Colorado SECTORS Initiative

MARCH 2013 REPORT



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ABOUT

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EXECUTIVE SUMMARY

Sector strategies have emerged as a promising model for economic development, inspiring experimentation, research and scholarship over the last decade. Colorado is one of many states to embrace sector partnerships as a model for workforce and economic development. Colorado's adoption of sector strategies reflects its recognition that new approaches are needed to ensure that the state has a skilled workforce to meet the needs of local business and to maintain the state's economic competitiveness. Beginning in 2008, the Colorado Department of Labor and Employment (CDLE) and the Colorado Workforce Development Council (CWDC) partnered to pilot a sector-based approach to workforce and economic development.

In May 2009, CDLE and CWDC issued the first round of Colorado SECTORS Initiative pilot planning grants. Funds for the initiative came from the Governor's discretionary budget under the Workforce Investment Act (WIA). Following the planning phase, nine grantees received three years of additional funding to implement the strategies developed through the planning grants, and to advance their respective sector initiatives. These sector partnerships in Colorado presented a new model to shift the focus and the process of economic development in the participating regions and industry sectors. The new paradigm was driven by business and required regional collaboration and partnerships intended to benefit all stakeholders. Over time, employers came to the table with public partners and worked together to achieve common goals.

GOALS: The ten partnerships shared the common goal of creating a more skilled workforce. Other goals included creating new career pathways in the targeted sectors, increasing capacity and opportunities for training, and streamlining workforce center procedures to better meet the changing needs of business.

EDUCATION AND TRAINING: The primary training-related activity of the nine implementation grants was creating and customizing curriculum to meet industry's need for a more skilled workforce. Industry experts, employers and educational/training providers collaborated in the development of course modules, workshops, and credential-granting programs for both incumbent workers and jobseekers. Over the course of the grants, 1018 unique individuals entered training and 991 completed those programs. A diverse array of subjects and skill sets were covered in the trainings and courses. Many reflected rapidly-changing production technologies or addressed more efficient and lean processes.

EMPLOYMENT: Employment data indicates that most partnerships exceeded their targets in the number of individuals who gained or retained employment subsequent to participation in one or more training activity.

IMPACT AND RETURN ON INVESTMENT (ROI): Interviews with sector partners and quarterly reports provided information on the ROI from sector grants. Some highlights include:

- Increased lean and efficient systems, e.g. better use of resources and less waste, in the manufacturing sector.
- Enhanced comprehension by workers of total production operation, reducing slowdowns and inadequate or incomplete transfers down the production line, in the manufacturing sector.
- Greater worker investment and loyalty; and increased team work and/or collaboration.

¹ A tenth grant was awarded as a planning grant – the Aerospace Planning Initiative. This grant did not apply for or receive additional funds for implementation. An eleventh and final grant was awarded in 2012 to replicate the Get into Water! Initiative in Northern Colorado. This final grant was not included in Rutgers' evaluation because it was awarded after the evaluation was underway.

• Lower rates of absenteeism and lateness; as well as reduced worker turnover, e.g. increased retention rates for both nurses and nursing students.

SUSTAINABILITY: Several sector partnerships have established strong collaborative partnerships that improve their understanding of and responsiveness to industry's needs. They see their collaboration as critical for the future of their targeted sector, even expanding their membership to include their industry's supply chain or the geographic reach of their project.

All of the grants have different sustainability models and funding strategies. The Pueblo Manufacturing Partnership is using federal H-1B training grant funds to continue providing training. Other partnerships such as SMIAC reported increased employer interest to invest in employee training by taking on a larger share of training costs.

RECOMMENDATIONS: The Colorado SECTORS Initiative piloted new approaches to workforce and economic development, and there were challenges and successes. The following are the key recommendations to inform the sustainability and expansion of sector strategies in Colorado.

- Align existing and new sector partnerships with other industry-focused efforts, such as the state's Key Industry Networks (KINs); and affiliate with industry councils and Economic Development Corporations.
- Build upon existing or create new state-level structures that can coordinate sector partnerships across industries, help to streamline and universalize processes, and engage in long term planning efforts.
- Explore the possibility of multi-region initiatives to better serve industry needs and respond to supply chain and workforce issues.
- Identify and create a basic ROI model that can be refined by industry to quantify the impact of training on a company's workforce, productivity, and profits.
- Streamline WFC paperwork and processes and institute common statewide practices to improve service delivery to both job seekers and businesses.
- Develop a network database enabling multiple WFCs to enter and update industry contact data, view and update training data, coordinate events, and eventually develop STEM tracking initiatives.
- Establish industry pipelines by introducing primary and secondary students to careers in renewable energy, water treatment, and manufacturing occupations.
- Institute soft skills training in middle and high schools to prepare the next generation of workers to be problem solvers, team players, and leaders.
- Expand opportunities for trained incumbent workers to engage in turn-key training to reinforce what they have learned and further disseminate information/skills.
- Include funds for evaluation in all new grants to monitor program implementation and assess
 performance. Require an evaluation design to be submitted along with the program proposal to ensure
 that evaluation is an integral part of all new initiatives up front.

INTRODUCTION

Throughout the country, many states and regions are adopting sector strategies as a powerful mechanism to address employer and workforce needs. Sector strategies are state policies that promote regional public-private partnerships to address the skill needs of critical industries in a region. These sector-based partnerships are regional, industry-focused approaches to workforce and economic development, with the dual goals of improving access to good jobs for workers and meeting industry's need for a skilled labor force. Sector partnerships provide not only a mechanism for coordination across systems, but also funding streams to help industries, workers, education institutions, and economic development agencies achieve common goals.



Woolsey, L. & Groves, G. (2012) State Sector Strategies: Coming of Age. Washington, D.C. National Governors' Association Center for Best Practices. Page 3.

Sector strategies have emerged as a model for economic development, inspiring experimentation, research and scholarship. Pilot programs across the country have demonstrated the benefits of sector partnerships, but also have exposed the challenges of establishing regional collaborations and sustaining them over the long-term.² Understanding how sector partnerships develop and realize their goals is vital to ensure the successful establishment and growth of new sector initiatives.

