US Department of Labor
Community Audit Demonstration Project

FINAL REPORT SUMMARY

GRANTEE AND GRANT AWARD

NH Community Technical College System

Workforce Opportunity Council (Council) (administrative entity)

GRANT AWARD

$150,000.00

PROJECT PARTNERS

Rockingham Economic Development Corp (REDC)

Business Enterprise Development Council (BEDCO)

North Country Council (NCC)

Knowledge Institute (KI)

OVERALL PROJECT GOALS

The project's purpose was to gather data to test the feasibility of moving information technology work from New Hampshire's Southern Tier, an area of high demand for workers, to New Hampshire's North Country, an underdeveloped area with the potential to meet that demand.

It was hoped the successful completion of the audit would achieve several related outcomes:

- Create a means for stakeholders to gain a better understanding of business and labor force trends in the information technology sector and to deploy that understanding to address worker and business needs;

- Provide information on the demand side of the information technology labor market in Rockingham County and the supply side of the labor market in the North Country;

- Develop a common language for employers to assess skill needs and work requirements;

- Define gaps between available and needed skills and identify links to training providers who can address those gaps;

- Synthesize and leverage the considerable work already completed at the state and regional level with minimal additional DOL funding;

- Support on-going regional and state collaborations aligning workforce and economic development initiatives;

- Inform the direction of future projects and strategic plans to address audit findings; and

- Provide a process model for duplication in other regions of the state.

The project goals were unchanged throughout the project, and were achieved. Various stakeholder groups now have new information and new tools to assist in their planning and decision-making.

DESIGN

The project was designed in phases with specific responsibilities assigned to each of the participants. An outline of these assignments is attached. Each project team members had primary areas of responsibility. REDC was responsible for identifying the southern New Hampshire information technology businesses that have the potential to move work to a distant location. The Knowledge Institute utilized its Workforce Knowledgement System (WKS) to develop a skills-based, attribute-driven profile of the work that could also be used in recruitment of workers and defining their training requirements. BEDCO, and later the North Country Council (NCC) worked with organizations located in the state's rural north country to identify potential workers, training partners and possible work locations. Due to contractual issues BEDCO was replaced by NCC mid-way into the project.

Though it was not necessary to change the overall design of the project, certain aspects were modified. Project outreach efforts were significantly delayed by the unexpected events of September 11th and the economic downturn experienced by many high technology firms. Many business contact personnel were laid-off and their positions not refilled. Other businesses reported that the press of compensating for the economic downturn limited their time available for participating in projects other than

those directly related to the survival of their firms.   The goal of interviewing 25 Technology-based Businesses (Task 2c) was reduced to 10-15 firms.

One aspect of the design that was enhanced was the higher use of the Internet to research job requirements.   This added important additional information. In retrospect, a greater emphasis could have been placed on the use of the Internet and a lesser emphasis placed on directly interviewing local firms to derive job work content.

COLLABORATION

The original project participants included the Workforce Opportunity Council Inc. (Council), Rockingham Economic Development Corporation (REDC), the Knowledge Institute (KI) and the Business Enterprise Development Council (BEDCO).   BEDCO replaced by the North Country Council (NCC).

- The Council, the state's Workforce Investment Board, served as oversight and administrative body for the project.   The Council ensured the completion of the project, facilitated the activities between the different partners and maintained the timeline for completion of the project.

- BEDCO was originally selected to coordinate project activities in the North Country but, due to contractual performance issues, was replaced by NCC. Consistent with NCC's role in economic development, and their influence/outreach within the project area, NCC's role was an asset to the project.

- REDC acted as lead economic development organization in the southern area of New Hampshire. Their role in business outreach and contact was an easy match to the needs of project development in this area.

- KI provided venture initiation and innovative research, education and consulting services to profit and nonprofit organizations.   KI created the Workforce Knowledgement System (WKS™), proposed as a key element of the project, and was co-developer of the project.

The project engaged key stakeholders through a series of outreach activities. Meetings were held with all area economic development agencies and input was solicited for private sector participation.   A series of firms were identified and interviewed to

determine their level of interest in further participating in the project.   Members of the New Hampshire High Tech Council and the Software Association of New Hampshire were surveyed through the use of an e-mail instrument.

