El Concilio of San Mateo County
Final Report for
the California Emerging Technology Fund

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Name of Project: Wi-Fi 101
Grant Number: 33445566
Start Date: July 2008   **End Date:** December 2012

I. Financial Summary

- Total Project Budget Spent: $4,645,395.35
- CETF Grant Amount: $750,000
- Percentage of Match Funds Raised against Goal ($750,000):   100%
- Cost Per Unit of Outcomes: (Total Outcomes/Total Budget) $200

II. Project Description, Goals and Objectives, and Outcomes

Project Description

Background: In the 1990's, East Palo Alto (EPA) was described as a community facing '*economic, skill, employment and technology usage deficits*'. Located 'literally across Highway 101' from neighboring communities that averaged 2.9 computers per household with nearly 100% Internet connectivity; EPA had no broadband available. In fact, broadband would not become available to EPA until 2004. A joint community initiative led by East Palo Alto Digital Village (EPADV), aimed to ensure that EPA residents, families and businesses, would benefit from advances in telecommunications and computer technology that was ironically being developed in neighboring Silicon Valley. East Palo Alto Digital Village - YouTube

With the support of a $5M neighborhood investment in 2000 many community based organizations, under the initial leadership of EPADV, came together to jointly focus in improving technology use and literacy within EPA. With collaboration involving EPADV, One East Palo Alto (OEPA), El Concilio of San Mateo County (ECSMC), Plugged In (PI) and corporate supporters including HP, Cisco, and Microsoft; EPA began building support and initial funding to develop a community network. This first phase led to the introduction of an online community network, and a presence on the Internet (EPA.net). Over the next 10 years the network was expanded, computer ownership and usage increased, but residents were not able to afford the monthly fees for a cable modem connection. Other challenges included the need for additional funding to maintain and expand the benefits of the network. The CETF grant combined with successfully raising $3.5M in matching funds has provided an opportunity to ensure that EPA technology would continue to be enriched and expanded. Through this grant funding, the focus on closing the digital divide transitioned to the Wi-Fi 101 project; allowing more EPA residents to be reached.

Mission: The mission of the Wi-Fi 101 project was to help transform the EPA and East Menlo Park communities by building a community accessible *wireless* Internet network. The vision for the project was to create a network that was ubiquitous to the entire East of Bayshore community. The project successfully employed strategies and activities that raised community awareness and support through collaborations with city government, community based organizations, local schools, small businesses and Silicon Valley based corporations. More importantly, WiFi101 believed that the history of providing a broad range of services in the community has greatly impacted the success of the outreach, marketing, and collaboration during the grant period.

Goals and Objectives Summary

Significant progress was made in all areas of grant deliverables. The achievements were accomplished despite unanticipated challenges that occurred at various stages of the work plan implementation. The results from Wi-Fi 101 helped to extend the reach of the wireless broadband network and infrastructure in EPA. Wi-Fi 101 now has over 16,000 registered users experiencing the benefits of using a computer with free or very low cost broadband access.

Key to the success has been the holistic approach of the work plan. The goals, objectives, deliverables and outcomes relied on engaging EPA residents, as well as, partnering with key community stakeholder groups. Partners successfully worked with a number of faith-based organizations, grassroots and established CBOs, city departments, local middle schools, corporate supporters, and community leaders to provide new and refurbished computer equipment, training, technical service and support, as well as, internships that led to employment opportunities for over 100 people. Finally, this project has helped the Ravenswood school district to raise academic achievement over the past 5 years by increasing the availability of computers in the classroom as well as, home usage for students, teachers and parents.

Project Outcomes Summary

Outcome Description	Actual	Goal	Percent Completed
Operate a Free Internet Service with 2,650 Registered Users and	16,418	2,650	100%+
Generate 1,460 Service Calls for free Internet service	268	1,460	18%
Generate 1,252 paying registrations for Premium Service Customers	12	1,252	.95%
Establish 1,684 paying customers to partially support free service-annual service contracts for premium service customers.	21	1,684	.1%
Train at least 90 community members to become Computer Service Technicians, Telecommunications Installers and Telecommunications Technicians.	63	90	68%
Cross promote EPA Techs as support organization for free service.	16	8	100%+
Internships and 80% job placement will be provided through partnership with Community Wireless and Computers for Everyone.	59	74	100%
Provide free refurbished computers to 433 students over 3 years.	671	433	100%+
Develop a comprehensive refurbished laptop program for 550 middle school students over 3 years.	2,400	550	100%+

