ANNUAL PERFORMANCE PROGRESS REPORT FOR SUSTAINABLE BROADBAND ADOPTION

General Information

1. Federal Agency and Organizational Element to Which Report is Submitted	2. Award Identification Number	3. DUNS Number
Department of Commerce, National Telecommunications and Information Administration	36-43-B10559	161853940

4. Recipient Organization

WILDWOOD PROGRAMS, INC. 2995 CURRY RD EXTENSION B, SCHENECTADY, NY 12303-2801

5. Current Reporting Period End Date (MM/DD/YYYY)	6. Is this the last Annual Report of the Award Period?
12-31-2013	⊙ **Yes** ○ **No**

7. Certification: I certify to the best of my knowledge and belief that this report is correct and complete for performance of activities for the purposes set forth in the award documents.

7a. Typed or Printed Name and Title of Certifying Official	7c. Telephone (area code, number and extension)
Lou Deepe	(518) 640-3342
	7d. Email Address
Director of Day Services	ldeepe@wildwoodprograms.org

7b. Signature of Certifying Official	7e. Date Report Submitted (MM/DD/YYYY):
Submitted Electronically	01-28-2014

PROJECT INDICATORS

1. Does your Sustainable Broadband Adoption (SBA) project foster a particular broadband technology or technologies? If so, please describe this technology (or technologies) (600 words or less).

This project, which brought together Wildwood Programs, Living Resources, and Catholic Charities in partnership, aimed to foster the use of videoconferencing technology. The three organizations created a broadband video network across their respective "program" sites, so as to deliver education and training to individuals with disabilities, families, and staff. Each site was equipped with end units that varied from 52 inch high definition units in large sites, to high definition cameras on lap top/desk top computers that utilize MOVI software. The entire network has been managed by Wildwood Programs, the prime recipient, through a multi-point control unit.

2a. Please list all of the broadband equipment and/or supplies you have purchased during the most recent calendar year using BTOP grant funds or other (matching) funds, including any customer premises equipment or end-user devices. If additional space is needed, please attach a list of equipment and/or supplies. Please also describe how the equipment and supplies have been deployed (100 words or less).

Manufacturer	Item	Unit Cost per Item	Number of Units	Narrative description of how the equipment and supplies were deployed
N/A	0	0	0	N/A
Totals		0	0	

Add Equipment	Remove Equipment

2b. To the extent you distribute equipment/supplies to beneficiaries of your project, please describe the equipment/supplies you distribute, the quantities distributed, and the specific populations to whom the equipment/supplies are distributed **(600 words or less).**

There were no equipment and/or supplies that were distributed to beneficiaries of the project. The only item that was given to beneficiaries was the MOVI software, which is a free download, and therefore, not considered equipment of supplies under the project. However, without the free software the expansion and implementation of the project would have been very difficult.

3. For SBA access and training provided with BTOP grant funds, please provide the information below. Unless otherwise indicated in the instructions, figures should be reported underlined cumulatively from award inception to the end of the most recent calendar year. For each type of training (other than open access), please count only the participants who underlined completed the course.

Types of Access or Training	Number of People Targeted	Number of People Participating	Total Training Hours Offered
Open Lab Access	0	0	0
Multimedia	0	0	0
Office Skills	0	0	0
ESL	0	0	0
GED	0	0	0
College Preparatory Training	0	0	0
Basic Internet and Computer Use	0	0	0
Certified Training Programs	0	0	0
Other (please specify): Industry Specific Training	4,035	4,035	4,035
Total	4,035	4,035	4,035

4. Please describe key economic and social successes of your project during the past year, and why you believe the project is successful thus far (600 words or less).

During this final year, the need to find efficiencies within human service organizations has continued to be increasingly important. This project has allowed us to realize significant savings connected to staff travel expenses; mileage/gas costs, travel time, and vehicle wear. Staff are able to reinvest their time in providing better services to the people we serve, and spending more time focused on our mission. This technology has allowed for us to provide training to an additional 1100 staff this year, allowing us to have a more highly trained workforce and having a positive effect on the supports we are able to provide to individuals with disabilities and their families. In addition, this project has allowed us to offer our staff and the families we work with more flexibility, specifically in their ability to attend a meeting via teleconference should they not be able to be physically present at the meeting.

5. Please estimate the level of broadband adoption in the community(ies) and/or area(s) your project serves, explain your methodology for

estimating the level of broadband adoption, and explain changes in the broadband adoption level, if any, since the project began.

5a. Adoption Level (%):	Narrative description of level, methodology, and change from the level at project inception (600 words or less).
79	The adoption methodology was derived from data obtained from the Gadberry Group which can be found at http://broadbandbreakfast.com/wpcontent/uploads/2009/12/Take-Rate-Brief.pdf. The purpose of that analysis is to improve metrics used to characterize broadband adoption. According to this data, 12.4% of New York residences do not have access to broadband. However, our project is a Sustainable Broadband Adoption project and does not provide infrastructure. Rather, our project provides end user equipment and attractive services to promote adoption where it is available. The pertinent question is how many homes have access to broadband (100% - 12.4% = 87.6%) but do not subscribe (100% - 78.29% = 21.71%). Multiplying the number of homes who have access (87.6%) times those that do not subscribe (21.7%), we find a potential increase in subscribership of 19%, However, unfortunately, the success in reaching people in their homes, and thereby increasing home subscribership, has been minimal due to a variety of challenges. It is estimated that we have only see a 1% increase among the population we serve.

6. Please describe the two most common barriers to broadband adoption that you have experienced this year in connection with your project. What steps did you take to address them (600 words or less)?

