

The cover features a light blue background with a large, white, upward-pointing arrow in the center. To the left, there are several interlocking gears in shades of green and blue, some with motion lines. At the bottom, there are stylized, layered blue and white shapes that resemble waves or a modern architectural design. The title is in a bold, sans-serif font, and the subtitle is in a smaller, italicized font.

MANUFACTURING CAREER PATHWAYS SUMMIT

Snapshot Report

JUNE 2016

I THINK IT'S VERY IMPORTANT TO HAVE
A FEEDBACK LOOP, WHERE YOU'RE
CONSTANTLY THINKING ABOUT WHAT
YOU'VE DONE AND HOW YOU COULD
BE DOING IT BETTER. I THINK THAT'S
THE SINGLE BEST PIECE OF ADVICE:
CONSTANTLY THINK ABOUT HOW YOU
COULD BE DOING THINGS BETTER AND
QUESTIONING YOURSELF.

-ELON MUSK



SECTOR INTERMEDIARY SNAPSHOT REPORT

PROJECT OVERVIEW

In July 2015, Goodwill Southern California (GSC) was contracted by the Los Angeles County Department of Community and Senior Services to serve as the Manufacturing Sector Intermediary. In that role GSC committed to gather intelligence from across the region as it relates to employer needs and industry dynamics, training and education resources, and to assess the pipeline of potential workers to manufacturing jobs. With that information, GSC is working with Los Angeles County and other partners to align stakeholders across the region, identify promising program opportunities, and begin developing resources that can be broadly utilized to produce prepared, qualified workers.

GSC conducted both qualitative and quantitative analyses of employers and educators to identify gaps and opportunities. GSC utilized surveys, focus-groups, and one-on-one engagement. Employers, educators, public agencies, and community organizations were convened in large and small groups at the regional and sub-regional levels. GSC hosted forums with specific stakeholders, as well as with multiple stakeholders. Employers ranged from 10 employees to 1200 employees and educators spanned the entire county. GSC engaged 42 educators, 98 employers, 16 public agencies, and 18 community-based organizations and other employment services providers.



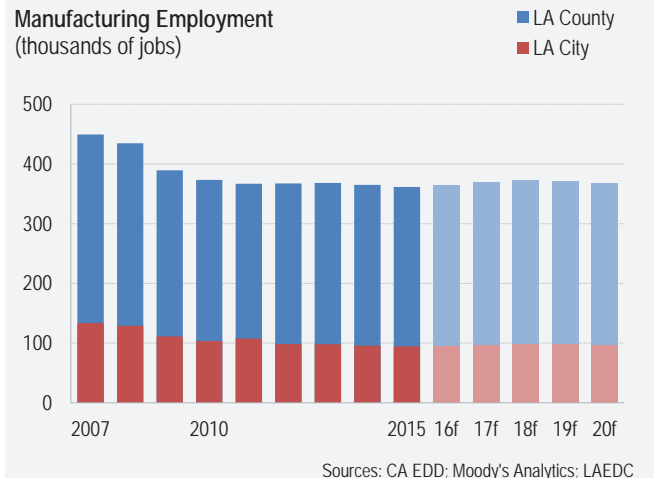
INDUSTRY AT A GLANCE



Employment in manufacturing has been in decline across the country for years. Los Angeles County will experience meager growth in manufacturing overall but upon closer examination, there are pockets of robust projected job growth, particularly in Fashion, Aerospace, Information Technology, and Biomedical Devices¹.