Colorado is one of many states to embrace sector partnerships as a model for workforce and economic development. Colorado's adoption of sector strategies reflects its recognition that new approaches are needed

² Accelerating State Adoption of Sector Strategies: An 11 State Project Report, the National Governors Association, The Corporation for a Skilled Workforce, and the National Network of Sector Partnerships, 2008.

to ensure that the state has a skilled workforce trained to match the needs of local industry and to maintain the state's economic competitiveness.³ The Colorado Department of Labor and Employment (CDLE) and the Colorado Workforce Development Council (CWDC) partnered to launch a sector-based approach. Funds for the initiative came from the Governor's discretionary budget under the Workforce Investment Act (WIA).⁴

In May 2009, CDLE and CWDC issued the first round of Colorado SECTORS Initiative pilot/demonstration planning grants. The six-month planning phase allowed grant recipients to define their industry of focus, to assess workforce challenges and industry needs, and to identify methods to address these issues. For many grantees, this work involved extensive community research, the development of many new partnerships, and changes in policy and practice.

Following the planning phase, nine grantees received three years of additional funding to implement the strategies developed through the planning grants, and to advance their respective sector initiatives.⁵

In the final year of the implementation grants, Rutgers University's School of Management and Labor Relations was hired to document the work and achievements of the sector partnerships. From March 2012 to March 2013, researchers from Rutgers University conducted phone interviews with project leaders, visited each project site, and analyzed program documents. Rutgers sought to better understand how the sector partnerships and related programs were implemented and to identify the challenges that emerged and the lessons learned. Rutgers has produced individual case studies that discuss the experiences, challenges, and successes of each of the ten partnerships. This paper provides a look across all these partnerships to create a broad picture of Colorado's statewide SECTORS grant initiative.

BRIEF SUMMARIES OF THE SECTOR PARTNERSHIPS

The Rutgers research team studied ten grants: nine implementation grants and one planning grant. The grants were geographically dispersed throughout the state and focused on a variety of industry sectors including aerospace, renewable energy, water/wastewater operations, manufacturing, and healthcare.

Beginning with the Aerospace Initiative (the sole planning grant), the following pages provide brief descriptions of the ten grants. For more detailed information about these partnerships, please see the individual case studies.

The Colorado Aerospace Planning Initiative was a joint project between two regions: Pikes Peak Workforce Center and the Jefferson County Workforce Center (which serves the Tri-County region of Jefferson, Gilpin, and Clear Creek counties). The goals of the planning grant were to establish the capacity of the Workforce Centers to provide tailored services and training to aerospace and related supply chain companies. A further goal was to assist the Colorado Workforce System to strategically

³ Colorado SECTRS Initiative: Solicitation for Grant Applications. [http://www.coworkforce.com/pgl/pgl/pgl0811wiasectrsinitiativesgaexecutivesummary.pdf]

⁴ Governor's Discretionary funds are for initiatives that fit strategies and directions of the Governor and conform to the Workforce Investment Act (WIA), its regulations, and all other federal circulars and directives related to WIA and regulations.

⁵ A tenth grant was awarded as a planning grant – the Aerospace Planning Initiative. This grant did not apply for or receive additional funds for implementation. An eleventh and final grant was awarded in 2012 to expand the Get into Water! Initiative into Northern Colorado. This final grant was not included in Rutgers' evaluation because it was awarded after the evaluation was underway.

position itself within the aerospace industry to facilitate workforce recruitment, and to provide specialized training and other appropriate services.⁶

The nine implementation grants were as follows:

The Eastern Colorado Healthcare Workforce Partnership encompassed a broad array of workforce regions, community-based organizations, community colleges, area health education centers, economic development councils, and industry representatives. Workforce regions involved in the Partnership included workforce centers from the Eastern and Southeast Regions, as well as the Jefferson County Workforce Center (serving the tri-county region). Project goals were to: expand the ability of the Eastern and Southeast Workforce Regions to help employers and community-based organizations work with seniors; expand the capacity of local community colleges to attract, educate, and train students to work in healthcare careers, especially those serving seniors; enhance community awareness of generational differences; educate the community about the growing need for employees and volunteers; and enhance the capacity of healthcare facilities and providers to offer high quality healthcare services to Spanish-speaking clients.⁷

The Eastern Colorado Wind Energy Partnership was a collaboration of more than twenty eastern Colorado agencies and employers including wind energy employers,8 economic development agencies, Colorado Workforce System representatives, education and training institutions, 9 local governments, community-based organizations, and industry support organizations. The goals of this partnership were to provide the industry with a skilled workforce, and to support and engage K-12 schools in creating a pipeline for careers and employment opportunities in the wind energy and other renewable energy careers. Additional goals were to streamline and align workforce and economic development efforts, and to develop education programs and other services to address the workforce needs of the industry.10

The Foothills Energy Partnership (FEP) grant operated within the Tri-County (only Jefferson County), Boulder, and Broomfield Workforce Regions. This grant pursued the following goals: establish an organizational structure for the partnership; develop a green-collar workforce within the FEP targeted super-region; increase business' capacity to evaluate, place, and train the existing energy workforce; eliminate workforce system barriers for stakeholders within the sector; institutionalize energy sector strategies; and develop and implement a sustainable advisory council and training strategy. 11

The Get Into Water! Front Range Sector Initiative (GIW!) involved four counties in the Denver Metro region: Arapahoe, Boulder, Denver, and Douglas. The sector-based partnership addressed the needs of regional water utilities. The Partnership had several goals: conduct and promote training programs to fill mission critical positions with qualified, trained, and technically skilled personnel; maintain interest in, and attraction to, these positions by conducting outreach and recruitment efforts; enhance the

⁶ See Case Study: Aerospace Planning Initiative

⁷ See Case Study: Eastern Colorado Healthcare Workforce Partnership

⁸ Producers, Electric Utility Suppliers, Wind Energy Service Companies, and Wind Energy Manufacturers

⁹ Community Colleges, other training providers, and secondary education system

¹⁰ See Case Study: Eastern Colorado Wind Energy Partnership

¹¹ See Case Study: Foothills Energy Partnership

collaboration of operations staff and human resource professionals; and increase the expertise of mission critical personnel through improved knowledge management.¹²

Greater Metro Denver Healthcare Industry Partnership was led by the Colorado Urban Workforce Alliance (CUWA) and Arapahoe/Douglas Works! The foci for this project included developing an industry-driven partnership to review human capital needs and workforce challenges in the region, creating a talent development pipeline for the local healthcare industry. This entailed developing a streamlined Workforce Center process to inform job seekers of occupational opportunities in the healthcare sector, and strengthening the use of the workforce system's services by Partnership members and organizations. The Partnership identified supply-side healthcare workforce partners within the super-region specifically targeting youth and adults with low-skills, and created sustainable partnership model and fundraising strategies.¹³

