CREATING CAREER PATHWAYS *in* COLORADO
A STEP-BY-STEP GUIDE

CWDC

2014
SECTORS SUMMIT II
Growing the Talent Pipeline

May 2014

What is a Career Pathway?

A career pathway is a series of connected education and training programs, work experiences, and student support services that enable individuals to secure a job or advance in a demand industry or occupation.

How do Career Pathways Emerge?

Career pathways must emerge out of two ongoing conversations: one with employers in the target industry, and one with the education and training institutions ultimately responsible for their development and implementation. Sound familiar? It should. Colorado's Sector Partnerships are the vehicle for integrating these two conversations.

Sector Partnerships: The Keystone to Connecting Career Pathways to Industry Cluster Growth

Sector Partnerships align education and training programs with industry needs to produce readily employable workers.

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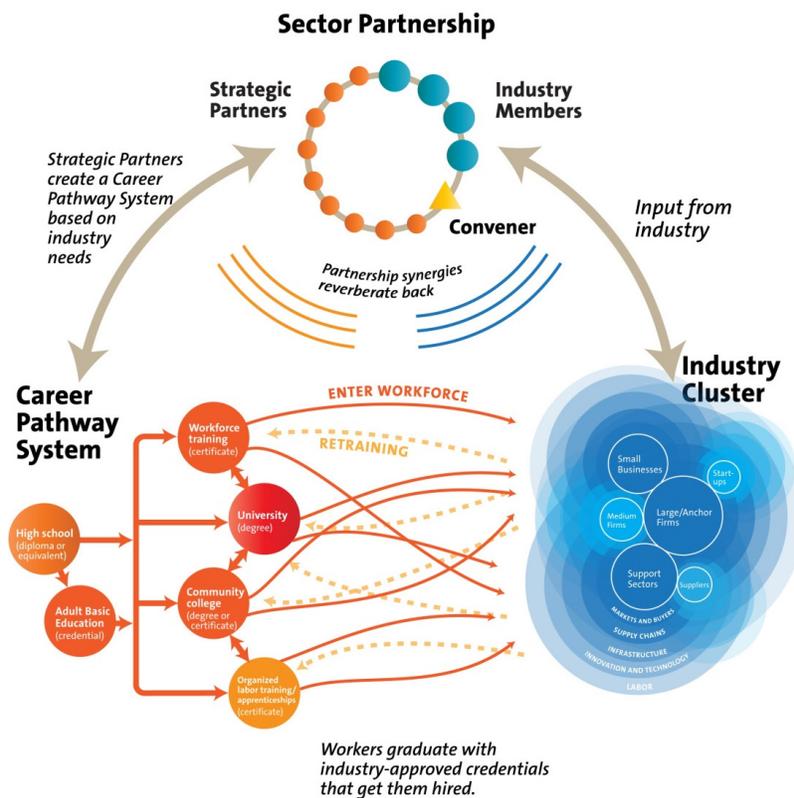
What's a Sector Partnership?

Sector Partnerships bring together employers, at a regional level, from the same industry with the education, training and other community support programs needed to implement solutions and services that ensure the target industry thrives.

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What's your Starting Place?

Got a Sector Partnership? Use it. Your sector partnership is the place for authentic engagement with employers on the issues important to them. Your partnership most likely already includes a workforce or education priority, and therefore a workforce or education taskforce or committee. This is the place to begin tackling the development of a comprehensive career pathway. (Start with Step 5.)

Got a Career Pathway employer group? The opportunity before you is to build your employer group out into a comprehensive sector partnership that facilitates focused attention on multiple priorities important to employers. Keeping employers engaged over a longer term depends on finding the multiple, but focused, priorities that matter to the health of the industry. Expand the conversation to include issues related to economic development. The partnership will still be the best place to access employers for the purposes of building a career pathway system. (Start with Step 2.)

Planning to launch a new sector partnership? Start thinking ahead about education and training partners that should be part of your community support partners. They will become important when the partnership moves into implementation. Rarely does a sector partnership exist without a priority related to creating a skilled, educated workforce. This will be where you and partners (employers and program) can discuss and develop a comprehensive career pathway. (Start with Step 1.)

Planning on building a Career Pathway? Think bigger. Start planning now to launch a strong sector partnership, out of which you and partners can develop a comprehensive career pathway. Why bother? Don't make the mistake of asking for employers' time to just respond to their talent pipeline needs. Employers have multiple needs, but need a single table at which to work with multiple public entities, including education, workforce development and economic development. A sector partnership is an effective and sustainable vehicle to meet employers' multiple needs, including building a talent pipeline into good jobs. (Start with Step 1.)

This document contains links to several online resources, please find the full document with links at www.sectorssummit.com/toolkit.

Career Pathways in 5 Parts

▶ **PART I:** Build the Sector Partnership*

1. Defining the scope of your sector partnership: The key here is to work through a shared set of facts together with education, workforce development and economic development partners. Discuss and jointly assess your region's industries by wage, growth, location quotient and other factors.** Leave this discussion with agreement on which sector(s) are most ripe for a sector partnership, and discuss the most appropriate geographic scope.

2. Preparing to Launch your Sector partnership: Start planning. Confirm among partners who the best person(s) and organization(s) will be to take the lead convener role, and be clear about support roles from others. Start building your invite list for employers in your target sector from around your region. Identify the "civic entrepreneurs" within these companies that you know will help lead and actively participate. Cultivate one or two lead employers who will help now with invitations, setting the agenda and showing other employers that this is worth their time. Don't forget about your community support partners. Prep them for the launch by inviting them and letting them know this meeting will be about listening to employers. Finally, set your date and location.

