

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of

A National Broadband Plan for Our Future

GN Docket No. 09-51

**COMMENTS OF THE CALIFORNIA PUBLIC UTILITIES COMMISSION AND
THE PEOPLE OF THE STATE OF CALIFORNIA ON NOTICE OF INQUIRY
ON DEVELOPMENT OF A NATIONAL BROADBAND PLAN**

HELEN M. MICKIEWICZ
505 Van Ness Avenue
San Francisco, CA 94102
Phone: (415) 703-1319
Fax: (415) 703-4592
Email: hmm@cpuc.ca.gov

Attorney for the People
Of The State Of California And The
California Public Utilities Commission

June 8, 2009

TABLE OF CONTENTS

I.	INTRODUCTION	4
II.	DISCUSSION	7
A.	Establishing Goals and Benchmarks.....	7
	1. Defining Broadband Capability	7
	2. Defining Access to Broadband	9
	3. Measuring Progress.....	12
	4. Role of Market Analysis	14
B.	Effective and Efficient Mechanisms for Ensuring Access	14
	1. Market Mechanisms.....	15
	2. Determining Costs	18
	3. Universal Service	20
	4. Wireless Service Policies.....	23
	5. Open Networks	24
	6. Competition.....	24
	7. Other Mechanisms	25
C.	Affordability and Maximum Utilization.....	26
	1. Affordability	26
	2. Maximum Utilization.....	28
	3. Broadband Privacy.....	29
D.	Status of Deployment.....	29
	1. Subscribership Data and Mapping	29
	a) Data Collected at the Census Tract Level under Form 477	30
	b) The Form 477 Data Collection Method Has Many Important Data Tracking and Auditing Benefits	31
	c) The Current Form 477 Data Collection Method Has Limitations and Should Be Revised in Order to Provide Accurate Analysis of the Current State of Broadband.....	32
	d) Broadband Mapping is Important to Understanding the Implications of the Collected Data	43
	e) A National Broadband Map Should Be Interactive and Contain Certain Base Data	44

E. Specific Policy Goals of the National Broadband Plan.....	47
1. Advancing Consumer Welfare.....	47
2. Civic Participation	47
3. Public Safety and Homeland Security	48
4. Community Development.....	48
5. Health Care Delivery	49
6. Energy Independence and Efficiency	51
a) Smart Grid.....	51
7. Education	53
8. Job Creation and Economic Growth	54
9. Other National Purposes	54
F. Relationship between the Recovery Act and Other Statutory Provisions	55
G. Improving Government Performance and Coordination with Stake holders.	56
1 Public/Private Partnerships and Cooperatives	56
III. CONCLUSION	57

I. INTRODUCTION

The California Public Utilities Commission and the People of the State of California (California or CPUC) submit these comments to the Federal Communications Commission (FCC or Commission) in response to the Notice of Inquiry (NOI)¹, seeking comment to inform the development of a plan to ensure that all people of the United States have access to broadband capability, and to establish benchmarks to meet these goals, as required by the American Recovery and Reinvestment Act of 2009.²

The CPUC strongly favors development of a national broadband plan. Our nation's future economic development and global competitiveness depend on the nationwide roll out of this vital infrastructure and the widespread adoption of broadband in our homes, businesses, schools, health facilities and community organizations. We see such a nationwide plan as a necessary step toward completing the market movement already underway to extend advanced communications systems throughout the nation.

California is one of the nation's broadband leaders, with experience in broadband mapping, a unique broadband infrastructure grant program, and a successful "digital divide" program. California has vigorously pursued the goal of statewide broadband deployment and adoption through both legislative and regulatory measures. In October 2006, California Governor Arnold Schwarzenegger formed a state Broadband Task Force which brought together public and private stakeholders to recommend how to remove barriers to broadband access, identify opportunities for increased broadband adoption, and enable the creation and deployment of new advanced communication technologies in this state.

The Task Force issued two reports on how best to advance broadband in California, and conducted a voluntary broadband mapping project. The final report³ established seven goals:

¹ *In the Matter of a National Broadband Plan for Our Future*, Notice of Inquiry (GN Docket No. 09-51) (2009) (NOI).

² American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009) (Recovery Act) § 600 (k).

³ *The State of Connectivity – Building Innovation Through Broadband*, Final Report of the California Broadband Task Force, January 2008, (Task Force Report), p. 7. (http://www.calink.ca.gov/pdf/CBTF_FINAL_Report.pdf).

1. Build out high speed broadband infrastructure to all Californians - *Advancing new incentives for deployment and improving existing programs will create a world-class broadband infrastructure in California.*

2. Develop model permitting standards and encourage collaboration among providers - *Developing a public-private partnership between local governments and broadband providers to endorse permitting standards will improve the speed with which broadband is deployed.*

3. Increase the use and adoption of broadband and computer technology - *Expanding the opportunities for Californians to access, use, and learn broadband, at home and in the community, will provide the foundation for a digitally literate society that is able to fully benefit from broadband technology.*

4. Engage and reward broadband innovation and research - *Promoting innovative uses of broadband technology and encouraging wider e-government use will result in quality-of-life improvements, while increasing demand for a robust broadband infrastructure.*

5. Create a statewide e-health network - *Implementing a sustainable statewide e-health network will improve quality of care across the state and simultaneously increase demand for broadband services.*

6. Leverage educational opportunities to increase broadband use - *Ensuring high-capacity broadband connections coupled with a robust technology support system, relevant curriculum, literacy standards, and off-campus educational partnerships will provide California's students with the skills they need to compete in a 21st century economy.*

7. Continue state-level and statewide leadership - *Continuing the California Broadband Initiative and supporting the creation of community Broadband Leadership Councils will strengthen the statewide leadership necessary to drive broadband access and adoption across California.*⁴

Also in 2006, California further spurred the deployment of broadband through the enactment of the Digital Infrastructure and Video Competition Act (DIVCA) which created a mechanism for awarding statewide video service franchises, and enhanced the state's efforts to map and promote statewide broadband deployment by requiring state franchisees to regularly report deployment information to the CPUC

Since then, the CPUC has implemented the California Advanced Services Fund Program (CASF) -- a broadband infrastructure subsidy program intended to foster deployment to unserved and underserved areas in the state, as revealed by the broadband mapping project of the Task Force. In addition, funds contributed by Verizon and AT&T

⁴ *Id.*, p. 8. A full discussion of these recommendations is at pp. 50-78.

as a result of their respective mergers in 2005 led to creation of the California Emerging Technology Fund (CETF), a non-profit organization dedicated to helping close the digital divide. CETF has a particular focus on broadband access and adoption issues relating to remote/rural communities, disadvantaged communities and persons with disabilities. The CPUC and CETF are working closely on broadband deployment issues. Also, through our California Teleconnect Fund (CTF) program, the CPUC provides monthly subsidies for broadband Internet-access service to K-12 schools, libraries, community-based organizations (CBOs), rural health facilities, and community colleges.

Last year, a grant from the FCC Rural Healthcare Pilot Program enabled the formation of the statewide California Telehealth Network (CTN), which has been working for over two years to plan a statewide telehealth network with over 800 healthcare sites linked through advanced broadband facilities. Many of these sites are in rural areas, and include tribal lands.

We strongly encourage the FCC to develop an ambitious and robust nationwide plan for improved broadband access and widespread adoption. California believes that the plan to be presented to Congress in February 2010 should emphasize 1) completion of nationwide mapping by each state – a critical initial step; 2) deployment to known unserved and underserved areas; 3) creation of adoption incentives and initiatives; and 4) deployment of state of the art critical public infrastructure, such as public safety networks. The CPUC also agrees with the Commission that any national broadband plan must allow for modification going forward as policymakers learn from experience and as the market evolves.

We address below the particular questions raised in the NOI. For these comments we have drawn on California's extensive experience with mapping broadband data through the California Broadband Task Force and under DIVCA, as well as our experiences with the statewide broadband deployment and adoption programs noted above. We focus on the four major areas outlined in the Recovery Act: accessibility, affordability, mapping of broadband deployment, and application of broadband for public purposes and within public institutions.⁵

⁵ Recovery Act at § 6001(k)(2).

II. DISCUSSION

A. Establishing Goals and Benchmarks

1. Defining Broadband Capability

The FCC seeks comment on how it should define “broadband capability.”⁶ In particular, the FCC asks if the national broadband plan should develop a unified understanding of broadband instead of categorizing it as “advanced telecommunications capability,” if broadband should be defined by speed, and whether the definition should differ depending on a variety of factors, such as technology type. Further, the NOI asks if the definition of “broadband” should be defined numerically and whether that numeric metric should be static or dynamic. The NOI also asks if the FCC should consider improving standards for other advanced broadband technologies and if different standards should be used for mobile broadband services in urban and rural areas.

The CPUC believes that “broadband capability” should be defined numerically by minimum speeds. The FCC may find our experience in California instructive. As noted above, beginning in June 2008, the CPUC successfully launched the California Advanced Services Fund (CASF) -- a grant program to promote the deployment of broadband infrastructure in the state. The CASF matches up to 40% of funding for broadband infrastructure projects in unserved and underserved areas if an applicant provides the other 60% of the funding.⁷ Unserved areas are defined as areas that are not served by any form of facilities-based broadband, or where Internet connectivity is available only through dial-up or satellite service. Underserved areas are defined as areas where broadband is available but no facilities-based provider(s) offers speeds of at least 3 Mbps download and 1 Mbps upload (3/1 speed). The CPUC found that this “current generation” speed benchmark of 3/1 would provide the minimum necessary to effectively work from home. Therefore the CPUC adopted these speeds to

⁶ NOI at ¶ 15.

⁷ The California Advanced Services Fund (CASF) was authorized by the CPUC on December 20, 2007; *Order Instituting Rulemaking into the Review of the California High Cost Fund B Program*, Decision 07-12-054, *Interim Opinion Implementing California Advanced Services Fund* (Cal. P.U.C. June 29, 2006). On June 12, 2008, the CPUC approved [Resolution T-17143](#) which adopts the application requirements, timelines, and scoring criteria for parties to qualify for broadband project funding under the CASF. *See also* Telecommunications: Universal Service: California Advanced Services Fund, Senate Bill 1193 (2008).

help ensure that telecommuting is an option in all areas of California.⁸ Although we believe that lower broadband speeds are better than no broadband, our current aspirational goal is broadband capability of 3/1 speed.

Whatever the initial standards prove to be, the CPUC also recommends that any minimum speed standard, and in turn the FCC's 477 speed tier reporting obligations, be redefined on an ongoing basis to account for advances in technology and the demands of Internet applications. The California Broadband Task Force set a state goal of 50 Mbps by 2015 for global competitiveness.⁹

The Commission should also take into account the capabilities of smaller wireline service providers, and wireless service providers, when providing broadband service to rural areas as it determines this minimum. However, we urge the FCC not to set different minimum standards for different technology types or for different geographic locations. It is imperative that the nation avoid a digital divide involving bandwidth capabilities between urban and rural areas, as well as *within* urban areas.

The FCC's national broadband plan should not be based on preference for one technology type over another but should balance access considerations, affordability and cost of deployment without regard to pre-conceived technology preferences. With the deployment of 4G networks (Wi-Max and Long Term Evolution or LTE technologies) the differences between wireline and wireless bandwidth capabilities may narrow, and the cost advantages of wireless access as compared to wireline deployment may recalibrate the relationship between modes of access and measures of affordability.

Further, mobile wireless should be subject to the same minimum speed standards as traditional, wireline service for both residential and business uses in urban and rural areas. Other policy determinations can be flexible in accounting for possible challenges faced by wireless service in areas with specific geographic constraints. Again, the

⁸ Telecommuting has special significance for residents of remote areas or workers constrained by child or elder care needs. *See*, National Academy of Sciences 2002 Report at 117. Telecommunications can reduce and even eliminate barriers imposed by distance. These distance barriers not only contribute to travel costs but also to the time required to cover even short distances. Telecommuting also eliminates further contributions to air pollution as staying at home consumes three times less energy than commuting to work. *See, Broadband Services: Economic and Environmental Benefits* by Joseph P. Fuhr Jr. and Stephen B. Pociask (rel. Oct. 31, 2007), (if broadband adoption became widespread, there could be a significant reduction in greenhouse gas emissions, equaling 1 billion tons over the course of 10 years.).

⁹ Task Force Report at p. 50.

national broadband plan should not assume the superiority of one mode of access over another given the rapid changes in technology to which broadband is subject and to which a national plan should be hospitable. To the extent possible, policies should be technologically and competitively neutral.

2. Defining Access to Broadband

The FCC seeks comment on how it should define “access to broadband capability.”¹⁰ The NOI asks what it means to have access to broadband (at home, at work, in schools, in transit, in libraries and other similar community centers, or at public Wi-Fi hotspots), and whether access should be adjusted to reflect consumer expectations and changes in technology. Further, the FCC inquires about what metric should be used to define wireless access and whether access should be evaluated based on consumer expectations. The FCC also seeks comment on the extent to which it should consider price or marketplace competition in assessing access to broadband capability and the different technologies – wireless and wireline – when evaluating access and availability.¹¹

The CPUC recommends defining “access” in terms of the availability of infrastructure. As a long term goal, “access” should be an Internet connection to every household, business, public facility etc. in the country. However, for purposes of the initial national broadband plan, “community access”, i.e., reasonable public availability to computers and free Internet access at libraries, schools, senior centers and other such community centers, may be the most effective and least costly method for delivering this service to certain unserved communities. In other words, the FCC may want to consider community access as an acceptable standard for access in unserved areas where the current cost of deployment to households in an unserved area would be economically prohibitive or technologically impossible. This “community” standard can be used to estimate the availability of broadband access in the FCC’s mapping efforts. Moreover, as wireless access expands with next generation networks (which use spectrum more efficiently and provide reception over larger cell areas), access is likely to become less a

¹⁰ NOI at ¶ 23.

