

**Executive Summary**

This is a demonstration project intended for the Human Services primary application area and for the Community Networking secondary application area. The University of Colorado at Boulder and the Boulder Community Network will develop a Web-based One-Stop Career Network encompassing the services of 16 County-wide agencies. The network will improve the efficiency of client access to services, decrease the cost of redundant paperwork, facilitate electronic communication between counselors and clients, and integrate the local business community as a key partner. BCN is providing the technical foundation and support to develop and integrate the network into existing services, and is providing connectivity to network lab sites. BCN will also offer hands-on training programs for network agency staff, and targeted subcommunities.

**Problem Definition**

In Boulder County there are 16 individual job training and employment agencies ranging in services from resume writing to community college placement. These agencies are located throughout the 753 square mile county of 267,696 citizens. One agency, Job Services Center, has 10,000 registered clients alone. Smaller agencies like the YMCA serve approximately 300 clients yearly. The clientele is diverse including a high proportion of dislocated technology workers, immigrants, and welfare recipients.

Citizens are often unaware of the breadth of services available to them through these many disparate agencies. Interagency coordination is limited due to the lack of communication technologies such as e-mail which could minimize the inconvenience of "non co-location". Case management also suffers due to frequent duplication of client paperwork. Coordinating the effective delivery of employment services across such a population and geographic area requires the development of what the Department of Labor has coined "One Stop Career Centers" where individuals may apply for a range of employment services from multiple agencies at one location.

One-stop Career Centers have been mandated in both The Workforce Development Act (S. 143) and The Career's Act (H.R. 1617). (Both bills are in reconciliation and are expected to be signed into law). These bills call for the consolidation of approximately 100 job training programs. Job Training Partnership Act programs across the United States will face a 20 - 52% cut in federal funding. Nearly \$600 million in funding has already been cut with the elimination of the Summer youth employment program (National Association of Counties and the National Association of Private Industry Councils). Under these circumstances, streamlining of client services has become imperative.

Funding cuts  
Significant

The Boulder Community Network (See Attachment I for description of BCN) and a consortium of 16 Boulder County Job Training and Employment agencies (See Attachment II for member agency list) will create a model online system called the "One Stop Career Network" (OSCN) in order to address the critical need for a coordinated presentation and delivery of job training and employment services to the citizens of Boulder County.

The OSCN is a single point of entry system where clients can quickly and easily identify their unique job training and employment needs using either their home computer and Internet access or one of many BCN public access computer labs around Boulder County (See Attachment III for explanation of client process). Agency counselors will also be fully trained to work with those who need assistance at the agency site. Simple online forms (See Attachment IV for example of form) will allow clients to complete an eligibility questionnaire that returns personalized results indicating services that the client may request. Additional online forms for each agency facilitate applying for requested services, and easy to use e-mail forms, that do not require users to have their own e-mail accounts, facilitate communication with counselors at each

16

agency. Career Network partners will also utilize a powerful automation tool called the Distributed Information Processing Protocol (DIPP) (See Attachment V for discussion of DIPP) designed at UCB for effortless updating of career trends, program availability, service descriptions, and state-wide and local job availability pages on their WWW pages.

Clients, agency staff, and the business community are all expected to benefit from this program. Clientele numbers for job training and employment services are expected to increase in Boulder County; however, client costs are expected to decrease with the implementation of an effective One-Stop Career Network. In addition, agency staff efficiency is expected to increase with the use of OSCN. Finally, Chambers of Commerce will work with members to create centralized on-line employment listings. Centralized listings will assure that all populations in Boulder County have access to the broadest potential employment resources. The presence of BCN Public Access computers throughout Boulder County assure that all users can gain easy access (See Attachment VI for public access site locations).

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**Technical Approach**

The technology applied in the OSCN and BCN projects is simple (See Attachment VII for network diagram). 2 new lab sites will be installed at the Boulder County Employment and Training Center locations in Longmont and Broomfield . Each lab will consist of 4 Macintosh 636 Performa computers with 15" monitors and one printer. A frame relay 56kbps connection will be provided to the University server. In addition, a bank of 16 28.8bps modems will provide PPP accounts for the 16 agencies, and 50-60 POP mail accounts will be provided for counselors. The application of the DIPP protocol is the most exciting element of the OSCN project. DIPP provides automated intelligence to cross- platform data maintenance and provides the necessary elements for a truly seamless and integrated document environment (See Attachment VIII for timeline).