3. Holding your Launch meeting*:** There is no one right process for a launch meeting with employer partners, but a few guideposts can help set the right tone and get the right outcomes. Start with opportunities, not issues or challenges. Facilitate a discussion that draws out what employers see as their biggest, most exciting growth opportunities now, and on the horizon. Follow this up with brainstorming the required action areas that will leverage those opportunities. Ask for champions around those action areas, and commitments to continue fleshing out potential next steps.

4. Organizing the Aftermath: Guess what? You've launched! Now comes the critical follow through. Get those notes out. Pull together smaller conversations of your "champions" to flesh out short term and long-term actions. Start immediately expanding the circle of employer members, and make sure you are bringing community support partners along without sacrificing the ongoing prominence of the employer voice. Stay agile, move forward, get some early wins.

COLORADO
REGIONAL
SECTOR
PARTNERSHIP
CONVENER
TRAINING
WORKBOOK

CWDC   May 2014
Prepared by Collaborative Economics
and the Woolsey Group, LLC

*For more resources on building a sector partnership, access the full Convener Training Toolkit

Sectors Summit: Region 1 and Colorado Profile

Colorado Key Economic Regions
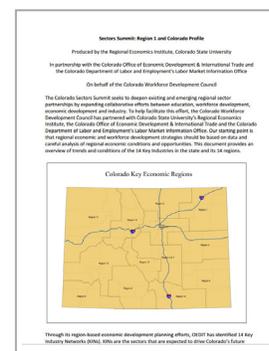
**See sample regional industry data profiles

03 - DEFINING THE SCOPE
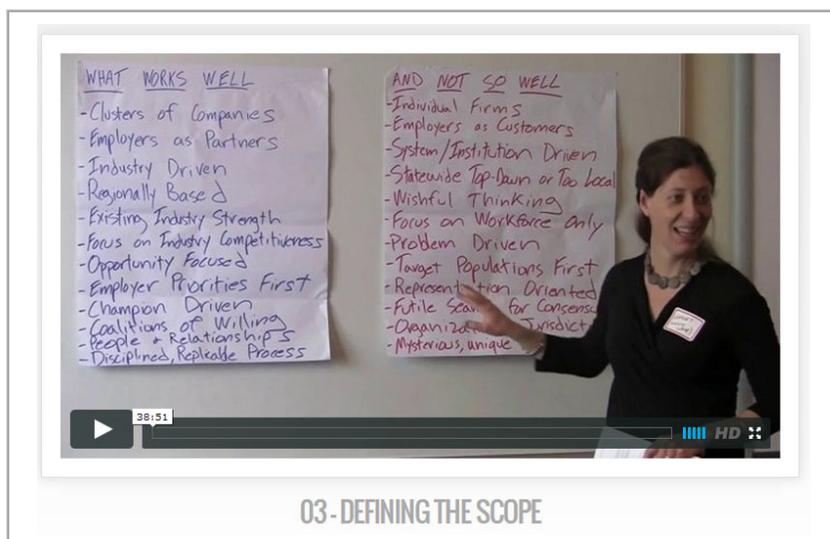
*** Access the video to watch a simulated launch of a sector partnership

▶ **PART II:** Reveal the Sector's Talent Landscape

5. Understand the Industry's Critical Occupations: It's time to go back to the data, and just like in Step 1 above, you want to use data as a conversation starter. Data is not a substitute for the kind of information you can glean through employer engagement, but just the right amount of analysis will give you "prompts" to use with actual employers in a conversation about their most critical occupations. You will want to look at past, current and projected growth of occupations in your target industry. You will want to look at wage data across occupations. You will also want to organize the occupations into rough categories of compatibility (e.g. production occupations, transportation and material moving occupations, and sales and related occupations). Present this data in a simple way (pie charts, bar graphs). For more detailed steps on how to analyze and present this data, see Appendix I.

6. Develop a rough (not perfect!) inventory of education and training programs: At this stage, develop a simple inventory of the existing education and training assets that apply to your sector in your region. List the training programs, certifications and credentials that your community colleges, WIBs, and universities offer. Consider the role of adult basic education, pre-college and incumbent worker programs in your inventory. Don't worry about going into detail or capturing everything at this stage. The goal is to develop a working inventory of the major education and training assets in your region that you will use later to compare against employers' training needs.

The inventory can take many forms, but it's important to include a few key pieces of information listed in the sample template below:

Sample charts

Projected Manufacturing Job Growth
Total Job Growth by Occupation - Western Region
2012-2022