¹¹ *Id.* at ¶ 24-26.

matter of geography than a matter of access to the appropriate wireless broadband device and the economics of wireless data service plans.

Access should also be understood as a minimum speed or bandwidth capability without regard to technology. The definition of broadband should evolve with advances in technology, which itself is in flux, as are the applications riding that technology. The FCC has recently adopted speed tiers to rank broadband capabilities for reporting purposes. In addition, the Broadband Data Improvement Act (BDIA)¹² explicitly requires the Commission to compare United States broadband speeds to those speeds available in other countries. Threshold speeds for minimal broadband capabilities should be the same for all technology platforms – that is, should be technology neutral – and adjusted regularly to reflect technological changes in this country and in comparable global economies.

The Commission also seeks comment on the extent to which access hinges on affordability.¹³ The CPUC believes that the term “broadband access” should pertain to physical access to broadband and not affordability of access. We recognize that affordability plays an important role in whether or not consumers are able to actually use the broadband service they can physically access. In that vein, we address the matter of affordability below in our comments on disabled access, adoption, and measuring success.

The FCC specifically seeks comment on what it means for a person with disabilities to “have access” to broadband capabilities.¹⁴ Accessibility should be defined in such a way as to accommodate the widest possible range of users, including people with disabilities. Therefore “access” or “availability” should accommodate a broad array of broadband-ready devices and applications for disabled access.

The CPUC has had in place for more than twenty years a program to provide telecommunications equipment on a loan basis to individuals who are deaf, hard-of-hearing, speech-disabled, and or otherwise disabled in a manner that limits their ability to communicate telephonically. The equipment program, known to the community as the

¹² 47 U.S.C. 1303; Pub. L. No. 110-385 (S. 1492) (2008).

¹³ NOI at ¶ 27.

¹⁴ *Id* at ¶ 28.

California Telephone Access Program (CTAP), is a component of our Deaf and Disabled Telecommunications Program (DDTP), which also includes the Telecommunications Relay Service. Through our equipment program, California has enabled thousands of individuals with a variety of disabilities to communicate with the rest of the world. It has been a very successful program, and as noted elsewhere in these comments, we have recently expanded the program to include wireless equipment. It would be a logical next step to expand the program to include broadband service as well.

We know from the input we receive through our DDTP Advisory Committees that access to advanced telecommunications devices serves as a lifeline to disabled individuals. Using various telecommunications devices, the disabled can communicate in ways they otherwise could not. The ability to use telecommunications equipment to communicate in text, for example, can mean the difference between social isolation and achieving a sense of greater community for the deaf and hard-of-hearing. The ability to access the world through the Internet poses even greater advantages to the disabled, allowing them to achieve higher levels of employment and other interaction with family, friends, and the business world. This ability can only be enhanced by access to broadband.

The FCC asks for comment on who is not using broadband.¹⁵ In that context, we note that availability of subsidized equipment which enables broadband access for the disabled is the easy part. The more difficult problem is the on-going cost of access to broadband, which the states cannot control. While we do not equate affordability with accessibility, we observe that for the disabled, the recurring costs of access to broadband can be an impediment. We urge the FCC to bear in mind that a disproportionately high percentage, perhaps as high as eighty percent, of the disabled live in poverty. In recognition of this fact, California provides two state LifeLine monthly discounts for low-income households that include disabled consumers so as to accommodate lines for TTYs or other special equipment. Some type of subsidized broadband service to the disabled could be one solution.

¹⁵ NOI at ¶53.

The California Emerging Technology Fund (CETF) has among its goals and definitions¹⁶ the extension of broadband service to consumers identified as people with disabilities; that is one of three priority consumer communities for the initial focus of the program. CETF grantees are required to have broadband adoption programs that are flexible enough to meet the needs of the widest possible range of users, including people with vision, hearing, dexterity, mobility, cognitive, learning or reading-related limitations. The CETF credo is that “accessibility is everyone’s responsibility.” We recommend that the FCC approach the topic of broadband accessibility from the same perspective.

3. Measuring Progress

The FCC seeks comment on what metrics should be used to measure progress toward the goal of ensuring that all Americans have access to broadband.¹⁷

It has been our experience that the best way to measure progress with regard to broadband is to use detailed mapping based on data collected from broadband providers via a revised Form 477. Mapping can be used as a way of tracking and measuring progress in deployment and adoption. California emphasized this viewpoint in its comments filed with the NTIA on April 13, 2009.¹⁸

Granular broadband mapping will allow the FCC to compare broadband availability and subscribership numbers from year-to-year and area-to-area. The success of a national broadband plan cannot accurately be gauged unless the FCC knows what is changing (and where it is changing) in the industry as a result of that plan. Collecting data via Form 477 (with revisions, as discussed below in our mapping section) will allow the FCC to track progress and enforce any mandatory buildout or other requirements it may see fit to include in the national plan.

It is also important to determine how many service providers are present in various areas. By tracking competition as the national broadband plan goes into effect,

¹⁶ <http://cetfund.org/>.

¹⁷ NOI, at ¶ 29.

¹⁸ *In the Matter of American Recovery and Reinvestment Act of 2009 Broadband Initiatives; Broadband Technology Opportunities Program; Rural Utilities Service, Distance Learning, Telemedicine and Broadband Program*, Comments of California Governor Arnold Schwarzenegger and the People of the State of California, (Docket No. 090309298-9299-01) (2009) (NTIA Comments), pp. 22-48.

the FCC can compare deployment and adoption rates, among other factors, to help guide and refresh policy related to the national broadband plan.

The CPUC, in its role as administrator of the statewide video franchise program under the Digital Infrastructure and Video Competition Act (DIVCA), uses mapping and data analysis to monitor changes to video and broadband service throughout California from year-to-year.¹⁹ DIVCA was created, in part, to promote video and broadband competition across wired platforms throughout California. In comparing annually submitted data from video franchise holders, we have noticed a difference for the better in broadband availability throughout the state, including an increase in competition in several areas. In the coming years, the CPUC will use mapping to compare service availability of Video Franchise Holders to their availability when their franchises were granted.

DIVCA requires that franchise holders meet certain benchmarks for building out their networks.²⁰ Data comparisons using mapping will help CPUC staff determine if those benchmarks have been met. Results for our comparisons of 2007 to 2008 will be available publically in our 2009 Annual Report.²¹ We believe that the FCC could benefit from the same kind of comparisons to measure progress towards toward deployment and adoption goals included in the national plan.

With respect to specific metrics that should be used, in order to realize the full benefit of mapping, it is imperative that broadband maps be capable of showing levels of broadband service capability and availability in as accurate a method as possible. In particular, broadband data must be collected at the smallest granularity that is practical in order to yield an accurate understanding of the current state of broadband. Please refer to

¹⁹ A.B. 2987, 2005-2006 Session, (Ca. 2006); Cal Pub, Util. Code, Division 2.5, The Digital Infrastructure and Video Competition Act of 2006 (DIVCA). DIVCA assigns the CPUC the duty to issue video franchises, to gather data from state video franchise holders regarding their video and broadband services, to monitor holders' deployment of infrastructure and services to protect against discrimination and enforce build-out requirements, and to protect against telco-video cross subsidization

²⁰ Pub.Util. Code §5890(e); Buildout benchmarks pertain to buildout and service being made available to a certain percentage of low income households.

²¹ Pub.Util. Code §5960; Under DIVCA, Video Franchise Holders must submit data regarding their video and broadband service annually. The CPUC uses this data to create an annual report for the Governor and Legislature.

our comments on mapping below under the Status of Deployment for further discussion of data granularity.

4. Role of Market Analysis

The FCC asks if it should, in formulating its broadband plan, undertake a traditional market analysis with respect to any market related to broadband.²² Although California takes no position on whether any traditional market analysis is necessary in order to complete the initial plan due in February 2010, the CPUC suggests that, going forward, mapping itself can be viewed as a kind of market analysis. Mapping gives a visual display of market participants and their offerings. Data collected from broadband service providers can be displayed, analyzed, compared, and layered in a variety of ways to allow for targeted market analysis. Further, mapped data can be keyed to specific social and economic demographics which can be used to help the FCC understand the factors driving broadband deployment and use. The benefits of mapping and its capabilities are discussed in more depth below.

More traditional forms of market analysis, such as examining market structure, provider conduct, consumer behavior, market share, and market penetration should be used if these analyses contribute to the tracking of access, affordability, and the FCC's public interest goals for broadband. Given the FCC's stated goal of promoting broadband access in the United States, any form of market analysis that the FCC deems appropriate and useful should be used when attempting to measure the success of the national broadband plan and the ubiquity of broadband. This includes comparison of the United States' broadband markets with broadband markets in other countries, a comparison expressly required under the Broadband Data and Improvement Act (BDIA).

B. Effective and Efficient Mechanisms for Ensuring Access

The Recovery Act requires the Commission to include in the national broadband plan "an analysis of the most effective and efficient mechanisms for ensuring broadband

²² NOI at ¶35.

access by all people of the United States.”²³ The FCC seeks comment on what mechanisms are currently working and what might be expanded.²⁴

1. Market Mechanisms

The FCC seeks comment on the best ways to attract risk capital to broadband infrastructure projects and where market-based policies have been unsuccessful in ensuring access, and why.²⁵ Further, the FCC seeks comment on the role of regulation in broadband infrastructure and service markets, as well as its efficacy and efficiency in achieving the important policy objectives contemplated by Congress in its directive to establish a national broadband plan.

The CPUC has actively encouraged broadband deployment objectives and the need to attract risk capital in areas that have been left unserved or underserved by the market. We have also recognized that in many instances a need exists for the state to help incent adoption of Internet services by consumers and workers. Below we discuss the state’s experience with two distinct programs underway in California which provide matching grants to help meet deployment and adoption goals.

The California Advanced Services Fund (CASF), now in its second year, is a, \$100 million state initiative that awards 40% matching fund monies to private sector entities for broadband infrastructure projects in unserved and underserved areas of California. The program is funded by a 0.25% surcharge on end-user intrastate billings of the ILECS, CLECs, and wireless providers.

²³ Recovery Act § 6001(k)(2)(A).

²⁴ NOI at ¶36.

²⁵ Id.at ¶37.

CASF grantees must make a 5-year service commitment.²⁶ The CASF scoring criteria used in CASF awards give weight to the following factors: a) funds requested per potential customer, b) broadband speed offering, c) service area size, d) timeliness of completion of a project, e) average price of the service per megabit, f) guaranteed pricing period and, g) low-income areas encompassed by the proposed project. California urged the federal government, at a minimum, to apply these seven factors in establishing a similar stimulus grant program under the Recovery Act to promote advance service or broadband deployment to unserved and underserved areas of the United States.

As noted earlier, benchmark speeds are set at 3 Mbps download/1 Mbps upload to mirror the state's Broadband Task Force Report's suggested minimum speeds to accommodate, at the very least, telecommuting. Where there are no competing applications for an area, the CASF program will consider speeds below these minimums since, because in our view, any broadband is better than no broadband.

Under the CASF program, twenty *unserved* area applications were submitted and 13 projects have been approved as of April 16, 2009, for a total of \$8,528,528 in CASF funding. Additionally, 33 applications were submitted for *underserved* areas and 11 projects have been approved as of April 16, 2009, for a total of \$1,009,247 public funding.

Another example of a successful fund-matching program is the California Emerging Technology Fund (CETF).²⁷ In 2005, the CPUC directed creation of the CETF with \$60 million in seed money over five years²⁸ to help close the digital divide and ensure that California is a global leader in the adoption of broadband. The CETF, which

²⁶ Footnote 7, *supra*.

²⁷ *In the Matter of the Joint Application of SBC Communications Inc. ("SBC") and AT&T Corp. ("AT&T") for Authorization to Transfer Control of AT&T Communications of California (U-5002), TCG Los Angeles, Inc. (U-5462), TCG San Diego (U-5389), and TCG San Francisco (U-5454) to SBC, Which Will Occur Indirectly as a Result of AT&T's Merger With a Wholly-Owned Subsidiary of SBC, Tau Merger Sub Corporation, Decision 06-09-011, Opinion Granting Awards for Intervener Compensation to Greenlining Institute, Latino Issues Forum, Disability Rights Advocates, Community Technology Foundation and the Utility Reform Network for Their Contributions to Decision 05-11-028* (Cal. P.U.C. September 7, 2006) (D.06-09-011).

²⁸ Seed money was contributed by AT&T and Verizon as a consequence of their respective merger decisions (SBC acquiring AT&T and Verizon acquiring MCI). Information about the accomplishments of the CETF, including a list of major grantees, is available at <http://cetfund.org/progress/overview>.

is administered by a non-profit organization, strives to achieve ubiquitous adoption of advanced services in California by the year 2010.

