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COMMUNITY / TECHNOLOGY / OPPORTUNITY

National Broadband Plan for Our Future ZeroDivide Comments to FCC

EXECUTIVE SUMMARY

ZeroDivide is a 501(c)(3) public foundation that has invested more than \$45 million over the past 10 years in innovative programs that encourage sustainable adoption of broadband services in unserved and underserved communities. ZeroDivide provides financial support, capacity building and technical assistance to nonprofit organizations that benefit low-income, minority, immigrant, non-English speaking, LGBT, aged and disability communities. Our key comments and recommendations to the Federal Communications Commission regarding the development of a National Broadband Plan are:

Community Engagement:

- The Commission should conduct significant outreach to unserved and underserved communities in developing the National Broadband Plan.
- Supporting community institutions is critical in providing broadband access, creating broadband demand, and creating economic, educational and civic engagement opportunities through broadband.
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The Market and Affordability:

- The issue of price and marketplace competition should be a key consideration in the Commission's plan. Unserved and underserved communities should be a priority in the national plan.
- Market failure has occurred in certain communities because the product is not affordable and/or applications and content are not relevant to the community.
- Affordability is a determinant of access for low-income and other underserved communities.
- The goals of Affordability and Maximum Utilization are linked, however, affordability is not the only issue which drives adoption (and maximum utilization) in underserved communities.

Demand and Adoption in Unserved and Underserved Communities

- The Commission should consider programs which provide broadband subsidies for low-income communities and create low-cost community based broadband services.
- Broadband adoption and demand strategies must be included in a National Broadband Plan to assure maximum utilization.
- Technology adoption programs in unserved and underserved communities work best when tied to other community outcomes such as civic participation, community

development, health care delivery, education, worker training, entrepreneurial activity, job creation, and economic growth.

Broadband Mapping and Data:

- The Commission should develop a system for collecting data on availability of broadband as well as the broadband adoption.
- The broadband mapping effort should include the mapping and tracking of broadband adoption, in addition to broadband availability.

Accessibility for Individuals with Disabilities:

- The Broadband Plan must promote the concept of universal design in broadband networks and application in order to assure that individuals with disabilities can fully access and benefit from broadband.
- These recommendations are based upon our lessons learned over the past decade and focus largely on broadband adoption, demand, training, education and job creation in unserved and underserved communities.

II. DISCUSSION

In this section, ZeroDivide offers its comments in response to the Federal Communications Commission Notice of Inquiry released April 8, 2009 GN Docket Number 09-51. Note: The section and paragraph numbers indicated below coincide with those reflected in the Notice of Inquiry.

A. Approach to Developing the National Broadband Plan

12. The Commission should conduct significant outreach to unserved and underserved communities in developing the National Broadband Plan.

In order to hear directly from the unserved and underserved communities that will benefit most from a national plan to “ensure that all people of the United States have access to broadband capability,” the Commission must conduct significant outreach to these communities during the development of this plan. While some organizations representing these communities, like ZeroDivide, will participate in this proceeding, the fact is the voice of the very people we seek to help will not be at the table if the Commission relies on a typical regulatory proceeding. The Commission would be able to gather invaluable knowledge about specific community needs and solutions by engaging with communities directly. Specific activities could include:

- Public hearings throughout the country
- Site visits to effective broadband access and adoption programs
- Roundtables with organizations serving these communities

B. Establishing Goals and Benchmarks

2. Defining Access to Broadband

23. Supporting community institutions is critical in providing broadband access, creating broadband demand, and creating economic, educational and civic engagement opportunities through broadband.

The goal of a National Broadband Plan should be the availability of affordable broadband to every household in the country. However the Commission should also look at broadband

capabilities at community institutions such as schools, libraries, small businesses, health clinics, and community-based organizations. These community institutions provide critical access to broadband services for individuals who may not have access at home. Libraries and community-based organizations still serve as the major access point to the internet in many communities. In addition, community institutions need access to broadband and broadband applications to effectively deliver services and address needs in the community.

In measuring broadband access and capabilities, the Commission should include measures of these key community institutions and organizations. Their level of broadband access, capacity and use of broadband application is a direct reflection of the overall level of broadband access and capacity in the community.