To compensate for the reduction in business participation, an extensive web-based research of job descriptions was implemented. This produced a richer database than originally envisioned.   Similar outreach activities in the North Country involved a wide range of public and private sector workforce development organizations that collaborated in identifying potential worker participants. The Council was a key participant in the project through all phases. Through much good will and collaboration of the primary contractors we were able to involve a wide and diverse group of additional participants.

PROJECT MANAGEMENT – Challenges

The project faced one administrative challenge and two operational challenges.   The administrative challenge involved BEDCO, the North Country contractor, who proved unresponsive and was removed.   Through a competitive procurement process NCC was selected to replace BEDCO and subsequently performed extremely well.

The operational challenges included both social/political and economic issues. The project was scheduled to launch on September 11, 2001 to present the project and seek support of an invited gathering of stakeholders.   The tragic events of that day compromised the launch and required much additional and unexpected work.

When the project concept was developed and the grant application submitted, there was a strong economic climate and many southern area firms were finding it difficult to recruit needed workers.   By the time the project was funded, the economic climate was reversed and these same firms were laying off workers and struggling to survive. This resulted in an investment of more time than had been planned and extended the outreach both through surveys and other means, such as extensive Internet research. Through these extra efforts, the impact of these events was minimized and the results greater than had been originally anticipated.

PRODUCTS

The project produced:
- a working definition of IT-based work in the NH southern tier;
- an attribute-based profile of that work;

- a model of workforce potential in North Country to be trained and employed in such work; and

- an application model plan and budget to implement an outsourcing project in the North Country.

The project also identified the physical location characteristics and technology infrastructure required to support outsourcing of appropriate jobs, and identified aspects of that work that may be suited to outsourcing;

KEY FINDINGS

The project yielded new insights into the changing nature of technology employment in New Hampshire. The significance of the findings is multiple:

- Defining Technology Work

This was the first time that Technology-Based Occupations (TBOs) were identified, other than through general reference as elements of employment in high tech firms. The project identified and defined the work content of 30 TBOs, resulting in a listing of 514 skill sets as specific elements of work, or work attributes.

Contrary to popular representation, not all work in high tech firms is technology based. Approximately 50% of the work in high tech firms is technology-based. The balance of the work is of a general and traditional administrative, production and sales support nature. Accordingly, the findings support the conclusion that "technology-based work" is not the preserve of the high-tech community, but rather is broadly diffused throughout the general economy.

The observation made from this data is that a broad-based economic recovery is expected to carry a substantial demand for technology workers that is in addition to and independent from the vitality, recovery or growth of the high-tech community. It is reasonable to further conclude from this collective data that technology-based work is far more than computer programming or software development, and includes work in firms ranging from the biotechnology and medical industry, to grocery stores, insurance companies, banks, and machine tool operators. The average wages for these technology-based occupations exceed the general wage by 150%-200%.

- Connecting High Tech Employers with North Country Employees

   Traditional recruitment is job-title based. As part of this project, the IT WorkNet Attribute Lexicon (IT WorkNet) was developed to provide a highly efficient means for employers and employees to significantly improve the recruitment match process. Some of the job categories listed in the IT WorkNet have as many as 40 separate job titles to describe the same work. If an employer seeking employees lists one of these 40 job titles in the traditional search system, and a qualified employee lists his/her experience as one of these same 40 job titles, there is a 1:1600 chance of the two finding each other. The IT WorkNet improves the match probability to closer to 1:1, resulting in significant recruitment effectiveness. Further, if the candidate is skill deficient, the employer would know exactly the nature of the skill deficiencies, and be able to plan specific training to compensate for the deficiency.

- Employability Index

   The IT WorkNet also allows employees to evaluate the suitability of their skills in comparison with the skills in demand. If they discover that their skills are not in significant demand, they can select a high value skill from the IT WorkNet attribute listing as a logical choice for further skill development to help improve their employability.

- Links To Training

   Educators and trainers can identify high demand skills as the appropriate goal of training and educational program development. By categorizing educational and training programs utilizing the IT WorkNet, employers and employees can define needed training through a gap analysis.

