

**U.S. DEPARTMENT OF COMMERCE  
National Telecommunications & Information Administration**

Evaluation of the  
Telecommunications and Information Infrastructure Assistance Program

**Case Study Report**

**Oklahoma Department of Commerce  
95113**

**Oklahoma City, Oklahoma**

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Site Visitors: Gary Silverstein and John Lockwood

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## **PREFACE**

On behalf of the National Telecommunications and Information (NTIA), I am pleased to share the following report that is one of a series of case studies conducted on grants awarded by the Telecommunications and Information Infrastructure Assistance Program (TIIAP) in 1994 and 1995. The case studies are part of the program's evaluation effort designed to gain knowledge about the effects and lessons of TIIAP-funded projects. NTIA contracted Westat, a research and consulting firm, to perform an independent evaluation of the program's first two years of grants. The evaluation consisted of a mail survey of 206 grant recipient organizations and in-depth case studies of selected projects. In February, 1999, the Commerce Department released Westat's evaluation report.

The projects selected for the case studies cover a broad range of program types and sizes, planning grants as well as demonstration grants, and they show varying degrees of implementation, sustainability, and replication. Westat selected the projects to represent a cross-section of all projects funded in the program's first two years. Specific selection criteria included geographic region, target population, project application area, project category, and size of award. To conduct each case study, Westat reviewed all project files, including progress reports and the final report, and conducted site visits. The site visits consisted of project demonstrations and interviews with project staff, representatives of partner organizations, and project end users.

NTIA thanks the case study participants for their time and their willingness to share not only their successes but their difficulties, too. Most of all, we applaud their pioneering efforts to bring the benefits of advanced telecommunications and information technologies to communities in need. We are excited about the case studies and lessons they contain. It is through the dissemination of these lessons that we extend the benefits of TIIAP-funded projects nationwide.

We hope you find this case study report valuable and encourage you to read other TIIAP case studies. You may obtain additional case studies and other TIIAP publications, including the final Westat evaluation report, through the NTIA web site ([www.ntia.doc.gov](http://www.ntia.doc.gov)) or by calling the TIIAP office at (202) 482-2048. We also are interested in your feedback. If you have comments on this case study or suggestions on how TIIAP can better provide information on the results and lessons of its grants, please contact Francine E. Jefferson, Ph.D. at (202) 482-2048 or by email at [fjefferson@ntia.doc.gov](mailto:fjefferson@ntia.doc.gov).

Larry Irving  
Assistant Secretary for Communications and Information

## **TIIAP CASE STUDY**

### **Oklahoma Department of Commerce**

#### **EXECUTIVE SUMMARY**

The \$1.5 million TIIAP demonstration grant enabled the Oklahoma Department of Commerce (ODOC) to award 33 “mini-grants” to rural communities around the state. The project partnered with the Oklahoma State Regents for Higher Education, which administers the official telecommunications and information network for Oklahoma education and government agencies called OneNet, and the Oklahoma State University (OSU) Institute for Telecommunications. The matching funds for this project included \$8 million dollars to expand OneNet to rural communities and a windfall contribution of \$1.4 million from Southwestern Bell that was used to fund additional sites.

Before the TIIAP demonstration grant, the state of telecommunications in Oklahoma was poor. Thus, the purpose of the mini-grants was to address the lack of telecommunications access, especially for rural residents. Each community that applied for a grant was required to assemble a consortium of local partners who were willing to contribute a portion of the matching funds and provide the general public with Internet access.

All of the projects were to include at least three community access sites. The most prevalent sites were cooperative extension offices, libraries, chambers of commerce, and schools. Two communities intended to build their own fiber networks to have greater control over services and technologies and to avoid the recurring line charges associated with leased lines. Many successful applicants included local providers, vendors, and consultants in their proposals, thereby using the grant as a means of supporting the local economy. The first community to have access through the program was Ada, connected on September 25, 1996.

Due to problems with OneNet, the ODOC requested and received an extension of its TIIAP grant period to April 30, 1998. ODOC staff indicated that a final workshop would be held in April 1998 to provide final instructions on closeout documentation, to obtain feedback on the demonstration effort, and to assess whether coalition members want to reconvene on a periodic basis. At the time of the site visit, the ODOC had not begun to systematically address steps to sustain these public access projects beyond the life of the TIIAP grant. This was the area that was most troublesome for staff in the local sites visited.

Since the projects are still relatively new, it is not clear what impact the projects are having on community residents. One impact that is clear, however, is that TIIAP funding provided a powerful incentive for local coalition members to work cooperatively and to foster collaborative relationships among organizations. Additional impacts will be more easily assessed after the project closes out in 1998 and after the ODOC conducts an evaluation of their program. The ODOC has contracted with the OSU Institute for Telecommunications for the evaluation component of the project, and a report of their finding will be forthcoming.

The TIIAP funding clearly enabled the ODOC to move forward on the public access approach that was outlined in the original strategic plan. Equally important, several of the community members indicated that they would not have been able to initiate their local projects without the \$80,000 in mini-grant seed money. As a result, while it is likely that some rural communities would have eventually obtained minimal access,

it is also likely that many other parts of the affected communities would have remained unserved. Lessons learned include:

- Communities with access to local technical experts were in a better position to implement their projects. As a result, they recommended that future projects be required to identify a local technical expert to assist with software/hardware selection and navigating the Internet.
- The mini-grant approach required strong buy-in from a variety of local stakeholders.
- Projects would likely have benefited from more guidance in how to conduct a thorough assessment that encompasses the needs of *all* community residents.

Although it is too early to be sure whether this TIIAP project is a success or failure, there are enough positive elements and lessons learned to say that it was a worthwhile endeavor. In the short run, the mini-grant program has given many Oklahomans access to the NII. It has also allowed the State of Oklahoma to leverage funds to build a high-speed backbone. The above lessons also provide good advice to other projects attempting a similar project in the future. Thus, this project can be considered a promising project and, if it provides the assistance necessary to sustain the community centers, a successful one.

## OVERVIEW

### Purpose and General Approach

The \$1.5 million TIIAP demonstration grant enabled the ODOC to award “mini-grants” to rural communities around the state. The purpose of these community centers was to address the lack of Internet access in some of Oklahoma’s rural communities. As such, the broad goals of the project were to improve the quality of rural life, encourage rural economic development, increase awareness and use of telecommunications to deliver necessary services, and provide affordable access to technology through shared equipment.