25. The issue of price and marketplace competition should be a key consideration in the Commission's plan. Unserved and underserved communities should be a priority in the national plan.

The issues of price and marketplace competition are integrally linked to access to affordable broadband services. A more competitive market will provide greater consumer choice, help keep prices affordable, and promote customer service as well as create other ways for companies to distinguish their service.

Those communities with no broadband access (unserved) should be a priority in the National Broadband Plan. However, underserved communities that may not be able to take advantage of broadband provided in their community because they cannot afford it, or experience other barriers to broadband adoption should also be prioritized. Whether one is an inner-city resident who cannot afford the broadband service provided in his/her community or a resident of a rural area with no broadband service, the result is the same – no access to broadband. The barriers to broadband access and adoption are just as real to underserved communities as they are to unserved communities.

This “digital divide” is a technological manifestation of economic, cultural and political divides. Underserved communities appear in both rural and urban settings and include low-income, minority, immigrant, non or limited-English speaking, LGBT, aged and disability communities. Underserved also refers to populations for which there exist barriers to broadband assimilation that can be effectively removed by implementation of demand/adoption programs. These barriers include: race, ethnicity, language, physical capacity, economic conditions, and geography. For the purposes of broadband demand and adoption programs, the term underserved should be defined as geographic areas or population groups which meet one or more of the following criteria:

- Broadband access and adoption rates fall below the rates of the general population (less than 55%)¹;
- A low-income population as determined by state or federal guidelines, such as residents of low-income housing, or an area with a high rate of participation in free and reduced price lunch/breakfast program;
- The cost of broadband services is out of reach for the targeted population; or
- The target population or geographic area has one or more demonstrated barriers to adoption including, race, ethnicity, language, physical capacity, economic conditions, and geography.

In order to assure that data on these barriers is collected and their impact measured consistently, we also recommend that the Decennial Census and the American Community Survey include regular collection of such demographic characteristics such as race/ethnicity, language, physical ability, income, and education data related to broadband adoption.

1 [Pew Internet and American Life Project](#)

27. Affordability is a determinant of access for low-income and other underserved communities.

Low-income households have among the lowest rate of broadband adoption and cite high costs of service as a barrier to access.² Even though broadband services may be fully deployed in a geographic area, if residents cannot afford the price point offered, broadband will still be inaccessible. Therefore, the Commission should consider support for three types of programs which can reduce costs and provide affordable broadband to low-income communities in such a region:

- Deploy municipal or community-based networks;
- Increase capacity of community-based organizations to serve as access points in the community; and
- Provide a subsidy to low-income individuals.

More details on the issues of affordability are discussed in our response to questions posed under Section D: Affordability and Maximum Utilization, including examples of successful programs which address the issue of affordability.

² [Pew Internet and American Life Project](#)

28. The Broadband Plan must promote the concept of universal design in broadband networks and application in order to assure that individuals with disabilities can fully access and benefit from broadband.

A robust broadband infrastructure provides significant opportunities for new applications to increase access for individuals with disabilities to a host of information and services via the internet. ³ However, many web sites, broadband applications and computer equipment are not accessible to individuals with disabilities. The concept of universal design promotes the design of products, services and applications that are accessible to all regardless of their disability.

In addition, the National Broadband Plan should include a plan for more in-depth study into the broadband adoption and adoption barriers to individuals with disabilities. Current research surveys which measure broadband adoption rarely include meaningful information about broadband adoption among individuals with disabilities.

Broadband adoption in this community, like other underserved communities, requires not only access to affordable broadband services but also relevant content and applications. One successful program supported by ZeroDivide is [Bookshare](#)TM, the world's largest accessible digital library of scanned material for people with vision and reading disabilities.

³ For more information on how broadband impacts the lives of Children with Disabilities see [Helping Our Children With Disabilities Succeed: What's Broadband Got To Do With It?, The Children's Partnership, July 2007](#)

3. Measuring Progress

29. The Commission should develop a system for collecting data on availability of broadband as well as the broadband adoption.

The Organization for Economic Cooperation and Development (OECD) measures adoption or subscription rates rather than availability in ranking broadband penetration in OECD countries.