Northwest/Western Colorado Healthcare Initiative (NWCHI) operated in Mesa, Northwestern, Rural Resort, and Western Workforce Regions. The partnership goals included: increasing the number of skilled healthcare workers; accelerating the credentialing of healthcare workers by adding clinical training venues that provide industry-recognized occupational/professional certification or a state license for CNA, LPN, RN, EMT, and MA programs; and expanding the accessibility of readily transferable and latticing career development opportunities in health care, with easy documentation of the individuals' training and certifications. 14

The Pueblo Manufacturing Collaboration (PMC) was led by the Pueblo Workforce Center and involved the Pueblo, Southeast, Upper Arkansas, and South Central Sub-Regions, and the Pikes Peak Workforce Region. The goals of PMC were to improve skill assessment of new and incumbent workers, to create and deliver training programs to meet changing production technologies, and to develop a state of the art model and a sustainability plan for a super-region Manufacturing Center of Excellence. 15

The Sustainable Manufacturing Industry Alliance of Colorado (SMIAC), co-convened by Upstate Colorado Economic Development, was a joint sector partnership of Adams and Weld Counties. The goals of this grant were to address employer needs in sustainable manufacturing practices, as well as to create and promote a culture of sustainability among existing and potential manufacturing firms, the workforce system, secondary and postsecondary education, other training providers, and the broader business support community.¹⁶

The West by Southwest Healthcare Initiative was led by the Western and Southwestern Regions' Workforce Centers. The goals of this partnership were to improve the preparation and retention of Certified Nursing Assistants (CNAs) and other entry-level workers through the development of appropriate training opportunities in the local area, and the identification of a long-term support plan. In addition, the partnership wanted to investigate and report on best practices to maintain and improve RN specialty skills in rural regions.¹⁷

¹² See Case Study: Get Into Water! Front Range Initiative

¹³ See Case Study: Greater Metro Denver Healthcare Industry Partnership

¹⁴ See Case Study: Northwest/Western Colorado Healthcare Initiative

¹⁵ See Case Study: Pueblo Manufacturing Collaborative

See Case Study: Sustainable Manufacturing Industry Alliance of Colorado
 See Case Study: West by Southwest Healthcare Initiative

TRAINING ACTIVITIES

Training was an important component of the sector partnerships. Training content and programs grew out of collaborative research and consultation with industry experts and regional employers. Given the diversity of sectors, there was significant difference as to who was trained and in what skill area(s).

Most partnerships focused their initial proposals on job seeker training. However, as the partnerships developed, employers explained the need to retool their employees in order for the business to successfully integrate new technology, increase efficiency, and enhance product quality. In response, many partnerships shifted their training strategies from job seekers to incumbent workers.

The nine implementation grants reported a total of 1018 unique individuals entered training. The chart below reflects the numbers of completed trainings per partnership.

Industry partners drove the technical training concentrations in each partnership, with training programs developed to meet the specific needs of individual employers. Curriculum development was a collaborative enterprise between employers and training providers. These providers included community and technical colleges, secondary schools, and professional organizations such as the Colorado Association for Manufacturing and Technology (CAMT) and the Rocky Mountain Section of the American Water Works Association (RMSAWWA).

Grant-funded trainings covered a wide range of substantive content and diverse technical skills. For example, incumbent worker training in manufacturing focused on such technical areas as: multi-industry systems technician (MIST) programming, lean manufacturing, Six Sigma, total productive maintenance (TPM), advanced programmable logic controllers (PLCs), value stream mapping, customized ISO, rapid cycle product innovation, AC/DC electricity, electrical schematics, motors and controls, and advanced hydraulics. ¹⁸ Both job seekers and incumbent workers participated in OSHA and related safety workshops. Healthcare partnerships

¹⁸ Case Studies: Foothills Energy Partnership; SMIAC; Pueblo Manufacturing Collaborative.

developed training courses mostly for job seekers in such areas as medical administration, laboratory procedures, and patient care.¹⁹

A number of employers requested "soft skills" training for their employees, and also recommended that soft skills be integrated into certificate and degree programs.²⁰ The "soft skills" trainings focused on communication, giving and accepting constructive criticism, teamwork, conflict resolution, critical thinking, problem solving, and strategic planning.

Training programs were also developed and implemented to enhance the leadership skills of senior staff and to groom workers to take on more supervisory roles. For example, the Greater Metro Denver Healthcare Industry Partnership trained senior nurses to be clinical scholars, preparing them to be preceptors for nursing students. Additionally, in anticipation of large numbers of operators retiring in the next few years, Get Into Water! sponsored a training workshop on collecting and preserving institutional knowledge and expertise. Thirty-one individuals representing several metro counties attended this workshop.

How best to work with diverse and changing client groups was another area of focus. For example, in its efforts to enhance the provision of linguistically appropriate services to its Spanish-speaking population, the Eastern Colorado Healthcare Workforce Partnership initiated an interpreter training program. And, given a rapidly expanding senior population, a number of healthcare partnerships focused on improving services to seniors. The Eastern Region Healthcare Partnership was especially active in this area, sponsoring a workshop on intergenerational communication for home healthcare workers, as well as a community forum on "aging gracefully" that was well attended by both seniors and their caregivers.

CONTEXT FOR TRAININGS

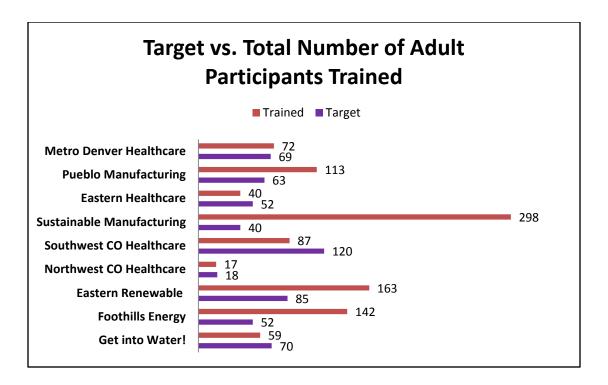
Many partnerships recognized the importance of training locations and schedules on rates of participation and completion. Over the course of the initiative, most incumbent worker trainings were conducted at the employer's location, and were scheduled around workers' shifts. Not surprisingly, onsite trainings increased rates of participation and were favored by both employers and employees. Students in these sessions brought technical work problems to the trainer, and in a few instances the trainer actually left the training classroom or mobile learning lab to address a problem on the manufacturing line.