- Mobility of Work

   In general, the findings indicated that firms would consider some form of remote work or outsourcing as a possible solution to a tight employment market. While they may themselves not find this approach appropriate to their own operations, businesses felt that it could be of benefit to others.

   Some firms already outsource work to other areas, and in some cases, to other countries. A few of the firms in the interview sample were in the business of providing

technology support to a broad range of companies. These applications reflect the adoption of technology solutions broadly within the economy as a way to continue to improve productivity and to maintain a competitive advantage.

Limitations to general outsourcing included issues of confidentiality, project management, quality, and cost. It was felt by some of the interviewees that, should these concerns be adequately addressed, there could be an opportunity for work outsourcing to properly qualified and managed groups in the North Country.

UTILIZING THE RESULTS

The project's purpose was to provide quality labor market and economic research to support the feasibility of using excess labor in the North Country to perform information technology work typically restricted to southern New Hampshire. The collected and organized data provides a systematic infrastructure for organizations to evaluate job needs, employees to define skill sets, and trainers to profile training offerings to match employer demand and worker needs.

Using the common attribute language to profile their skills and improve matches with employer needs, employees may compare themselves to an "employability index" and identify key skill training to improve their employability. Trainers may focus their training programs through use of the frequency distribution, which indicates the skill sets most in demand. Workforce development planners and other personnel can utilize findings to improve services to both employer and employee clients. Economic development professionals can use the project processes and results to more accurately assess available work skills in an area of high unemployment and align available skills with potential employer demands as a tool to improve recruitment of new firms into an economically distressed area.

As the regional economic climate continues to improve, North Country economic development practitioners will be able to use the tools and findings of the project to recruit new employers to this otherwise distressed region. As previously noted, a strategic plan (model) was developed as one of the project outcomes to guide this process.

LESSONS LEARNED

A key ingredient in project success was the development of highly detailed scopes of work prior to project commencement. Because time had been invested in defining objective outcomes and anticipating potential barriers to achievement, project participants were able to perform their designated work, engage other stakeholders, and coordinate results in a highly efficient manner.

A second key ingredient in the success of the project was the ability of the primary contractors to reach public and private sector participants and engage them in a highly effective collaboration. Key project participants were able to help other stakeholders understand the individual as well as the collective benefit that would (and did) accrue to each of them through their participation.

A third factor in success was the use of a validated data collection model, the Workforce Knowledgement System developed by the Knowledge Institute. The structure of the model gave the very complex task of organizing and correlating data structure and provided a framework by which other direct and indirect participants could understand and utilize the value created by the project.

COMMUNITY AUDIT NH Information Technology Sectoral Strategy
Scope of Work Definitions

Task I – Identify Key Stakeholders
Task I.A – Identify Key Stakeholders – General (KI Lead)
1. Develop program identity
   a. Develop / submit press releases promoting project (KI w/Council)
   b. Develop informational packet describing project (features / benefits) (KI)
2. Identify, contact and inform key statewide stakeholder groups. Meet with each group to solicit participation in project (KI)
   a. DRED
   b. NHHTC
   c. SWANH
   d. Other state-wide economic development and similar organizations
3. Identify, contact and inform similar IT outsourcing and related public initiatives. Meet with each group to exchange information. Develop brief summary of each effort (KI)
   a. Wooden Table Group
   b. BEDCO Cyberportal
   c. Mount Washington Valley Technology Park
   d. Others

Task I.B – Identify Key Stakeholders – Rockingham County & Surrounding Area (REDC Lead)
1. Identify key Rockingham County stakeholder groups. (REDC w/KI)
   a. Rockingham County CEDS participants
   b. RRPC
   c. Other economic development and similar organizations based in Rockingham County and surrounding area
2. Develop partner contact candidate base – Identify 200-300 technology-based companies (TBC) operating in Rockingham County and surrounding area (REDC)
   a. Contact, inform and seek referrals through CEDS / RRPC / other economic development groups
   b. Seek referrals through NHHTC / SWANH
   c. Seek referrals through DRED / OBID
   d. Research business data to identify potential participant firms
3. Develop partner candidate base – Identify 50 primary technology-based contact firms (REDC w/KI)
   a. Solicit participation in project via mailing to TBC group, follow-up with telephone contact (REDC)
   b. Develop critical list of 75-100 TBCs interested in learning more about the project (REDC w/KI)
   c. Hold initial informational meeting of 75-100 TBCs – include CEDS stakeholder group (REDC w/KI)
   d. Identify 50 primary contact firms for KI to survey (REDC w/KI)