In addition, the OECD tracks usage rates, recognizing that improving adoption is critical in assuring that the broadband infrastructure is useful and results in improved economic, educational, social, and health conditions among users.⁴

For example, broadband adoption program metrics should include:

- Increased broadband adoption rates in geography/population served.
- Increased level of technology skills of participants in the program.
- Revenue stream or diversified funding model from marketing and distributing products or services to unreached consumers.
- Measurable outcomes in terms of educational attainment or job readiness.
- A track record of success in creating community of learning models and practices.
- Economic capacity and asset growth in depressed economic areas as evidenced by:

Attraction of growth capital by nonprofit organizations and small businesses

Homegrown jobs created in the community

Employment of residents by broadband technology enabled enterprises

4 [OECD Broadband Portal](#)

D. Affordability and Maximum Utilization

52. The goals of Affordability and Maximum Utilization are linked. However, affordability is not the only issue which drives adoption (and maximum utilization) in underserved communities.

1. Affordability

54. The Commission should consider programs which provide broadband subsidies for low-income communities and create low-cost community based broadband services.

The cost of broadband subscription services and the necessary corresponding hardware and software continues to be a major barrier for low-income and other underserved communities. The cost of 1Mbps broadband service costs a household from \$325 to \$870 per year plus an additional \$500 for a computer and software.⁵ In addition, a household may have to factor in costs of training and technical support. For a household making \$20,000 or less per year, this is a significant addition to the annual household budget.

Low-income households continue to have the lowest rates of broadband adoption as documented by The Pew Internet and the American Life Project⁶ as well as supported by other studies including an annual statewide survey in California conducted by the Public Policy Institute of California (PPIC) and funded by ZeroDivide, Californians and Information Technology. These studies also point to cost as an issue to technology and broadband adoption. The Pew study found that 35% of dial-up users said that the price of broadband would have to fall before they would utilize this service. The PPIC study also found that cost is the main reason that adults in California do not have a computer in the home (37%). Additionally, 21 percent said they did not have a computer because they did not know how to use one.⁷

⁵ Based on comparison of sample costs of broadband subscriptions by technology type.

Comparison chart included in appendix.

⁶ [Pew Internet and the American Life Project. Home Broadband Adoption 2008. July 2008](#)

⁷ [Public Policy Institute of California. Californians and Information Technology. June 2008](#)

Over the last 10 years, ZeroDivide has supported a number of programs to increase technology adoption in low-income and underserved communities. We have employed two major strategies to address the affordability issue:

1. Create low-cost or free broadband services in unserved and underserved communities, primarily through the deployment of community wireless networks:

[Little Tokyo Unplugged](#) is a community wireless network that provides Wi-Fi Internet services to local residents, visitors, small businesses, and the nonprofit community. Little Tokyo Unplugged contributes to economic development of the Little Tokyo area of Los Angeles, helps

promote the community's culture and history, and provides broadband access for low-income residents.

[Tribal Digital Village](#) provides broadband internet service in rural Tribal communities that currently do not have service.

2. Support community-based organizations as key access points for low-income and other underserved communities:

[Self Help for the Elderly](#) provides technological education and curriculum tailored to the cultural needs of the aged. Courses are taught year-round by instructors that provide small group classes in English, Cantonese and Mandarin.

[Central American Resource Center](#) provides no-fee after school programs for youth, focusing on technology education, interdisciplinary art, literacy and youth leadership. To foster communication, the organization hosts family integration nights and sponsors an inter-ethnic youth leadership development program.

These programs have been tremendously successful in increasing broadband access in underserved communities in the home and through community access points. A National Broadband Plan must consider ways to replicate and scale such programs that address cost and other barriers to specific underserved communities. The sections of the Broadband Technologies Opportunities Program (BTOP) which establish funding for Innovative Broadband Adoption programs and Public Computing Centers is a good start.

In addition, to scale home-based broadband adoption, the Commission should support and/or implement programs that would subsidize recurring subscription costs for broadband services and fixed costs of obtaining computer equipment. The Universal Service program should be revised to subsidize broadband for low-income individuals under the Lifeline and Link-Up program.