III.   Accomplishments and Challenges

Summary of Accomplishments and Impacts of Project

Assessment of Outcomes Achieved in Comparison to Grant Agreement

- The Wi-Fi 101 program had 6 key goals as well as a cash fund/investment goal. Each goal had a set of specific outcomes (see previous page) totaling 16 specific key deliverables. The program met or exceeded goals for 11 key outcomes, and did not meet outcomes in 5 areas. In spite of variations, the program was a success based on its ability to close the Digital Divide and significantly increase computer literacy for residents, students, and EPA families/households. Full coverage has been established for 80% of the East of Bayshore region, including a base station that is fully operational.

- Through this program WiFi101 saw evidence of the 'transformation' WiFi101 wanted to achieve in expanding broadband access. This enabled us to exceed the primary goal of providing free Internet access to 2,650 EOB residents and today over 16,000 residents have registered for broadband Internet access.

- From the 7 EPA Techs that provide technical support, to the 16 interns that have had an opportunity to learn, apply and hone their tech support skills, to over 2000 6th-8th graders who have received laptops, and computer training to enhance their academic performance, Wi-Fi 101 made a difference in EPA.

- Four (4) technical support sites were initially established within the community [Job Train, Ecumenical Hunger Project, Whole House Building Supply and Store Front]. These sites have now been consolidated into 1 site located at Computers for Everyone (CFE) that has placed a total of 59 graduates of the technician training program through the collaboration with community partners.

- OEPA-led work focused on helping organizations identify information and other resources needed to improve the quantity and quality of disability-based accommodations in their technology systems. The foundation of this work, which was the primary focus of Year 1 grant activities, targeted 62 nonprofits and churches that had previously participated in the Community Interact! (CI) project and received subsidized high speed Internet access. These organizations received a steady stream of messaging about the need for and importance of broadband access for organizations and their constituents.

- OEPA extended outreach efforts beyond CI organizations to send a series of messages promoting the importance of broadband to the more than 100 OEPA members, as well as to the agency's online network (1,100 individuals and organizations), mass mailing list (more than 800 individuals and organizations), and organizations participating in several OEPA-led collaboratives. It also collaborated with Wi-Fi 101 grant partners Computers for Everyone and Ravenswood City School District to leverage their training activities targeting East of Bayshore residents.

- Finally, these achievements would not have been possible without the commitment, dedication and sustained collaboration of the funding sponsors, community partners, faith-based organizations, local school district, corporate partners and volunteers, as well as, the city leaders.

- To-date, 671 (155% of the goal) students have attended the 3 hour introduction to computer course (5). Upon completion of the course they were rewarded with coupons to subsidize purchase of a refurbished computer at Computers for Everyone.

- Finally WiFi101 were successful in securing $3.5M in matching funds to support the program goals and objectives.

Delineation of Deliverables and Outcomes Not Achieved and Explanation

- **Provide 1st and 2nd Level Training to 123 high school and junior college students**-The purpose of this goal was actually to have 87 (70%) of the students successfully complete/graduate from the 2nd level program. This goal was not met as the 25 week long self-paced program was too long for the target age group to accomplish. This approach resulted in students losing interest and eventually dropping-out of the 2nd level training and only 2 students actually graduating from the program. This aspect of the program was discontinued in the second year of the grant and efforts were refocused on increasing computer skills and accessibility for middle-school students using an Instructor led approach.

  The students who took the introductory courses were in most cases people who wanted to learn to use, not fix a computer and so had little interest in the computer technician courses. A number of students, however, did take the computer technician course offered by JobTrain and graduated. Many followed up this course with an internship at Computers For Everyone where they gained valuable experience in refurbishing and repairing computers as well as dealing with customers.

- **Advertising Income & Premium Service Revenue**-The program was not successful in generating advertising income or securing long-term contracts with targeted city departments. WiFi101 realized early on that raising advertising income would be far more challenging and require us to compete with much larger economically advantaged organizations (i.e., Facebook, Google and the like). WiFi101 developed plans for several city departments and requested meetings to discuss the plans. These meetings explored the feasibility of the city using the network to meet their network communication needs. WiFi101 also believed that the proposal contained a very cost effective and efficient service that may provide cost savings if implemented.