Exhibit 3-17

Manufacturing Employment
(thousands of jobs)



MSI Aerospace and Manufacturing Sectors Forum, Feb 2016

Exhibit 3-18

Top Occupations in Fashion (NAICS 313, 314, 315, 316)
(by % of Industry Employment)

SOC	Occupational Title
51-6031	Sewing machine operators
51-6061	Textile bleaching and dyeing machine operators and tenders
51-6062	Textile cutting machine setters, operators and tenders
43-5071	Shipping, receiving, and traffic clerks
51-9031	Cutters and trimmers, hand
51-1011	First-line supervisors of production and operating workers
11-1021	General and operations managers
53-7064	Packers and packagers, hand
51-9061	Inspectors, testers, sorters, samplers and weighers

Sources: BLS: Occupational Employment Statistics Survey, May 2015



MSI Manufacturing Apprenticeship Pathways Forum, May 2016

Exhibit 3-19

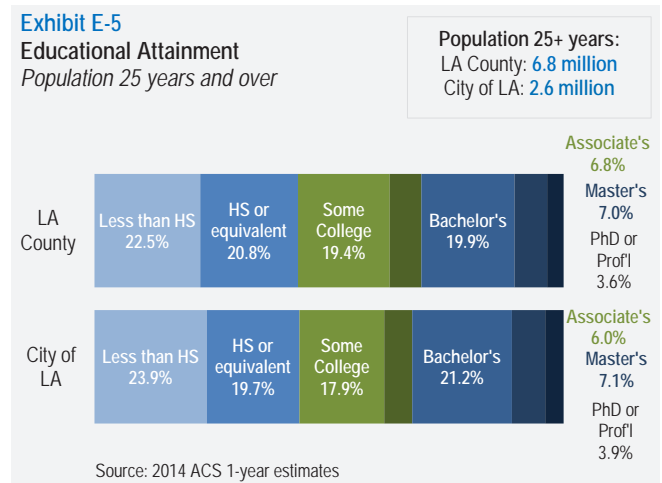
Top Occupations in Other Manufacturing (NAICS 334, 336, 339)
(by % of Industry Employment)

SOC	Occupational Title
15-1133	Software developers, systems software
51-2092	Team assemblers
51-2022	Electrical and electronic equipment assemblers
51-9061	Inspectors, testers, sorters, samplers and weighers
15-1132	Software developers, applications
17-2072	Electronics engineers, except computer
17-2061	Computer hardware engineers
17-2112	Industrial engineers
11-9041	Architectural and engineering managers
11-1021	General and operations managers
17-2071	Electrical engineers

Sources: BLS: Occupational Employment Statistics Survey, May 2015

INDUSTRY AT A GLANCE

The challenge for keeping pace with these growth pockets will be preparing a skilled workforce. Education levels are a key indicator of a skilled workforce and both Los Angeles County and City have large segments of the population with low levels of education. This significantly impacts their connection to the workforce and employers' access to a ready talent pipeline².



Two factors within these growth areas imply that there are opportunities to meet the needs of both employers and jobseekers:

- 1 There are employment opportunities along the career pathway trajectory. In other words, employers have current needs for labor at all levels and with minimal additional education or training, jobseekers can access meaningful jobs and work their way up.
- 2 Manufacturing will be heavily impacted by an aging workforce. On one hand, this poses challenges for employers to replace hands-on experience. On the other hand, it creates an opportunity to upgrade and promote from within and opportunities for entry-level employment.



KEY FINDINGS



The supporting data gathered through the surveys is critical to learning and understanding the profiles of employers and educators, however, this project is more concerned with the experiences of stakeholders in engaging the workforce system, collaboration among stakeholders, and identifying scalable practices across the region. This report highlights those experiences and opportunities, which in turn will inform strategic recommendations and investments moving forward.

Each group or individual engaged through this process had a unique perspective on opportunities and challenges to build a stronger manufacturing workforce. As GSC reviewed the data and input from stakeholders, three consistent themes emerged:

Manufacturing employers have quality employment opportunities, but struggle with efforts to build a sustainable talent pipeline.