Each community was required to assemble a consortium of local partners (e.g., health care facilities, municipal governments, tribal governments, public schools, museums, public libraries, local agricultural extension offices, local chambers of commerce) that would contribute funding and provide the public with access to the Internet. Each community identified a master site that would connect to secondary sites via high-speed digital data (T-1) lines. As outlined in the TIIAP proposal, the master and secondary sites were designed to function as (1) workplaces for individuals, telecommuters, or businesses; (2) “technology incubators” that would acquaint businesses, schools, and other organizations with new developments in telecommunication technology; (3) practical training centers for students from apprenticeship or other workforce training programs; (4) social service centers for individuals to access state and local government services; and (5) adult education centers for individuals interested in improving or learning new skills.

Thirty-three grants were awarded.<sup>1</sup> Each community received \$80,000 in “seed” money, as well as planning assistance, training, equipment, and ongoing technical assistance through a series of workshops.

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<sup>1</sup>As is discussed later, 16 of these projects were funded by TIIAP. The remaining 17 projects were funded with monies received through a settlement with Southwestern Bell. The same project requirements were imposed on all 33 projects.

## Description of Grant Recipients and Project Partners

**Grant Recipient.** The grant recipient for the demonstration grant was the Oklahoma Department of Commerce (ODOC). (As is discussed later, the ODOC had previously received TIIAP funding for a planning grant.) The ODOC was responsible for:

- Publicizing the project across the state;
- Establishing selection procedures for the community application process;
- Overseeing the implementation and operation of the community centers;
- Managing the evaluation of the success of the community centers; and
- Managing the TIIAP grant, including activities related to budget, reporting, and project management.

Within ODOC, the Director of Programs, Research, and Planning assumed primary responsibility for administering the TIIAP demonstration project. In this capacity, the Director was responsible for overseeing the management and finances of both the TIIAP project and the 33 community centers. In addition, the Director conducted monitoring visits and helped individual sites navigate the process of initiating and implementing their projects. Overall, it was estimated that approximately half of the time had been devoted to TIIAP-related activities. The Director was assisted by a technical expert who assessed whether the project's equipment expenditures matched the items outlined in their contracts (overall, it was estimated that less than 10 percent of the expert's time had been devoted to TIIAP). Finally, the Division Director estimated that approximately five percent spent approximately 5 percent of the time was spent on TIIAP-related oversight. (It should be noted that the Division Director (previously the Director of Programs, Research, and Planning) managed the TIIAP planning grant.

**Project Partners.** Project partners included the Oklahoma State Regents for Higher Education and the Oklahoma State University Institute for Telecommunications. The State Regents, the statewide coordinating board of control for the state's 25 colleges and universities, is responsible for (1) prescribing academic standards of higher education; (2) determining functions and courses of study at state colleges and universities; (3) recommending budget allocations for each college and university to the state legislature; (4) managing 23 scholarships and special needs programs; (5) operating the Oklahoma Guaranteed Student Loan Program, which guarantees private sector loans made to students; and (6) the implementation of OneNet.<sup>2</sup> As part of the TIIAP project, the State Regents were responsible for establishing the linkages between OneNet and the community centers and for providing ongoing user support.

The OSU Institute was responsible for providing training to local stakeholders and collecting technical evaluation data from each of the community centers. The ODOC had worked previously with the OSU Institute on a number of projects, including the development of the strategic plan under the TIIAP planning grant.

The main infrastructure project partner that provided connection for the ODOC projects is OneNet. OneNet is the official telecommunications and information network for Oklahoma education and government. It

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<sup>2</sup>The Regents helped design the OneNet concept. They have continued to play a role in the management of the state network, including the provision of user support.

began with a \$14 million capital bond package approved in 1992 and started linking public schools, vocational-technical schools, colleges and universities, courts, libraries, and local, county, state, tribal, and federal government agencies across the state in July 1994. By serving as the state's telecommunications backbone, OneNet is designed to "give Oklahoma a statewide, coordinated network providing access and connectivity to all areas of the state" (TIIAP application, page 5).

The Oklahoma State Regents for Higher Education, in partnership with the Office of State Finance and Oklahoma telecommunications companies, operate the network. OneNet is a self-supporting network, with user fees paying for operating costs, technology upgrades, and equipment replacements.

OneNet operates 70 regional network hub sites and establishes a major fiber optic linkage between Oklahoma City, Tulsa, and Muskogee. A second fiber optic linkage starts at the Missouri border and follows the Will Rogers and Turner Turnpikes through Tulsa to Oklahoma City and then turns south along I-35 to the Texas border. The hub sites link user sites—public schools, vocational-technical schools, colleges and universities, courts, libraries, and government agencies—to the statewide network. OneNet has the technical capability to serve 2.2 million Oklahomans. Thus, it has been a powerful partner in linking much of the state to the Internet.

### **Project Costs**

The original project cost was \$9,836,222, of which \$1,494,844 (15.2 percent) was being provided through the TIIAP grant. Additional funding was provided through a bond issue from the Oklahoma state government, a settlement with the local telephone company (which enabled an expansion in the number of community center sites), and contributions from each of the local communities that participated in the project. The distribution of these funds includes \$8 million for OneNet, a \$1.4 million windfall from Southwestern Bell, the \$1.5 million TIIAP grant, and individual community contributions supporting the mini-grant program. Thus, the total cost is approaching \$11 million, \$2.9 million of which was used to fund the 33 community access sites.

## **PROJECT CONTEXT**

### **Community Description**

Since there are so many towns and counties involved in the TIIAP project (33 in different areas of the state), providing a precise description of the "community" to be served is difficult. In general, Oklahoma comprises 77 counties and a land area of 69,919 square miles. According to the TIIAP application, "The State of Oklahoma is more rural, more agricultural, more sparsely populated, less educated, and less wealthy than the United States as a whole" (TIIAP application, page 1). Specifically:

- Of the state's 3.3 million residents, 82.1 percent are white, 8 percent are Native American, 7.4 percent are African American, 2.7 percent are Hispanic, and 1.1 percent are Asian.
- Just under three-fifths (57 percent) live outside urbanized areas (compared to 32 percent of the U.S. population).
- Farmland accounts for approximately 70 percent of the state's 44 million acres.
- Oklahoma has 46.2 people per square mile compared to 71.3 for the United States.