The use of broadband to support the use of interactive video technologies is hampered primarily by two barriers. The dominant barrier exists in the area of residential broadband and concerns the quality of service being offered by providers. There is a lot of focus on advertising the speed of the downstream channel to the home. However, that focus is, while worthwhile, pursued while neglecting the technical needs of interactive real-time video communications. We have found there to be a serious lack of performance on the upstream channel, which limits quality and precludes some interactive uses of the technology.

More acutely in the realm of service quality, however, is the high degree of variability in latency and jitter in residential connections, which refers to the "delay" between the sending and receiving of information and the variability of that "delay", respectively. The "windows" of time during which residential connections have acceptable levels of latency and jitter do not typically coincide with the times we would have liked to utilize interactive video communications with the people we serve. The lack of connection quality when we would attempt sessions often resulted in dropped and mangled audio and video, thus eliminating the potential benefits of providing services using interactive video. This situation was responsible for great difficulty in meeting our desired residential subscriber metrics.

We worked with our Internet service provider to create a peering agreement between themselves and the most common provider of residential broadband in our region. Even initiating a conversation with the latter party was extremely difficult and, in the end, was fruitless anyway. Neither ourselves, nor our Internet provider, who has a sizable customer base in our region, was able to gain any kind of accommodation. Based on the nature of the dialogues we have had with the residential provider, our feeling is that a serious lack of competition for residential customers underlies both their lack of desire to work productively with other providers and the lack of attention to quality of service issues that affect next-generation broadband applications.

The other significant barrier exists on the business side of the equation and speaks to the difficulty of getting fiber optic connections built out to business sites. After many years of struggling with this issue, we were finally able to complete the deployment of fiber to all of our sites. However, without the financial support of this grant, some of our sites would still be operating on bundled T1 connections over old copper plant, which is really insufficient for the needs of interactive video within an enterprise. While not located in a rural community, one of our main sites is roughly 1.5 miles from the nearest fiber connection. Getting that fiber build completed at any kind of reasonable cost was very difficult, but has made a world of difference to us. Given that 1.5 miles is not a particularly long distance, this speaks clearly to the issues that will be faced by rural enterprises like ours that might try to deploy this type of technology.

Clearly, there needs to be progress in the area of policy to advance the efficient deployment of fiber broadly throughout service regions. The current arrangement of having each telecom provider responsible for building their own networks is unlikely to result in the level of penetration of fiber resources needed.

7. To the extent that you have made any subcontracts or sub grants, please provide the number of subcontracts or sub grants that have been made to socially and economically disadvantaged small business (SDB) concerns as defined by section 8(a) of the Small Business Act, 15 U.S.C. 647, as modified by NTIA's adoption of an alternative small business size standard for use in BTOP. Please also provide the names of these SDB entities. (150 words or less)

While subcontracts have been awarded in the project none have been made to classified socially and/or economically disadvantaged small businesses.

8. Please describe any best practices / lessons learned that can be shared with other similar BTOP projects (900 words or less).

We gained an immense amount of knowledge through the pursuit of this grant. The use of broadband technologies to support video applications, both in terms of interactive and broadcast models, has proved to be very valuable, but, at the same time, required a significant investment in learning how best to use the technologies. We are still learning, even at the close of the grant period.

The most important lesson for any organization desiring to use the technology effectively is to start by having a fundamental

understanding of the underlying technologies. People perceive video as video, however, there are a huge number of foundation technologies involved that do not necessarily play nicely with one another. For example, we had anticipated that the integration of our interactive video into a broadcast model would work cleanly. This is not the case. The bridging of those worlds requires effort that is fruitless without a solid understanding of how the technologies work. It is an aspect of the technology on which we are still working.

Even "standards" around the storage and transmission of video data can result in frustrations. For example, taking captured video from an interactive video conference and incorporating it into a downloadable training video can require someone within the organization to be able, among other issues, to work with multiple applications in the production of the final product, deal with technical issues such as non-standard resolutions, and, and output audio and video formats that are not universally playable.

When pursuing the use of high quality interactive video within an organization, it is important to build a high quality enterprise network. We found that we could not reasonably support such a network using bundled T1 connections over copper infrastructure as we often hit quality issues related to the speed of those connections. Moving to a fiber infrastructure to all of our primary sites turned out to be the right approach, though one we could not have accomplished in the timeframe we did without the support of this grant. That said, the investment has been worth every penny, for both the video and other applications.

It is also important to know the limitations of working with technologies beyond your control. Primarily, when leaving the enterprise network to connect to residential sites on the general "Internet", the quality of your own infrastructure will make no difference if the quality of the home user's connection is not good. As noted previously, this circumstance seriously impaired our ability in most cases to utilize broadband video in the provision of services to the people and families we serve. Our successes were very limited in this regard.

Of issue, too, in our proposed application, is the sophistication of the non-employee end users connecting to the enterprise service. At this point, we need to assist them, sometimes significantly, to install, properly configure, and operate client software for interactive video service. We are hopeful that the forthcoming WebRTC technology will assist in this regard, but the problems of interoperability between consumer and enterprise video technologies are well-documented, so our optimism is guarded.

Finally, we would advise those choosing to work with this technology to invest time in learning about it before entering into contracts with vendors. As noted, there are a wide variety of technologies involved in the "whole" package of our project and they do not integrate as nicely together as we would like. Consumer video technologies at this time differ significantly from enterprise video technologies, which creates issues around expectations and capabilities. Given the cost of the enterprise components, it is important that customers be smart about their purchases, and that requires a great deal of investment in learning not only about the various technologies and components themselves, but also in really being thoughtful in how those technologies can be used for the organization's desired applications and uses. While we have no regrets around the equipment we purchased through the grant, we would be much smarter, focused, and more efficient buyers today than we were three years ago. Fortunately, we had flexibility in the grant to make course corrections as needed.