CETF, to date, has awarded some \$20 million to grantees with a record of success in computer and broadband adoption programs. With this funding, CETF has supported the development of School2Home, a project distributing broadband connected devices to low-income middle school students and their parents and training teachers on integrating technology into their course work. For example, it has given grants to computer refurbishing centers, computer literacy programs and senior technology training programs. Other CETF funding investments have gone to five rural broadband consortia, to “smart housing” projects, to projects to provide disability access, to small business consortia, and to various university projects aggregating demand in rural areas and developing a telemedicine network.

The CETF grant program requires a 3:1 cash match so that the program does not take a "build it and they will come" approach. The Fund requires grantees to have a stake in the project they seek to fund and gives priority to “needle moving” projects to bring digital literacy to three groups: rural populations, urban poor, and people with disabilities. Applicants are asked to demonstrate a track record in the community they would serve, in the technology they would integrate and in the program they plan to implement. Applicants are also expected to show how their ventures will improve accessibility for the disabled. Additional requirements include a proposed budget with a showing of per unit/user cost outcomes, a plan to share ‘best practices’ and ‘lessons learned,’ a sustainability plan, quarterly progress report on measurable outcomes and milestones, and a monitoring and evaluation plan.

The CPUC recommends that the FCC’s national broadband plan encourage fund-matching programs similar to the CASF and CEFT programs for attracting risk capital for broadband projects. Fund matching would assure that service providers have some of their own capital invested and are therefore more likely to consider all the risks and benefits associated with a proposed project. Further, service requirements, such as that required by CASF, can assure that projects are not completed just to be abandoned. We discuss our experiences with these programs in more detail below.

2. Determining Costs

The FCC seeks comment on how useful or necessary it is for the Commission to understand the costs of deploying broadband networks to the unserved and underserved areas of our country.²⁹ Namely, the FCC asks if the national broadband plan should seek to bring broadband to 100 percent of the country, and, if so, what the costs and benefits of bringing broadband to the least densely populated areas would be. Further, the NOI seeks comment on how the FCC can better estimate the cost of deploying various alternative broadband technologies to those areas the market is not serving or is underserving, and which broadband technologies might work best and deliver the most effective, efficient services in various parts of the nation.

From the CPUC's perspective, it is not only useful, but necessary, for policymakers to understand the costs of deploying broadband networks to unserved and underserved areas if we are going to recommend public funding to ensure broadband access in areas where the private market alone is not likely to provide service. Although we strongly support the goal to deploy broadband nationwide, a cost/benefit analysis is still a legitimate tool in determining how and over what time period the national plan should strive to meet that goal.

Our experience with the costs of our CASF program in California may help inform the FCC on the issue of deployment costs in unserved and underserved areas.

In the case of CASF funding for unserved areas, as discussed above, the approved projects will serve 8,310 households (using 2000 census data), for an approximate cost to CASF of \$1,026 per household. Speeds for these projects will range from 1.5 Mbps download/ 384 Kbps upload to 6 Mbps download/ 786 Kbps upload. Similarly, the approved projects for underserved areas will serve 659 households at an approximate per household CASF cost of \$1,531. Speeds for these approved projects will range from 3 Mbps upload /1 Mbps download to 10 Mbps /1.5 Mbps.

Note that these per-household cost figures represent less than one-half the costs of these CASF projects because the program only funds up to 40% of a project's total cost. Total project costs, including the private sector contributions, for the unserved area

²⁹ NOI at ¶ 38.

deployments are \$21,160,796, while total project costs for the underserved area deployments are \$ 2,302,669.

These high per-household costs show that without fund matching there may be little to no incentive for private investment in broadband infrastructure in these unserved and underserved areas. The CPUC believes that subsidizing the cost of broadband deployment is imperative to meet our goal of providing broadband access to every Californian.

We have learned several lessons beyond these cost considerations, however. While there were 53 projects submitted for CASF funding, only \$20 million of the available \$100 million has been tapped so far, including the estimated funding for projects still being evaluated.

Feedback from our applicants suggests that there are several factors constraining the program:

- The 40% matching commitment of funds from CASF may not make business sense to providers when they consider developing rural projects and face problematic terrain, low population density, cost of construction, and on-going operating and maintenance expenses following deployment of the infrastructure in question;
- The 40% of matching funds covers only infrastructure construction and installation and no other costs, such as operation and maintenance costs or personnel expenses;
- The requirement that applicants have a CPCN or other registration with the CPUC in order to be eligible for awards limits the number and type of applicants. Most of our CASF grantees, with a few exceptions, have been incumbent local exchange carriers. (However, this requirement does offer some protection against waste, fraud and abuse);
- There are additional expenses and time requirements for projects to undergo California Environmental Quality Act (CEQA) review, a factor that is beyond the CPUC's control;
- Anticipated low adoption rates and sustainability of adoption after construction in unserved and underserved areas are also inhibitions.

The CPUC has initiated a proceeding to consider proposals to address several of these constraints on the CASF program. One possible revision to the program would permit more applicants to qualify, while another proposal would modify the CASF program to enable partial CASF funding to applicants who need the 20% matching funds to qualify for NTIA's Broadband Technology Opportunity Program (BTOP) federal grants under the Recovery Act.

We recommend that the FCC work with the NTIA in extending fund matching programs for broadband deployment and adoption after an analysis of the effect of the Recovery Act's BTOP. Our experience suggests the importance of balancing cost considerations, need for broadband, and investment incentives. The BTOP will provide additional experience regarding this same balancing act, given that the national plan should be a dynamic one that can modulate policy based on such major federal efforts.

Additionally, when market-based policies fail, the FCC may wish to explore other options such as encouraging / funding the local government provisioning of broadband facilities and services. At a minimum, a federal subsidy awarded to a municipality would be lower because it would not include the higher rate of return associated with private sector capital but rather the lower rate of government financing. However, similar to the private sector subsidy, local governments should match contributions to ensure they have proper incentives to pursue a viable project.

3. Universal Service

The FCC seeks comment on the impact of broadband on existing universal service programs,³⁰ The FCC also seeks comment on the effectiveness and efficiency of universal service as a mechanism to help achieve national broadband goals, and on the impact of broadband stimulus funds on the Commission's broader efforts to reform the distribution of high-cost support and the collection of universal service contributions. The NOI asks if, in light of this information, universal service should be modified to include broadband in its definition.

California has no settled view on broadband as an element of universal service.

³⁰ NOI at ¶ 39.

We have approached broadband as a dimension of universal service gingerly given what appear to be the likely high costs of 100% access. At the federal level, we do support a limited federal Lifeline/Link-up Pilot Program to provide computers and discounts for monthly Internet access service to low-income consumers as a way to gauge the costs of such a program.³¹ However, if the Commission or Congress decides to permanently add Internet access or broadband service to the definition of federal “universal service”, all broadband and Internet access providers should be required to contribute to the federal Universal Service Fund. The FCC should then expressly clarify state authority to seek contributions from all broadband providers and Internet access providers for their respective universal service programs.³²

In California, the CPUC subsidizes Internet access service for certain entities through its California Teleconnect Fund (CTF) Program. The CTF Program provides to qualifying schools, libraries, health care organizations, California Community Colleges, and Community Based Organizations a 50% discount on monthly communications services from basic measured business line to broadband Internet access services. The program is financed by a surcharge, currently set at 0.079%, assessed on intrastate end-user billings for telecommunications services. Since the inception of the CTF program in 1996, the CPUC has offered discounts for monthly Internet access service to qualifying CTF entities. However, because the FCC has largely pre-empted state authority over both DSL and cable modem Internet access service, carrier offering of these services as part of the CTF has always been voluntary. The CPUC cannot compel carriers to provide broadband as a component of its state universal service program. Thus, only a few CTF participants received the discount on this service before 2008. However, as a result of CPUC Decision 08-09-020 adopted last year, CTF participating carriers offering

³¹ Reply Comments of the California Public Utilities Commission and the People of the State of California., *In the Matter of High-Cost Universal Service Support, Federal-State Joint Board on Universal Service*, WC Docket No. 05-337, CC Docket No. 96-45; *Lifeline and Link Up*, WC Docket No. 03-109; *Universal Service Contribution Methodology*, WC Docket No. 06-122; *Numbering Resource Optimization*, CC Docket No. 99-200; *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98; *Developing a Unified Intercarrier Compensation Regime*, CC Docket No. 01-92; *Intercarrier Compensation for ISP-Bound Traffic*, CC Docket No. 99-68; *IP-Enabled Services*, WC Docket No. 04-36, filed December 22, 2008.

³² We note the FCC’s amici filing in [the Nebraska case], in which the FCC stated that states may assess universal service surcharges against interconnected Voice over Internet Providers, but the court in that case rejected the FCC’s position.

discounted Internet access have increased and more CTF eligible entities are now receiving their Internet access discounts. The CTF program has a budget of \$46.554 million for Fiscal Year (FY) 2008-09 and \$60.340 million for FY 2009-10. The CTF program anticipates that over 75% of the CTF budget will pay for broadband-related services.³³

Another suggestion for funding of broadband would be for the FCC to explore universal service, at least initially, as a matter of *ubiquitous availability of broadband infrastructure* separate from universal subsidy of broadband *service*. If the broadband infrastructure is in place universally, then service plans and their costs can be approached relatively free of the costs associated with infrastructure deployment.

Finally, broadband in the universal service context might be approached in the fashion we suggested above, where ubiquity of broadband consists of a combination of its availability in homes and its availability in community centers and public institutions so that all are served even if all are not provided with access at their residence. California's experience suggests that no one version of broadband or one version of universal service suffices when attempting to integrate the two objectives of physical access and economic affordability.

Our recommendation, based in part on our CASF and CETF programs, is that universal service funding decisions should take into consideration not only availability to the residential customer directly, but also availability of broadband to high volume locations such as senior centers, community centers, healthcare provider hubs (hospitals and medical centers), educational institutions (elementary, middle school, high school and colleges, libraries, employment training facilities), and fire/police and public safety personnel where a broader public benefit is maximized. Targeting high-use "hot spots" may pay greater dividends immediately than awarding funding for projects that serve a narrow or fixed pool of end-users in residential pockets.

³³ This rough estimate was developed using recently submitted data by carriers for specific services.

4. Wireless Service Policies

As the FCC notes, in the *Wireless Terrestrial Rural Report and Order*, the Commission concluded that steps were needed to promote greater deployment of wireless services, including steps to eliminate disincentives to serve or invest in rural areas, and to help reduce the costs of market entry, network deployment and continuing operations.³⁴ The FCC therefore adopted measures to encourage entities to provide or improve wireless services in rural areas. The Commission now seeks comment on other mechanisms that can be employed to encourage wireless broadband deployment in rural and tribal areas and how different regulatory approaches that the FCC has adopted in the past, such as facilitating more efficient spectrum use, developing licensing rules and construction requirements, designating spectrum for licensed versus license-exempt use, secondary markets, cognitive radio, or other policies can ensure efficient and effective access to broadband.³⁵

We recommend that the FCC continue its efforts to promote greater deployment of wireless services. These efforts should include continued steps to fully ensure adequate bandwidth for wireless broadband uses in a manner that will allow for more unlicensed wireless application. Wireless broadband providers utilizing the unlicensed bands of the spectrum already serve customers across the country. Especially in rural areas or areas with difficult geography that does not allow for traditional wired broadband service, unlicensed wireless Internet access is a viable and important technology.

A key market factor which may increase adoption of wireless broadband services is the growing popularity of smart phones and hand-held Internet access devices. Such devices as the iPhone, Google Android phone(s), and Blackberry devices have migrated wireless broadband from the business environment to regular use (and not incidentally posed significant data challenges to wireless networks). While still relatively expensive

³⁴ See *Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services; 2000 Biennial Regulatory Review Spectrum Aggregation Limits For Commercial Mobile Radio Services; Increasing Flexibility To Promote Access to and the Efficient and Intensive Use of Spectrum and the Widespread Deployment of Wireless Services, and To Facilitate Capital Formation*, WT Docket Nos. 02-381, 01-14, 03-202, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 19078 (2004) (*Wireless Terrestrial Rural Report and Order*).

³⁵ NOI at ¶42.

to purchase and to use (given the data plans required), these devices may be less so when riding on the next generation of wireless networks and when those devices are wi-fi ready. Long Term Evolution (LTE) and Wi-Max may provide relatively inexpensive technology solutions to the problem of ubiquitous coverage with their more efficient use of spectrum, more expansive geographical coverage, and their lower power consumption. Universal service programs, with broadband as a central component, may benefit from these new more efficient wireless technologies. New possibilities for wireless access may emerge with the combination of wired broadband and such new technologies as femtocells and portable wi-fi hot-spots (e.g., the Novatel MiFi) now just being marketed.

5. Open Networks

The Commission seeks comment on the value of open networks as an effective and efficient mechanism for ensuring broadband access for all Americans, and specifically on how the term “open” should be defined.³⁶ The CPUC recommends that the term “open network” include the four principles already adopted by the FCC in its Internet Policy Statement,³⁷ and also require interconnection among all providers.