Some partnerships, such as the Pueblo Manufacturing Collaborative, used mobile learning labs (MLLs) to deliver training workshops. MLLs enable hands-on training opportunities, including the simulation of system and work problems for students to diagnose and remedy. They also can be located wherever they are needed. MLLs are thus a very important resource for training in more rural areas where it is difficult for job seekers and incumbent workers to travel to educational institutions to gain new skills and/or credentials.

The graph below indicates the training targets each partnership set for itself compared to the actual number of completed trainings. Note that this shows not the total of unique individuals trained, but rather the number of participants in partnership sponsored trainings.

¹⁹ Case Studies: Greater Metro Denver Healthcare Industry Partnership; West by Southwest Healthcare Initiative; Northwest/Western Colorado Healthcare Initiative; and Eastern Colorado Healthcare Workforce Partnership.

²⁰ Case Studies: Foothills Energy Partnership; West by Southwest Healthcare Initiative.



NEW CURRICULA AND CERTIFICATE PROGRAMS

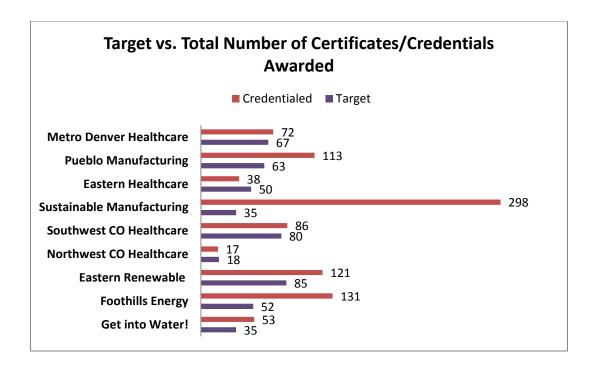
A number of new certificate programs and curricula were successfully developed through the collaborative efforts of sector partnerships. Get Into Water! developed and sponsored entry-level courses at regional high schools and community sites to prepare individuals to sit for state licensure exams in water distribution, collection, and treatment. Sixty-seven high school students completed the entry-level courses and about 20% passed their certification exams. Local utilities hired 10% of these individuals.²¹

Healthcare partnerships created new certificate programs for medical administration, lab technicians, and medical office assistants. The Partnership also assisted students to complete the Associate Degree program in Medical Laboratory Technology at Arapahoe Community College, the BSN program at Metro State, and helped expand capacity for the Medical Laboratory Scientist program at the Colorado Center for Medical Laboratory Science. The Greater Metro Denver Healthcare Industry Partnership also enrolled nurses in the above mentioned clinical scholar certificate program, graduating 34 Registered Nurses as clinical scholars through the Colorado Center for Nursing Excellence.

The graph below shows the number of certificates/credentials earned by individuals who completed grantfunded trainings.

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²¹ Case Study: Get Into Water



FINDING JOB SEEKERS: OUTREACH AND RECRUITMENT

Despite the recession, some of the partnerships were interested in creating more effective strategies to work with current job seekers and to educate them about career opportunities in their industries, as well as to ensure that a pipeline existed to find future workers.

A number of partnerships sponsored informational events and job fairs which reflected the active collaboration of Workforce Centers (WFCs) and regional employers. Thousands of individuals attended these in-person and virtual job fairs. Foothills Energy Partnership also offered a series of workshops to help job seekers more effectively use the Internet to locate jobs, including how to use key industry terms.

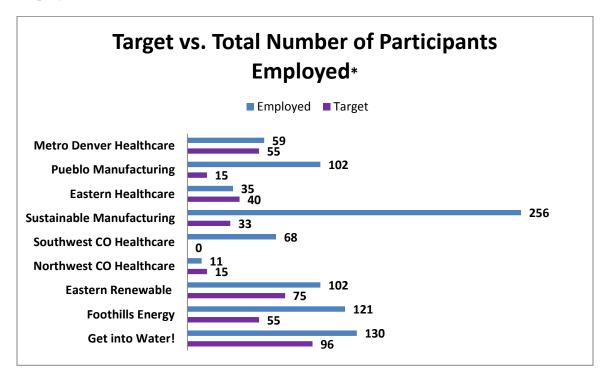
Manufacturing is now highly mechanized and jobs require advanced technical skills. Many manufacturers are small, very specialized businesses. Still, a negative image of manufacturing remains for many youth, and there are reports of declining interest in manufacturing jobs. The manufacturing sector has thus been concerned about recruiting skilled workers and establishing a pipeline for the next generation. The water treatment sector is similarly concerned about how to attract new workers to fill the jobs that will be vacated as half its workforce reaches retirement age over the next few years. In this context, a number of the partnerships initiated programs to educate and support a new generation of workers. For example, to stimulate interest in the targeted sectors, industry volunteers worked with teachers to integrate modules on water, manufacturing, and renewable energy technologies into high school science curricula. To facilitate rapid transition from high school into the water industry, Get Into Water! established licensing prep classes in high schools. The partnership also reached out to youth by sponsoring an annual World Water Monitoring Day as well as a water tower design contest that offered cash awards to the winners.

²² Case Study: Get Into Water!

EMPLOYMENT THROUGH SECTOR PARTNERSHIPS

Data from Connecting Colorado indicates that in most cases partnerships exceeded their targets in the number of individuals who gained or retained employment subsequent to involvement in a partnership training or other program activity. For example, wage records support that 256 individuals trained by SMIAC remained employed after participation, or close to 800% of its original target.

Using data from the quarterly reports, the graph below provides partnership targets and the actual numbers employed.²³



^{*}Southwest Colorado Healthcare did not set target employment numbers

Incumbent worker outcomes were not systematically tracked, so there is incomplete data on post-training retention, promotions, and changes in wages. Nonetheless, quarterly reports and information gathered during Rutgers' site visits indicated that incumbent workers who trained under the Greater Metro Denver Healthcare Industry Partnership and Eastern Wind Energy Partnership were promoted, which resulted in new job openings. No doubt other partnerships had similar results, but quantitative data to support this is not available.