- The state's per capita income is just over 80 percent of the national average.

Economically, Oklahoma accounts for approximately two percent of the nation's farm output. It is the third largest gas-producing state in the nation and ranks fourth in the nation in the production of wheat and in cattle production. The state also is a leading producer of pecans, peanuts, and peaches. According to materials submitted in support of the TIIAP grant, Oklahoma's diverse population, long distances, and eclectic economy make it a good model for other states in the nation.

A total of 65 communities applied for community center grants. Over half of these applications were from communities with populations of less than 10,000, and 17 were from communities with populations of under 3,000. Of the 33 communities that actually received funding, 4 (12 percent) were located in cities of over 30,000; 11 (33 percent) in cities of 10,000 to 29,900; 10 (30 percent) in cities of 5,000 to 9,000; and 8 (24 percent) in cities of 2,500 to under 5,000. According to application materials submitted by one of these 33 communities:

*The clientele served by Project Link will be residents of Seminole County. The County is an economically depressed area in southeastern Oklahoma where unemployment is in the nine percent range, higher than the annual state range of six percent...A heterogeneous mix of 25,412 white, black, and Native American peoples live in Seminole County. Because the area is economically depressed, 9,072 persons, or 35 percent, are currently on some form of public assistance.*

Nine Native American tribes were included as community project partners. In two sites (including Ada, which was visited as part of the case study), a Native American tribe was serving as the lead agency.

### **Status of Telecommunications/Information Infrastructure Environment Prior to the TIIAP Project**

According to the grant proposal submitted to TIIAP, telecommunications was seen as one of four critical strategies to "eliminate Oklahoma's principal disadvantages of distance and low population density." Prior to the ODOC TIIAP grant, there was little progress in developing the infrastructure necessary to bring Oklahoma close to achieving national technology goals. There was a strategic plan in place, but little progress had been made to bring that plan to fruition. The ODOC TIIAP grant was a critical step in getting Oklahoma communities connected to the NII.

The demonstration project's greatest impact was in each of the 33 rural communities where, prior to TIIAP, residents had only been able to access the Internet at home or in the workplace. As such, most of the participating communities lacked a site where the general public could access the Internet. This meant that information about agricultural and livestock concerns would need to be queried through materials sent by mail, resulting in lost treatment time. In addition, many students did not have access to computers, which may hamper their economic opportunities when they reach adulthood. In general, the state of telecommunications in Oklahoma before the ODOC TIIAP grant was poor.

## **PROJECT IMPLEMENTATION**

### **Activities/Milestones That Occurred Prior to the TIIAP Grant Period**

The ODOC and Oklahoma State University's (OSU) Institute for Telecommunications received a 12-month, \$248,750 TIIAP planning grant to develop a written strategic telecommunications plan for the State

of Oklahoma. The planning process was intended to develop a framework for connecting public agencies across the state. According to the original project application, the plan was to address two primary problems. First, Oklahoma's telecommunications infrastructure was considered to be outdated, redundant, uncoordinated, not interoperable, and inaccessible to a majority of the state's citizens. Second, the state's "geographic expanse and scattered rural population" were considered to have resulted in regions in which people remained "underequipped to improve the quality of life through education, economic development, health care, and other social services." (The strategic plan noted that the state had high-quality programs and services, yet lacked the ability to deliver these programs and services outside of its metropolitan areas.) As such, the statewide strategic plan was considered a means to "assist the state in using its investment wisely by avoiding the creation of duplicate services, fostering partnerships between public and private networks, identifying ways to interconnect and integrate, and upgrading the existing infrastructure."

As part of the planning grant, the ODOC and OSU conducted a needs assessment that included a series of consultant studies and focus groups to identify end users' needs. The focus groups were conducted with 165 individuals in the following six communities: Ardmore, Oklahoma City, Lawton, McAlester, Tulsa, and Woodward. Participants included teachers, medical service providers and patients, parents, local government officials, farmers, ranchers, librarians, business owners, educators, students, and telecommunications experts. Overall, residents identified two primary technology needs: (1) the ability to access the same quality and variety of educational, health care, government, and economic development services that are available in larger cities, and (2) assistance in using telecommunications to deliver these services.

The strategic plan that resulted from this process recommended a redesign and expansion of the state government's official telecommunications infrastructure. This system, renamed OneNet, is designed to electronically link user sites (e.g., public schools, vocational-technical schools, colleges and universities, courts, libraries, hospitals, local/county/tribal government agencies) with the statewide network.<sup>3</sup>

The strategic plan also endorsed and modified a previous recommendation to implement a series of "main street" community telecommunications centers throughout the state.<sup>4</sup> These modifications, which built upon a previous concept to "demonstrate and incubate telecommunications technology" in small towns across Oklahoma, served as the framework for the TIIAP demonstration grant that was subsequently awarded to the ODOC.

The TIIAP project was a direct outgrowth of a demonstration that occurred in Ponca City, a town of 26,000 near the border between Oklahoma and Kansas. The Ponca City project, initiated during the summer of 1994, was designed to assess the feasibility and impact of one-stop telecommunications centers. The complex housed a computer communications center, business conference center, and a full-motion video classroom. According to materials submitted as part of the TIIAP application, the demonstration was considered a success:

*The center is definitely fulfilling its roles as a technology incubator, training center and workplace with cost-effective access to sophisticated equipment. In discussions with the manager of this center, however, one concern became clear: the location of the center in the vocational-technical*

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<sup>3</sup>This network consists of 70 hub sites (e.g., colleges, universities, and vocational-technical schools) that house equipment and electronics and create a fiber optic link between Oklahoma City, Tulsa, and northeast Oklahoma. The regional network hub sites contain video equipment, high-speed data routers, modem banks, and computer systems for linking user sites to the statewide network.

<sup>4</sup>As is discussed later, a demonstration project in Ponca City had tested one approach for expanding Internet access in rural communities. The strategic planning process was used to refine this approach.