6. Competition

The FCC seeks comment on the extent to which competition between various broadband network providers, application and service providers, and content providers should be evaluated as an effective and efficient mechanism to achieve the goals of the Recovery Act.³⁸ Further, the NOI ask whether multiple providers of broadband services are useful or necessary for achieving the FCC’s goal of providing broadband services to unserved and underserved areas and whether it makes a difference if the providers utilize different technological broadband platforms. Additionally, the FCC seeks comment on how it should define sufficient competition as it evaluates competition as a potentially effective and efficient mechanism for broadband deployment.

California’s experiences under the DIVCA may help explain why evaluating competition is important. As mentioned above, DIVCA was enacted, in part, to promote

³⁶ NOI at ¶ 47.

³⁷ Policy Statement, 20 FCC Rcd 14987-88, ¶4 (2005) .

³⁸ NOI at ¶ 49.

video and broadband competition across wired platforms throughout the state by permitting statewide video franchises. The consensus of the California Legislature was that increased competition among *video* providers would improve the service of other technologies and in particular encourage broadband deployment while also driving consumer prices to more affordable levels. We believe that these principles will work at the federal level as well as at the state level. By comparing changes in competition across broadband modes, the FCC can compare deployment and adoption rates, among other factors, to help focus additional emphases in the national broadband plan.

7. Other Mechanisms

The FCC seeks comment on other policies or programs that it should review as a part of its analysis of effective and efficient mechanisms to achieve the goals of the Recovery Act.³⁹

We recommend that the FCC revisit the Form 477 decision that was recently released.⁴⁰ First, as explained in California's NTIA comments as well as in CPUC comments filed with the FCC in August of last year,⁴¹ collecting broadband data at the Census Tract level is inadequate if one expects to get an accurate picture of the actual state of broadband availability. The CPUC has recognized the value of collecting data at the street address-level and we recommend the FCC consider this option. We discuss the benefits of mapping at the street address level below under Status of Deployment.

Second, we urge the Commission to create a review process for assessing minimum speeds to be required under the definition of broadband. As technology and industry needs change, so, too, should the definition of broadband. We believe that a cyclical review, such as a yearly schedule, coincident with the FCC's competition and

³⁹ NOI at ¶ 50.

⁴⁰ *In The Matter Of Development Of Nationwide Broadband Data To Evaluate Reasonable And Timely Deployment Of Advanced Services To All Americans, Improvement Of Wireless Broadband Subscribership Data, And Development Of Data On Interconnected Voice Over Internet Protocol (Voip) Subscribership*, Report And Order And Further Notice Of Proposed Rulemaking (WC Docket No. 07-38), 23 FCC Rcd 9691 (Rel. June 2008) (*477 Order*).

⁴¹ *In The Matter Of Development Of Nationwide Broadband Data To Evaluate Reasonable And Timely Deployment Of Advanced Services To All Americans, Improvement Of Wireless Broadband Subscribership Data, And Development Of Data On Interconnected Voice Over Internet Protocol (VoIP) Subscribership*, Comments of the California Public Utilities Commission and of the People of the State of California on the Development of Broadband Data: Broadband Availability Mapping (WC Docket No. 07-38) (2008).

other broadband-related reports, will serve to keep this definition workable and relevant given the constantly shifting demands of Internet applications and services, including emergency services and telehealth applications. We also strongly recommend that Form 477 data be made available under protective order to the states shortly after it is received by the FCC. In California, under DIVCA, state video franchise holders are required to submit to the CPUC the Form 477 data they supply the FCC.⁴² But not all broadband providers – e.g., wireless providers, municipal providers – hold state video franchises and thus their data is not available to the CPUC in a timely manner, as it should be, in order to be integrated with the data already collected from other state video franchise holders. . Therefore, receiving the Form 477 data under protective order is critical for states to be able to map broadband deployment in a timely manner.

C. Affordability and Maximum Utilization

The Recovery Act requires the Commission to formulate a detailed strategy for achieving affordability of broadband service and maximum utilization of broadband infrastructure and service by the public. The FCC seeks comment on how to interpret this task.⁴³

1. Affordability

The Commission asks how it should define “affordability”.⁴⁴

A useful guide to affordability would be how broadband access compares to telephone voice service access on both wireline and wireless platforms. Another way of viewing this is gauging to what extent such telephone voice service access will become dependent upon broadband access and thus an economic hostage to it – so, too, with other services which depend upon a broadband pipe.. The CETF conducted a survey of broadband adoption across demographics including ethnic/racial groups and income levels which the Commission may find useful.⁴⁵ The survey found that A digital divide

⁴² See generally *Order Instituting Rulemaking to Consider the Adoption of a General Order and Procedures to Implement the Digital Infrastructure and Video Competition Act of 2006*, Decision 07-10-013, *Opinion Resolving Issues in Phase II* (Cal. P.U.C. October 4, 2007).

⁴³ NOI at ¶ 52.

⁴⁴ NOI at ¶54.

⁴⁵ <http://cetfund.org/progress/annualsurvey>

is also apparent among ethnic/racial groups, income levels, and regions when comparing rates of computer ownership, Internet access, and broadband connections at home.

The FCC seeks comment on whether subsidizing the recurring subscription cost for broadband service, or subsidizing the fixed costs of obtaining computer equipment, could address the affordability of broadband for all Americans. The Commission also seeks comment on how particular consumer communities of interest should be evaluated in such programs.⁴⁶

While we do not equate affordability with accessibility, we do recognize that the recurring costs of access to broadband can be an impediment for low-income and persons with disabilities. We again note our support for a limited federal Lifeline/Link-up Pilot Program to provide computers and discounted monthly Internet access service to low-income households. Such a program could be especially important for the urban poor who have access to broadband but cannot afford computers or monthly service. And California again urges the FCC to bear in mind that a disproportionately high percentage, perhaps as high as eighty percent, of the disabled live in poverty. Some type of subsidized broadband service to the disabled could be one solution.

One way to help ensure that low income consumers have access to the Internet is to improve the existing federal E-rate program that provides discounts to schools and libraries. It is our experience that many schools and libraries do not apply for the federal E-rate program discounts because the yearly application process is too complicated. The CPUC respectfully suggests that the Commission simplify its E-rate application process so that these schools and libraries do not need to hire a consultant to help them with their applications. Along this same path, a national broadband plan should encourage roll out of broadband to other community centers in addition to libraries, such as senior centers, recreation centers etc., and promote programs, such as California's CETF program, that provide matching grants to these entities for computers, training and other adoption needs

The FCC also asks what steps it should take to ensure that delivery of services is competitive, and thus protects consumers and helps promote lower prices.⁴⁷ We suggest that the FCC measure competition by the choices consumers actually make. Thus, again,

⁴⁶ *Id.*, at ¶ 54.

⁴⁷ NOI at ¶52.

we emphasize the importance of mapping the availability of access and subscribership by platform and provider. Form 477 requires carriers to identify the technology type used to provide broadband. The CPUC has used this data in our own DIVCA analysis to compare technology types throughout the State.

The FCC should measure the adequacies or inadequacies of intermodal competition in the U.S. by the adequacies and inadequacies of intramodal and intermodal experiences abroad, as the BDIA requires.

2. Maximum Utilization

The NOI asks what factors, beyond broadband availability, such as computer availability and literacy, affect consumers' choices regarding broadband.

California recommends that the Commission take account of the following points:

- Studies indicate that income, education, age, number of children, and location affect adoption rates.⁴⁸
- Above and beyond these socio-economic considerations, the impact of entertainment “needs” – access to music, video, social networking services, gaming, search capabilities – are becoming increasingly decisive incentives to adoption as such applications increase.
- New devices such as the iPhone, and Google’s Android have affected adoption rates because they open up access to entertainment via broadband, social networking in real time, and provide access at any time in a convenient, portable format. And hand-held computers, which these new devices amount to, are less expensive than their desktop or laptop rivals. The new netbooks may contribute to this “affordable portable” trend.

The last two incentives for adoption noted above may cross the usual demographic and geographic classifications, and may prove more powerful as inducements to adoption than formal programs dedicated to that end. While the problems of computer availability and computer literacy should not be underestimated, the introduction of new, less expensive devices such as the smart phones and netbooks may lessen these deterrents to adoption. Whatever the case, the universal availability of

⁴⁸ See John B. Horrigan, “Home Broadband Adoption 2008,” *Pew Internet & American Life Project*, July 2008, pp/ 3-4; Part 2 is devoted to an “Analysis of Non-Broadband Users.”

broadband access, as with the universal availability of telephone access, should help diminish the disincentives provided by economic inequalities. Broadband must be physically available before adoption can be induced or promoted.

3. Broadband Privacy

The FCC also asks what consumer expectations of privacy are, and what impact privacy concerns have on broadband adoption and usage.⁴⁹

Privacy is very important to the people of California. The right to privacy is set forth in our state Constitution, and this right is reflected in our statutes and regulations. Personal and confidential data electronically transmitted must be protected if the goal is to ensure maximize adoption of broadband services.

At a minimum, consumers should be made aware of the privacy and security issues associated with the use of computers and the Internet, and should be given effective tools to protect their personal information to the degree possible. Also broadband service providers and website operators and/or owners should be required to inform customers and website visitors of their privacy policies, including whether the provider or website owner or operator tracks, or permits tracking of, the customers' website visits and Internet searches. The privacy statement also should include how customer/visitor personal and tracked information is used. In other words users should receive full disclosure and transparency.

Given the complexity of Internet-related privacy issues and the importance of this issue to customers and the security of the communications network, it may be best to consider any possible action by the Commission in a separate proceeding.

D. Status of Deployment

1. Subscribership Data and Mapping

The FCC seeks comment on how it can use broadband subscribership data, collected via Form 477 at the census tract level, to report on the status of broadband deployment, including any benefits and limitations inherent in these data.⁵⁰

⁴⁹ NOI at ¶ 59.

⁵⁰ NOI at ¶ 61.

The Recovery Act requires the FCC to develop a national broadband plan that includes “an evaluation of the status of deployment of broadband service, including progress of projects supported by the grants made pursuant to this section.”⁵¹ The CPUC supports this effort because a comprehensive broadband plan cannot be fully developed until the FCC has an understanding of the current status of broadband subscribership, speeds offered, and availability throughout the country. Detailed mapping must be performed before any other measures can be taken to finalize a plan to promote or analyze effective deployment efforts. This detailed mapping cannot be performed, however, until data that accurately represents broadband infrastructure in the United States is collected. This will require the Commission to collect data at a level of granularity smaller than the currently used census tract level, and to collect availability and affordability data as well as subscribership data.

The FCC has recognized that it does not have comprehensive and reliable data on the extent of broadband availability and subscribership in rural areas.⁵² Nor does it have “sufficient information on rural broadband demand, transfer speeds, and prices, or on the infrastructure available to help provide broadband services to unserved and underserved rural areas.”⁵³ As the Commission acknowledges, “[t]his lack of information constitutes a significant challenge to ubiquitous and robust broadband deployment in rural areas.”⁵⁴ Below, we address the data the FCC is currently collecting, the method by which it is being collected, and the inadequacies of that data.

*a) Data Collected at the Census Tract Level
under Form 477*

The FCC’s data collection method under its Form 477, as it exists now, is not optimal to get an accurate understanding of the current state of broadband throughout the country. There are, however, some limited benefits to the existing form and the method by which it collects data.

⁵¹ Recovery Act § 6001(k)(2)(C).

⁵² Bringing Broadband to Rural America: Report on a Rural Broadband Strategy, at ¶ 88.

⁵³ *Id.*

⁵⁴ *Id.*

b) *The Form 477 Data Collection Method Has Many Important Data Tracking and Auditing Benefits*

The Form 477 data collection *process* has inherent benefits that can be carried over when implementing a national broadband plan. Since its creation, Form 477 has been used as a means to help the FCC and the public understand the extent of broadband deployment nationwide.⁵⁵ The form requires broadband service providers to report state-level information about the number of broadband connections in service. Further, there are similar requirements for incumbent LECs, cable companies that provide broadband, and providers of wired and fixed wireless broadband connections.⁵⁶ Because broadband providers are required to remit Form 477 data on a bi-annual basis, using this data collection method, paired with pertinent data collected on the more granular street address level, will provide a very comprehensive picture of broadband usage and availability throughout the county.

The CPUC recommends using an existing data collection method that has proven effective as the best starting point for a national broadband mapping plan. Modifying an existing procedure would employ fewer administrative resources than creating a completely new one. Using the existing Form 477 data collection procedure, with some revisions and additions, would not only allow the FCC to track broadband usage, deployment, and adoption, but also track the offerings of individual providers.⁵⁷ As the national broadband plan unfolds, it will be imperative for policy makers to have accurate information available. Comparing information reported by a service provider and any consumer complaints or reports that may be received against that service provider, for example, will allow the FCC to hold broadband providers to a high level of truthfulness in reporting. Further, this type of comparison will help the FCC develop enforcement measures and appropriate penalties for any broadband provider misrepresenting its offering capability or service territory.

⁵⁵ See generally 477 Order.

⁵⁶ 477 order, at ¶ 6.

