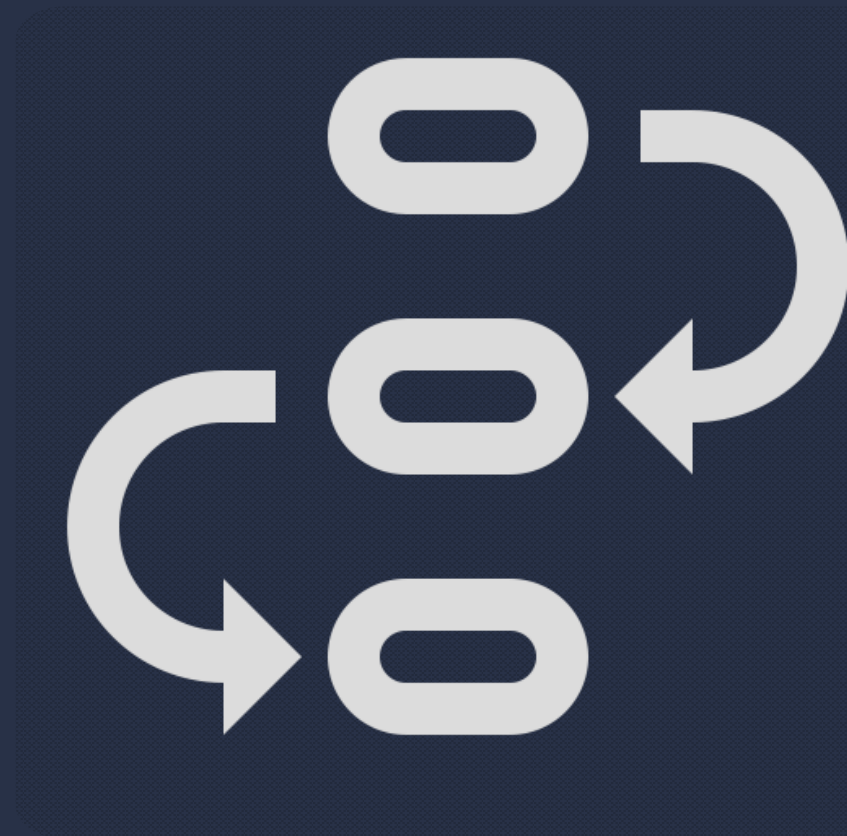
## REDF

REDF invests in and advises high-impact social enterprises to employ and empower people overcoming barriers to work.

Variable	Benefit to society as a whole	Benefit to SE worker
		Impact study
Income	\$1,257	-\$235
Work	1,257	1,257
Government transfers	0	-1,647
Transfers from others	0	155
Stable housing	75	-1,332
Criminal activity	503	0
Health	1,125	1,125
SE revenues	5,786	0

# Insight and Feedback

## Process-oriented



## Skills-oriented



# Process-oriented Feedback

*Via stakeholder interview and focus group.*



## Classroom Assets

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- Responsive curricular development
- Industry-expert educators
- Rational credentialing



## Funding as Incentive

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- Dynamic funding streams
- Productive reporting



## Shared Vision

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- Coordinated goals
- Community-directed communications
- Consideration of audience



**Collective impact model includes:**  
Shared measurement of indicators  
Clearly articulated shared goals  
Definition of collaboration  
Backbone organization

**The model's challenges include:**  
Backbone organization selection  
Competency in well-coordinated system  
Feasible use of data in support of work



## Collective Impact

...the shift in responsibility for improvement in outcomes from individual organizations to entire systems

Organization Type	Potential Benefits	Potential Challenges
Community-based organization	Roots in the community	Low capacity (perceived lack of time, staff, and/or resources)
City government	History of convening diverse stakeholders	Too political
Public school system	History of convening diverse stakeholders	Too political
Postsecondary institution	Demonstrated leadership in partnering with the community	Competition between local colleges
Workforce organization	Connections to the labor market	Lack of knowledge about education sectors
Multiple organizations	Distribution of responsibilities according to organizational expertise	More difficult to act as a single unit



# Models for Firms

*“There’s another way to compete, by investing in one’s employees and encouraging long-term employment relationships so employees can achieve high productivity and therefore can support good jobs and good wages. High-road businesses can be profitable and serve shareholders in the long run, too.”*

## HIGH ROAD

Employment Practices

Establishment effect on wages but industry segment important.