*school has been detrimental to awareness and access. People and organizations that do not use the center perceive it as a “vo-tech” facility, find the location or the hours inconvenient, or believe that it offers only education applications. Other people and organizations with no contact with the vo-tech are completely unaware of the center.*

The experiences of the Ponca City site and the findings of the strategic planning process (which was funded by a previous TIIAP planning grant), led to an important revision in the design of the community centers concept. Specifically, instead of locating all of a community’s telecommunications capabilities in a single location, the TIIAP project would be used to place equipment in multiple sites within a given community. This revised approach was seen as a way to maximize the likelihood that a community’s residents would actually gain access to the Internet.

### **Activities/Milestones That Occurred During the TIIAP Grant Period**

As discussed previously, the project was designed to provide technology mini-grants to rural communities across the state. At the onset of the demonstration (October to December 1995), the ODOC developed application guidelines and information materials. These applications were mailed to approximately 200 organizations, 32 Oklahoma Main Street towns, and over 200 communities that were participating in ODOC’s Capital Improvements Planning program. In addition, information about the project appeared in several state newspapers, as well as the *Oklahoma Register* (the publication for state government announcements). Prospective projects had approximately three months to submit their applications.

In January and February 1996, the ODOC conducted two workshops for communities interested in applying for the grants. The first session provided an overview of the program, the criteria that would be used to select demonstration sites, and the services provided through OneNet. A total of 350 people representing nearly 100 Oklahoma communities attended the two workshops (twice as many “winners” as “losers” attended one of these two workshops).<sup>5</sup>

According to ODOC staff, participants at the two training sessions “tended to focus excessively on technical equipment and connection issues and neglect the critical needs assessment process.” As such, some organizations “looked at what equipment they wanted to buy and thought about what to do with it afterwards.” However, the ODOC project director noted that the selection criteria placed considerable emphasis on an applicant’s efforts to identify the needs of the community’s residents. (It appears that applicants neither requested nor received technical assistance in how to conduct a comprehensive community-wide needs assessment. ODOC staff indicated that applicants varied with respect to the quality of their needs assessments.)

In Ada, coalition members used a mail survey to assess the needs of the community’s public and private organizations (identifying appropriate respondents was considered to be a challenge). The results of the survey suggested that prospective users wanted to be able to conduct research on the Internet and/or obtain access to word processing. A local coalition member expressed some surprise that few of the respondents expressed any interest in the system’s potential videoconference capabilities.

A total of 65 proposals were submitted to the ODOC. According to the June 16, 1996 quarterly report:

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<sup>5</sup>Although approximately 120 individuals registered for the January workshop, a major snowstorm limited the number of actual participants to 55. Special steps (e.g., providing video copies of the trainees to other sites, additional workshops) were taken to provide training to those unable to attend the original workshop.

- Most of the smaller communities that submitted applications were already participating in other ODOC strategic planning or economic development projects.
- All of the proposals included at least three community access sites, with some identifying as many as 15. The most prevalent sites were cooperative extension offices, libraries, chambers of commerce, and schools.
- Many communities indicated that they would supplement the \$80,000 grant award with substantial amounts of cash (projects were required to provide a \$5,000 match in cash or equipment) and in-kind services.

In judging the applications, a panel at the ODOC took into account the community's need (as discussed above, a needs assessment had to be completed before the application), the community's capacity and intent to serve and incorporate all community populations, efficient utilization of existing facilities and organizations, commitment to long-term operation of the center, commitment to provide staff for local support, and the amount of matching funds.

On May 2, 1996, a press conference was held to announce the winners of the community center grant. Of the 65 proposals that were received, 33 were actually funded—16 through TIIAP, and 17 through a grant from Southwestern Bell. According to ODOC staff, all of the projects that were approved met all of the criteria that had been established at the onset of the project. In addition,

- With the exception of the Panhandle region, the community centers were well distributed throughout the state (applicants in the Panhandle region scored significantly lower than any of the winning proposals).
- Two communities intended to build their own fiber networks to have greater control over services and technologies and to avoid the recurring line charges associated with leased lines.
- Many successful applicants included local providers, vendors, and consultants in their proposals, thereby using the grant as a means of supporting the local economy.

In mid-May 1996, ODOC conducted a series of training sessions for grant recipients. Four to six representatives from each center were in attendance. The sessions were used to describe the financial and management requirements for grantees, strategies for marketing and community awareness, and a discussion of revised OneNet rates. A second series of training sessions was held in early July to discuss marketing, OneNet connection procedures, and implementation issues. Grantees also had an opportunity to receive an overview about the Internet, review options regarding software packages and development of home pages, and learn about effective distance learning strategies. A third training session, held on October 8, 1996, was used to provide the projects an opportunity to describe their progress and identify significant issues (as is discussed later, the vast majority of sites reported having problems related to equipment choices and/or dealing with OneNet). Additional breakout sessions were used to address specific needs, e.g., ordering equipment, using such popular applications as Lotus Notes and the Internet, management of community sites, and specific applications for tribal and cultural organizations.

The first community center, located in Ada and managed by the Chickasaw Nation, opened on September 25, 1996 (this was one of the two community sites visited during the site visit). The event was marked by a press conference and demonstration that was attended by television and print media, as well as 75 community and tribal representatives. By the end of the year, however, only two communities had operating

sites. (The original goal was for all communities to have at least one site running by the beginning of 1997. As is discussed later, several factors contributed to these delays.)

In March 1997, grantees were surveyed about their technical assistance needs for an upcoming training session. On May 7, 1997, a 1-day training session was held for 117 coalition members. Topics included hands-on web page development, accessing the Internet, site maintenance, and contract compliance.

By the end of 1997, all grantees had at least some access sites that were operational.<sup>6</sup> Due to problems with OneNet, the ODOC requested and received an extension of its TIIAP contract to April 30, 1998. ODOC staff indicated that a final workshop would be held in April 1998 to provide final instructions on closeout documentation, to obtain feedback on the demonstration effort, and to assess whether coalition members want to reconvene on a periodic basis.

### **Steps Taken to Sustain Project Activities Beyond the TIIAP Grant Period**

At the time of the site visit, the ODOC had not begun to systematically address steps that would need to be taken to sustain the community centers beyond the life of the TIIAP grant (the project expires in April 1998). As is discussed later, some of the local sites have expressed concerns about their ability to maintain the public access sites. During the site visit interviews, there was a mention of holding a final workshop for mini-grant sites to address how projects could sustain themselves after the grant period ended. At this time, however, no such workshop has been scheduled.