- Nearly all employers engaged shared that they have open positions and are poised to grow, with talent and workforce issues being the largest impediment.
- Employers surveyed report that the most in-demand, hardest to fill, and immediate occupations are: Machinists, Computer Numerical Controlled Machine Tool Operators, and Manufacturing Technicians. However, Less than 40% of educational programs surveyed are preparing workers for these positions. This indicates a disconnect between employers demand and what the pipeline is producing.
- Employers indicate that they can train employees, but struggle with work readiness and soft-skills such as communication skills, problem-solving, team work, and self-motivation. Some employers even went so far as to share that they are just looking for people who will show up and they can teach the rest.
- Employers' indicators for hiring entry-level positions in order of relevance: prior work experience, industry-recognized certification, and high school diploma. In other words, higher education, per se, is not what many employers are seeking in candidates. They are seeking hands-on experience and industry-specific knowledge; many times machine- or process-specific knowledge.
- Employers indicate that training occurs primarily in-house, with community colleges and trade schools following.
- Employers are generally weary of trying to engage the workforce and education system. As one employer commented, "when you've been to one advisory meeting, you've been to them all." When pressed on the comment, other employers expressed that they too, had been to numerous advisory group meetings with few or no tangible follow-up actions taken.

Community colleges face multiple barriers to update training programs that keep pace with industry.

- State credential and approval processes make it challenging for community colleges to make timely curriculum changes. In some cases it can take up to two years to make curriculum adjustments and obtain state approval. In some companies and industries, occupations and technology will have completely changed by then and it will be time for new changes.
- Educators find it difficult to hire qualified, experienced instructors in the field. There does not seem to be a shortage of industry experts willing to be instructors, however, credentialing presents challenges to hiring instructors with industry expertise and hands-on experience, but limited academic requirements. On the flip side, educators expressed that they are seeing more instructors coming straight out of college with no industry experience.
- Community colleges indicated, overwhelmingly, that they designed curriculum in collaboration with employers, however, a limited number of employers indicated that they contribute to the design of curriculum. Those that did, expressed a general dissatisfaction with the outcomes.
- Community college representatives indicated a reluctance for institutions of higher education to focus energy on careers that were perceived

as less academic or polished. This points to the evolving role of community colleges and, at times, internal disconnect between academia and vocational or technical education.

- Community colleges serve a significant percentage of under-represented communities and under-prepared students. This poses challenges for community colleges to quickly prepare and train students for immediate industry needs. Employers are looking for community colleges and workforce agencies to provide immediate access to trained workers. But the skill and education levels of students requires increasing levels of remediation and basic education.

Employers, community colleges, and other stakeholders expressed a lack of awareness about a consistent resource from which they can solicit guidance and support for preparing a skilled workforce.

- Employers were uncertain or unaware of how to access skilled workers from colleges or other training programs and how to realistically contribute to development of programs.
- Some community colleges have well-established, and mutually beneficial relationships with industry. However, many colleges struggled with having genuine connectedness to industry for program development and hiring.



PROMISING PRACTICES



From Employer Demand to Regional Collaborative

In 2015, Northrop Grumman reached out to the City of Palmdale, GSC, Los Angeles County Community and Senior Services (CSS), and Antelope Valley College to discuss their need to train and hire 200 participants annually for Aircraft Fabrication and Assembly. All partners immediately recognized the opportunity but understood the challenge of trying to respond to such an enormous demand. With the full support of CSS, the partners came together to form the Antelope Valley Manufacturing Career Pathways Collaborative to address the numerous service and resource needs demanded by a project of this scope. The framework for the program was to have participants enrolled at the South Valley AJCC, receive training and education at Antelope Valley College, have a large employer (Northrop Grumman) committed to hire a significant number of completing participants, and have buy-in and support from the workforce system.