Task I.C – Identify Key Stakeholders – North Country – NCC Lead
1. Identify key North Country stakeholder groups, and contact person for each (NCC w/KI)
   a. North Country Council
   b. North Country CEDS Group
   c. One Stops and other public / private recruitment organizations
   d. Training Organizations serving North Country
   e. Other economic development and similar organizations based in North Country
2. Meet with North Country Council - Develop project partnership agreement to work with North Country CEDS group (NCC w/KI)
3. Send informational packets to the following (NCC):
   a. One Stops and other public / private recruitment agencies
   b. Training organizations serving North Country
   c. Other economic development and similar organizations based in North Country
4. Hold meeting of North Country CEDS participants, recruitment and training groups and other resource agencies and groups to inform of project goals and need to identify potential workforce candidates (NCC w/KI)

Task II – Identify Work to be Outsourced (KI Lead)
1. Review existing data (KI w/REDC)
   a. Identify NH technology-based work by type of work and worker populations within various sectors of the state
   b. Identify trends in growth of technology-based firms in NH
2. Survey SWANH & NHHTC (REDC w/KI)
   a. Identify range and type of member firms
   b. Identify work trends by type of technology
   c. Identify potential project participants
3. Survey 50 targeted TBCs (KI w/REDC)
   a. Determine potential interest as project participants
4. Interview 25 of 50 targeted TBCs (KI w/REDC)
   a. Determine nature and type of technology work
   b. Identify problems in lack of critical worker and/or skill set availability
   c. Determine interest in participating in work outsourcing – constraints, requirements, timing, volume of work
5. Develop WKS Common Language (KI w/REDC)
   a. Develop WKS Application Model (KI)
   b. Develop WKS Assessment Tools (KI)
6. Utilize ELMI Econometric Model (KI w/ELMI)
   a. Determine utility of ELMI informational resources to project purposes
   b. Apply ELMI Econometric Model to project outcomes as appropriate

Task III – Identify Availability of North Country Labor Force (NCC Lead)
1. Review North Country Labor Force Data – Provide report (NCC)
   a. NC workforce population by type of work
   b. General educational profile of NC workforce
   c. Other workforce profile data (age / sex / income levels)

2. Identify Workforce Development Partners (Task I.C.1) – Provide report (NCC)
3. Interview key WFD / ED contacts and NC placement personnel (KI w/NCC)
   a. Introduce WKS Assessment Tools (KI)
4. Identify potential workforce for training (KI)
   a. Develop composite model from NCC-provided information and workforce professionals interviews

Task IV – Skills Requirement Analysis – WKS (KI Lead)
1. Develop profile and matrix of skill set requirements (KI w/REDC)
2. Apply WKS gap analysis to NC workforce availability (KI w/NCC)
3. Develop training requirements based on outcomes of gap analysis (KI)
   a. Develop request for training proposals (RFP)
4. Identify/solicit/review training providers (KI w/NCC)
   a. Identify training providers serving NC (Task I.C.3.b) (NCC w/KI)
   b. Mail training RFP to key training providers serving NC (NCC)
   c. Review responses to RFP (KI)

Task V – Identify Technology Infrastructure (NCC Lead)
1. Identify technology requirements based on WKS analysis (KI)
2. Develop profile report of availability of technology requirements (NCC)
   a. Provide profile by total NC region, sub-area and population centers

Task VI – Identify Training Locations (NCC Lead)
1. Identify training location requirements by type of technology, area served, and worker profile (KI)
2. Identify potential training locations by city / population centers (NCC)
   a. Provide listing of sites showing size, cost, general renovations required, and availability

Task VII – Evaluate Research, Develop Implementation Plan (KI Lead)
1. Evaluate research, show key players, system requirements and lessons learned, determine overall concept feasibility (KI w/REDC & NCC)
2. If feasibility analysis is positive, develop implementation plan
   a. Indicate required resources, key players, workforce needs, recruitment / training plan, total budget to move project from concept to pilot (KI w/REDC & NCC)