### **Issues**

This section addresses some specific approaches that were used by ODOC or local sites to implement the community centers. It also includes changes that occurred in the projects during the grant period.

**Changes in Project Scope.** The ODOC has implemented the basic approach that was outlined in the original proposal for a TIIAP demonstration grant. Several minor modifications were made as the project progressed. Specifically:

- Under the original proposal, each of the 33 participating communities was going to be required to match the \$80,000 grant with \$20,000 in cash, equipment, or in-kind services. As the project progressed, however, ODOC staff became concerned that some small communities would have difficulty raising the required \$20,000. The match was therefore reduced to \$5,000 in cash or equipment; communities that pledged a higher amount were given special consideration during the selection process. (During the site visit, ODOC staff indicated that in hindsight, communities should have been required to guarantee a higher match of \$15,000 to \$20,000 in cash or equipment.)
- Under the original proposal, communities in the Oklahoma City and Tulsa local calling areas were ineligible for the demonstration project. Because this would have excluded some impoverished rural communities, it was subsequently decided that the selection criteria would

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<sup>6</sup>Two of the original 33 sites had their funding rescinded. In one site, concerns about the long-term viability of the project led to a loss of support from two significant stakeholders, i.e., the city government and the chamber of commerce. In the second site, delays in the construction of a cultural center raised concerns that the project would not have the impact that was outlined in the original proposal. In both cases, alternative sites were selected from among the original list of applicants.

include “communities located outside the Oklahoma City and Tulsa metropolitan statistical areas or communities with populations of less than 50,000.”

- ODOC originally proposed funding 20 telecommunications community centers as part of the TIIAP demonstration. The actual number funded through the demonstration was 33. This increase was made possible through \$1.4 million in funding that was made available by Southwestern Bell as part of a rate settlement (funding for the TIIAP and Southwestern Bell grants were combined so that communities would only have to submit a single application). Of the 33 demonstration sites, 16 were funded through TIIAP, while 17 were funded through the grant from Southwestern Bell.
- Some of the benefits that were originally supposed to be provided through OneNet had still not been made available. These included such services as online tax assistance and electronic renewal of automobile tags and driver’s licenses. ODOC and OneNet staff indicated that these services would be made available to the general public in the near future.

**Changes Resulting From Technology Changes.** The scope and implementation of the project were not affected by any changes in technology. However, many of the local community sites benefited from a significant reduction in OneNet’s line and access rates. As a result of the reduced OneNet rates, most communities found themselves with \$10,000 to \$20,000 in additional funds. In some cases, local projects used this additional funding to upgrade their equipment, purchase additional equipment, and/or connect additional access sites within the community. The time required to explore these new options delayed implementation of project activities in a number of sites. In addition, some sites required additional technical assistance regarding the new OneNet pricing structure and/or the purchase of new equipment.

Some of the projects also had to address issues related to interoperability. Because ODOC provided sites considerable latitude in the conduct of their projects, several towns ran into difficulties when they tried to connect with OneNet.

**Outreach.** Each project was responsible for informing community members about the Internet access sites. ODOC staff indicated that in many cases, the selection of access sites constituted a form of outreach, i.e., coalitions that wanted to target low-income residents would recommend placing computers in a welfare office or employment agency. In an effort to reach isolated segments of their communities, a number of projects were inserting outreach fliers in utility bills. In one of the two communities that were visited, the project was publicized in the county’s agricultural newsletter:

*We now have the Internet available at the Seminole County OSU Extension Center. Through a grant, we can now provide you this service. This service will allow you access concerning any subject on which you might need information. Come in and check out the system. We can supply help to get you started and then you will be allowed to explore any area of interest. Please use this as your personal invitation to the office and this technology.*

In Ada, the coalition conducted a number of outreach activities aimed at informing various constituencies about the Internet access sites. For example:

- The Chickasaw Nation posted information about the project on both its web page and tribal newsletter.

- The coalition used an information booth at the Ada July 4th celebration to promote the Internet access sites.
- The coalition printed T-shirts announcing the arrival of the Internet.
- The coalition placed announcements about the project on local radio stations.
- Several articles about the project appeared in a local newspaper.

It is not clear whether these outreach activities have expanded the number of people within Ada and Seminole who are aware of or use the Internet access sites. During a lunch time visit to Ada's public library, all of the computer terminals were occupied. However, it was not clear whether some of the other access sites that were visited (e.g., the Seminole County Chamber of Commerce) received much use. Nor is it clear that, with the exception of local tribal populations, either of these sites had taken steps to target their outreach activities to those segments of the local population who were *least* likely to know about and/or visit the access sites.

**Training and Skills Needed By End Users.** It did not appear that end users would require any special skills. Training for coalition members from the 33 sites was provided throughout the course of the demonstration project. Training for end users remains the responsibility of each project. At sites such as the public library and extension service, for example, staff were available to help users get acquainted with the Internet and other services. At other sites, such assistance did not seem to be as readily available.

**Technical Assistance.** Much of the one-on-one technical assistance provided to individual sites occurred during the training sessions that were conducted throughout the project. In addition, as the demonstration proceeded, projects were able to contact a help desk at OneNet to obtain technical assistance on a range of issues. Because of the high volume of calls and limited OneNet staff resources, this technical assistance was later outsourced to a consortium of five Oklahoma telephone companies known as the "OK5." Local staff in Ada indicated that they relied on a local specialist for help in tackling technical issues. In addition, local ODOC regional directors<sup>7</sup> were available to tackle community-level problems.

**Inclusion of Traditionally Disadvantaged Populations.** On the one hand, both of the local projects that were visited have taken steps to expand Internet access to traditionally disadvantaged populations. In Ada, the Chickasaw Nation has taken a lead role in managing the project and expanding Internet access to local tribal members. For example, the Chickasaw Nation has conducted a variety of outreach activities (e.g., articles in its monthly newsletter, posting public service announcements on a local AM/FM radio station owned by the Chickasaw Nation, information booths at community events) to inform the general public about the project. In addition, the use of an employment office as an Internet access site enables low-income individuals to access job listings across the state. In both Ada and Seminole, the use of local public libraries provides all local residents with an easy and comfortable site from which to use the Internet.