Western Region Manufacturing Jobs
2012
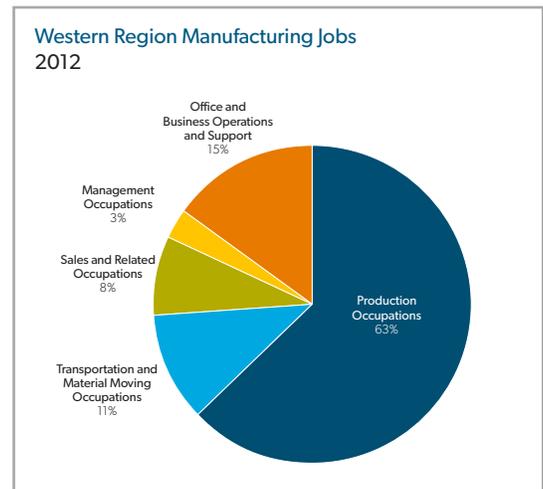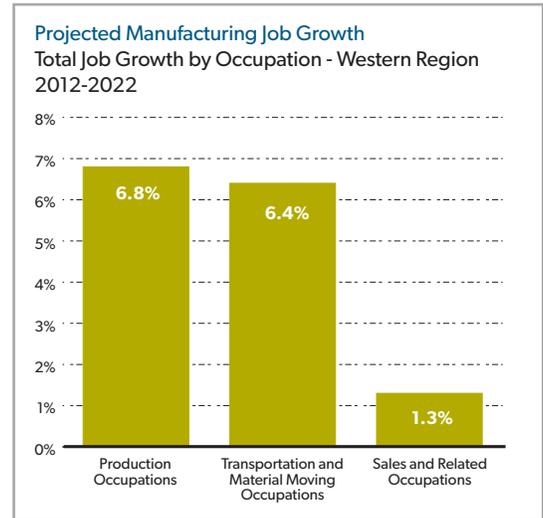
Institution/Organization	Program	Certification/Credential
Spring Valley Community College	Manufacturing Technology	Associate in Applied Science, Manufacturing Technology; Machine Operations Skills Certificate; Manufacturing Essentials Certificate; Quality Technology Certificate; Tool and Die Making Certificate; Applied Welding
Springfield State University	School of Engineering	Bachelor of Engineering - Manufacturing Electrical, Plastics, Mechanical Design, Production Occupations
Spring County Adult Education School	Bridge to Manufacturing Careers	Preparation for certificate programs at Spring Valley Community College
Spring County Workforce Investment Youth Council	Build a Boat Summer Camp	Certificate of completion, Career Readiness Certificate (soft skills)

Data Source: Colorado Department of Labor, LMI Gateway, Manufacturing Occupation and Wage Data, 2012 and 2022 projected
Analysis: Collaborative Economics

7. Get the Real Story from Employers: Occupational data, no matter its source and purported quality, tells only a small part of the actual talent landscape of a target industry. To truly get a handle on the real story, you need a conversation about critical occupations with employers. Use your simple data charts as prompts, but expect to spend only a few minutes hearing their reactions and reflections. Then facilitate a conversation that is instead driven purely by what employers in the room can tell you about their most critical occupations. Let them self-define "critical." It might be in terms of hardest to fill, highest turnover, highest output or profit. It may be based on the most number of workers in a specific occupation, or it may be a "kingpin" position filled by just one or two individuals. Let them tell you. As they are talking, find a creative way to map or storyboard their conversation.

Sample diagram of Employers' Perspective on the Talent Landscape
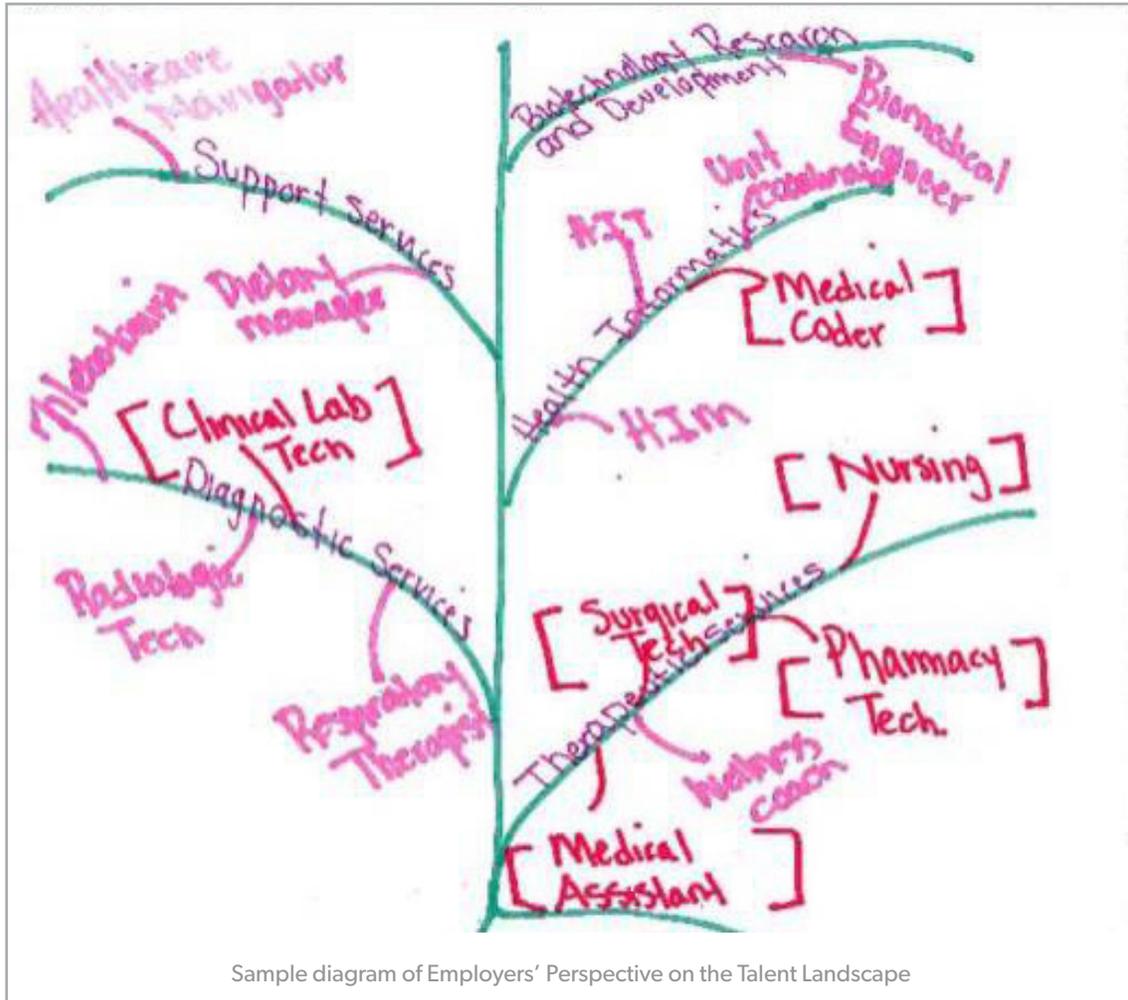
Sample Facilitated Conversation with Employers: Critical Occupations