Most partnerships did not collect and/or report wage data. It was therefore not possible at the time of to match participant information with wage records. As a result, there is little documentation on wage increases for incumbent workers and/or of job seekers who went through grant funded trainings. However, as with promotions noted above, both the Greater Metro Denver Healthcare Industry Partnership and the Eastern

²³ Wage data takes three calendar quarters to be posted, so current employment status may be different than reported.

Wind Energy Partnership reported that incumbent worker promotions realized as much as \$5000 per worker in increased wages.²⁴

CHANGING THE PARADIGM OF ECONOMIC DEVELOPMENT

Sector partnerships shift both the focus and the process of economic development. Instead of "fighting fires, we are more proactive," observed a member of the SMIAC team.²⁵ The new paradigm encourages collaboration, which in turn creates synergy that benefits all stakeholders. Employers whose interactions had previously been neutral at best now consciously worked together to reach a common goal to improve the skills of the workforce to meet industry needs.

Outreach also changed under the new paradigm. Outreach to employers was no longer "selling a product but (rather) meeting a need." ²⁶ Outreach meant sharing information about regional resources, and asking what the employer needed to maintain market position and facilitate growth, even in economically difficult times. Outreach was done in teams which included representatives from workforce centers, educational providers, economic development, and local public agencies as well as industry employers. At these meetings, partnering employers shared their experiences.

Outreach also evolved from a single, one shot presentation, to become an ongoing dialogue with employers. This gave employers more opportunity to learn about available resources and to identify their short term and long term needs, and for the partnership to respond to meet those needs. For example, through its successful training of 150 new workers, SMIAC was able to facilitate Sparton Medical's rapid expansion. Showcasing regional resources and training opportunities, ²⁷ SMIAC was also able to convince a site selector searching for a location to build a new plant to choose Adams County over a location in Portland, Oregon. As a result, new jobs were coming into the region.

Industry's involvement in training and education was perhaps the most significant change within the new economic development paradigm. Instead of workers completing degree and certificate programs in a silo separate from industry, employers were now directly involved in identifying the knowledge and skills that they needed in their workforce. Industry also actively engaged in the development of educational curricula for job seekers and incumbent worker trainings.

Partnerships with industry also led to the establishment of new pathways for nurses to become supervisors and preceptors, and in turn, expand the capacity to train the next generation. As mentioned above, Northwest/Western Colorado Healthcare Initiative's development of a nurse scholar program²⁸ is an excellent example of this paradigm shift.

²⁴ Case Study: Greater Metro Denver Healthcare Industry Partnership

²⁵ Case Study: SMIAC

²⁶ Case Study: SMIAC

²⁷ Case Study: SMIAC

²⁸ Case Study: Northwest/Western Colorado Healthcare Initiative

CHALLENGES

Over the course of the grant, partnerships experienced unique challenges. These are discussed in the individual case studies. Common challenges, however, also emerged, and are identified below.

Administrative Challenges

- Grant start dates were delayed due to contract and subcontract negotiations, which in turn hindered performance and achievement of some targets.²⁹
- Due to a lack of qualified applicants, partnerships in rural areas reported difficulty in staffing the project coordinator or director positions.³⁰
- A number of partnerships worked closely with their workforce partners to streamline procedures, and to improve service delivery to both employers and job seekers. However, given the autonomy and unique culture of workforce centers, it was at times difficult to develop common paperwork and registration processes across workforce regions.
- Many grant recipients were unclear how to collect and track data as well as how to effectively use existing CDLE reporting tools. This resulted in inconsistent data across all projects and the absence of some important outcome data, e.g. changes in wages and employee retention.
- The completion of CDLE paperwork emerged as a barrier for some employers who were interested in incumbent worker training.³¹ This resulted in a few companies withdrawing their requests for training. A specific example was I9 attestation or authorization to work prior to incumbent training. Attestation requires checks of birth certificates, visas, and social security cards. Industry partners grew frustrated by this requirement, confirming existent negative attitudes towards government bureaucracy. This was an issue for the Pueblo Manufacturing Collaborative. However, the Pueblo Workforce Center successfully worked with CDLE to find a solution. In the end, attestation was streamlined to permit employers to submit the documentation they collected on new hires. This reduced duplication of efforts, and significantly reduced the processing time for incumbent trainings. As a result of new procedures, several employers returned to the Pueblo Manufacturing Collaborative and revived their earlier requests for training. Note, the new attestation process was soon disseminated to other partnerships as a success, resulting in less paperwork and confusion for employers involved with those other partnerships.

Curriculum and Training Challenges

The requirement that new educational programs/curricula as well as industry credentials be vetted by institutional boards, professional organizations, and/or state agencies caused delays in the development and implementation of training programs, especially in healthcare.

²⁹ Case Studies: West by Southwest Healthcare Initiative; Eastern Colorado Healthcare Workforce Partnership; Eastern Wind Energy Partnership; SMIAC.

³⁰ Case Studies: West by Southwest Healthcare Initiative; Eastern Colorado Healthcare Workforce Partnership. ³¹ Case Study: SMIAC; Pueblo Manufacturing Collaborative.

- In the past few years internships, which provide occupational experience, have faced increasing challenges. Companies are concerned about risk liability and the actual cost of supervising unseasoned workers. As a result, there are fewer opportunities for job seekers and students to get credited and/or paid internships.³² The Eastern Wind Partnership faced this problem. In the wind industry there is a large demand for intern slots, but a low supply of opportunities. Of note, Northeast Junior College has eliminated its internship requirements for its Associate Degree program.
- In certain industries such as water treatment, there are new requirements for certifications that include proficiency in math and reading and/or formal academic credentials in addition to technical knowledge, skills, and experience. Current employees who may be seasoned workers must now demonstrate proficiencies they previously were not tested on. For some, the absence of sufficient math and literacy skills has become a barrier to passing state or national certifications required by their industry.³³ To address this issue, Get Into Water! worked with local municipalities to hold classes for incumbent workers in math and reading literacy.