On the other hand, state staff indicated that many of the needs assessments communities conducted as part of the application process did not directly address steps that would be taken to expand access for traditionally disadvantaged populations. Rather, they focused on how their own coalition members would benefit from the project (in some cases, coalition members did include Native Americans and other economically disadvantaged groups).

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<sup>7</sup>The ODOC has 12 regional economic directors who are responsible for providing technical assistance in a broad range of economic and community development issues.

## Problems

Both local and state staff identified a series of issues that affected the project's scope and timetable. Many of the problems were related to factors that are likely unique to Oklahoma and/or this particular project. Primary problems are summarized below.

**OneNet rates were lower than initially expected.** In response to concerns expressed by a number of communities,<sup>8</sup> OneNet developed a standard rate structure for both OneNet access and tail circuit charges (these rates were not dependent on a project's distance from a hub site). These rates represented significant savings over the rates that were projected at the time communities prepared their proposals. As a result of these savings, most projects found themselves with \$10,000 to \$20,000 in additional funding. The majority of sites used this money to upgrade the equipment at their existing sites and/or add other equipment sites in the community. At the same time, coalition members indicated that they needed additional information about hardware and software before they could purchase equipment. In response to these concurrent issues, ODOC provided coalition members with an additional three months to finalize their budgets and equipment plans.

**OneNet was not initially able to handle the volume of community needs.** A significant number of projects experienced difficulties ordering equipment and connections from OneNet. According to ODOC staff, these problems resulted from a combination of factors:

- Projects were ready to come on line before OneNet had established its order and billing procedures.
- The Oklahoma Telemedicine Network decided to use OneNet as its carrier at the same time that the TIIAP-funded community centers were coming on line.
- Throughout the start-up phase of the community centers initiative, there was also considerable pressure for OneNet to connect the state's educational institutions before the beginning of the 1996-97 school year.
- Because OneNet was understaffed, it was not prepared to handle a sudden increase in demand for its services.

To overcome these problems, OneNet contracted with OKFive (OK5), a consortium of private telecommunications providers. OK5 assumed responsibility for managing OneNet equipment purchases, arranging connections, billing clients for services, and responding to consumer queries.

**Fluctuating OneNet Rates.** In early 1997, coalition members began complaining to ODOC that they were being quoted different prices for connection and installation than had previously been agreed to by OneNet. According to its May 1997 quarterly report to the U.S. Department of Commerce, ODOC indicated that:

*In effect, OK5 was attempting to eliminate the preferential pricing for community center installation and secondary site connection charges. They were also attempting to force non-profit organizations out of the community centers because of a new OneNet policy that only government*

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<sup>8</sup>According to the March 1996 quarterly report to the U.S. Department of Commerce, the "perceived 'high cost' of the line charges for the tail circuit to connect to the OneNet hubs is a major concern for many communities, particularly those that are long distances from OneNet hub sites. Some communities must deal with multiple phone companies to access hub sites."

*and educational institutions were entitled to be connected. These changes would have had severe negative impacts on the community centers. Many had already completed equipment orderings and connections and would have had no source of funding for increased charges.*

In light of this situation, the ODOC met with staff from the State Regents (who oversaw OneNet) and OK5 in mid-March 1997. During this meeting, ODOC presented written comments and documentation from grantees about the difficulties that would result from these increases. In addition, ODOC reminded OneNet that it had announced a standard rate structure for both OneNet access and tail circuit charges during several public forums that had been attended by a large number of coalition members. As a result, OneNet and OK5 agreed to honor the original pricing structure *for the period of the grant*. The potential implications of this decision on the long-term sustainability of individual projects are discussed in Section H.

**Other problems.** ODOC and local projects identified other issues that affected the progress made by individual communities. For example, many communities lacked the local expertise to make timely decisions regarding equipment purchases. As a result, ODOC and OneNet staff devoted more technical assistance to hardware and software issues than was originally envisioned. In addition, the local authors of the original proposals that were submitted to ODOC were not always the same individuals who assumed responsibility for implementing the grant.

## **PROJECT ACCOMPLISHMENTS AND IMPACT**

### **Technology-Related Accomplishments**

As stated previously, the TIIAP project successfully linked 33 rural communities to the Internet. For example, the Seminole community offers residents eight access sites, including Seminole Junior College, the county extension service, the public library, the chamber of commerce, a children's museum, the county court house, and two public libraries. For example, the children's museum allows youngsters to access the Internet in a fun and interactive environment. The museum is also required to provide free access to anyone who visits. A site at the local chamber of commerce allows staff to post information about Seminole on the Internet. This information includes places to visit (e.g., local museums and historic sites) for potential tourists, as well as facts about the community's business climate (e.g., schools and public services for prospective businesses). The local cooperative extension office allows staff and regional farmers to access information on crops and other agricultural issues.

The Ada project has five access sites, including the public library, the local extension office, the tribal headquarters for the Chickasaw Nation, the local employment office, and the local college.<sup>9</sup> (A plan to have an access site at a local coffee shop fell through for reasons unrelated to the TIIAP project.) The public library has five computer stations that provide access to the general public. A librarian indicated that these five workstations are constantly being used by housewives, students, business people, and the local tribal community (observations by project staff confirmed that all of the computers were simultaneously being used at the time of the site visit).

The variety of communities and access sites across Oklahoma suggests that the TIIAP project has expanded the state's use of the Internet to a broad range of end users. Unfortunately, ODOC has not been systematically tracking the number and/or the characteristics of the project's end users. Individual sites are tracking usage, but it is not clear whether these data will ever be aggregated and/or analyzed.

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<sup>9</sup>The sites were selected due to their accessibility, ability to provide supportive services, and commitment to the project.

## **Impact of Project on Direct End Users**

The end users for these 33 projects included a broad range of rural communities and citizens. At this point in time, it is not clear what impact, if any, these connections are having on the residents of these communities. Data still need to be collected on (1) the range of access sites in place across the state; (2) the number of new and repeat users in individual communities; (3) the number of new and repeat users by type of site (e.g., extension office, public library); (4) the characteristics of end users by community and by site type; (5) the range of applications (e.g., Internet, video conferencing) in use in individual communities and at different sites; and (6) the impact that these applications are having on end users.