Antelope Valley College offers Aircraft Fabrication and Assembly training to inexperienced students with entry-level skills for the aerospace industry and experienced students with upgraded skills. Antelope Valley College is one of the few community colleges in the United States offering composites fabrication and repair. Additionally, the credits for this program can be articulated into Associate of Arts Degree in Aircraft Mechanics, which allows individuals to continue advancing in their career path. The pilot program started in Feb 2016 training students in 10 weeks to obtain 20 credit units in Basic Blueprint Interpretation (AFAB 110), Aircraft Structures (AFAB 115), Composites Fabrication & Repair (AFAB 120) and Aerospace Workplace Issues & Ethics (AFAB 130). Students who complete the program receive certification as

an Aircraft Fabrication and Assembly Technician. GSC, as Manufacturing Sector Intermediary, has been working closely with Antelope Valley Manufacturing Career Pathways Collaborative to ensure that the training is approved on I-train and to identify other major employers that might benefit from a skilled workforce. The project is a result of true collaboration with stakeholders coming together to address a tremendous employer need that will lift up the entire community.

Tapping the Talents of Special Populations

The Uniquely Abled Project is a great example of a community partner collaboration along with industry support to create one-of-a-kind training that will prepare young people with mild developmental disabilities to be CNC (Computer Numerically Controlled) Machinists. The program will provide instruction, learning and testing for students to achieve technical proficiency, as well as work readiness skills and job placement assistance. In addition, the program extends into the workplace with on-going support from community partners, educators and employers.

The pilot program will provide approximately 240 hours of instruction over ten weeks at Glendale Community College. Beginning June 20, 2016, the program trains participants to become CNC (Computer Numerically Controlled) Machinists, eventually leading to career opportunities with manufacturing employers. GSC is documenting the program and developing a replication manual to demonstrate the capacity of Workforce Career Development to develop usable training tools based on specific targeted sectors, and which focus on individuals with disability.

GSC's role in this consortium is threefold: enrolling eligible participants through its AJCC's and other employment programs; identifying promising practices and making recommendations for scaling the program across the regional network; and assessing broader opportunities in manufacturing for individuals with disabilities.

This project is a true example of partners' collaboration between Ivan Rosenberg Association, Glendale Community College, Verdugo Workforce Development Board, Los Angeles County Community Department of Rehabilitation, Lanterman Regional Center, Exceptional Children's Foundation and Goodwill Southern California.

Launching Aerospace Apprenticeships

In response to an industry needing to not only preserve, but grow its workforce for the future, the Manufacturing Sector Intermediary coordinates the service system to establish Registered Apprenticeships. In the process of learning about the Manufacturing workforce needs, one aerospace company came forward to solicit our support to help them develop two apprenticeships for Airframe and Powerplant Mechanics and Aircraft Metal Technicians/Machinists & CNC.

Hawker Pacific Aerospace, located in Sun Valley, California, is home to 370 employees and is a leading independent international maintenance, repair, and overhaul (MRO) provider. The Lufthansa Technik Group is made up of specialists that successfully offer the world's airlines new and valuable services. At a recent Apprenticeship Forum, Brian Carr, VP. of Operations, spoke on the issue of a graying

workforce and skills gap. "Most of these people are baby boomer's. . . they will be leaving the workforce and there's really nobody out there behind them. . . . Several years we tried to do things to increase our workforce and most of it has happened by luck, however it takes months and months and months to find younger people with these skills. . . These skills are not offered in the public schools. We have to do it ourselves and take the homegrown path and partner with educational resources."

Simultaneously, while working to support Hawker Pacific Aerospace, GSC is assisting with the development of a Pre-Apprenticeship in Manufacturing. The Cloud & Fire YouthBuild Pre-Apprenticeship Program is being developed in collaboration with industry, the California Division of Apprenticeship Standards (DAS), and in alignment with the U.S. Department of Labor.

The Manufacturing Pre-Apprenticeship will on-board to Registered Apprenticeships in Manufacturing, secondary programs such as the LAVC Manufacturing Academy, and direct entry-level intern placements into local machine shops. Several YouthBuild graduates are working at Klune Industries, Hawker Pacific Aerospace, Repairtech International, Inc., and Prompt Machine Products, Inc.

The ability of the intermediary to focus resources for this type of demand driven workforce development solution is an example of how sector partnerships can operate. Engaging community, education, industry, and government to construct and launch training that employs people quickly with a targeted track for advancement.