⁵⁷ Note that mapped data must be aggregated before it is made available to the public to protect broadband service providers' proprietary information.

c) *The Current Form 477 Data Collection Method Has Limitations and Should Be Revised in Order to Provide Accurate Analysis of the Current State of Broadband*

The current Form 477 data collection method must be revised, however, before a national broadband mapping plan can be fully developed. In particular, as we have emphasized, data must be collected at a more granular level than the currently used census tract. For broadband maps to be capable of showing levels of broadband service capability and availability as accurately as possible, the smallest level of granularity must be used. The FCC's current Form 477 (census tract data collection) can produce misleading maps and analysis, thus running the risk of providing information that negatively distorts policy making efforts.

While the Commission has made progress in data collection methods in the last year by revising Form 477 to collect data by census tract vs. the original zip code collection method, problems are still inherent in collecting data at this level. As the 477 Order states, “[a]s of June 2007, Form 477 data show that more than 99% of all ZIP Codes had some broadband connections in service.” This number represents a percentage that, without further analysis, implies that broadband is available to 99% of the county, a plain overestimation. If 99% of the country actually had access to broadband, there would be no need for broadband deployment policies or the scope of the BTOP initiative under the ARRA. Collecting data by census tract produces a similar overestimation of data. In order to get an accurate idea of broadband service, data must be collected at a more granular level.

California has experience mapping broadband service and availability data that has been submitted on both a street address basis and on the larger, less accurate, census tract basis. Data submitted to the California Broadband Task Force (Task Force)⁵⁸ was by street address.⁵⁹ By contrast, data submitted to the CPUC under the DIVCA was by census tract.

⁵⁸ Exec. Order No. S-23-06, Expanding Broadband Access and Usage in California (2006).

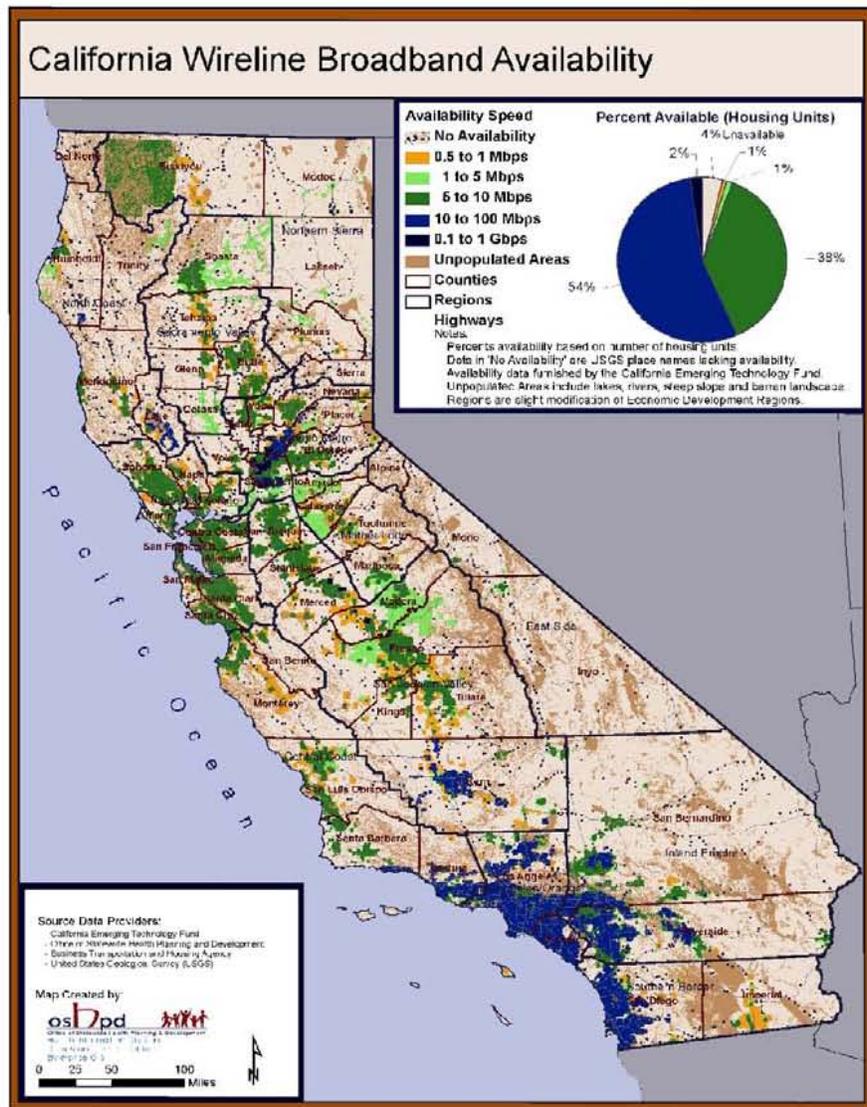
⁵⁹ When that was not possible, providers had other options available, such as submitting shape files denoting areas wherein all households had access to broadband service at the same maximum speed.

The impact of collecting data these two different ways can be illustrated by four maps. Map 1 was produced by the Broadband Task Force based on the street level data. This map incorporates over twenty million individual records, each of which was geocoded to show individual locations where service is available; those actual locations were “disguised” by mapping a square kilometer around each point where service is available.⁶⁰ By contrast, Map 2 was produced by the CPUC based on the census tract data it collected. The CPUC’s map shows a census tract as served when the reporting provider served *any* location in the tract.⁶¹

⁶⁰ BBTF Methodology

⁶¹ Note that the CPUC’s map reflects data current as of March 31, 2008, based on the reporting requirements for DIVCA. The CPUC will soon analyze data current through March 31, 2009, and will create new maps accordingly. *See* P.U. Code §5960.

Map 1



Map 2



Note the differences in the two maps. Using census tracks as a Minimum Mapping Unit (MMU) results in an overstatement of the actual households served. Using street address data, the Task Force found that broadband service is available to 96% of California households, while the CPUC census tract data suggested that 99% of California households were located in census tracts having broadband service available to its occupants.⁶²

The geographic areas that result in the 3% discrepancy tend to be large, rural, low-income census tracts. When using census tracts, the CPUC does not know where, within a large rural area, broadband service is available. Even if there are several providers reporting that service is available in a given census tract, there is no way of

⁶² See Discussion of inaccuracies in data collection at note 4, *supra*.

knowing if those providers are competing in a relatively concentrated area of the tract, or if the areas they serve are dispersed throughout the tract.

The current method of collecting broadband subscribership data by census tract vastly overestimates the areas where broadband is being used. On April 1, 2009, the CPUC received broadband data from each company that has been issued a California state video franchise, as part of the DIVCA reporting requirements. This data included the Form 477 data for California that each franchise holder provided to the FCC on March 16, 2009, also collected by census tract. Data collected by this level of granularity does not give any indication of where within a census tract (some of which are as big as 8007 sq. miles in California⁶³) particular broadband speeds are available. This is because of an overestimation of the area offered service. Further, *areas offered service are not collected*, only customer subscribership data. Accordingly, underserved areas cannot be determined using these data.

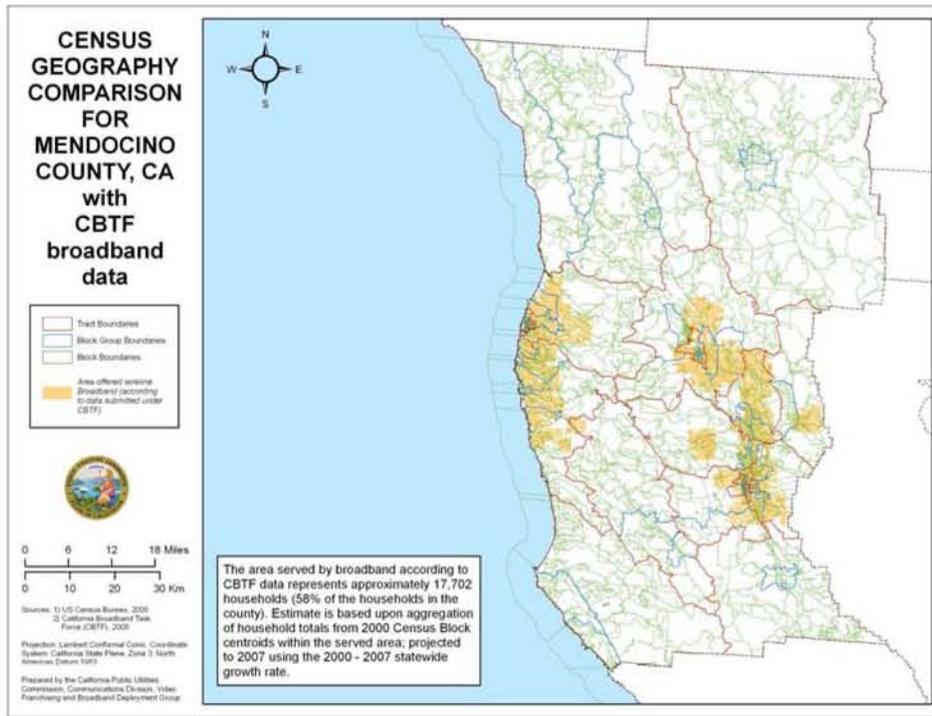
Further, collecting data by census block groups results in overestimation, as well. While smaller than census tracts, these areas are still generally too large to provide the most useful information. Under the CASF program, grant applicants submit to the CPUC maps showing proposed service areas for which grant funds are requested. These maps use data collected by census block group.⁶⁴

The following maps illustrate the overestimation that occurs when data is mapped by census tract, census block groups, and street address level data. Map 3 shows a census geography comparison of Mendocino County using wireline broadband subscribership data available to the Task Force (collected by street address). Map 4 shows the same broadband subscribership data when mapped using DIVCA data (collected by census tract). Map 5 shows these same data by census block groups. Note the differences in the broadband service areas represented in each of these maps (the area shaded yellow). One can see that more granularity provides a truer picture of the *actual* areas of broadband deployment.

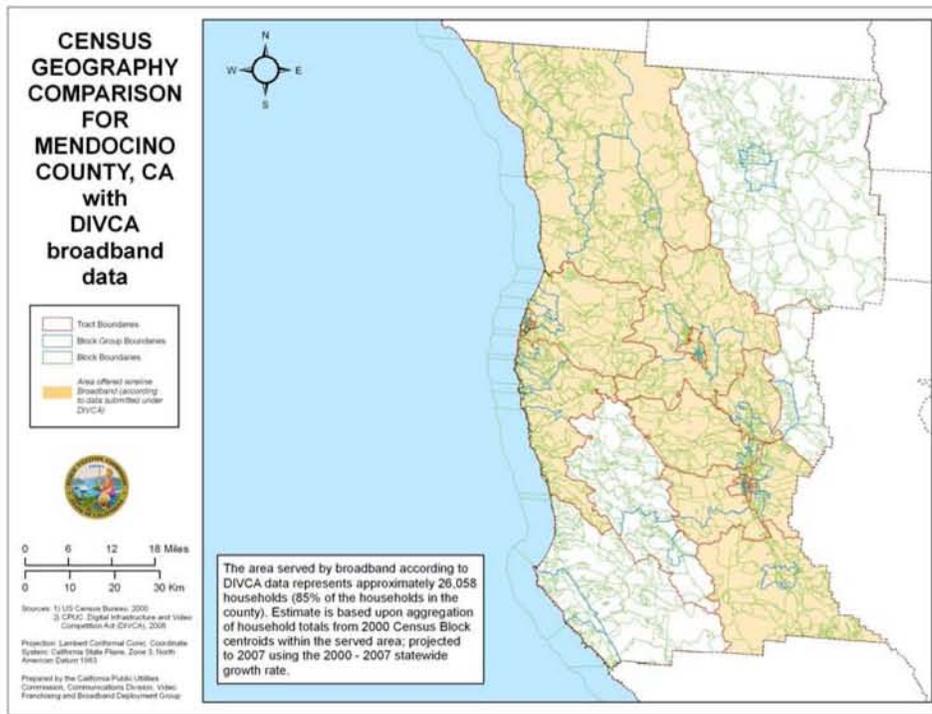
⁶³ Tract in San Bernardino County.

⁶⁴ This concept is illustrated in more detail in Maps 10 and 11, *infra*.