In Seminole, for example, residents had access to the Internet at the local public library, a children's museum, and a tribal museum. The Chamber of Commerce in Seminole was not only being used to promote the economic development of the local area, but a senior citizen routinely came in to send e-mail to her grandchildren in South America. In the same town, several county offices were linked to promote governmental efficiency.

## **Impact of the Project on Other Beneficiaries and/or the Overall Community**

The experiences of the two communities that were visited shed some light on the project's impact at the local level. In Ada, the most heavily used site has been the public library (approximately 550 users per month). Usage at other sites has also been steady, including approximately 250 users per month at the employment office, 150 users per month at a local college, 150 users per month at the Chickasaw Nation headquarters, and 85 users per month at the extension office. Comparable data were not available on the number of users in Seminole. At least two of the sites visited in Seminole, a terminal in the lobby of a children's museum and the local chamber of commerce, did not appear to get much use.<sup>10</sup> Other sites in Seminole (e.g., a public library and a tribal museum) are used more frequently.

While these data provide evidence that the workstations are being used, they do not address *how* various end users are benefiting from their increased access to the Internet. The site visit obtained anecdotal information on specific uses that local partners have observed. For example, staff at the extension office in Wewoka (part of the Seminole County project) indicated that local farmers have been using their site to address a wide range of agricultural issues. (Examples of how farmers and staff *might* use the Internet were provided in the project's application to ODOC. These included learning about trends in the state's agricultural industry, securing the latest economic data on crop and beef production, studying worldwide trends and trade agreements, and obtaining up-to-date information on severe weather. However, no data have been systematically collected on whether farmers are indeed using the Internet for these purposes.) Extension office staff also indicated that they have been using the Internet to answer questions received over the phone. In addition, as stated previously, a senior citizen has been using e-mail to correspond with her grandchildren. Staff in both Ada and Seminole indicated that they would eventually take steps to obtain more detailed information on how local citizens are using the system.

There seemed to be a wide range of usage in the sites visited. Although videoconference services were not being used in Ada as much as originally anticipated, the public library site was busy with various Internet inquiries. Word processing was also available and reportedly used, especially at the local college. Residents interested in learning about potential statewide and national employment opportunities were able to access

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<sup>10</sup>Because the museum charges a fee for the exhibit area, an additional terminal has been set up in the building's lobby. Adults and children may use this computer for free. However, it does not appear that this terminal gets much use. This is likely due to the museum's lengthy distance from downtown and any residential areas. Museum staff reported that the terminals inside the museum are often used by visiting school children.

the Internet at the county employment agency. Farmers in need of agricultural information were able to access the Internet at the local extension office.

### **Impact of the Project on Grant Recipients and Project Partners**

**State-Level Participants.** Staff from ODOC and OneNet indicated the TIIAP grant did not have any short- or long-term impact on their operations.

**Local-Level Participants.** The TIIAP project provided a powerful incentive for local coalition members to work cooperatively. Both state- and local-level respondents provided evidence that TIIAP helped foster collaborative relationships among organizations—and in some cases, communities—that had not previously worked together. It is too early to determine the longer term impact and/or sustainability of these new relationships.

Local officials in both Ada and Seminole indicated that an important benefit of the project was the improved relationships among local coalition members. According to the July 1996 quarterly report to the U.S. Department of Commerce:

*Participants continued to comment that the telecommunications center program had promoted unheard-of cooperation between organizations in their communities. Many coalitions suddenly realized they would have to work together on a long-term basis and that there were many unresolved issues regarding ownership of equipment, financial procedures, maintenance, acceptable use policies, etc.*

In Seminole, the TIIAP venture represented the first joint venture between two neighboring jurisdictions. (The Seminole project was one of several in which neighboring communities joined together to apply for ODOC/TIIAP funding. According to an ODOC regional economic development director, this project may provide the foundation for a long-term alliance among two towns whose previous relationship was characterized by intense competition for jobs and football titles.) In Ada, the project represented the first formal working arrangement between the Chickasaw Nation and the local municipality. Staff at the Chickasaw Nation headquarters also indicated that the success of the project served to overcome some of the negative stereotypes that people have of Native Americans.

### **Impact of TIIAP Support on the Initiative**

The TIIAP funding clearly enabled the ODOC to move forward on the community center approach that was outlined in the original strategic plan. Equally important, several of the community members indicated that they would not have been able to initiate their local projects without the \$80,000 in seed money. As a result, while it is likely that some rural communities would have eventually obtained minimal access, e.g., through agricultural extension offices, it is also likely that many other parts of the affected communities would have remained unserved.

## **EVALUATION AND DISSEMINATION**

### **Evaluation**

ODOC has contracted with the OSU Institute for Telecommunications for the evaluation component of the project (OSU was also responsible for some of the project's training and dissemination activities). At the time of the site visit, OSU was in the process of conducting on-site evaluations of 15 centers. The site visits are being used to (1) document the range of uses at a given site (e.g., Internet, distance learning, video conferencing); (2) assess user friendliness and user satisfaction; (3) assess additional training needs; and (4) identify implementation issues. Site visit findings are summarized in quarterly reports to the ODOC.

ODOC will also collect additional data from sites on the project's impact across the community. Data to be collected will include the characteristics of users, the range of uses being made of the access sites, and the ways in which the Internet is changing residents' lives. Plans are to collect these data 18-24 months after the project has officially ended.

At the local level, coalition members are asking users to complete brief surveys that track their use of the system. In Ada, for example, a one-page survey is used to assess the availability of the computers and the ease with which the user was able to access the Internet.

### **Dissemination**

At the state level, the OSU Institute for Telecommunications is responsible for helping coalitions devise strategies for disseminating information about their projects. In Ada, for example, stories about the access sites have appeared in a local newspaper. In addition, ODOC published information about the project and individual coalitions in its newsletter.

## **LESSONS LEARNED**

Project staff at both the state and community level provided insights as to the lessons they had learned as a result of their participation in the TIIAP project. These lessons are summarized below.

### **Lessons Learned By State-Level Staff**

Staff identified a number of lessons that cut across the local projects. First and foremost, ODOC staff indicated that communities with access to local technical experts were in a better position to implement their projects. As a result, they recommended that future projects be required to identify a local technical expert who would be able to assist with software/hardware selection and navigating the Internet.