STRATEGIC RECOMMENDATIONS



Develop guidance and resources for community colleges to be more nimble and responsive to employers' changing needs.

- Provide robust training, promising practices and peer exchanges, as well as, resources that expand the effectiveness of certification, utilization of industry-recognized certificates, apprenticeships, career pathways, bridge programs, and internships.
- Develop formal resources to assist colleges in navigating program design and the state approval process.

Establish NAICS alignment between Workforce Development Boards and community colleges.

- Workforce Development Boards and community colleges tend to utilize differing industry classification tools that do not consistently match occupations with job categories. Aligning both stakeholders under the same classification system would strengthen the link between industry demand and educational programs.

Strategically invest in efforts to facilitate ongoing regional dialogue and information-sharing between employers, community colleges, public agencies, and workforce service providers.

- Continue to invest in Manufacturing Sector Intermediary role. This role has enabled the workforce system to engage manufacturing

employers and community colleges in a way that has increased active participation, collaboration, and ongoing dialogue that will help bridge the gap between stakeholders. More importantly, the intelligence-gathering and convenings have produced concrete program opportunities that demonstrate the potential for shared wins for our economy and communities.

- Expand Sector Intermediary role to operationalize identified opportunities and translate them into quality career pathways programs and talent pipelines. As a result of the research and convenings held over the course of the last year, GSC was able to operationalize a handful of program opportunities that resulted in training skilled workers. But the primary focus was information-gathering and convening stakeholders. Many additional opportunities remain to create demand-driven training programs, provided the resources are appropriately directed to these efforts.

Expand capacity-building efforts of the workforce system overall.

- The Manufacturing Sector Intermediary role has proven the value of ongoing industry analysis, convening and aligning stakeholders, and operationalizing training and skill-building opportunities. Efforts should be made to build on previous findings, identify promising practices, and develop a framework for expanding sector intermediary capacity across the system.

STRATEGIC RECOMMENDATIONS

- In order to expand capacity, resources must be developed and consistently updated to reflect the constantly-changing needs of employers, demands on educators, and demographics of the workforce.
- Investments should be made in building the capacity of America's Job Centers of California (AJCC) to serve as sector intermediaries in each of their respective service areas. While the capacity currently resides in a centralized role, the longer term strategy should focus on more localized capacity to assess industry dynamics and employer needs, align community college programs, and engage all stakeholders in the process.

Build stronger awareness with schools, organizations, and communities in regards to awareness about quality career opportunities in the industry.

All stakeholders agree that there is a prevalent misconception about the quality and diversity of career opportunities in manufacturing. In order to shed that image, it is imperative that the system and its stakeholders be proactive and creative in crafting a consistent message that informs, inspires, and draws new workers to the industry.

- Manufacturing Month
- Promotional materials
- Employer field trips for students
- Public occupational profiles
- Sector events
- Collaboration with middle schools and high schools
- Internships



A SPECIAL THANKS TO THE PARTNERS AND SUPPORTERS WHO HAVE MADE THIS PROJECT POSSIBLE:

FUNDERS

Los Angeles County Department of Community and Senior Services

City of Los Angeles Economic and Workforce Development Department

JPMorgan Chase & Co.

RESEARCH PARTNER

Alliant International University – Center for Innovation and Change

MANUFACTURING ASSOCIATIONS AND NETWORKS

Advanced Manufacturing Partnership of Southern California (AMP SoCal)

California Manufacturing Technology Consulting (CMTc)

Congressman Tony Cardenas's Manufacturing Council

Los Angeles Economic and Development Center (LAEDC)

The National Institute for Metalworking Skills (NIMS)

National Tooling and Machining Association (NTMA) – Los Angeles and San Fernando Valley

Small Manufacturer's Association/Small Manufacturer's Institute (SMA/SMI)