2. Maximum Utilization

55-57. Broadband adoption and demand strategies must be included in a National Broadband Plan to assure maximum utilization.

The National Broadband Plan must include strategies for creating demand for and adoption of broadband in both unserved and underserved communities. Broadband adoption data shows that, even when affordable broadband is available subscription rates are not as high in underserved communities.

While access and affordability are key issues driving broadband adoption in unserved and underserved communities, ZeroDivide has learned that barriers to adoption are complex, vary among different populations, and cannot always be resolved with a one-size fits all approach. Other key issues include relevant online content and applications, language barriers, training and technical support needs, privacy and security concerns.

ZeroDivide recently completed a study of five of its community wireless broadband projects in various underserved communities in California, which provides interesting data for the Commission to consider in understanding broadband adoption in underserved communities. All five projects included deployment of a wireless network, consumer education and outreach, technology training and computer access programs. Four of the five projects were in underserved communities in which broadband service was available, but residents could not afford the service. In one case, the project was in an unserved community on rural Tribal lands. The study found that the availability of computer equipment and training, and community outreach and education about the importance of technology adoption were critical to the success of each project. In addition, the study revealed that broadband access alone would not have been great enough of an incentive for adoption. In order to achieve broadband adoption, significant effort and resources had to be devoted to outreach and education.⁸

In our experience with various technology adoption programs, key elements to a broadband adoption program include:

Leadership:

Building leadership in unserved and underserved communities that understand the value of technology, such as broadband and its applications has been a key driver in technology adoption in underserved communities. These leaders serve as the “translators” for the community in conducting outreach and education campaigns. They are thought leaders who help transform community technology needs into policy initiatives, and entrepreneurs who develop new ideas to more effectively use technology in their communities to improve economic, educational and social conditions. Through the ZeroDivide Fellows program, we have built a network of 45 diverse community leaders who promote broadband technology adoption in the most underserved communities in California.

Relevant content and applications:

Underserved communities must see the relevance of broadband to their lives in order to make the necessary changes in their lives to overcome barriers to broadband such as cost, training, and investment in computer equipment. ZeroDivide programs have demonstrated that when individuals begin to experience how broadband can connect them to information and services, improve educational opportunities, help find jobs, access better health care, provide content in their own language, and provide content about their local communities, adoption of this technology occurs. In addition, broadband becomes highly desired in households with new users, particularly youth, who have the opportunity to create their own content such as videos, podcasts, and blogs, and interact with peers online through social networks.

Community outreach/community-based organizations:

Broadband adoption programs succeed when they are tied to community organizations and institutions which have already gained the trust of the target populations. These organizations understand the issues and perspective of their community members. They are able to conduct culturally competent outreach and education and more effectively reduce barriers to broadband adoption. In many underserved communities, such as immigrant communities and communities of color, trust is a significant factor in technology adoption.

8 ZeroDivide Community WiFi Study, Review Draft, Tina Lee, May 2009, pgs. 12,18

Programs which address targeted populations and their specific barriers to broadband adoption

As stated earlier, barriers to adoption are complex and vary among different populations, and therefore cannot always be resolved with a one-size fits all approach. ZeroDivide has invested in the following organizations that demonstrate that focused approaches targeted to distinct populations can have significant impact within their communities:

[CAMINOS](#) enables low-income, Latina immigrants to create economic opportunities and self improvement through access to technology.

[FresYES](#) is a workforce skills development initiative of the [Center for Multicultural Cooperation](#) in the rural central valley of California. This enterprise responds to the public’s need for reasonably priced reliable technical assistance by training and employing disadvantaged youth.

[Familia Unida Living with Multiple Sclerosis](#) supports technology access and training for Spanish-, Japanese-, Chinese- and English-speaking populations living with multiple sclerosis.

Sustainability:

ZeroDivide was established at the pinnacle of digital divide funding in the late 1990's, however since then funding for technology adoption in underserved communities has dramatically fallen due to the dotcom bust in the early 2000's and reduced federal support for community technology programs. We remain one of the few funders dedicated to supporting technology in underserved communities. This has led us to focus on building sustainability strategies within technology adoption programs through social enterprise.