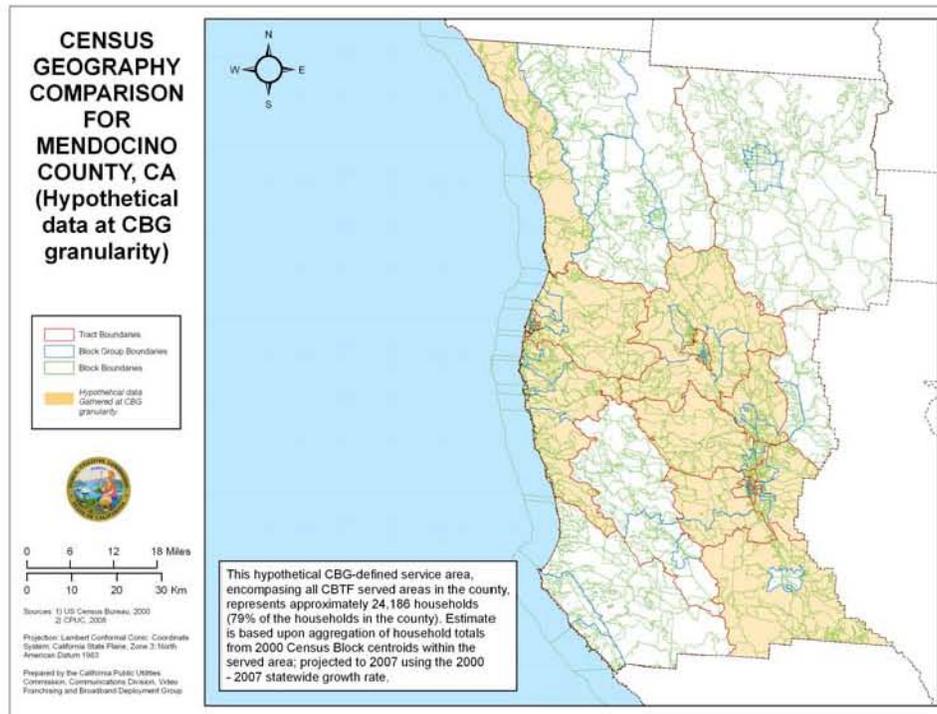
Map 4



Map 5



Map 6

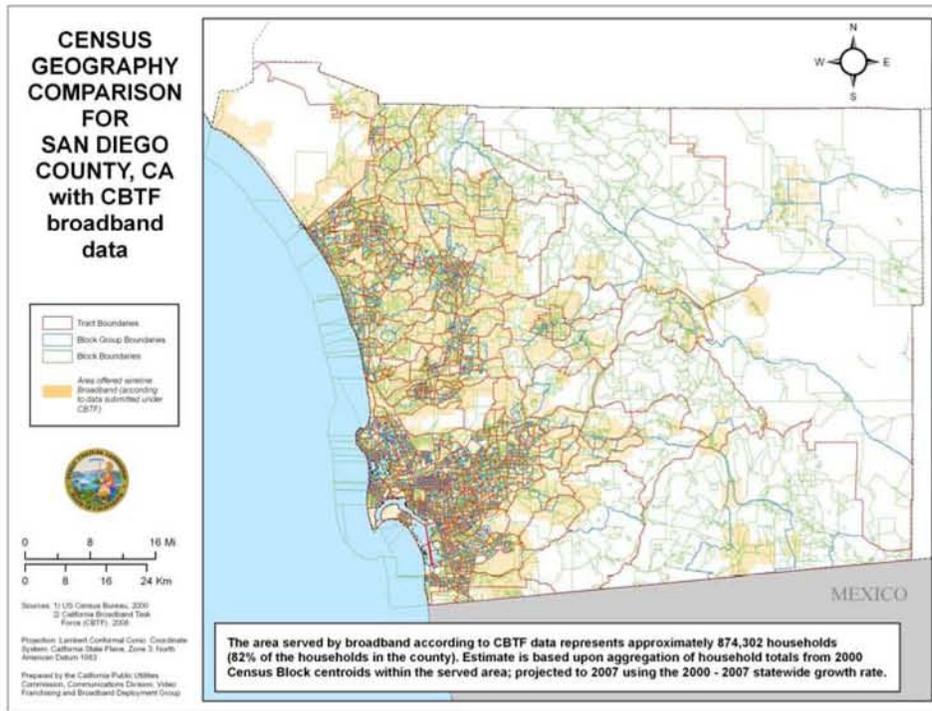


According to the data collected by the Task force, approximately 17,702 households are served in Mendocino County. According to data collected under DIVCA, approximately 26,058 households are served. Collecting data by census tract rather than address results in overestimating households served by 47%. Further, data collected by census block group shows 24,186 households and accounts for a 37% overestimation of the actual service area when compared to data collected by street address in this County.

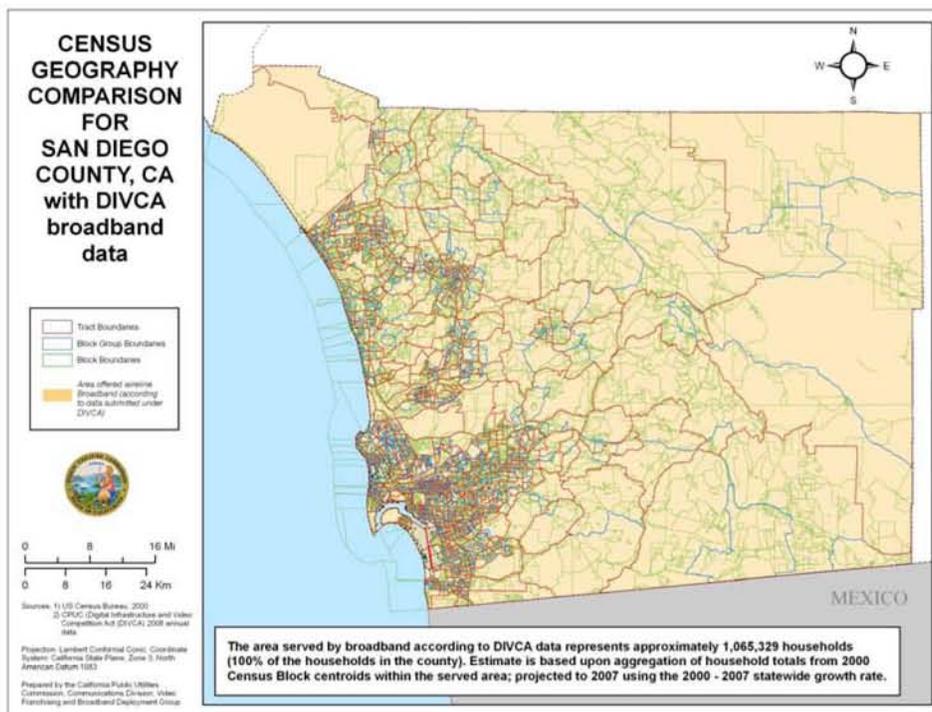
Mendocino County is a rural county in California with sparse population density. This fact is of particular importance because grant funds distributed under the BTOP program are focused on rural counties that have little to no broadband availability. In order to accurately assess whether an area such as a rural county is unserved or underserved, data must be collected at a smaller granular level than census tract.

This overestimation occurs in San Diego County, as well. Maps 7 through 9 show the same type of comparisons for San Diego County, classified as a non-rural county.

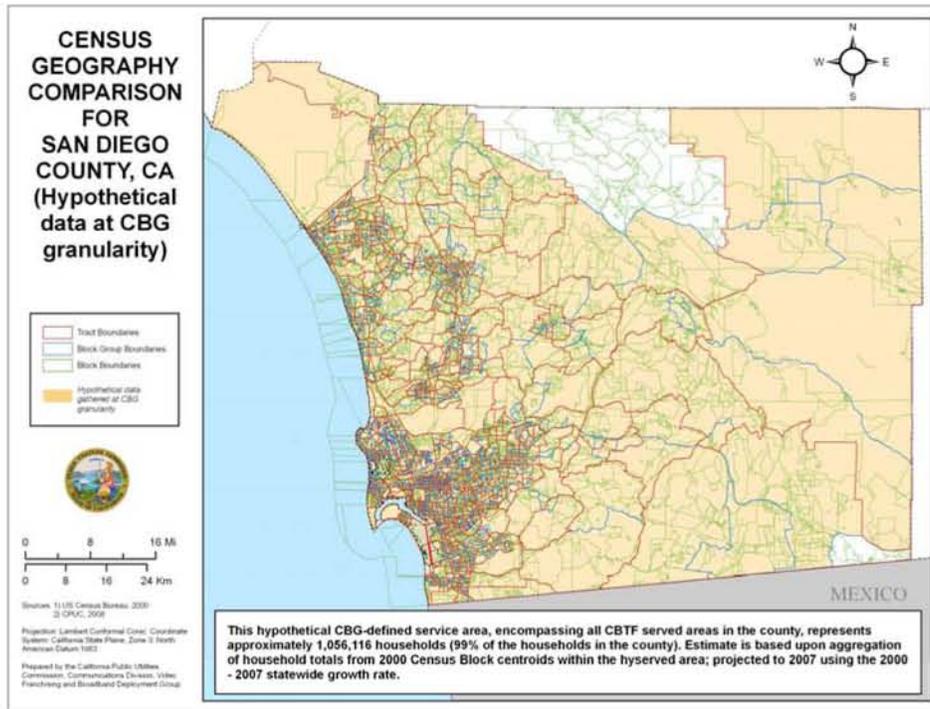
Map 7



Map 8



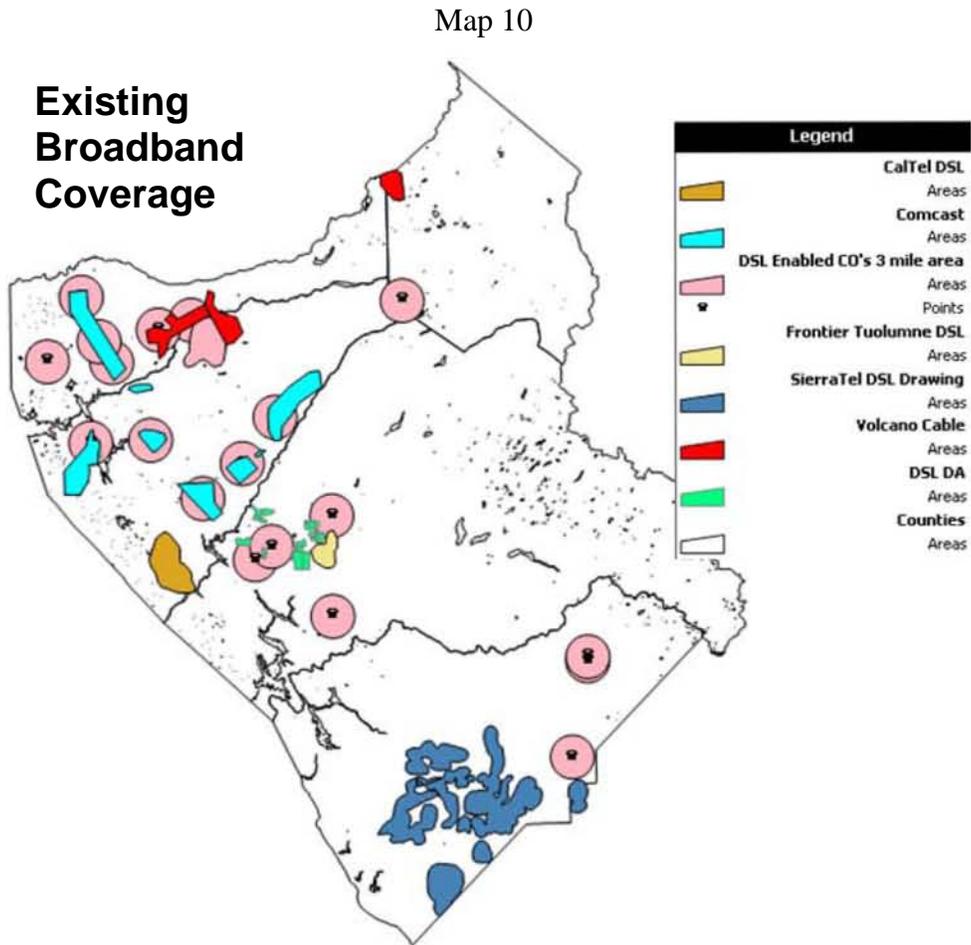
Map 9



Note the differences in these maps. According to the data collected by the Task force, approximately 874,302 households are served by wireline broadband in San Diego County. However, according to data collected under DIVCA, approximately 1,065,328 households are served. Collecting data by census tract rather than address results in overestimating households served by 22%. Further, projected data by census block group shows service to 1,056,116 households, which accounts for a 21% overestimation.

As stated above, in implementing our CASF program, grant applicants submitted maps showing proposed service areas for which grant funds are requested. These maps use data collected by census block group. When pinpointing funding for broadband deployment projects, it is imperative to know the exact locations where infrastructure buildout is needed. In order to truly determine this, data must be presented at the smallest level of granularity possible. The maps below provide another example of data overestimation that can occur when data is mapped at the census block group level versus. at the street address level. These maps show this overestimation for a small area.

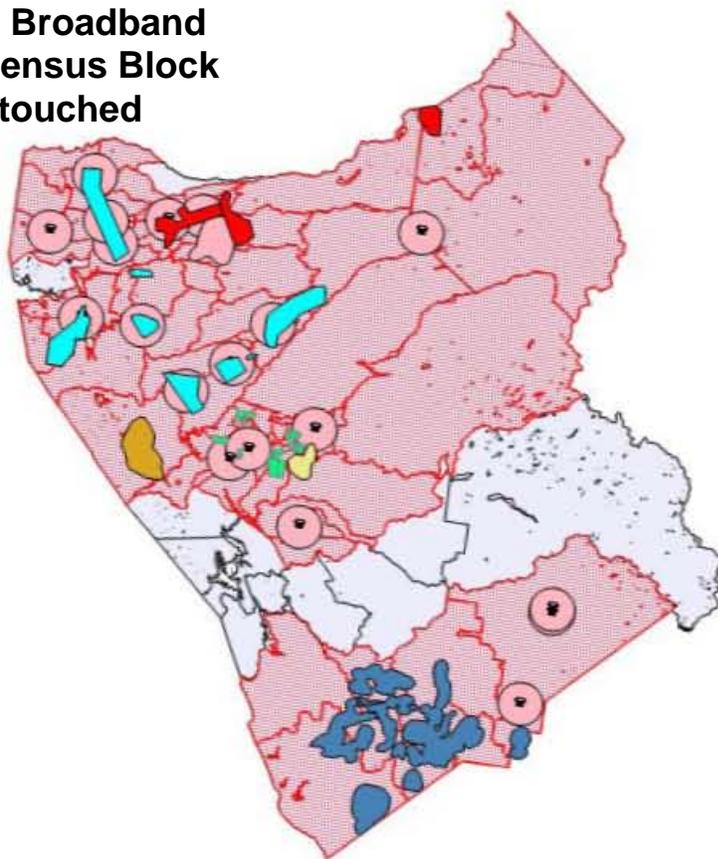
Map 10 shows the actual areas being served, while, by contrast, Map 11 shows those same areas and the census block groups that they touch.⁶⁵



⁶⁵ Presentation: Motherlode Broadband: A Joint Venture by Rapid Link and Mother Lode Internet, pp. 27-28 (legend added).