1. **Invite employers to use index cards to write down their two most critical needs — in terms of specific positions/occupations:**

   - Put another way, what two positions that if you can't adequately fill them will MOST hold back your ability to grow and stay competitive?
   - Or, what two positions most concern you and keep you up at night?

   > **Materials**
   > - Colored markers
   > - 5"x8" index cards (colored cards work best)
   > - Blue sticky wall or tape to stick papers on wall to display

2. **Meanwhile, create occupational categories at the top of the blue screen, using a different color index card.** For example, production, engineering, transportation, sales, office support, management.

3. **Collect the cards and start to group them by category, trying to discern where there might be a career pathway, or at least different levels.** For example, CNC operators may fall at the bottom, with quality control technicians in the middle, and production supervisors on the top row.

4. **After you have done an initial sorting of the cards, ask employers to share more about each occupation, for each major occupation on the sticky wall.** Through this discussion, you may find that the same occupation looks quite different across companies.

5. **Invite employers to offer additional input, asking, and "If you had a third card, is there any other occupational need you would have identified"?** Employers may identify occupations that are already on the wall or offer new additions.

6. **As you begin the discussion, continue to move cards around in response to employer feedback.** Try to create a "pathway" of entry, mid-, and advanced positions as the discussion progresses. The goal of conversation is to paint an accurate picture of the talent landscape of these employers. Questions for discussion:

   a. Why did you list these positions as your most critical needs? Was it because:
   - You need a large number of them?
   - They're the hardest to fill?
   - They have the highest turnover?
   - They have the biggest impact on company costs (e.g., turnover, recruitment, hiring)?
   - They have the biggest impact on company growth and profitability?

   b. Where are your needs shifting the most?
   - Where are positions disappearing?
   - Where are positions transforming?

   c. Tell me about how a person advances inside your company.
   - Where does it happen most now? Within categories? Across categories?
   - Where would you like it to happen more?

   d. How are local institutions/programs working to meet your most critical needs?

7. **To recap, ask employers to look at the sticky wall and consider whether, taken as a whole, this is an accurate depiction of the reality facing this sector in this region.** Are there any major additions or caveats to note?

▶ **PART III:** Act Now and Lay the Groundwork for the Long Term

8. Do something now about specific critical occupation shortages: Every good sector partnership balances short-term actions with longer term strategies. Being able to show early wins to member employers and community support partners is an essential element of creating the momentum needed to sustain and expand. Almost inevitably your conversation with employers about critical occupations will reveal some non-training issues that can be resolved quickly (immediate job matching, new hire recruitment) or some short-term training responses that can fill an immediate need (incumbent worker training for example). Be opportunistic, identify these areas, and show early results.

9. Organize jobs by skill sets and levels: At this point, you will be able to begin grouping occupations by skill sets, first based on the direct input you solicited from employers (step 7 above), and then based on crosswalks with databases that categorize occupations based on their required knowledge, skills and abilities. The most commonly used such database is the U.S. Department of Labor's Occupational Information Network, or O*NET. As a first step, do a simple crosswalk of the critical occupations named by employers with Standard Occupation Codes (SOC). Then crosswalk each critical occupation with the skill profiles in O*NET, and stack them by entry, mid- and advanced levels.

Stacked SOC Codes Crosswalk

Title	SOC Code	Notes From Employer Discussion
Entry level Production		
Industrial Vehicle Operators	53-7051	Employers emphasized high turnover in these positions; lack of soft skills.
Mid-level Production		
Supervisors	51-1011	Our discussion highlighted a need for supervisors, particularly with diverse shop floor experience.
Welders	51-4121	Very specific aluminum welding needs highlighted here, and 2-5 years of experience.
Assemblers	51-2000	The conversation about line workers included assemblers, QC, and the need for CNC machinists. Some unexpected complexity here when we discussed actual wages as it was clear that all three occupations could be entry, mid or advanced level. Not clear cut.
Metal Workers (Machinists)	51-4041	
Quality Control	51-9061	
Mid-level Sales	41-4000	This conversation focused on sales people who were skilled in social media and other modern sales techniques. This is the sales code for a Manufacturing Sales Rep.
Advanced level Engineers		
Industrial Engineers	17-2112	Emphasis on how engineering talent improves production and innovation processes. Both mechanical and industrial engineers were mentioned by title. Also some evidence of advancing from within to these positions.
Mechanical Engineers	17-2141	

10. Deeply understand the underlying knowledge, skills, and abilities (KSAs) – You are now at a critical step in the process of building a career pathway that requires digging into the actual knowledge, skills and abilities of critical occupations. You explored this already by using O*NET. A common pitfall at this point is to use the O*NET skill profiles as substitutes for the actual KSAs required by employers in your target industry in your region. There will be overlap, but they will not be precisely accurate. You have two tasks to tackle:

Start to understand compatible occupations: Using the existing skill profiles from O*NET, you can understand the basic skill requirements of an occupation. You can also cross-check these skill requirements with other jobs that have similar profiles. This may take you outside the scope of your target industry, but that's okay. You are finding jobs potentially held by individuals with compatible, or transferrable, skills for your target critical occupations. This is extremely important information for multiple purposes, including recruitment of workers, re-training of dislocated workers, and creating or refining curriculum and credentials that might serve multiple industry sectors. (For a sample occupational crosswalk, see Appendix B).