Technology provides a unique opportunity for underserved communities to produce valuable products and services in the marketplace. ZeroDivide currently invests in social enterprises which focus on broadband access, technology training and content production, and have developed an earned income strategy to support overall operations and social outcomes of increased economic opportunities and/or civic engagement. Some examples of these social enterprises include:

[Change Agent Productions](#) is a social enterprise of the [YMCA Long Beach Youth Institute](#) comprised of professional digital media artists who work alongside urban youth from low-income communities to produce professional video productions, graphic design projects and digital media trainings.

[ReliaTech](#) is a social enterprise of the [Stride Center](#) that provides computer service and support by training and employing individuals from low-income communities. ReliaTech also refurbishes computers for low-income individuals, schools, churches, senior centers and other nonprofit organizations.

E. Status of Deployment

2. Subscribership Data and Mapping

61. The broadband mapping effort should include the mapping and tracking of broadband adoption, in addition to broadband availability.

Currently, no quality public data tracks broadband adoption by census tract or zip code. Adoption rates need to be mapped in order for the FCC, NTIA, RUS, other agencies, and the general public to understand more clearly the issues associated with adoption and to measure the success of adoption in unserved and underserved communities.

Such data should be consistent with new mapping tools such as Google maps to allow researchers and others to compare adoption data with socio-economic data. ZeroDivide supported such an effort in California entitled [In Search of Digital Equity: Assessing the Geography of the Digital Divide in California](#) conducted by the Pat Brown Institute at the California State University – Los Angeles.

F. Specific Policy Goals of the National Broadband Plan

63. Technology adoption programs in unserved and underserved communities work best when tied to other community outcomes in such areas as civic participation, community development, health care delivery, education, worker training, entrepreneurial activity, job creation and economic growth.

The following list provides examples of how investment in technology adoption in underserved communities can also achieve specific policy goals outlined in the National Broadband Plan.

2. Civic Participation

[Filipinos for Affirmative Action](#) utilizes social media and new technology tools to increase voter participation and civic engagement of Filipinos in California and the nation. They conduct voter mobilization, data collection and analysis, and engage Filipinos in the development of

positive social policy aimed at defending and expanding the rights of immigrants. FAA's mission is to build a strong and empowered Filipino community by organizing constituents, developing leaders, providing services, and advocating for policies that promote social and economic justice and equity.

[Hispanas Organized for Political Equality \(HOPE\)](#) works to provide a critical voice to Latinas to develop their personal growth, prosperity, and political clout through innovative advocacy, education and leadership strategies and programs. With its HOPE.ACT.VOTE campaign, HOPE is utilizing an interactive advocacy web-portal aimed at mobilizing California's 1.6 million Latina registered voters. HOPE is utilizing a variety of web-based advocacy tools to increase the number of informed Latina voters, motivate them to become politically active and advocate on behalf of HOPE's policy agenda, and increase the number of Latinas directly communicating with policymakers to impact state policy.

[Youth Radio](#) trains young people from under-resourced public schools, community-based organizations, group homes and juvenile detention centers to produce and distribute award-winning media productions via cutting-edge technology.

[Youth Outlook,\(YO!\)](#) produces and distributes youth media content locally and nationally to influence opinions and move policies. YO! is the umbrella organization that houses YO!TV, YO!Radio, and four magazines (Debug, The Beat Within, SNAG, SPRAWL). YO! also podcasts and streams youth content directly from its website, YO! trains and employs youth ages 14-25 in all aspects of its programs.

[Just Think](#) teaches young people media literacy skills for the 21st century. They have created and delivered in-school, after-school and online media arts and technology education locally, nationally, and internationally for thirteen years. In the past four years their programs have impacted over 2000 students nationwide. Just Think's enterprise earns revenues through training teachers to use key concepts of media literacy and selling their innovative curricula online.

4. Community Development

[Little Tokyo Unplugged](#) is a community wireless network that provides Wi-Fi Internet services to local residents, visitors, small businesses, and the nonprofit community. Little Tokyo Unplugged contributes to economic development of the Little Tokyo area of Los Angeles, helps promote the community's culture and history, and provides broadband access for low-income residents.