Map 11

**Existing Broadband
within Census Block
Groups touched**



Clearly, Map 11 shows a much larger affected area than Map 10. As with data collection by census tract, any tract where even one subscriber is located is considered to be served. This is the same with census block groups. As the maps illustrate, data collected by census block groups shows entire block groups as being served when, in fact, only small portions of them actually are. Data collected to this standard overestimates where broadband is being offered.

The maps shown above illustrate the critical importance of collecting data at a small level of granularity. Data collected at levels other than the street address can vastly overestimate the presence of broadband. This overestimation can lead to misappropriated funds and wasted hours devoted to conjecture that could hinder the goals of a national broadband mapping program by obscuring the actual availability of broadband. Our experience indicates that the optimal level of granularity is at street address level.

California recommends that, as part of a comprehensive broadband plan, that the FCC revise its Form 477 to collect data at that more granular level.

In light of the overarching goals of the Recovery Act and the ever-increasing interest in developing state and national broadband policies to promote broadband deployment, particularly in rural and hard-to-serve areas, the FCC should use its unique position to develop a solid factual foundation regarding all aspects of broadband service. Collecting both subscribership and availability data on a street address level and mapping that data on a nationwide basis would provide the FCC and state commissions with a more accurate picture of national broadband availability and would help move the country closer to the goal of ubiquitous broadband access.

d) *Broadband Mapping is Important to Understanding the Implications of the Collected Data*

By mapping broadband data at a sufficiently granular level, the FCC and other state and federal policymakers can get an accurate picture of the current state of broadband and a sense of where additional deployment steps need be taken. Maps can be used to analyze nearly all of the topics covered by the FCC in this NOI. These include broadband usage trends, where subsidy programs to encourage broadband deployment are working and where they are not, where existing infrastructure is inadequate, where it is working; where adoption rates are high or low; where adoption rates do not follow availability, etc. Such maps would also identify the amount of competition present in the broadband market, and pinpoint areas that may benefit from entry by additional providers. The FCC has stated that “[p]rovider-specific and technology-specific data on broadband availability and subscribership would help policymakers evaluate issues such as the level of broadband competition in rural areas and the extent to which certain technology platforms are better suited to serve certain types of rural markets.”⁶⁶ Further, maps could be used as a tool to track price and its relationship to affordability, adoption rates, and the location of unserved and underserved areas.

By knowing how many providers offer service in a given area, or in a nearby area, the FCC can evaluate the relationship between the presence of competitive alternatives

⁶⁶ Report, at ¶ 89.

and subscription rates. This will assist in determining where competition policy should be focused on broadband deployment projects, and where it should be focused on broadband adoption programs. Mapping competition can also be used to evaluate the effectiveness of FCC and BTOP efforts and associated state efforts.

From the CPUC's perspective, one of the main benefits of a national broadband mapping program would be to provide the uniformity necessary for making state-to-state comparisons. Various states, California chief among them, are engaged in broadband mapping efforts; however, differences in definitions, data collection methodology, and granularity prevent an accurate comparison of the status of infrastructure development between and among them. Mapping by the FCC would facilitate such a comparison, and would help identify the infrastructure successes and the effectiveness of adoption policies in the various states. As the FCC develops its national broadband mapping plan, it is imperative that a comprehensive mapping effort be included in the plan and used as an ongoing test of the plan's effectiveness. GIS systems, or other analytical software, can also perform multiple regression analyses to determine what factors influence broadband penetration. This software can layer penetration rate data with other data regarding socio-economic factors, education, etc. A national map containing these data would provide a benchmark for measure the broadband plan's direction and the degree to which it has, among other things, succeeded in closing the digital divide.

e) *A National Broadband Map Should Be Interactive and Contain Certain Base Data*

California recommends creation of an interactive mapping system even more sophisticated than that order in the Broadband Data Improvement Act. This would entail combining U.S. base map data (including U.S. geography, state boundaries, counties, municipalities, congressional and senatorial districts, zip codes, and census boundaries) with thematic broadband data collected at the census tract (service capability, availability, and subscribership), and standardized census data.

Base map data shows certain fundamental information, used as a base upon which additional data of specialized nature or analytical theme are compiled or overprinted.

With respect to base map data, California recommends the following statewide GIS map layers be developed comprehensively:

- Parcel
 - Includes survey and description frameworks such as the Public Land Survey System, as well as parcel-by-parcel surveys and descriptions including geographic extent of past, current, and future right, title and interest in real property, and the framework to support the description of that geographic extent.
- Street Addressing (also know as the Master Street Address File)
 - Street addressing encompasses the individual address locations of all mailing addresses.
 - This database houses the location and address of every mailable address in the state.
- Government Units
 - Describing, by a consistent set of rules and semantic definitions, the official boundary of federal, state, local, and tribal governments, as well as political divisions such as congressional and senatorial districts, as reported/certified to the U.S. Census Bureau by responsible officials of each government or Indian tribe for purposes of reporting the Nation's official statistics.
- Cultural and Demographic Statistics
 - Describing the characteristics of people, the nature of the structures in which they live and work, the economic and other activities they pursue, the facilities they use to support their health, recreational and other needs, the environmental consequences of their presence, and the boundaries, names and numeric codes of geographic entities used to report the information collected.
- Elevation
 - State Digital Elevation Models (DEMs) from which topography, slope, and aspect can be derived, in order to understand line-of-sight issues.

These base layers are important for broadband mapping and analysis; in addition, they have substantial value for other purposes, such as emergency response, E-911, wild land fire protection, health service planning, tax collection, and economic development.

Thematic data shows the spatial distribution of one or more specific data themes for standard geographic areas, such as patterns in statistical data. In order to present the

most accurate picture of the current state of broadband, certain data must be mapped. As we suggested to the NTIA earlier this year, California recommends that maps contain the following data:

- Broadband Availability data:
 - Broadband availability data detailing the specific areas (addresses) where broadband is currently available and the associated speed tiers.
- Broadband Subscribership data:
 - Subscriber data by location (address) and FCC broadband speed tier.
- Infrastructure data:
 - Telecommunications GIS data pertaining to broadband (i.e. current location and supply of network fiber, wireless facilities, etc., to the extent available).
 - Leverageable broadband resources (federal or state owned property or facilities which can be used to deploy broadband hardware and equipment, e.g. buildings, communications towers, forestry towers, etc.).
- Standardized census data (by the smallest census area possible):
 - Per capita income
 - Educational attainment
 - Age
 - Language
 - Housing density
 - Urban/rural classification

Data should be aggregated so that individual provider data cannot be identified from the national map. On publically available maps, street-level data can be “rasterized” (converted to dots for video display) to disguise competitively sensitive information. While government entities would need access to street-level data to know if a given location is actually without service, maps available to the general public should rasterize the data to a ¼ square kilometer, for example, and mask the identity of the provider(s).

Under an interactive mapping program, users will be able to generate maps of their own; for example, the CPUC has produced many maps from a combination of Task Force data and census data to illustrate broadband availability in a particular area. In this

way, the CPUC could help identify specific communities to a legislator who wanted to know exactly what areas of his district were unserved. Similarly, the FCC could produce an interactive map that would allow a user to search by county, zip code, governmental boundaries, or street address.

E. Specific Policy Goals of the National Broadband Plan

The FCC seeks comment on the Recovery Act requirement that the FCC include a plan for the use of broadband infrastructure and services in advancing a series of public policy goals – including advancing consumer welfare, civic participation, public safety, community development, health care delivery, energy efficiency, education, worker training, private sector investment, and job growth.⁶⁷

1. Advancing Consumer Welfare

The FCC asks how it should interpret what is meant by “consumer welfare” in the Recovery Act, citing its 2005 principles, consumer protection, privacy protections and the impact of technology.⁶⁸

The CPUC considers the principles in the FCC’s 2005 Internet Policy Statement⁶⁹ as adequate for defining consumer welfare respecting access under both the Recovery Act and a national broadband plan. Consumer protection and privacy should be based on state and federal law, with the states as the chief enforcement authorities for those protections. In the case of technology, both state and federal broadband programs and incentives should be technology neutral so that advances in technology are not hindered by policy or regulatory strictures based on one technology or one set of technology capabilities or one set of providers.

2. Civic Participation

The Commission seeks comment on what “civic participation” means in the context of broadband deployment and adoption.⁷⁰ The FCC asks for comment on how

⁶⁷ NOI at ¶¶ 63.

⁶⁸ *Id* at ¶¶ 64-69.

⁶⁹ Policy Statement, 20 FCC Rcd 14987-88, ¶4 (2005).

⁷⁰ NOI at ¶¶ at 70-71.

the goals of open and accessible government aimed at increasing public awareness and participation in government can be amplified by access to broadband. The FCC asks about how this new media can improve access to local and national news, the ability to be heard, and the benefits of video conferencing of government meetings. The NOI uses the term “disintermediation” to ask about the role of broadband in breaking down the distances between government and citizens.

One measure of broadband’s impact on civic participation is its universal availability across demographic and geographic groupings. Another is that the discrepancy between the least expensive versions of broadband and the most expensive should not be a discriminatory barrier to access to news media, sources of entertainment, or government meetings. The slowest broadband should not be the only broadband service available in the poorest neighborhoods and in public institutions such as libraries, schools and hospitals. Nor should the slowest be so far from the fastest that it manifests another version of the digital divide.

3. Public Safety and Homeland Security

The FCC asks what broadband services are most needed to ensure public safety and security, and specifically seeks comment on wireless and interoperability issues.⁷¹

Deployment of broadband for public safety purposes should be a priority under the national broadband plan. The broadband services most needed with respect to public safety are access to E911, emergency alerts, and the interoperability of public safety communications across municipal, regional, tribal, and state boundaries. The national plan should provide for the development of such services in a timely way and subject to regular review as to their effectiveness.

4. Community Development

The FCC asks how broadband contributes to community interaction and what role universal service programs for broadband can play in this regard.⁷² All levels of government can enhance the role of broadband in community development through programs that encourage the deployment to local community and government centers.

⁷¹ *Id* at ¶¶ 72-79.

⁷² *Id* at ¶ 80.

The federal E-rate program is one such program.

Another prime example is the California Teleconnect Fund (CTF) Program. In 1996, the CPUC established the CTF to provide certain community institutions with access to advanced telecommunications services in recognition of their economic and societal impact. Today, CTF provides a 50% discount on communications services - from basic measured business line to broadband Internet access services - to qualifying K-12 schools, libraries, health care organizations, California Community Colleges, and Community Based Organizations. The CTF program has a budget of \$46.554 million for Fiscal Year (FY) 2008-09 and \$60.340 million for FY 2009-10, and we anticipate that over 75% of the CTF budget will pay for broadband related services.⁷³ The program is financed by a 0.079% surcharge assessed on intrastate end-user billings for telecommunications services. [I fixed this previously – this is the way this should read.]

5. Health Care Delivery

The FCC's requests for comments focus on electronic medical records, rural health care, and telehealth initiatives⁷⁴. Namely, the Commission asks about the interaction between broadband development and improved access to medical records and healthcare.

California considers telehealth initiatives (i.e. the use of telecommunications and information technologies for the provision of health care at a distance) health information exchange (i.e. mobilization of healthcare information electronically across organizations within a region or community) to be imperative. National broadband policies should give high priority to the encouragement of the development of telehealth and telemedicine networks and applications. The CPUC is part of a unified public-private partnership in both telehealth and health information exchange initiatives.

The CPUC's telehealth initiative is encompassed by the California Telehealth Network (CTN). The FCC announced in late 2007 its decision to provide funding of \$22.1 million over three years to the CTN via the Rural Health Care Pilot Program (RHCPP). The purpose of the CTN is to increase broadband access to acute, primary,

⁷³ This rough estimate was developed using recently submitted data by carriers for specific services.

⁷⁴ NOI at ¶ 81-85.

and preventive health care in rural areas. The CTN is intended to directly interconnect or peer with several regional, statewide, and national networks, in effect creating a "network of networks" that facilitates advanced telehealth services, including telemedicine consultation, tele-education, and remote patient monitoring.