Prioritize a set of critical occupations (perhaps 3 to 5) for which you will conduct focus groups with subject matter experts, or SMEs (employers, human resource managers, and workers themselves), to assess KSAs and critical work functions. This approach, sometimes called a Skill Panel, is a structured, facilitated process that solicits the specific KSAs of a job from SMEs, and organizes that information into a useable format for stakeholders. (For a sample description of a subject matter expert work group, see Appendix C). It requires a close, working relationship with employers who will be willing to not only give their time to a focus group, but give their employees' time too. This is where working within an established sector partnership proves advantageous.

Skills Standards and Skills Profiling 101

Skill Standards and Skill Profiles answer two critical questions:

1. **What do workers need to know and be able to do to succeed in today's workplace?**

2. **And how do we know when workers are performing well?**

Without this fundamental information, employers do not know whom to hire or where to focus their limited training dollars; employees and new entrants to the workforce do not know what they need to do to improve their performance; and educators do not know how to prepare students for the challenges of the workplace.

The goal of a skill standards or skill profiling process is to specify the critical work functions, key activities, performance indicators and knowledge, skills, and abilities an individual needs to succeed in certain occupations. The major difference between a skills standards process and a skill profiling process is the length of time it takes to conduct the process. A full skills standards process typically takes 2 full days of focus groups with employees and employers. A skills profiling process typically takes one full day focus group with employees, sometimes with a follow up survey to employers. In both cases, the resulting product should support the development of new curriculum and the strengthening of existing curriculum in programs leading to certain careers in an industry.

What is a skill panel?

A skill panel is a group of skilled workers with in-depth knowledge of the hands-on skills required to perform the job tasks in a technical position.

How are skill standards and profiles used?

- Industry: Recruiting, hiring, training and promoting employees

- Incumbent Workforce: Advancing careers and/or reentering the workforce

- Future Workforce/Students: Understanding/acquiring skills needed to attain high wage jobs

- Labor: Ensuring employees benefit from high paying career opportunities

- Government: Linking education reform initiatives, workforce training and economic development

- Educators and Trainers: Developing curriculum and teaching to the required skills sets

Who Participates? Employees are the Subject Matter Experts

Typically, to develop full skill standards or an occupational profile an all-day focus group of employees who actually work in the occupations being studied is required. The focus groups should consist of 12 front-line employees who represent the same or similar occupations, from many different companies. The group may also contain managers or other knowledgeable persons with extensive, current knowledge about those occupations.

How Industry Can Contribute – Recruiting Participants

The goal is to recruit 12 participants for the focus group meeting. This requires employers and labor partners where applicable to identify and support employees to participate in the meeting. It is imperative to have an adequate number of knowledgeable employees for each occupation participate so the standards will be valid for the industry. It is necessary to have employees from many different places of employment to ensure that a range of work environments is represented.

Industry must also participate directly via survey (more typical for occupational profiling), or via a separate focus group meeting (necessary for full skills standards). Written surveys and focus groups of employers supplement data collection about foundation skills required. This information is essential to cross-check with findings from the employee focus groups.

The Process

Ideally a facilitator with experience in developing skill standards leads the focus group(s). There is a set agenda, but the format is very interactive and discussion-based. Getting input from all participants about their work functions, activities, knowledge and skills is one key goal. Reaching agreement about the scope and content of the information is another. The process includes fast-paced and intensive discussions about work functions, activities and skills, but it is also a fun and rewarding experience for participants. Similarly, the focus group with employers or the written survey is designed to gather supplemental information about needed skills, knowledge, daily work functions, and job descriptions. The industry employers then review draft standards before final documents are produced.

11. Turn your rough Education and Training Inventory into a refined Asset Map: It's time now to re-visit your education and training programs. Using the inventory that you developed earlier, begin to develop a map showing the transferability and connections among the certifications, credentials, and degrees currently offered. Do not forget to include any programs that offer a work experience component, such as internships, on-the-job training or apprenticeships. Organize your map by entry-, mid- and advanced level credential attainment, and overlay what you now know about the needed skills of critical occupations. To do this, invite all of your education and training providers in your region to provide input. Similar to the storyboard or map you created during your facilitated discussion with employers in Step 7, create a visual that best represents the actual programs, their credentials and how they are connected.

Example of an Education and Training Asset Map

▶ **PART IV:** Build the System for Continuous Talent Generation and Career Mobility

12. Apply KSAs in as many ways as possible: Once you have documented the KSAs of a critical occupation, the application potential is significant. Fundamentally, documented KSAs, in some places called Skills Standards (example: http://cleanenergyexcellence.org/skill-panel/energy-industry/), should be the guidebook for education and training providers to make changes and upgrades to existing curriculum, and to create new programming and credentials. KSAs should additionally be used to develop and refine existing jobseeker assessment protocols, as well as remedial and job readiness training. KSAs are also useful for employers to re-write their job descriptions and hiring requirements, which, if inaccurate, are often a bottleneck in recruiting skilled workers or advancing existing workers from within.