provide a path to adequate wage in a low-wage industry

## HPWO

Employment Practices

Target increased productivity & quality of work via better org. performance

Job-crafting: employee discretion on effort and creativity







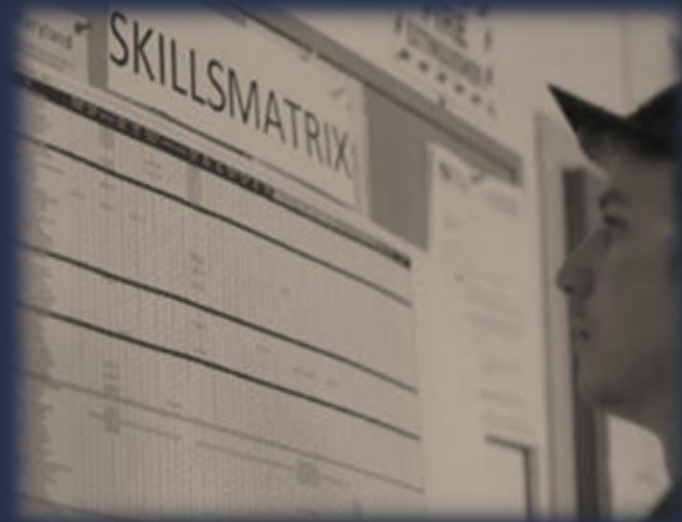
# Models for High Road and HPWO:



NYCEDC supported program to empower small businesses to improve job quality.



Leverages purchasing power of anchor institution for a single coordinate strategy for community economic development.



Example Hitachi Foundation Pioneer Employer, Marlin Steel Wire Products, pays employs to upskill.



Creates living-wage jobs in six low-income neighborhoods in Ohio.



*“While there are no easy solutions and there have been mixed empirical results with stackable credentials, there are risks – some of which pertain to the behavioral economic decision-making of students themselves – in framing vocational training as something substantively different from a credit-bearing education.”*

## ➤ Community Colleges: Training grounds for U.S. workforce

- Understand goals of different student population segments and set goals accordingly
- Avoid demographic pigeonholing and tracking students – particularly low-income or minority students – into a narrow vocational path.

# Process optimization

*Strategic Rollout: a la Mental Health Act*

*Unified vision and priorities aligned with funding cycle and industry needs*

**Individuals**

[Pops] Immigrant status | formerly incarcerated | female, single head of household

**CBOs**

Community communication; perception vs. reality (pigeonholing)

**Government**

Convene: provide and fund frameworks and data-driven opportunities for partnership

**Firms**

Partner with universities and peers to fund pre-competitive solutions and foundational skillsets

**Education**

Community colleges judged by outcomes; students need skin in the game too

*Credentialing*

*Curricular development  
[credit/non-credit;  
timeline;  
streamlined]*

*Industry – Edu.  
Partnership;  
certifications*

Geographies

Incentives alignment

Networks; Innovation ecosystems

Next

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# Skills-oriented Feedback

*Via stakeholder interview and focus group.*



## Technical

- Computation/math/STEM
- Technical reading and writing
- Mechatronic (cluster)
- Machinist/fabrication



## Behavioral

- Conflict mediation, ethics
- Radical candor
- Safety and safety mgmt.
- Inter-cultural personability and communications



## Mindset

- Process-orientation and systems-thinking
- Entrepreneurial skillset
- Problem-solving skills

# Technical Skills

*Case study: skills matching in Manufacturing*

***“The mechanics of labor market disaggregation, communication, and coordination may ultimately provide a more appropriate framework for thinking about labor market challenges than conventional skill mismatch formulations.”***

## » Skills Mismatch in U.S. Manufacturing?

### *Alternative scenarios to skills mismatch*

- Vocal and visible employers' desire for increased publicly funded training
- Lack of competitiveness
- Temporary adjustment; SBTC
- Communication, coordination, disaggregation

### *Skills mismatch survey results*

- Technical reading and math skills
- Unique skills need
- Member of industry cluster



Behavioral



## Behavioral Skills: B2C Skills in a connected market

In an increasingly hollowed out market environment where technology diminishes the need for the middle men and firm of supply chains, opportunities for direct business-to-customer interactions and transactions abound.

*“We’re moving away from the archaic supply chain of extraction, manufacturing, distribution center, warehouse, retailer. That paradigm has evolved. Many of the manufacturers are going direct to consumer for improved efficiency.”*

Mindset



## Mindset Skills: Entrepreneurial competency development

Entrepreneurial competencies are a useful framework for thinking about the value of entrepreneurship in terms of a skillset and further a teachable one.

*Entrepreneurial competencies include: opportunity recognition; opportunity assessment; risk management and mitigation; conveying a compelling vision; creative problem solving and imaginativeness; value creation; and building and using networks.*

# Green/Clean Regulation

Regional competitive advantage | Global market advantage (export-oriented) | Cross-sectoral application

Transportation



Warehousing



Manufacturing



Healthcare



There are programs geared at green capacity building in small businesses (E-Contractor Academy); green career pathway creation (ACES [Architecture, Construction, Engineering Students] Pathway Program; and, an Apprenticeship Guide.



through a combination of green jobs training, community greening programs, and social enterprise, SSBx provides skills training in green construction and offers USBC, EPA Lead and OSHA 10 certifications among others



the City launched the “We Build Green Cities” Campaign which was a City-wide effort to market and export Portland firms that sell ideas, services, and products around sustainability