California is involved with two major projects that promote broadband usage in the field of telehealth. First, our CTF provides discounted telecommunications services including voice and Internet service to hospitals and health clinics that are owned and operated by a municipal, county government, or a hospital district, as well as K-12 schools, libraries, and community organizations.⁷⁵ Further, California Telehealth Network (CTN) participants are eligible for CTF discounts. The program is funded through a surcharge on all end-users of intrastate telecommunications services and provides a 50% subsidy for qualifying participants.⁷⁶ The \$22.1 million FCC funding, or approximately 85% of the estimated cost of the CTN for three years, is to be supplemented by the CTF discount of 50% of the remaining 15%, amounting to approximately 7.5% of total CTN costs.

Second, the California Emerging Technologies Fund (CETF) is a non-profit corporation with \$60 million, contributed by AT&T and Verizon pursuant to a CPUC order available over five years to advance broadband, has earmarked at least \$5 million to fund telemedicine applications that serve California's underserved communities, particularly rural areas and facilities with a large number of indigent patients.⁷⁷ Underserved communities include individuals, groups, and organizations that face telecommunications challenges or disadvantages due to physical disabilities, low incomes, inadequate telecommunications infrastructure, language and cultural differences, lack of technological understanding and/or equipment, and other constraints facing members of the state.

⁷⁵ *Rulemaking on the Commission's Own Motion into Universal Service and to Comply with the Mandates of Assembly Bill 3643*, Decision 96-10-066, *Investigation on the Commission's Own Motion into Universal Service and to Comply with the Mandates of Assembly Bill 3643* (Cal. P.U.C. October 25, 1996)(D.96-10-066).

⁷⁶ *Id.*

⁷⁷ D.06-09-011. More information is available at <http://www.cpuc.ca.gov/PUC/Telco/emergingtech>.

To date, the CETF has contributed \$3.6 million in matching money for the FCC grant of \$22.1 million for the CTN. The CETF Board of Directors has committed another \$1 million as a "challenge opportunity" to attract an additional \$10-15 million from foundation investors who along with the State of California and supporting partners can seek Recovery Act funding. UnitedHealth/PacifiCare is also expected to contribute additional funds to CTN.⁷⁸

The CPUC's other primary initiative concerns facilitating the development of efficient health information exchange (HIE) in California. The HEI, directly synergistic with the CTN, has the overarching goal of improving health care quality, delivery, access, and safety for all Californians.⁷⁹

Because telehealth programs provide life saving services, the FCC should give high priority to their broadband needs when developing policies under its national broadband plan.

6. Energy Independence and Efficiency

The FCC asks about applications that can enhance energy efficiency, such as the "smart grid" and telecommuting.⁸⁰

a) Smart Grid

A smart grid can be defined broadly as an electric grid that is enhanced through the use of digital communication technologies and that allows customers, utilities, and society to make better choices in how energy is produced, delivered, and consumed.⁸¹ These issues are particularly important to California, because of the state's policies aimed at reducing energy use and greenhouse gas emissions.

⁷⁸ A further feature of the CTN (and the Health Information Exchange described below) is to function as part of a statewide disaster and emergency preparedness network.

⁷⁹ Governor Schwarzenegger issued an Executive Order on March 14, 2007 establishing the Health Information Technology (HIT) Vision for the state: Achieve 100% electronic health data exchange among payers, providers, consumers, researchers, and government agencies in the next 10 years; and accelerate the use of HIT, leveraging state purchasing power, including support for uniform interoperability standards and adoption of health information technologies, such as e-prescribing, e-billing, and e-medical records.

⁸⁰ NOI at ¶¶ 86-87

⁸¹ Order Instituting Rulemaking to Consider Smart Grid Technologies Pursuant to Federal Legislation and on the Commission's own Motion to Actively Guide Policy in California's Development of a Smart Grid System, Rulemaking 08-12-009, Order Instituting Rulemaking (Cal. P.U.C. Dec. 22, 2008) (OIR), at p. 12.

The CPUC recently filed comments with the Federal Energy and Regulatory Commission (FERC) supporting FERC's efforts to expeditiously adopt key standards to achieve interoperability of Smart Grid devices and systems.⁸² As the CPUC explained, it is imperative that FERC understand and acknowledge that the CPUC and other state utility commissions have a direct role to play in creating this new grid for the nation. This is also important for the FCC to note as it develops its national broadband plan.

The CPUC issued an Order Instituting Rulemaking ("OIR") on December 22, 2008, (R.08-12-009) to consider setting policies, standards and protocols to guide the development of a smart grid system and facilitate integration of new technologies such as distributed generation, storage, demand-side technologies and electric vehicles. The CPUC will examine ways to enhance the ability of the electric grid to support important energy policy goals including reducing greenhouse gas emissions, increasing energy efficiency and demand response, expanding the use of renewable energy, and improving reliability. Further, the CPUC will be hosting a series of workshops this year pursuant to its own Smart Grid rulemaking. These workshops will cover the following issues: consumer issues, transmission, distribution, electric vehicles, jurisdictional concerns/regulatory approach, and Federal Stimulus Bill projects.⁸³ One thing that has been expressed in public workshops so far is the need for very fast, secure fiber optic networks to handle thousands of data points from the electric system that will need to be processed for a Smart Grid.

Smart grid technology's use of broadband puts it solidly within the purview of the FCC's national broadband plan. The CPUC urges the FCC to create broadband policies to promote the development and use of this smart grid technology. In expanding the use of smart grid systems, many energy saving benefits would be realized by utility providers, by residential customers, and broadband technology providers alike. We defer to the expertise of the FCC to determine what these policies should entail but again emphasize the importance of ensuring broadband policy that will promote, not hinder, the growth of this technology.

⁸² *Smart Grid Policy Statement And Action Plan*, Notice Of Intervention And Comments Of The Public Utilities Commission Of The State Of California (Docket No. PL09-4-000) (2009) (FERC comments).

⁸³ FERC Comments, at pp. 8-11.

7. Education

The NOI solicits comments about distance learning, computer use in the classroom, and what role the federal E-rate program play in advancing education goals.⁸⁴

Promoting broadband access and adoption in schools, and for distance learning purposes, is vital to the provision of quality education. We urge the FCC to develop policies as part of its national broadband plan to accomplish these goals.

The federal E-rate program is a commendable program that should continue, although as we noted earlier in these comments, the applications process should be simplified to encourage more schools to participate.

State programs can augment the E-rate program. As noted earlier, the CPUC's CTF program provides discounted telecommunications and advanced services to qualifying schools, libraries, government-owned and operated hospitals and health clinics, and community based organizations. Public or nonprofit private schools that provide elementary or secondary education and that have endowments under \$50 million qualify for the CTF discount. The discount was also recently extended to California Community Colleges. The CTF discount works in conjunction with the FCC's e-rate discount. The 50% CTF discount on monthly recurring charges applies after applying the FCC's actual E-rate discount. However, if a school does not participate in the federal E-rate program, the statewide average E-rate discount will first apply prior to applying the CTF discount.

The California Emerging Technology Fund (CETF) has also provided grants and assistance to promote "digital literacy" and distance learning. CETF is also facilitating the development of a statewide initiative, School2Home , to provide all California students in low-performing middle schools with affordable computers and broadband connections at home and to assist schools in integrating the use of technology into teaching and learning. School2Home is aimed at ensuring that the current generation of youth living in disadvantaged neighborhoods are not left behind on the other side of the "digital divide", but rather are provided the skills and opportunities to succeed in a digital world.

⁸⁴ NOI at ¶¶ 88-93.

8. Job Creation and Economic Growth⁸⁵

In light of the focus on this topic in the Recovery Act, the FCC seeks comments on how the Commission should evaluate Recovery Act grants when measuring job creation and broadband deployment. Also highlighted is the question of how broadband speed may affect global economic competitiveness.

California recognizes that new job creation is a major focus of the Recovery Act and that special priority will be accorded projects that can retain or create jobs and the costs associated with this job creation. To capture this focus, California recommends that the federal government include a factor for “New Jobs Creation” in the evaluation criteria developed for any broadband policy under the national plan. We recommended in our comments to the NTIA that selection criteria for grant recipients include this factor.⁸⁶

California has several planned projects in the public sector that will not only provide economic stimulus through job creation, but will have the additional public benefit of leveraging public investment by improving public services, healthcare opportunities, communications capabilities at schools, universities and libraries, and improved capabilities of public services such as fire and policing. The CETF, for example, prioritizes grant applications according to their focus on stimulating demand for broadband, economic growth and job creation. By June 2009, CETF expects to have 1,300 trained for the digital workforce as part of its grant process.

We urge the FCC to consider how policies will affect job creation and economic growth when developing their national broadband plan. Also, we believe it is important to emphasize that the U.S. should not settle for second best no matter how broadband availability is measured by international standards. This includes minimum standards for speed and quality of service.

9. Other National Purposes

The NOI asks if there are other national purposes not mentioned in the Act that should be given weight.⁸⁷ Global economic competition is again mentioned as a focus

⁸⁵ NOI at ¶¶ 95-97.

⁸⁶ See generally NTIA Comments.

⁸⁷ NOI at ¶¶ 104-105.

for comment. So too are the risks associated with Internet access.

Here in California, home to Hollywood, much of the music industry, and Silicon Valley, it would be difficult to overemphasize the potential of broadband for producing new products and services. Inventions and new applications emerge from the edge of the Internet to its center; this receptivity to inventiveness is the core of the Internet's value as an engine of innovation and a spur to economic development. Openness and speed are keys to the Internet's success. The national broadband plan should encourage the continued openness of the network to developments from the edge and make such openness and nondiscrimination criteria for network deployment and usage. The openness of broadband networks in providing unfettered access to the Internet should be a major rationale for the national broadband plan itself.

F. Relationship between the Recovery Act and Other Statutory Provisions

The FCC seeks comment on how the national broadband plan should account for the variety of previously existing statutory provisions that touch on broadband, how its development relates to other statutory provisions (including § 254 of the Communications Act), and where authority may be needed or where resources should be directed as a part of the national broadband plan the Commission will report to Congress.⁸⁸ Further, the FCC seeks comment on the relationship between the Commission's development of a national broadband plan and the requirements Congress set forth in the BDIA.

At a minimum we believe the national broadband plan should take three regulatory steps:

1. The FCC should resolve the tensions between the definitions of "telecommunications services" and "information services" which continue to confuse regulators and the industry.
2. In the absence of common carrier obligations for the provision of broadband, the FCC should clarify the regulatory responsibilities and obligations of the FCC, the states, and network and service providers using the Internet *and providing access to it*.

⁸⁸ *Id* at ¶¶ 106-111.

3. The FCC should make the data collected under the reporting requirements of Form 477 and section 706 available to the states at the same time they are provided to the FCC.

G. Improving Government Performance and Coordination with Stake holders⁸⁹

The FCC seeks comment on how a coordinated effort among federal departments and agencies; tribal, state, and local governments; and interested groups and individuals may enable the nation to achieve Congress's goal that all Americans have access to broadband.

In these comments we have strongly recommended more systematic data collection by the FCC, and the mapping necessary to visualize that data and make it available to the public. At the same time, state governments, in most cases, are in a better position to address broadband mapping, grant allocation, etc., than the Federal government. This advantageous position is based on a state government's superior knowledge of the technical needs, geography, and financial landscape of their unique jurisdictions. We would expect that the National Broadband Plan would continue and build upon the collaborative relationship between the federal government and the states in the broadband area.

We further recommend that all federal agencies who have programs that impact broadband, such as the E-rate program and similar state programs such as California's CTF program, coordinate on a regular basis to ensure their actions are consistent with the National Broadband Plan. Finally, we cannot emphasize enough that one can develop all the broadband plans it wants, but it is leadership at the top that will make the plan happen. In California's case, we had alignment in the broadband goal by the Governor's Office, the state Legislature, and leadership at some state agencies.

1. Public/Private Partnerships and Cooperatives

The FCC seeks comment on ways in which public/private partnerships can collaborate to advance common broadband objectives.

⁸⁹ *Id* at ¶¶ 112-122.

As we have indicated in these comments, California has had several successful public/ private partnerships for broadband deployment and adoption. These examples include the California Broadband Task Force, the CASF, and the CETF, which though privately funded and operated, provides funding to public entities. The Broadband Task Force produced cooperative collection and mapping at the street address level of broadband data, so far as we know, an unrivaled collaboration for any region as large as California. The CETF has brought together industry, community based organizations, and the Commission to foster scaled deployment and adoption. And the CASF is developing into a comprehensive tool for subsidizing broadband deployment in unserved and underserved area transcending the usual industry participants.

II. CONCLUSION

The California Public Utilities Commission is grateful for the opportunity to comment on the FCC's Notice regarding the elements that should go into a national broadband plan. In our own efforts we have sought to make the benefits of broadband deployment as ubiquitous as possible. We agree that a successful national broadband plan will couple the innovations and flexibility of the private sector with the far-reaching policy goals of the public sector. As the NOI notes America's broadband plan must "allow for modification as we learn from experience" and "reflect the input of all stakeholders -- industry, American consumers; large and small businesses; federal, state, local, and tribal governments; non-profits; and disabilities communities."⁹⁰

⁹⁰ NOI at ¶ 8.

Respectfully submitted,

By: /s/ HELEN M. MICKIEWICZ

Helen M. Mickiewicz

505 Van Ness Avenue
San Francisco, CA 94102
Phone: (415) 703-1319
Fax: (415) 703-4592
Email: hmm@cpuc.ca.gov

Attorney for the People
Of The State Of California And The
California Public Utilities Commission

June 8, 2009