13. Turn your Education and Training Asset Map into a Clear Skill Attainment Map: By now you and partners should have a clearer picture of the actual programs, curricula, and credentials that serve your target industry. You have detailed KSA profiles for critical occupations, and hopefully educators, trainers and employers themselves are using them in multiple ways. You also have a sense of compatible jobs and transferrable skills in and out of other industry sectors. It is now time to create a Skill Attainment Map. Congratulations! This is in fact your career pathway!

You will need to dig into the specific skills needed for an individual to advance from an entry-level occupation to a mid-level occupation by assessing the needed skills attainment for such advancement. This will require a cross-analysis between levels. For example, an entry-level Heavy Equipment Operator will need additional skills in repair, equipment maintenance, troubleshooting, reading and math, and blueprint reading if he or she is to advance to a mid-level Assembler. Once again, find a creative way to graphically depict this, and start labeling the gaps in programming. Use this as a guide for finding critical touch points between institutions where articulation agreements, MOUs and improved navigation for students may be needed. Finally, find a way to insert actual projected demand in real numbers into your Map. The pitfall at this point is not paying attention to just how many jobs exist within a certain occupational category, and potentially training too few jobseekers or worse, over-saturating the labor market by training too many.

Combustion Turbine Technician Skill Standards
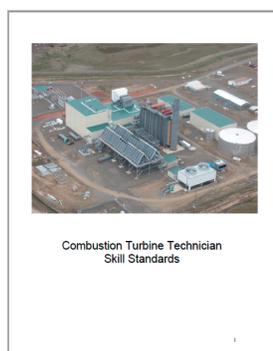
See example skill standards documents

MANUFACTURING | Career Pathways and Demand in Greater Kansas City   Updated March 2014

| Education	Job Description	Tools & Technology	Current Openings	Median Hour Wage	Certifications/ degrees offered
High School Diploma & Work Experience	**PRODUCTION OCCUPATIONS (PACKAGING, INSPECTORS, TESTERS)** Operate or tend machines to prepare industrial or consumer products for storage or shipment. Inspect, test, sort, sample, or weigh materials or assembled products.	MS Programs, Scanning equipment. Software: Data entry, label making, industrial control	437 Job openings	$15.36 (KC) $13.91(National)	Certified Production Technician, OSHA Safety, OSHA Forklift
	MAINTENANCE AND REPAIR WORKERS Perform work to keep machines, mechanical equipment, or the structure of an establishment in repair. Duties may involve pipe fitting; boiler making; insulating; welding; machining.	MS Outlook, Excel, Word, Industrial control, facilities management	361 Job openings	$15.87 (KC) $15.95(National)	OSHA Safety, Machine Tool Tech, Industrial Maintenance
	SUPERVISORS OF PRODUCTION & OPERATING WORKERS Supervise and coordinate activities of production and operating workers, such as inspectors, precision workers, machine setters, assemblers, fabricators, and plant and system operators.	MS Programs, Software: ERP, project mgmt., logistics planning	200 Job openings	$25.28 (KC) $24.49(National)	Quality Management & Lean Enterprise
	SUPERVISORS OF MECHANICS, INSTALLER, REPAIRERS Supervise and coordinate the activities of mechanics, installers, and repairers.	MS Programs, ERP and project mgmt. software	179 Job openings	$27.31 (KC) $27.65(National)	Quality Management & Lean Enterprise
Certification or Associate's Degree	**MACHINISTS, METAL WORKERS, WELDERS, CUTTERS** Set up and operate a variety of machine tools to produce precision parts and instruments. Use hand-welding, flame-cutting, soldering equipment to weld or join metal components.	Software: CAD, CAM, project management, Excel, Industrial Control	39 Job openings	$17.37 (KC) $16.50(National)	MIG/TIG Welding, Soldering, Precision Machining, CNC Operator, Fabrication
	WHOLESALE AND MANUFACTURING SALES REPRESENTATIVES Sell goods for wholesalers or manufacturers to businesses or groups of individuals where technical or scientific knowledge may be required.	Microsoft Programs, data entry software, CRM software, Oracle	510 Job openings	$26.44 (KC) $26.50(National)	Leadership Skills Certificate
	DRAFTERS, ENGINEERING AND MAPPING TECHNICIANS Apply theory and principles of engineering to modify, develop, test, or calibrate machinery. Prepare detailed working diagrams of machinery and equipment. Calculate mapmaking information from field notes, and draw and verify accuracy of topographical maps.	CAD, Adobe, CAM, development environment software, industrial control software	188 job openings	$23.28 (KC) $23.12(National)	Computer Aided Drafting and Design, CAD/CAM system solutions
Bachelor's Degree	**INDUSTRIAL ENGINEERS** Design, develop, test, and evaluate integrated systems for managing industrial production processes including human work factors, quality control, inventory control, logistics and material flow, cost analysis, and production coordination.	Software in CAD, Industrial control, project mgmt., development environment	259 job openings	$34.75 (KC) $35.56(National)	CAD/CAM system solutions, Mechanical Engineering
	MECHANICAL ENGINEERS Perform engineering duties in planning and designing tools, engines, machines, and other mechanically functioning equipment. Oversee installation, operation, maintenance, and repair of equipment such as centralized heat, gas, water, and steam systems.	Software in CAD, CAM, development environment, C++, G-Code	138 job openings	$35.45 (KC) $36.19(National)	Mechanical Engineering
	ELECTRICAL ENGINEERS Design, develop, test, or supervise the manufacturing and installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use.	Software: CAD, development environment, C++, Java	159 job openings	$35.26 (KC) $38.89(National)	BS in Electrical & Computer Engineering

Sample: Career Pathways and Demand in Greater Kansas City Manufacturing Career Pathway

14. Market it for all audiences: Ideally, your Skill Attainment Map, or career pathway, becomes a career advisory tool for educators, guidance counselors, parents and students. It also becomes the connecting framework across the multitude of private and public education and training institutions responsible for guiding individuals onto a career path. As you implement the strategy outlined in your Career Pathway Action Plan, keep the map updated and reflective of changes in employer demand and in education and training programs.