- **Premium Service Revenue**- The number of premium customers has been declining. WiFi101 had over 50 at the start of the program however that number has fallen to 21 (9 paying and 12 service bartered for roof access for transmitters). The reason for the decline is the availability of lower cost Internet from both

Comcast and ATT throughout the city, coupled with the fact that wired Internet (as provided by Comcast and ATT) is more reliable than wireless. An additional factor is WiFi101 is free, so in essence WiFi101 were competing with ourselves, thus this feature lost viability as a source of revenue generation.

- **Long-Term Self- Sufficiency** -As the EPATechs gain experience WiFi101 hope to implement a fee for service pricing to generate revenue support the free network. The service call volume has not increased to a level that would make this feature viable now; however, this will help the project gradually move toward self-sufficiency over time.

- **Securing City TV Contracts**-WiFi101 had several meetings with the City Of East Palo to promote their use of the wireless network as an aid to city services. The city was supportive of the network and how it could benefit the city, but severe budget constraints prevented pursuit of these ideas. The City Manager did ask whether the network could be used to support remote TV monitoring of the new park being developed by the county within the city's area of responsibility. WiFi101 performed a feasibility study and presented it to the city. However, again budget constraints prevented this from being pursued.

Discussion of Other Positive Results from Project

1. **Free Internet Access**: A robust marketing and community awareness effort in collaboration with community based and faith-based organizations; along with several well attended community meetings ensured that residents were aware of and would use the free broadband access. WiFi101 have successfully promoted and engaged the community to exceed the targeted usage of the broadband network from 2650 (goal) to over 16,000. Today the Wi Fi network is a strategic asset in the community.

2. **Academic Improvement:** Over 600 middle school students have access to 21st century classrooms. The ratio of computers to students has changed dramatically from an initial ratio of 30 students to 1 computer to at 1.3 students to 1 computer. Through Wi-Fi 101 and the help of 300 donated computers from HP, WiFi101 is now creating 21st century learners in our all of the classrooms. The improvement in their computer literacy skills has also improved academic confidence. Teachers are better able to zero in on areas where students may need more attention, coaching or tutoring. Through this initiative, teachers are also able to track student performance against state compulsory subject areas (i.e., math, science, etc.). As a result, there has been year-over-year improvements in academic performance since the inception of Wi-Fi 101.

3. *Parent Involvement:* Over 200 parents participated in 3 hour training session on how to use computers to access the Wi-Fi network. This training strengthened the school's effort to bridge home to school. The Student Information System (SIS) allows on-line student registration and through the training program, WiFi101 were able to jump start and enhance parent engagement. Parents are able communicate with teachers, track academic performance progress and become more involved in their child's education.

4. **21st Century Classrooms for 21st Century Learners**-The Ravenswood City School District moved away from the constraints of one computer lab with 30 or 40 computers for 1,200 students to supporting a network that has allocated a computer to each classroom and hired a Network Specialist to support their ongoing network access usage. The school is also able to monitor the overall performance of its students on compulsory assessment exams. This access now allows teachers and administrators to identify areas needing greater concentration to ensure students keep pace academically with their peer-groups in 'real time'.

5. **Community Non-Profit After-School Programs Using Wi-Fi**- As a result of positive experiences with subsidized high-speed Internet access resources provided by the Community Interact! Initiative, several local nonprofits and churches were receptive to the idea of continuing their broadband access through the Wi-Fi 101 project. More specifically, these entities bought in to the idea of using Wi-Fi 101's wireless resources to facilitate their efforts to conduct academic enrichment services as independent after school activities or school day experiences in partnership with the local school district. The following organizations signed on for premium wireless services offered by Wi-Fi 101 to support student academic progress through their existing academic enrichment activities: Bayshore Christian Ministries, Community Development Institute, Creative Montessori Learning Center, East Palo Alto Teen Home, El Concilio of San Mateo County, Foundation for a College Education, I Have A Dream, Project WeHOPE, Saint Francis of Assisi Church/Boys Club, Saint Samuel Church and YES Reading Program.