Employment Challenges

- The economic downturn affected the rate of employment of recent graduates of some training programs.
- In spite of training, job seekers often lacked on the job or other occupational experience. This was an additional barrier to employment for some recent graduates of certificate and degree programs, e.g. water treatment. To address this, Get Into Water! worked with a number of employers to develop an On-the-Job Training (OJT) program for individuals who had passed state licensing exams.³⁴

Partnership and Industry Challenges

- Helping an industry shift from a competitive culture to a collaborative one emerged as a challenge for many partnerships. In some cases, project leaders had to work very hard to foster an appreciation that sector strategies could benefit all around the table, that resource-sharing resulted in mutual benefits, and partnerships were a win-win endeavor. Both Greater Metro Denver Healthcare and the Eastern Healthcare Partnership, which involved traditionally strong institutional competitors, noted this as a difficulty, but it was one that they successfully overcame.
- In addition, to push back from individual companies who had proprietary competitive cultures, a few partnerships had the additional challenge of working with industries which historically exist behind a veil of secrecy. In these situations, project leaders found it difficult to get business competitors around a table to discuss common interests and needs, and to move forward into a collaborative partnership. The aerospace planning grant provides the best example of a partnership stymied by the high degree of secrecy and competition within the aerospace industry.

³² Case Study: Eastern Wind Energy Partnership

³³ Case Study: Get Into Water! Front Range Initiative

³⁴ Case Study: Get Into Water! Front Range Initiative

LESSONS LEARNED

Many lessons learned and best practices were identified in the course of developing and implementing the sector partnerships. Some of these have already been mentioned. However, the most salient lessons are highlighted below. Further details can be found in the individual case studies.

Administration and Procedures

- Employ a full time project director for sector partnerships. A dedicated staff person is better able to create and maintain project momentum, engage in a wide range of interactions with potential and actual workforce and industry partners, and follow through on recommendations and initiatives. Site visit interviews with industry and educational partners cited the advantages of a full time director over part time leaders in moving their agenda forward, e.g. Greater Metro Denver Healthcare Industry Partnership and Get Into Water!
- Maintain regular bi-directional communication between WFCs and CDLE and schedule an
 orientation with the state accounting office as soon as an award is made. A general orientation
 will enable the project leader to have a solid understanding of policies and procedures, thereby
 reducing the potential for problems with budgets and procurement processes. Bidirectional
 communication will help identify emerging issues, and encourage more rapid resolution of
 problems, facilitating a project's success.
- Develop universal screening and enrollment procedures as well as common forms and procedures across workforce areas. Given changing industry needs and worker mobility, common statewide screening and enrollment procedures would make job searches and recruitment easier for both employers and workers. Universal forms and streamlined procedures are needed if workforce centers are to become the "go to" resource for business and job seekers. CDLE's dissemination of the employer attestation process, and Metro Denver Healthcare Partnership's success in streamlining workforce procedures, are examples that highlight how these changes can lead to more effective and efficient partnerships between industry and the region's workforce centers.³⁵
- **Standardize job descriptions across each industry**. Sector partnerships provide a forum to develop skill-based and functional job descriptions to reduce confusion and streamline recruitment.

Establishing Partnerships

• Use an entity that has credibility with industry to convene your sector partnership. A successful convener has established connections to a range of industry employers, has historic legitimacy, and is perceived to be business friendly. Existing organizations can help incubate a developing partnership, and might provide bridge funding when grant funding has been delayed. An example of this was when the Rocky Mountain Section of the American Water Works Association helped to pay for the project lead from Get Into Water! when funds were delayed. Industry associations and economic development corporations historically have buy-in from businesses. One of the very successful sector partnerships was convened by an Economic Development Corporation (SMIAC)

³⁵ Case Study: Metro Denver Healthcare Partnership

and another by a professional organization (Get Into Water!). A third successful partnership included the chamber of commerce as a key leader and contributor (Greater Metro Denver Healthcare Industry Partnership).

- Build on existing relationships and use trusted "insiders" within an industry sector to help open doors, lend legitimacy, and foster trust. Given the history of competition within many industries, it was important for sector partnerships to gain legitimacy. In some cases, this meant overcoming negative perspectives of initiatives run or funded by government. To open up lines of communication with industry and achieve legitimacy, partnerships used existent relationships with industry and professional associations and/or Economic Development Corporations. They then networked, gaining information about key stakeholders and identifying potential industry partners.
- Define roles, including the project leader, and put into writing expectations for each partner. Making roles and expectations explicit facilitates planning and follow-up activities. Goals and objectives also need to be written down and circulated to ensure transparency and a shared understanding of the work to be done.
- "Stand and deliver" on commitments to the business community. Trust and legitimacy are a process, not a single action. It is imperative to follow through on promises. If challenges emerge, including unanticipated schedule delays, open communication about alternative strategies as well as formal opportunities to solve the problem are very important to sustain any partnership.
- Remember "one size does not fit all." Partnerships realized how important it was to tailor their services to the unique needs of each employer. This relates back to the paradigm shift where a product is not being sold, but instead resources are identified and services are customized.
- Utilize in-person meetings and conference calls to get the work done. Face to face meetings and conference calls provided important opportunities to engage in group brainstorming about project goals, to solve problems, and to share challenges and best practices. The success of these methods is evident in the number of partnerships and affiliated groups that stated they will continue to meet and work together even without continued grant funding.
- Schedule regular meetings. Keeping a schedule of regular meetings throughout the year facilitates communication and collaboration. It also helps a partnership to focus on its timetable for deliverables. Scheduling regular meeting times also improves attendance of members.
- **Develop task focused subcommittees to do the work:** "not everyone can do or should do the same thing."36 Subcommittees allow for the division of tasks and the engagement of individuals by interest and/or expertise. They maximize the contribution of busy people by employing their talents in a time limited specific task, while building towards a whole. This was evident in Pueblo Manufacturing Collaboration's use of a small group to visit existent Manufacturing Centers of Excellence around the nation, and then report their observations and recommendations.³⁷ Another example is the Subject Matter Expert Committees established by the Greater Metro Denver Partnership to develop nurse scholar curricula.

³⁶ Case Study: SMIAC³⁷ Case Study: Pueblo Manufacturing Collaboration

Patterns of Communication

- Identify key words and concepts in the industry and develop a lexicon so all partners speak the same or similar language. Across sectors, partnerships found that communication was the key to their success. However, given the diversity of members within a partnership (including workforce staff, industry, educators, and public officials), there was occasional confusion about terms and concepts. Shared language enhances communication and also helps build a sense of community. Thus, the creation of an open access lexicon, such as on a web page, can make a real difference in the work of a diverse partnership.
- Develop multiple modes for communicating internally and externally. Transparency of agenda and processes was critical to achieve sector partnership goals. Partnerships therefore developed a variety of mechanisms to keep everyone informed, including monthly updates, listserves, and minutes from conference calls. To get the word out to the larger community about resources, programs, and services, partnerships used newsletters and created websites, e.g. Get Into Water!