15. Integrate Demand (the critical occupations) and Supply (your education and training asset map) into a Career Pathway Action Plan: The next step is all about matching demand and supply, and identifying specific areas for action to strengthen the system for attaining skills, developing talent, and enabling career mobility within your target industry. You now have the tools necessary to build the Sector's Career Pathway Action Plan (see Figure 3, below). Consider this to be an actionable strategy tool that will focus and guide your ongoing efforts to develop and maintain an integrated career pathway.

- **Start by mapping out the talent landscape that you heard from employers.** Build from lower-to higher-skilled positions, mapping out the pathways among those positions.
- **Next, map relevant local education and training programs to those positions**, referencing your Skill Attainment Map.
- **Once you have an initial sketch of the Action Plan, bring in employers and community partners to discuss where there is a strong match between employer demand and education and training supply and where there are gaps.** The goal of the discussion is to reveal where the biggest mismatches exist, and to help determine priorities for matches that need to be strengthened.
- **This process may require matching projected demand with anticipated completions, and occupational KSAs with program curriculum.** It will also require digging into the specific skills needed for an individual to advance from an entry-level occupation to a mid-level occupation by assessing the needed skills attainment for such advancement.

It should now become clear where the gaps, duplications, and mismatches within the education and training system exist. These areas will require action. You may realize that no articulation agreements exist between important institutions along the career pathway from one credential to the next. You may realize the system offers duplicative credentials for one area, and none in another. You may find coursework that leads to dead-ends (i.e. no occupation at all!). The Action Plan, in effect, becomes your strategy for closing gaps and strengthening the system that develops a talent pipeline for sector employers and career pathways for jobseekers in your region.

Sample Career Pathway Action Plan

▶ PART V: Ensure Your Career Pathway has Owners and a Home: Your Sector Partnership

16. Transition to Implementation: As you and partners begin to implement the strategy outlined in your Action Plan, use your sector partnership as the cross-system, employer-driven home for ongoing efforts. Establish lead employer champions to help chair the work; continue to draw on community support partners to contribute; use the discipline of action plans and timelines to stay on track. **See Modules E and F of Sector Partnership Convener Workbook.**

17. Sustainable Implementation: Effective career pathways grow out of a strong and current understanding of industry's needs, as well as a deep understanding of how individuals access and progress through the labor market. The final, and highest risk, pitfall now is to build a career pathway system that simply justifies the existing curriculum and credentials offered by education and training programs, verses building a career pathway system that is the true reflection of advancement through an industry. Use your sector partnership to: keep employers in the driver's seat; regularly document and report progress, and make adjustments along the way as needed; and establish a culture and protocol of being able respond and shift according to new information and opportunities.

Final Tips

- Remember you are building an entire infrastructure of support for industry and jobseekers

- This takes time. Be okay with that, but keep moving and benchmark progress along the way.

- Just start – this is still the best advice out there.

▶ **Appendix A:** Using and Organizing Data to Understand an Industry's Key Occupations

There are many kinds of employment data to draw from, but this toolkit references the information provided in the Bureau of Labor Statistics Occupational Employment Survey (BLS OES). This is meant to be a very simple overview of how to think about this data as a tool that doesn't require a statistician to operate!

Know where your data comes from and what it can tell you. The Bureau of Labor Statistics collects occupational data at the industry level on an on-going basis using a mail survey that solicits information from employers about what kinds of positions exist in their companies and how much they pay. Every 2 years the BLS releases 10-year projections, projecting the growth patterns of all occupations. Sample data is used to project both the current occupational levels as well as the 10-year projections. Because the OES employs a sample method, there is an implicit margin of error. Occupational data, especially at the regional level, is not meant to be an accurate census of all workers, but rather an overview the industry composition. More information on the methodology of the OES see http://www.bls.gov/oes/current/methods_statement.pdf

Identify the industries involved in your sector. Data is sorted by two important codes. The North American Industry Classification System (NAICS) identifies a company's industry and sub industry at an increasing level of detail; each digit of a NAICS code offers more specificity on what it is that the firm does. The first two digits are the broader industry code. To gather information on a particular industry query data using the appropriate industry code. Codes for the 19 industries OES tracks are found here: http://www.bls.gov/oes/current/methods_statement.pdf.

Identify large and growing occupations. Standard Occupational Classification codes (SOC codes) are associated with occupations within a given industry. For instance, Office Manager or Engineer are two occupations that exist in many industries. Each SOC code digit adds a layer of specificity to the given occupation (See figure below for a sample of occupations at SOC levels 1, 2, and 3) Because of the limitations of sample data, especially at the regional level, SOC data at the 4 and 5 digit level often isn't very revealing or accurate.

SOC Code	SOC Level	SOC Title
00-0000	1	Total, All Occupations
49-0000	2	Installation, Maintenance and Repair
49-2000	3	Electrical and Electronic Equipment Mechanics, Installers and Repairers

- **Identify large occupations.** To identify where the majority of occupations fall in a given industry, start by looking at SOC level 2 data and sort the data from the most workers to the least. These occupational categories are fairly broad but can point to where the majority of occupations lie. In occupation categories that are either very large or you know to be critical, you can expand your view to look at level 3 data, or occupations within

- **Identify growing occupations.** If the growth rate of a given occupation is not given, create a spreadsheet that has both current and projected numbers for occupations. Sort by highest growth. Sometimes occupations with less workers in the current year make projected growth look particularly dramatic. While this may temper your interest it's an important line of inquiry to bring up with employers. Is this the result of sampling error or is something happening?