	Cluster-Based Perspective	GVC Perspective	Workforce implications
Trade	Trade in finished goods	Trade in tasks/activities and intermediate goods	Process-based knowledge and skills rival product-based knowledge
Networks	Dense networks of local firms	Production networks controlled by lead firms	Increased importance of managerial learning from global sources
Participation	Organic participation in clusters by all firms	GVC participation requires deliberate choice	Knowledge of position in and trajectory of upgrading provides insight into skill requirements
Norms and regulation	Local norms of cooperation	Compliance with international standards	Rising importance of training to comply with new product and process standards and internationally recognized certifications



# Recommendations: Process-oriented

**Clarify the workforce development paradigm(s) for the County's portfolio(s) of interventions:** As discussed, workforce development can be thought about from a variety of vantage points that imply different sets of goals and activities. While the County may engage all three paradigms through different programmatic investments, it can be useful to organize programmatic portfolios around particular paradigms so that broad goals, constraints, and essential ecosystem partners are considered.

**Consider establishing a backbone organization or coalition of organizations for the coordination of workforce development efforts across the County:** Backbone organizations are tasked with solving challenges around coordination and communication. They are also responsible for articulating shared goals and keeping partner organizations accountable to clearly defined metrics for success.

**Engage managerial policy and managers of local employers on High Road employment practices and collaboratively further explore High-Performance Work Organization**

**practices:** The County can engage leaders in the local business community to improve the quality of the County's existing jobs, leveraging models like Best for NYC and anchor institution models.

**Facilitate a collaborative effort among community colleges to identify their distinct student populations and their respective goals, connecting those populations among institutions.** Juggling institutional goals, partnerships, and strategy development for all three student populations discussed in the report is burdensome for any one community college; government bodies can help facilitate the sharing of that burden particularly as it applies to employer-driven curriculum development and training opportunities. This also decreases redundant outreach with the private sector.

# Recommendations: Skills-oriented

**Identify potential ways of codifying regionally-relevant vocational training in the traditional credit-bearing education system.** San Bernardino County employers voiced frustration around translating their needs into credit-bearing courses in the formal education system. When vocational training lives outside of the education-to-career system, there is increased risk for demographic pigeonholing and self-selection bias.

**Focus on challenges around (1) communicating those high-productivity skills employers are willing to pay more for and community colleges are willing to pivot training toward; and (2) coordinating investments for which payoff is acceptable to employers and costs are acceptable to training institutions but for which there is no initiating investor.** In disaggregated industry clusters, communication and coordination between employers and workforce training institutions is difficult and act as barriers to mutually beneficial investments in upskilling.

**Explore need for customer-facing skills including skills around value proposition.** Based on San Bernardino County stakeholders' feedback, employers in the region noted the ability to proposition value as a higher priority soft skill given the increased interaction firms are having with customers directly, as a result of technology.

**Identify which specific entrepreneurial competencies are most useful to San Bernardino County's core industries and their respective firms.** Entrepreneurial competencies help articulate the value of entrepreneurship and entrepreneurial experiences into skills and standards which can be integrated into training. There may be industry-specific trends around entrepreneurial competencies and their respective value to the processes and dynamics of particular industries in San Bernardino County.



# Recommendations

**Use sustainability and green regulatory frameworks to explore cross-sectoral upskilling initiatives.** San Bernardino County given its assets, core sectors, and regulatory infrastructure is well-positioned to explore a competitive advantage in green regulatory infrastructure across its core sectors.

**Leverage GVC (global value chain) approaches in development to identify global market opportunities for competitiveness.** The County may consider green regulatory initiatives or any other initiatives in a GVC context which introduces a different set of priorities than those of a local industry-cluster approach to workforce development. GVC approaches focus on global market entry and success and factors influencing that trajectory like lead firms which often act as gatekeepers or facilitators for international trade.

# Intervention Framework: Considerations

## Constituency

*Whom do you seek to serve? It is important for the intervening body to clearly articulate whom it seeks to serve through the design of a specific intervention. Solving challenges for one constituency may not solve it adequately for another and it often costs more to solve the same challenges for different constituencies.*

## Levers

*Consideration of an agency's deployable levers maximizes the return on a potential investment. By identifying core levers, the intervening body may eliminate consideration of challenges or opportunities it is not well-positioned to address.*

## Additionality

*Articulated consensus on an intervening actor's unique value can help maximize the efficiency of the intervention design process. The intervener's additionality can be likened to what outcomes or results would not be generated if not be for the intervener.*

# Intervention Framework: Toolbox

## **Logic Model**

*Logic models help design the how of an intervention and connect resources and inputs with activities, outputs, outcomes, and finally impact*

## **Metrics for Success**

*Economic data indicators can be useful tools for both defining success in empirical terms and evaluating whether or not success has been achieved post intervention*

## **Theory of Change**

*The theory of change is the outcomes pathway or the interlinking series of relationships that encapsulates a theory of how and why certain outcomes are expected to result from the intervention*

## **Government's Justification**

*In addition to identifying what intervention is believed to be most effective, government actors must grapple with the question of market interference. The framework of market failure can be a useful one for government actors when considering intervention.*

Thank you for your time and  
attention.

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