2 labs  
4 sites

Interoperability: All technologies used for the OSCN system are based on standard Internet protocols such as hypertext transport protocol (HTTP) and simple mail transport protocol (SMTP). OSCN will be based on open software architectures expandable to additional client and organization needs. The DIPP technology will be used in all entry forms and will be held in public domain.

Scalability: All features of OSCN are designed to replicate easily for other human service agency types (childcare, counseling, etc.) The Boulder County Human Service Coordinating Council has committed to expand funding for further implementation of the model. This expansion would integrate other human service agencies and establish additional public access computer sites. With expansion of services, the 56kbps connections to BCN/OSCN labs can be replaced with T1 connectivity to accommodate growing traffic. All systems are compatible with the county government's growing network.

Maintenance/Upgrading of System: BCN has a contract with the University of Colorado for all hardware/software repair and upgrades during the OSCN project duration. And all sites receiving hardware/software have agreed to maintain them after the grant period. The BCN Technical Advisory Board reviews all new technologies and will continue to advise OSCN after the grant period.

Privacy of End Users: Only non-sensitive agency files intended for public access will be stored on the OSCN server. Transmitted client information is divided into personal and eligibility (demographic) components that will not be transmitted together. All transactions will be encrypted using the Secure Socket Layer (SSL) of the secure Netscape server software. SSL is an open non-proprietary protocol providing data security layers between application protocols such as HTTP, Telnet, FTP and TCP/IP.

### Ability to Serve as a Model

The OSCN's model is a single point of entry system offering quick and easy interactive mechanisms for the determination of client eligibility across 16 disparate employment and training agencies, integrated communication tools, and DIPP-automated data maintenance. Other existing employment systems include closed BBS systems, offering basic agency contact information--such as the La Plata County BBS--without the benefit of full Internet access. Several graphics-intensive Web projects such as Indiana and New Jersey State provide basic directory services such as phone numbers and brief program descriptions for an abundance of employment agencies. Several other Web-based projects, such as Washington State's, are in the planning stage. These directory-type systems channel clients back into the same old process and structure of service delivery (a structure that is being dismantled due to budget cuts).

**BCN has learned that a model must not simply offer directory pages. A model must implement information infrastructure to assist organizations in re-engineering their business processes to meet tough budget cuts and make the delivery of online services efficient.** The OSCN model is cutting-edge. It provides an online working environment where the redundancy of clients filing out multiple agency forms is replaced by single point of entry. Agency time per client is reduced and streamlined via online eligibility forms and program applications (resulting in reduced cost), and counselors can communicate together and with clients via e-mail, and conferencing tools. No other One-Stop type service has these elements, nor do they bring the expertise in community-wide integration and specialized training that has been established by BCN.

The OSCN is not only a model for the nation's job training and employment agencies. All human service agencies are experiencing budget cuts and are searching for online service delivery models. The Colorado Association of Nonprofit Organizations, and the Colorado Rural Development Council realize the need for such models and pledge to include the OSCN model in state-wide telecommunications workshops (see letters of support). Funding for continued One-Stop services is provided for in the House and Senate bills discussed in the problem definition.

### Applicant Qualifications

The Boulder Community Network (BCN) has established itself as a model information-based community network where county residents may post non-profit activities and events. BCN's experience in Web development, data maintenance, technical applications, volunteer management, marketing, and training will be directly applied to the OSCN. BCN advisory boards, including technology and policy, will also serve OSCN.

University of Colorado at Boulder (UCB) The University is a leading institution in the application of Internet-related technology, managing several large-scale projects. It will continue to house BCN and now OSCN staff at its Computing and Network Services (CNS) unit. CNS provides technical assistance, incidental hardware and software.

Ken Klingenstein, Ph. D., Principal Investigator Dr. Klingenstein is Director of CNS at UCB. He is Chair of the Federal Networking Council Advisory Committee (FNCAC) and the Westnet Steering Committee. He also serves on the Board of Directors of Colorado Supernet, a state-wide provider of Internet access and is a Principal Investigator on the Boulder Valley Internet Project - a NSF testbed for K-12 networking.

Catherine Weldon, M.S., BCN Director Ms. Weldon has been the Coordinator of Boulder Community Network since October 1994. She coordinates all BCN policy, technical, educational, and public relations activities. She is a member of the Boulder County Information and Referral Committee, a member of the Access to Information Subcommittee of the Boulder

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County One-Stop Career Network Consortium, and an organizer of the Colorado Small Business Teletechnology Workshops developed with the Rural Colorado Development Council.