Second, ODOC staff indicated that formal written agreements could foster long-range cooperation among local coalition partners. Formal contracts can also minimize misunderstandings about whether a given organization has actually agreed to participate in the coalition (one site's failure to formalize its relationship with the local municipality contributed to the project's eventual collapse). In Ada, for example, a written memorandum of understanding was used to delineate the responsibilities of each organization that participated in the community-based effort. The agreement outlined the responsibilities of both the lead agency (the Chickasaw Nation) and the participating organizations. The use of these agreements assured that all agencies understood their responsibilities regarding the installation and maintenance of equipment, the payment of fees, and the provision of access and support to end users. It also ensured that there were no misunderstandings regarding who owned the equipment (i.e., the Chickasaw Nation), who was responsible for maintaining the equipment, and who was responsible for providing technical assistance to end users.

Third, projects often require guidance in how to conduct a thorough assessment that encompasses the needs of *all* community residents. ODOC staff indicated that many of the 65 proposals they received focused on

technical equipment and connection issues. Absent from these proposals was any discussion of (1) problems that needed to be solved, and (2) services that would be provided to ameliorate these problems. It should be noted that the criteria used to select the 33 sites placed considerable emphasis on conducting a needs assessment. Nonetheless, the assessments prepared by most of the successful applicants focused solely on the needs of coalition members and their constituencies (as opposed to the entire community). As such, it is not clear whether many of the projects took steps to identify and/or target the most underserved segments of their local communities. In future years, one of the sites visited suggested that it might be useful for the state to provide technical assistance (e.g., methods and forms) in conducting community-wide needs assessments.

Other lessons identified by ODOC staff are summarized below:

- Training for local coalition leaders and other staff should be tailored to their various needs and levels of computer literacy. For example, breakout sessions can be used to provide more intensive training to those individuals who have had the *least* exposure to the Internet and/or computers.
- Train-the-trainer programs can be used to increase the number of local coalition members who are knowledgeable about the inherent possibilities of the Internet.
- Local communities that design their own networks will often need standards to prevent incompatibility problems across access sites. These standards should be sought from the community's telecommunications provider (e.g., OneNet).
- If mini-grants are to be distributed for the purposes of linking to an established backbone, then they should be required to work with the telecommunications provider that will handle the connections in order to avoid incompatibility problems.

### **Lessons Learned By Community-Level Staff**

Local staff also stressed the importance of having access to local expertise for such services as building a system, providing user support, and resolving technical issues. In Ada, staff indicated that coalitions need to establish policies for (1) requesting reimbursement from users who print large quantities of data; (2) safeguarding against improper use of the Internet; and (3) use of the Internet by children (e.g., obtaining parental permission).

Although it is too early to be sure whether this TIAP project is a success or failure, there are enough positive elements and lessons learned to say that it was a worthwhile endeavor. In the short run, the mini-grant program has given many Oklahomans access to the NII. It has also allowed the State of Oklahoma to leverage funds to build a high-speed backbone. The above lessons also provide good advice to other projects attempting a similar project in the future. Thus, this project can be considered a promising and, if it provides the assistance necessary to sustain the community centers, a successful one.

### **FUTURE PLANS**

At the time of the site visit, the project was still operational. The project closed in spring 1998.

The future status of the project is uncertain. At the state level, ODOC staff indicated that they have no plans to provide supplemental funding to any of the 33 sites. Nor do they intend to finance community

centers in any other rural communities. However, rural jurisdictions that want to replicate the community centers model will be able to contact the ODOC for technical assistance. The sustainability issue was the most troublesome for site visitors. Although the community centers were concerned about whether they would be able to sustain themselves after the grant period, ODOC officials were optimistic. State officials did not specify where they thought the sustaining funds would come from, but they indicated that there should be no problem in this regard.

In Ada, coalition members have agreed to pay a monthly charge of \$260 to maintain their connections to OneNet (the coalition is also exploring ways to generate additional revenues). In Seminole, however, several stakeholders expressed concern about whether the coalition would remain intact after ODOC support for the project officially ended. Respondents also indicated that a decision by OneNet and OK5 to raise their rates at the end of the TIIAP grant could constitute a serious threat to the sustainability of some of the project's access sites (communities may choose another Internet provider that offers better access rates).<sup>11</sup> At least one respondent indicated that if the coalition cannot raise the necessary funds, individual sites (e.g., the public library, the extension service) might have to fend for themselves and develop their own strategies for maintaining access to the Internet.

ODOC staff intend to devote a future training session to helping coalitions devise strategies for raising funds and becoming self-sufficient. Examples of fundraising activities that might be shared during the training include annual coalition membership fees, charging for distance learning, establishing e-mail accounts for individuals, and charging printing fees. (Because the intent of the project was to provide citizens with free access to the Internet, coalitions cannot charge users a fee for Internet access. Nor can they solicit businesses to advertise on the Internet.)

ODOC staff indicated that, at the end of the grant, competition among the growing number of Internet providers in Oklahoma would keep Internet access charges affordable. ODOC staff also expressed optimism that rural political power and the aggregation of local demand would compel other state agencies and/or the Oklahoma Legislature to allocate funding for maintenance of the local projects. In addition, ODOC regional economic development directors will be assigned to help individual communities devise strategies for maintaining coalition activities beyond the life of the ODOC grant. In large measure, however, ODOC staff viewed their role as providing seed money to 33 communities. Although ODOC will continue to provide technical assistance once the project has ended, it will become the coalition's responsibility to devise strategies and support for maintaining their access to the Internet.

ODOC staff indicated that the 33 projects would continue to receive state-level technical assistance after the project has officially ended. In addition, other rural jurisdictions that want to replicate the community centers model will be able to contact the ODOC for technical assistance. OneNet will also provide assistance via the OK5, a consortium of phone companies that operate OneNet's help desk.

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<sup>11</sup>In April 1997, the State Regents amended OneNet's Acceptable Use Policy so that only clients paying for OneNet connections would be able to utilize the system's services (including video conferencing and value-added access to the Internet). This amendment precludes coalitions from raising revenues by charging other organizations for access to the project's original line connections.