Tooling U/SME



PARTICIPATING EMPLOYERS AND EDUCATORS

A&R Engineering Co., Inc.	Lee's Enterprise
AAA Institute	Lobart Company
ACG	Lockheed Martin
ASC Process Systems	Los Angeles Community College District
Accurate Dial & Nameplate, Inc.	Los Angeles Mission College
Aire Rite Air Conditioning & Refrigeration	Los Angeles Trade Technical College
Alliance Thread Rolling	Los Angeles Unified School District, Division of Adult and Career Education Career
Altech Services, Inc.	Los Angeles and Orange County Regional Consortia
Antelope Valley College	Louroe Electronics
Antelope Valley Unified School Districts	MENTORS International
Aviation Center A&P Mechanic Program	Magna Flow
Avibank	Masters in Metal, Inc.
BYD Coach & Bus	Miyachi America
California State University, Northridge	North Orange County Community College District
Cerritos Community College	North Valley Occupational Center
Citrus Community College	Northrop Grumman
City of Palmdale	Pierce College
Cloud and Fire YouthBuild	Powerful Public Schools
College of the Canyons Community College	Precision Labs Calibration
D&G Engineering	Prompt Machine Products, Inc.
DLT Tooling Systems Inc.	Raytheon
D'Addario	Repairtech International
East Los Angeles Community College	Roberts Tool Company, Inc.
El Camino Community College	Savage Machining Inc.
Frazier Aviation, Inc.	Schrillo Company LLC
GKN Aerospace	Skylock Ind. Inc
Glendale Community College	Stitches Technology Business and Career Center Inc.
Hawker Pacific Aerospace	Superior Thread Rolling
Hydraulics International Inc	The Aerospace & Defense Forum
Implant Direct	The Uniquely Abled Project
Industrial Metal Supply	University of Southern California
John Muir Charter	Van Nuys High School
Kinkisharyo International, LLC	Verisurf Software, Inc.
Klune Industries	Xceliron
LA Gauge	
LaDeau Manufacturing	





NOTES

ABOUT GOODWILL SOUTHERN CALIFORNIA

Transforming lives through the power of work, Goodwill Southern California (GSC) serves people with disabilities or other vocational challenges, as well as businesses, by providing education, training, work experience and job placement services. Each year, GSC prepares and places thousands of individuals into sustainable employment through programs and services offered at three campuses, Career Resource Centers, America's Job Centers of California, Youth and Veteran Employment Programs throughout Los Angeles, Riverside and San Bernardino counties. GSC supports its mission with proceeds generated from 81 retail stores and 47 attended donation centers. Charity Navigator, an independent charity evaluator has awarded GSC its highest four-star ranking for 13 consecutive years; largely due to the fact GSC spends 95 percent of its budget on programs and services.

GSC has incorporated sector strategies into its work for the last 10 years and maintains its high-demand sector industry focus. GSC has long recognized the need to focus on specific industry sectors as a way to build stronger local economies and establish clear career pathways for jobseekers. This strategy enhanced the organization's ability to develop partnerships with community colleges, school systems, and other training providers, resulting in a demand-driven and qualified workforce. GSC strives to be at the forefront of our industry; leading the advance in identifying and growing sector strategies, developing career pathways and cultivating apprenticeship opportunities.

FOR MORE INFORMATION PLEASE CONTACT:

Goodwill Southern California, Workforce and Career Development

Simon J. Lopez

Vice President, Workforce and Career Development

P 323-223-1211 Ext: 2115 . email: simon.lopez@goodwillsocal.org

Adrineh Terantonians

Director of Operations, Workforce and Career Development

P 323-223-1211 Ext: 2323 . email: aterantonians@goodwillsocal.org

Tracy DiFilippis

Sector Strategies Implementation Manager, Workforce and Career Development

P 323-223-1211 Ext: 2307 . email: tdifilippis@goodwillsocal.org

*Transforming Lives through
the Power of Work.*



**Goodwill
Southern
California**

Presented by Goodwill Southern California in partnership with
the Los Angeles County Community and Senior Services