Peggy Rueda, OSCN Coordinator Ms. Rueda has coordinated all meetings and subcommittees of the OSCN member agencies for the last year, written several project analyses of the OSCN, and is working to educate other agency types on the application of the OSCN model to their provision of services. She has 15 years experience in human service and non-profit management. She has worked with more than 75 Boulder County agencies and organizations during the last 4 years. Ms. Rueda sits on several advisory boards including Project Self Sufficiency, the Human Services Coordinating Councils Information & Referral Committee, and the BCN policy and management teams. She also coordinates all human service projects on BCN.

Jim Waterman, MS., DIPP Consultant Mr. Waterman has 12 years experience in software development and information management specializing in decision support systems with organizations such as the US Bureau of Reclamation. He is a 10-year veteran of the Internet, and a long-time volunteer to BCN sitting on the technical advisory board.

Mary Virnoche, M.A., BCN/OSCN Volunteer Coordinator Ms. Virnoche is a sociologist who has been studying the development of BCN since its inception. She coordinates the activities of more than 50 BCN volunteers, develops volunteer and community training curriculums, and has published several papers on community networking. Ms. Virnoche will be conducting all evaluation of the OSCN project.

#### **Partnerships and Community Support**

Boulder County Employment & Training Center (BCETC) • Role--coordination of all 16 OSCN agencies with Ms. Rueda for design of services, content, & training. Benefits • Creation of the OSCN, training, state-wide promotion. • Contribution--\$72,000.

Boulder County Government • Role-- County jobs announcements, Internet access to some OSCN members. • Benefits-- staff training. • Contribution-- \$18,000. • Previous BCN partner-- information contributor, assistance with directory of 200 human service agencies on BCN.

Boulder Public Library • Role-- providing public access site, training facilities for public and staff. • Benefits-- staff training, community involvement • Contribution-- \$47,900. • Previous BCN Partner-- pubic access site, major BCN information contributor.

City of Boulder • Role--City job announcements, training facilities for City and County employees, marketing of BCN on public television • Benefits-- staff training • Contribution-- \$7,748 • Previous BCN partner-- testing of DIPP on City files, public access sites, marketing.

City of Boulder Housing and Human Services • Role--providing space and T1 connectivity for public access computers, facilities for lecture presentation on BCN/OSCN. • Benefits--staff training, online senior citizen activity guide via DIPP • Contribution-- \$15,696.

City of Louisville Chamber of Commerce • Role--assure business community involvement in OSCN development and implementation. • Benefits--provides public access site, online employment announcements for members, improved labor information. • Contribution--\$9000. The role and benefits are the same for the City of Boulder Chamber of Commerce.

Triad Com Corporation • Role--Spanish language translation, training classes in Spanish for OSCN/BCN, Web page design • Benefits--community-wide exposure. • Contribution--\$8000.

Longmont Public Library • Role--provide space for public BCN/OSCN lab, training facilities for public and staff. Benefits--staff training, community involvement. Contribution--\$37,800.

Meeker Center, Casa de Esperanza, Family Learning Center • Role--provide space for BCN/OSCN labs, training facilities for public and staff. • Benefits--Access to disadvantaged Hispanic populations, training for staff and community. • Contribution (\$20,000).

*Excellent*

*Spanish Language. Needs letter*

**Project Self-Sufficiency** • Role--provide lab space, training facilities and staff. • Benefits--access OSCN/BCN for their community of welfare recipients. • Contribution--\$14,340.

### **Support for End Users**

The OSCN has three categories of end users: job training and employment service seekers, OSCN member agencies, and local businesses. Service seekers and the general public will have direct input to construction of the OSCN through community-wide electronic conferences held on BCN and via feedback mechanisms imbedded in the OSCN end-user forms. Ongoing evaluation data (see evaluation section) will provide feedback from under served target populations. OSCN member agencies are directly involved in the total design of the project and have met for over one year to plan the online OSCN service based on the knowledge of their organizational and client needs. Local chambers of commerce are represented in the OSCN planning meetings, and will continue their involvement through subcommittee reviews of OSCN progress. Hands-on specialized training for all three categories of end users will be supplied by BCN using UCB facilities. BCN has been offering specialized and general public sessions for two years and has a team of dedicated and professional instructors. **Training for all end users on the use of BCN and OSCN is critical to the success of the project.**

**Scenario:** Jill is a low-income single mother of two. In search of services, Jill expects to spend the day shuttling between several agencies. She is pleased to discover that her caseworker can help her with all her needs by instructing her on use of the OSCN. Using the eligibility forms, they learn that Jill qualifies for educational training vouchers, special child-care assistance, and a part-time job with the City of Boulder. Jill uses additional interactive forms on OSCN to complete an application for child-care, and she begins the process of applying for educational vouchers. She also prints a list of BCN and OSCN public orientation sessions for her brother who is interested in using the service to locate a job with the State of Colorado.