6. **Support for Continuing Wi-Fi 101 Program**- During the last phase of the California Emerging Technology Fund (CETF) grant, including the no-cost extension period, OEPA led an intensive effort to bring the work and accomplishments of the Wi-Fi 101 project to the attention of a former East Palo Alto Digital Village (EPADV) partner organization, Plugged In (PI). This effort was prompted by information received by OEPA that PI's Board of Directors planned to dissolve the nonprofit and needed to dispose of its financial assets, including a major unspent grant PI had received in 2000 through EPADV's initial funding from Hewlett-Packard Company. Success was achieved when PI's board awarded $198,000 of its unused EPADV grant to EPADV for sustaining the Wi-Fi 101 project through Computers for Everyone operations, specifically the organization's maintenance of the wireless network and continued provision of low-cost, refurbished computer equipment to low income East of Bayshore residents.

7. **Corporate Partnerships Strengthened** – Wi-Fi 101 is now on the map! With the donation of 300 new computers from HP, other corporations began supporting the efforts. Companies such as VMware, Facebook, Stanford University's Mormon group, and HP provided volunteers who loaded software, help set-up new computers or unload, stock computer donations and provided technical support. With the help and support of these volunteers the program today is more efficient and sustainable.

8. **Merger of 2 Non-Profits –** In an effort to increase efficiency and maximize limited resources, Community Wireless and Computers For Everyone merged under the name Computers For Everyone.

9. **Upgraded Computer Lab for JobTrain-** Through the generous support of Hewlett-Packard, the Job Train computer lab was provided with $300,000 worth of computers and printers to create a state-of-the-art computer lab.

Overview of Major Challenges to Achieving Planned Results

Identify Major Challenges to Successful Implementation

- **Radio Interference** – There have been serious problems with radio interference in certain sections of the city. While this is an inherent problem with Wi-Fi technology providing city-wide access; this limits access during certain times of the day or users may experience very slow service.

- **Network Expansion** – WiFi101 was not able to reach all sectors of the EOB communities due in part to the limitations of the technology; resulting in an inability to provide wide area coverage through Wi-Fi technology. WiFi101 also has no control of unlicensed network bands.

- **Revenue Generation**- As technology advances, the cost of maintaining, improving and expanding the network will require funding. The assumptions upon which this proposal was based changed significantly (i.e., advertising revenue, city contracts and fees for service). In other cases, in-kind contributions that would have supported reaching more distant sectors of the city were no longer viable to pursue without the ability to provide reliable technology.
- **Unpaid Internships-** Feedback from interns suggests that there needs to be some form of financial incentive included in this aspect of the program. Because students are assigned to a local business organization site to support their technology needs, they don't feel rewarded for the value they bring as interns in resolving technological problems that would otherwise require the organization to incur an expense. This poses a challenge for trainees to complete the internship successfully or use their new skills to find permanent employment elsewhere.

Discuss Efforts to Address Challenges and Resolve Problems

- **Network Limitations** - WiFi101 is considering a few options to address the limitations of Wi-Fi technology (i.e. radio interference and network expansion). In the case of radio interference, WiFi101 is working out an agreement with a DSL reseller which would allow us to improve reception quality to approximately 1/3 of the community. WiFi101 is currently in the process of moving some customer to DSL. This is a supplement to Wi-Fi access and will help the community to become digital proficient. Additionally, through the reseller agreement, WiFi101 will be able to realize a modest revenue gain through DSL.

- **Lack of Incentives for Interns**-WiFi101 believes that some form of incentive needs to be added to the internship program. This will help sustain participation, reinforce the value of the tech training programs and reward interns for the value their knowledge brings to both the community (economically) and the organization (lower technology repair expenses).

- **Length of Training and Training Format-** WiFi101 listened to students and revamped the training format, shortened the duration and provided bi-lingual instructors capable of ensuring effective knowledge transfer and understanding for students and parents. WiFi101 also increased the number of programs offered to parents as word spread that the program was available.

- **Parent-Teacher-Student Engagement-** Parents were slow to attend initial orientation sessions. To boost their interest, involvement and participation; their training/orientation was designed to provide them with skills on using the computer and accessing the Student Information System (SIS). This also allowed parents to be in contact with teachers to discuss any issues or support needs for students. More importantly, with language translation available via the Internet, language differences were diminished opening the door for more parent-teacher-student collaboration.