Development and Implementation of Training

• Industry defined training. Partnerships engaged industry employers and professional associations in the identification of the skills and core competencies needed to meet current and anticipated workforce needs. Employers and education institutions/training providers then collaborated to translate the content into modules that could be used in incumbent training, or in certificate and degree programs. The collaboration between industry and educators/trainers resulted in a better mutual understanding of the possibilities and limitations of training. It also resulted in the creation of new strategies to train the current and next generation of workers. For example, healthcare partnerships worked with local educational institutions to ramp up health worker education programs, and manufacturing partnerships developed customized incumbent trainings.

In addition, industries' request for "soft skills" training led to the development of new incumbent training modules, as well as the integration of soft skills in vocational programs. Feedback from students and employers facilitated revisions of content and/or presentation, which insured greater satisfaction in employer investment trainings, e.g. the Pueblo Manufacturing Collaboration.

• Incumbent worker training can increase capacity, production, and operational efficiencies. This will be further discussed under the section, "Return on Investment" but it merits mention under Lessons Learned. Partnerships reported that employers were more than satisfied with their investment in incumbent training, some requesting additional trainings, and many increasing their share of the cost of subsequent trainings. Incumbent training not only helped to change the efficiency of production but also led to better interaction between workers (and between workers and their supervisors), resulting in better communication and problem solving. For example, one company within the SMIAC partnership learned from their workers that a production platform was too high for the stature of the employees. Lowering the height of line equipment increased productivity. Training incumbent workers also facilitated internal promotions and new job openings.

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³⁸ Case Study: SMIAC

- Use industry or subject matter experts to help develop training curriculum. Subject matter experts provided firsthand experience and insights about employee skill sets and the qualities that are needed for success. Their input resulted in effective recruitment and training activities to address and respond to the needs of industry employers.
- Schedule incumbent training on site and around work shifts, not around academic calendars. Partnerships reported that on site trainings increased attendance and completion of trainings and reduced worker (e.g. transportation) and employer costs (e.g. release time). Industry also welcomed the flexibility that was possible off the academic grid, and the ability of trainings to be rescheduled when there were changes in production demand and timetables.
- Mobile Training Labs (MLL) increased the capacity to provide hands on training. MLLs were very successfully used by the Pueblo Manufacturing Collaboration to provide incumbent worker training in rural areas. Note: MLLs are now part of the Colorado TAACCCT grant agenda. New ones are being built by Colorado Mountain College and Front Range Community College, as well as by Pueblo, to expand off site trainings in renewable energy fields.
- Co-enrolling participants enables more workers to receive training and may cut down training costs. A few partnerships developed training sessions which met the needs of multiple companies. Employees from these companies were then trained together. Joint training facilitated the participation of both large and small companies, and allowed single workers to attend a needed training. It also reduced company training costs. Co-enrollments enabled companies to try out trainings, and weigh gains against costs. For example, one company sent a single worker to a SMIAC training. The worker's subsequent increased efficiency led the company to schedule trainings for all its workers.³⁹
- Think both within and out of the box to address rural workforce gaps. Health care partnerships realized that they could expand the reach of service delivery if they provided education to and supported lay caregivers. Thus, in addition to developing more traditional certificate and degree programs, they began to train community members to provide in-home services. 40

Sector Academies

Four Sector Academies were sponsored by CDLE between 2009 and 2012. Feedback from all sources indicate that participants welcomed the opportunity to meet with their peers to share challenges, lessons learned, and best practices, as well as to learn about sector-based programs across the country. 100% of respondents at each Academy reported they were "satisfied or very satisfied" with the Academy overall. The wide array of organizations and institutions, professions and disciplines allowed cross-fertilization and fostered an interest in cross-regional partnerships (see Recommendations). The academies also helped to integrate the work of the sector partnerships with other state workforce and economic development initiatives.

 $^{^{39}}$ Case Study: SMIAC 40 Case Study: Eastern Colorado Healthcare Workforce Partnership

Evaluation of Processes and Outcomes

- Evaluation, whether process (formative) and outcomes (summative) evaluation, helps programs and their funders to understand what has been achieved. Feedback loops created by ongoing process evaluation can also facilitate mid-stream corrections.
- Partnerships stated that it would have been helpful if metrics and reporting requirements had been clarified much earlier in the sector initiative. More instructions, even data collection training, would have significantly increased valid data, as well as reduced the inconsistencies in data collection that occurred across projects. The lack of good data limits what can be said about the success of individual partnerships and/or an initiative as a whole.

IMPACT AND RETURN ON INVESTMENT (ROI)

Multiple factors impact workforce capacities, productivity, and profits. It is therefore not easy to calculate the return on investment for incumbent worker training and/or the provision of support services. Hard skill competencies tend to be easier to measure than soft skills. Given any intervention, the halo effect on morale has to be separated from actual changes in attitudes and behaviors as the result of a specific intervention. In addition, over time the initial impact of an intervention can multiply in its effects.

Economists and social scientists across the nation are working to develop algorithms to quantify ROI for incumbent trainings, internships, etc. One partnership, SMIAC, attempted to collect ROI data through a survey sent to companies after the completion of training. This survey asked questions about retention, jobs creation, cost savings, increased sales, etc.⁴¹

Based on findings from Toyota and other management studies, a good work environment is as important as salary for workers' satisfaction and productivity. Further, an investment in workers improves morale and workers' willingness to give back. While quantitative data are not available, qualitative data indicate that incumbent trainings resulted in the following changes.