- **A note on sorting SOC code data.** When looking at SOC data it is best to make sure you are only seeing one level of data at a time. Occupations are replicated at each level of information so when you are looking at a complete data set you are seeing the same jobs represented up to 5 times with a growing level detail. For instance, when you are looking at SOC Code level 2 data all the codes should look like XX-0000. There are many ways of sorting and filtering this information in Excel – help yourself out by narrowing the amount of information you see at one time.

Create visualizations of the data that communicate what you see. This is a step that is individual to the data, but some important charts you might want t o create are:

- A bar or longitudinal chart that shows the change in level 2 occupations over the 10 year period within a given industry.

- Pie charts or compositional charts that show the relative proportions of different occupations in the industry now and projected.

- Projected growth information at SOC code level 3-detail on occupations that are large and/or fast growing.

Confirm and explore data with employer partners. As mentioned before there are limitations to occupational data so it is absolutely critical to confirm patterns you see in the data with actual employers. Let this data guide the conversation you design. Make sure that you also create room for employers to talk about occupations that did not come up in the data. This is Step 7 in this Step-by-Step guide.

▶ **Appendix B:** Sample Occupational Crosswalk

SOC/O*NET Code: **51-4011.00**

HB13-1165 Manufacturing Career Pathway Skills & Competencies Cross-Walk with Manufacturers and Education

Job Title/Occupation: Computer Controlled (CNC) Machine Tool Operator

(Yellow highlight indicates 80% or more agree it's not applicable for this occupation)

(Strike through text indicates that portion of a description is not applicable for this occupation)

(Green highlight indicates additional needs for this occupation)

CORE – Skills & Competencies
Baseline Source: US DOL Model of Competencies and O*NET Defined Skills & Competencies

Knowledge	Knowledge Description	Validated need by Regional Manufacturers (Y/N)	Skills and Competencies Provided by Regional Educators (School Name, Grade Level, Course Title)
Mathematics	Knowledge of arithmetic, algebra, geometry, ~~calculus~~, statistics, and their applications.	Y-5 N-0	
Production and Processing	Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.	Y-5 N-0	
English Language	Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.	Y-4 N-1	
Physics	Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub- atomic structures and processes.	Y-1 N-4	

Category	Tools and Technology Use		
Tools	Surface grinders	Y-4 N-1	
Tools	Computerized numerical control CNC tappers	Y-4 N-1	
Tools	Tapping machines	Y-4 N-1	
Tools	5 axis lathes	Y-1 N-4	
Tools	8 axis lathes	Y-0 N-5	
Tools	Lathes	Y-5 N-0	
Tools	2/3 axis computer numerically controlled CNC milling machines	Y-5 N-0	
Tools	Bore mills	Y-5 N-0	
Tools	Computer numerical controlled CNC milling machines	Y-5 N-0	

▶ **Appendix C:** Sample Subject Matter Expert Work Guide
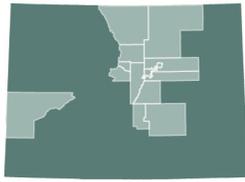
Colorado
Urban Workforce
Alliance

**Subject Matter Expert Work Groups
Greater Metro Denver Healthcare Industry Partnership**

The Greater Metro Denver Healthcare Partnership (Partnership) is an industry led, workforce, education and economic development collaborative designed to meet the hiring, retention, and training needs identified by six of the largest hospital systems and ambulatory care facilities in the Metro Denver area.   The Business Executive Committee of the Partnership, representing Denver Health, Kaiser Permanente, HealthOne, Centura, University of Colorado Hospital and Children's Hospital identified new targeted occupations in anticipation of their future hiring and training needs. The new targeted occupations include: Pharmacy Technicians, Medical Coders, LPN's and Medical Assistants and specialty training for nurses in Wound Care and ICU. They also confirmed that they still anticipate hiring Surgical Technicians, Medical Lab Technicians, Medical Laboratory Scientists (Medical Technologists), and nurses trained in OR (the original targeted occupations). One of the goals of the project is to strengthen the career pathways for all of these occupations. Collectively, these 6 healthcare industry systems have Affiliate Agreements with public and private academic institutions that provide training for these targeted occupations.

There are four new Subject Matter Expert Work Groups being formed with individuals suggested by the employers from their respective healthcare system. These Work Groups will focus on Pharmacy Tech, ICD10 Medical Coders, LPN and Medical Assistant curriculum and programs. The Work Groups are being asked to do the following:

- Review existing training program curriculum for the 4 areas and make recommendations for changes to curriculum to meet industry needs and standards;
- Establish minimum criteria/content for each training program;
- Suggest screening and assessment guidelines/criteria for selecting candidates for these training programs;
- Recruit additional Subject Matter Experts for the targeted occupations when appropriate;
- Suggest how the workforce/project training dollars could be used and allocated for the training programs and healthcare system; and,
- Hire, if appropriate, successful students.

The Work Groups will meet 3 - 4 times for approximately 1.5 hours each time. It would be ideal to meet in person for the first meeting. Teleconferencing can be made available for the following meetings to minimize travel. The information gathered by the Work Groups will be shared with the employers for their approval and buy-in.

12/10/2013