- **Need for Additional Support and Resources-** As more in-kind computers were received WiFi101 needed assistance with setting them up, loading software, ensuring security, etc. A number of Silicon Valley organizations (previously mentioned) provided volunteers who provided help beyond the needs and feel grateful for their contributions.

IV.   Lessons and Recommendations

Summary of Lessons Learned

Lesson 1. People were skeptical about getting public, non-profit and corporate resources to work together and have something good happen for EPA. This effort proves that indeed it is possible!

Lesson 2. Consider the impact of community needs through the eyes of the 'residents'. As WiFi101 listened to members of community tell us about their needs, 'new needs surfaced'. When the community is engaged their perspective should not be overlooked or ignored. As a result of their input WiFi101 was able to broaden the scope and reach of the work; which ultimately redefined the view success (i.e., premium paying customers were not as important as ensuring more residents were registered and using the network).

Recommendations for Expanding the Project in Region or Scaling Up Statewide

Recommendation 1: **This project can and should be expanded regionally because it is manageable after WiFi1-101. However, it has to limit the goals and focus areas.** San Mateo County is one of the most diverse counties in the Country with over 50% communities of color. An expansion of WiFi 101 throughout San Mateo County beyond East of the Bayshore, would broaden Internet access and benefit often, hard to reach populations such as those characterized as low wealth/income, non/limited English Speaking seniors and disabled communities within the county. This would socially disadvantaged communities with different language, cultural and affordability needs to become more engaged and self-sufficient.

On a state-wide level, it would be more challenging to fully realize economies of scale, as a project this complex would require an inordinate amount of uncompensated time and significant resource commitments from potential partners. An approach WiFi101 considesr potentially viable on a state-wide level is the opportunity to raise awareness of the benefits of this type of community initiative, share best practices and leverage strategies that create successful community and local partner engagement. The potential to host a series of forums that bring communities and partners together is a critical role the state can play in leveraging the success of this project state-wide. WiFi101 sees this next step as WiFi 101 as the 2.0 iteration that extends the benefits of Internet access to similar communities throughout the state.

Replication of WiFi101 would require significantly more partnerships across public, private, non-profit and faith-based sectors. In addition, the investment of more resources, facilitation of groups to work together and defined bandwidth with the flexibility to adapt to community needs when necessary or appropriate would require *out of the box strategies* in order to achieve the desired impact. This should be implemented with an overarching theme of community building within these communities. The key to successful expansion is ensuring that all stakeholders are able to participate in the development and implementation of project during the early, mid-term and final phases of the community initiative. This will go a long way to ensuring that buy-in, support, resources and community commitment are sustained before, during and after the network is introduced.

Recommendations to CETF Regarding Grants Management

Recommendation 1: CETF did a good job of providing access to experts in the field of technology, broadband awareness and adoption for grantees and should continue to do so.

V.   Grant Agreement Requirements

Purchased Equipment – No equipment was purchased with CETF funds.

Unspent CETF Grant Funds - All of the CETF grants funds were expended.

ADDENDUM

The accomplishments and results from the CEFT Grant were achieved through the commitment and generous support of the following organizations that WiFi101 wish to thank and acknowledge as part of the final report.

COMMUNITY BASED PARTNERS	CORPORATE PARTNERS
1. East Palo Alto Digital Village (EPADV)	1. CETF
2. Community Wireless	2. Hewlett Packard
3. Computers For Everyone (CFE)	3. Microsoft
4. PluggIn	4. Facebook
5. Ravenswood School District	5. Google
6. JobTrain	6. VMware
7. One East Palo Alto	7. Stanford University
8. El Concilio of San Mateo County	8. Four Seasons Hotel
9. Bayshore Christian Ministries	9. City of East Palo Alto
10. Community Development Institute	10. San Mateo County Board of Supervisors
11. Creative Montessori Learning Center	
12. East Palo Alto Teen Home	
13. Foundation for a College Education	
14. I Have A Dream	
15. Project WeHOPE	
16. Saint Francis of Assisi Church/Boys Club	
17. Saint Samuel Church	
18. YES Reading Program.	