- Increased preventive maintenance, reducing overall maintenance costs. 42
- Reduced shutdowns or downtime for specific machines and reduced breakage of equipment/parts.
- Increased lean and efficient systems, e.g. better use of resources and less waste.
- Enhanced comprehension of total production operation, reducing slowdowns and inadequate or incomplete transfers down the production line.
- Improved acceptable product rate e.g. one company reported its rate went from 30% to 90%.⁴³
- Improved quality and consistency of products, e.g. stain on cabinets.⁴⁴

 ⁴¹ Case Study Appendix: SMIAC
 42 Case Study: Pueblo Manufacturing Collaborative
 43 Case Study: SMIAC
 44 Case Study: SMIAC

- Reduction in breakage and lower re-work costs, e.g. one company reported \$100 for a worker in contrast to company average of \$8000.⁴⁵
- Reduction in the numbers and percentage of customer complaints.
- Lower rates of absenteeism and lateness; as well as reduced worker turnover, e.g. increased retention rates for both nurses and nursing students.⁴⁶
- Increased opportunity for internal promotions with concurrent pay raise.
- Greater worker investment and loyalty; and increased team work and/or collaboration.
- Increased problem solving among employees.⁴⁷
- Increased understandings among workers due to developing a shared terminology.
- Improved management-employee communication.
- Expanded worker confidence, e.g. nurse clinicians teaching new students, and more positive experiences for supervisors, workers, and students.
- Increased student and worker interest in pursuing AAS, BS, and MS degrees.

Further, demand for incumbent trainings increased as the success and impact of training became known within sector partnerships, either within an industry or across a geographic region. In fact, some partnerships discovered that formal outreach/marketing was not needed as the benefits of training were sufficiently conveyed through word of mouth by prior users. The Pueblo Manufacturing Collaborative is an example of this momentum. Highly regarded, the demand for incumbent training from the Collaborative was significant and continuous. To meet increasing requests, additional grant funds were secured. However, even with new monies, the Collaborative was unable to meet all the demand.

Finally, as cited previously in the case of SMIAC, the success of incumbent trainings was used by some partnerships as part of their "marketing" package to attract new employers into a region.

SUSTAINABILITY

Collaboration was seen as mutually beneficial to employers, WFCs, and educational institutions – growing a skilled workforce and increasing economic well-being. The sector model promoted synergy of impact through increased communication and collaborative efforts. Given their successes, a number of sector partnerships indicated an interest in sustaining, if not expanding, the partnership established under their sector initiatives. As noted by a member of the Get Into Water! project, "... the cultivation of these partnerships is critical to the future success and sustainability of the water profession." ⁴⁹

⁴⁵ Case Study: SMIAC

⁴⁶ Case Study: Greater Metro Denver Healthcare Industry Partnership

⁴⁷ Case Study: Pueblo Manufacturing Collaborative

⁴⁸ Case Study: Greater Metro Denver Healthcare Industry Partnership

⁴⁹ Case Study: Get Into Water! Front Range Initiative

Over the past four years, a number of models have been used to coordinate and administer the partnerships. At this time, it appears that partnerships embedded in Economic Development Corporations and/or located within professional or industry associations may have a more sustainable sector-partnership structure than those that were located in already stretched WFCs. Therefore, it is important to track what happens to all partnership models over the next few years.

The many curricula developed under the sector-based grants can continue to be used with little additional cost. For job seekers, student fees and tuition may offset the cost of delivery for certificate programs. However, the heavy reliance on student aid through one or more state and federal programs (e.g., WIA, TAA, Pell) may not be possible if there are federal cuts. Substantial cuts may jeopardize future job seeker training and certifications.

In terms of funding, some partnerships are using federal H-1B training grant funds to continue providing job seeker training.⁵⁰ Others are relying on industry associations and/or employers to fund incumbent trainings. Further, some partnerships are seeking and receiving CDLE funds, as well as matching in-kind resources and funds from their partners.⁵¹

At the same time, many partnerships reported increased employer interest to invest in employee training by taking on a larger share of training costs.⁵² Professional organizations with membership dues are also defraying ongoing expenses.⁵³ Incumbent worker training could continue and expand if the ROI of training can be refined and better communicated to industries and employers.

Improved collaboration between employer partners and regional WFCs resulted in better information about job openings, e.g. the use of Connecting Colorado, as well as knowledge about the range of services WFCs can provide to job seekers. It appears that further use of websites and other social media will continue the momentum.⁵⁴

Further, through the partnerships' varied outreach and educational activities, middle and high school faculty are increasingly aware of the need to educate the next generation about career paths in a range of industries. Schools are integrating material about target industries in their curricula. Some partnerships have identified the possibility of co-enrollment between high school and community colleges. For example, the Foothills Energy Partnership is now working with the Arvada Chamber of Commerce to address the shortage of skilled workforce in the energy sector by establishing a concurrent enrollment program between Jefferson County public schools and local community colleges.

Finally, WFCs are expanding their services to job seekers in terms of soft skills assessment and training, e.g. the re-designed "'A' Game" curriculum now used by the Jefferson County Workforce Center.

⁵⁰ Case Studies: Pueblo Manufacturing Collaborative; Aerospace Planning Initiative.

⁵¹ Case Study: Greater Metro Denver Healthcare Industry Partnership; SMIAC; Get Into Water! Front Range Initiative.

⁵² Case Study: SMIAC

⁵³ Case Study: Get Into Water! Front Range Initiative

⁵⁴ Case Study: Foothills Energy Partnership

RECOMMENDATIONS

Policy and legislative actions are needed to facilitate the development and maintenance of a skilled workforce, while promoting economic growth. Many of the lessons learned and strategies discussed above need to be further developed and/or implemented. The following are some key recommendations to sustain and expand sector strategies in Colorado.

- Align existing and new sector partnerships with other industry-focused efforts, such as the state's Key Industry Networks (KINs); and affiliate with industry councils and Economic Development Corporations.
- Explore the possibility of multi-region initiatives to better serve industry needs and respond to supply chain and workforce issues.
- Identify and create a basic ROI model that can be refined by industry to quantify the impact of training on a company's workforce, productivity, and profits.
- Streamline WFC paperwork and processes and institute common statewide practices to improve service delivery to both job seekers and businesses.
- Develop a network database enabling multiple WFCs to enter and update industry contact data, view and update training data, coordinate events, and eventually develop STEM tracking initiatives.
- Establish industry pipelines by introducing primary and secondary students to careers in renewable energy, water treatment, and manufacturing occupations.
- Institute soft skills training in middle and high schools to prepare the next generation of workers to be problem solvers, team players, and leaders.
- Expand opportunities for trained incumbent workers to engage in turn-key training to reinforce what they have learned and further disseminate information/skills.
- Include funds for evaluation in all new grants to monitor program implementation and assess
 performance. Require an evaluation design to be submitted along with the program proposal to ensure
 that evaluation is an integral part of all new initiatives up front.