5. Health Care Delivery

[Health Access](#) established a project with Alameda County Medical Center (ACMC) and San Francisco General Hospital (SFGH) to ensure systematic, high-quality, and quick delivery of interpreter services between patients and doctors. The Video Medical Interpretation System (VMI) provides translations for about 22 different languages. Since the inception of this project, wait times for patients who need interpreter services have shrunk from an average of 30 minutes to shorter than five minutes. Interpreter services have moved beyond the hospitals and now include community health centers. Each county records more than 100,000 interpretations a year - the majority of which are performed either telephonically or via video-conferencing equipment.

7. Education

[Benetech](#) uses technology innovation and business expertise to solve unmet social needs. They created Bookshare™, the world's largest accessible digital library of scanned material for people with vision and reading disabilities.

[Change Agent Productions](#) is a social enterprise of the [YMCA Long Beach Youth Institute](#) comprised of professional digital media artists who work alongside urban youth from low-income communities to produce professional video productions, graphic design projects and digital media trainings.

8. Worker Training

[Bay Area Video Coalition \(BAVC\)](#) is a nonprofit media arts center launched in 1976 as a way to make emerging video technology accessible to independent mediamakers. BAVC's enterprise

utilizes a high-speed fiber network to transform their in-person technology training programs to an offline format, expanding the market base for these state-of-the art training services as a profitable online enterprise.

[Women's Audio Mission \(WAM\)](#) is a women-run, nonprofit organization dedicated to the advancement of women in the recording arts. In a field where women are historically underrepresented, WAM seeks to create an environment that will encourage and enable the aspirations of women in the recording arts. WAM uses video technology to produce on-demand learning units, live and interactive lectures, and member meetings to reach low-income women throughout California. It takes advantage of social media and video streaming technology as a means of delivering educational content.

10. Entrepreneurial Activity

[EPA.net](#) works with low-income youth to create web and video products for paying clients.

Youth participate in leadership roles within the business to expand the client base.

[San Diego Futures Foundation](#) works to establish accessibility to information technology resources, increase computer literacy, and provide training to enable a broader range of citizens to cross the digital divide. The WhizKidz venture trains at-risk young adults (18-24 yrs old) to develop marketable technical, entrepreneurial, and business skills while teaching small business owners in the San Diego City Heights area to leverage technology to improve productivity and increase revenue.

11. Job Creation and Economic Growth

[ReliaTech](#) is a social enterprise of the [Stride Center](#) that provides computer service and support by training and employing individuals from low-income communities. ReliaTech also refurbishes computers for low-income individuals, schools, churches, senior centers and other nonprofit organizations.

[MicroMentor](#) provides emerging entrepreneurs from low-income communities with convenient and affordable access to trusted business mentoring, current industry information, and personalized advice via a web-based social network application. MicroMentor's mission is to build businesses that increase economic activity and employment opportunities in low and moderate-income communities.

III. CONCLUSION

ZeroDivide is pleased to participate in this proceeding and share the knowledge and experience we have gained over the last 10 years in supporting and investing in technology adoption in underserved communities. We appreciate the Commission's thorough and thoughtful questions, particularly as they relate to the unserved and underserved communities we have worked with over the last decade.

Our comments and recommendations in this document are based on our experience and reflect our key lessons learned regarding technology adoption (including broadband adoption) in unserved and underserved communities including:

- Investment must be made in both the deployment of technology and adoption and demand creation strategies;
- Adoption and demand strategies must be tied to other community outcomes that are relevant to the target population or community;
- Solutions must come from and involve the communities that are the intended beneficiaries;
- Successful technology adoption requires target programs that address the specific barriers to adoption for a specific population;
- Community outreach and connections with trusted community organizations is required;
- Building local community leadership to promote and utilize technology helps to achieve and sustain technology adoption;

- Technology applications and services can help create sustainable community organizations and businesses;
Technology adoption in unserved and underserved communities fosters economic and educational opportunities, jobs, civic engagement, and health and well-being in these communities.

Appendix

[ZeroDivide Sample Broadband Estimated Cost Chart](#)

[ZeroDivide WiFi Study, Review Draft, Tina Lee, May 2009](#)

[Public Policy Institute of California Statewide Survey: Californians and Information Technology, June 2008](#)