### **Evaluation and Dissemination**

**Problem:** Develop and implement an effective online OSCN program that will help the Boulder County job training and employment agencies meet the challenge of reduced federal funding and consolidation of programs. Effective is here defined to include: an increase in the number of clients serviced, a decrease in client service costs, OSCN competency for 90% of agency staff, use of centralized job listings by agencies.

**Timeline progress:** Evaluation of progress will take place at each OSCN/BCN subcommittee meeting (see Attachment VII for timeline). Adjustments will be made based on evaluation results, and results will be documented for inclusion in project analysis compiled in months 6 and 12.

**Usage of technology:** • Hits to all OSCN pages and services will be calculated daily using Getstats software which will also log the IP addresses for public access sites and BCN/OSCN labs. No personal information will be retained in the collection process. The results will help OSCN developers understand which services are being requested by online service users • Pre-entry evaluations will be given to staff of OSCN to determine their abilities and knowledge regarding the Internet, available services on the Web, use of e-mail and conferencing tools. The results will be compared to evaluations made in months 6 and 12. Training sessions will be tailored to address the results. The results will be documented and included in the end of project analysis.

**Project outcomes:** • OSCN developers project a cost savings per client in service delivery, a reduction in duplicated procedures between counselors and agencies, increased exposure of area job announcements, and increased efficiency in communication between agencies. Documenting the pre-OSCN procedure and comparing associated costs with the OSCN process will indicate

actual cost savings and increase of efficiency. • Data will be collected on total clients serviced by each OSCN member agency before the online OSCN goes into effect, and will be compared to similar data gathered in month 12 of the grant period.

Regarding both *usage of technology* and *project outcomes*. Formal semi-structured interviews will be conducted with 20 clients, 20 agency staff, and 20 business community representatives in months 6 and 12. These interviews will gather experiential data concerning the use of OSCN and assess technological, programmatic, and educational gaps to be addressed and included in project analysis. Follow up interviews will be conducted in months 15 and 16 of the grant period.

**Dissemination:**

In month 15 of the grant period OSCN and BCN will host a workshop at UCB for employment and training directors and staff from across the state in conjunction with the Rural Colorado Development Council and the Colorado Association of Nonprofit Organizations. BCN and OSCN project coordinators will also be available to speak at the annual Community Net-working Conference, Workforce Coordinating Council meetings, and other conferences specific to improving the delivery of human service information to the public. Papers discussing results will be submitted to appropriate journals. All procedures and reviews for both OSCN and BCN will be fully documented and available on the Web. In addition, the public domain version of DIPP will be available.

**Reducing Disparities in Access to and Use of the NII**

Access to the NII is projected to be high in Boulder County due to the many government agencies, university faculty, staff and students, and high technology businesses. However, Boulder County has a sharp disparity in socioeconomic levels. Select geographic pockets of the county are home to immigrant populations with often unstable employment outlooks in the low-paying service and agrarian work areas (Eleven percent of the Boulder County population lives at or below poverty level--1990 Census).

BCN designates "low-income" and "at-risk" populations as the focus of added support services. Boulder Community Network has already established Internet labs at several sites: Project Self-Sufficiency (PSS), which is home to 140 mostly female participants--1/3 of which are minority; Casa Esperanza, a farm worker family housing site serving more than 30 families living below the poverty line with limited knowledge of the English language; the Meeker Neighborhood Project, serving low-income families; the Family Learning Center, serving almost 2000 families from South and Central America, Southeast Asia and the Middle East; and September School, an alternative high school for at-risk youth. Reaching these communities through specialized sessions took the better part of BCN's 1994 grant period. Continuing to serve these communities will assure that they are fully exposed to the technology and can maintain associated costs on their own.

The following steps are critical in efforts to serve these populations:

- Incorporate community members into OSCN planning sessions.
- Provide one-to-one OSCN assistance at community sites.
- Develop OSCN information and communication tools in Spanish.
- Continue to provide network hardware and Internet connectivity directly to target population community centers (per BCN funding in this proposal)

In assisting the above populations with OSCN, we serve the dual purpose of helping them access employment and training information while familiarizing them with general NII technologies. As the NII remains a tool most commonly used by professionals and college students, training support for these under served populations will lower their barriers to real access.