

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Rural Digital Opportunity Fund)	WC Docket No. 19-126
)	
and)	WC Docket No. 10-90
)	
<u>Connect America Fund</u>)	

Comments of the California Emerging Technology Fund

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Pursuant to 47 CFR Rules 1.415, 1.419 and 1.49, the California Emerging Technology Fund (CETF) hereby timely files comments on the Notice of Proposed Rulemaking (NPRM or Notice) relating to the proposed Rural Digital Opportunity Fund (RDOF) in the above-referenced dockets.

Summary: CETF commends the FCC on moving forward with this initiative for an RDOF with a decade of support because high speed broadband is vital for economic development, telemedicine, public safety, education, and agriculture for rural areas of the nation. At present, California is fighting unprecedented numbers of severe wildfires in our state. Broadband is an important tool for utilities to prevent fires by monitoring weather and moisture sensors, and monitoring their infrastructure 24/7 for problems which can be corrected and contained. For emergency responders, broadband is critical to urgent communications, situational awareness, and to send data such as maps of fire areas and evacuation routes.

On the program budget, CETF requests more transparency as to how the “at least \$20.4 billion” amount (over the next ten years) was determined to be adequate.¹ Given the fact that the current FCC broadband map likely overstates actual broadband coverage, CETF recommends that the RDOF funding amount be subject to upward adjustment once improved broadband mapping results become available² and the true scope of the challenge reveals itself.

CETF supports both the two-phase approach with RDOF funding prioritized to unserved areas first, and the 10-year support model. CETF praises the FCC’s proposal to make the minimum speed for the RDOF program 25 Mbps. download and 3 Mbps. upload (25/3). However, CETF asks how these deployment speeds will keep pace with speeds deployed in urban areas, especially over a period of a decade? With technological advances moving so swiftly, the 25/3 speeds may be wholly inadequate in a decade. There is an urban/rural speed Digital Divide right now. The FCC should ensure that rural America is not consigned to slow broadband inadequate for daily tasks.

CETF joins with SHLB Coalition in its request to include anchor institutions as well as residents as “locations” in served by RDOF support recipients, due to the critical importance connecting such critical institutions to 21st century networks. In the West, connecting first responders by broadband is critical, given the increase in devastating wildfires in the region and the need for reliable communications to fight fires and provide information to residents fleeing the blazes to evacuation centers.

¹ NPRM, at p.6. For example, working papers on the funding calculation should be released.

² CETF commends the FCC on opening its broadband mapping docket, an overdue issue of great importance to ensuring coverage for rural, remote and Tribal areas.

CETF highlights that it is submitting data on AgTech pilots performed in California, which it sponsored. The data shows broadband delivered important efficiencies for the farmers including up to 20% decreases in water usage, up to 15% decrease in energy usage, up to 15% decrease in labor, and up to 18% increase in crop yield. The data confirm the important benefits of broadband to the agriculture sector, including how it will benefit water and energy conservation and increase crop yields. Thus, CETF recommends that farmlands where the farmer wishes to deploy broadband be included in supported “locations” for RDOF funding.

CETF proposes the FCC prioritize funding of rural deployment of broadband in states where there are matching dollars from those states. This will maximize results for specific projects. Current programs lack flexibility to allow a grantee to bring together state and federal funds for a single project. All federal agencies such as USDA’s RUS, should be encouraged to be innovative in consolidating available funds to better leverage other federal, state and other public funding for greater impacts on broadband deployment.

CETF recommends that the FCC take steps to ensure that rural broadband rates are actually reasonably comparable to urban rates, as mandated in the universal service portion of the Telecommunications Act of 1996.

CETF recommends that the Commission allow updated data to the FCC Broadband Maps (based on Form 477 data) from sources such as state utility commissions or other state broadband authorities, in order to include more granular and accurate broadband speed and location data reflecting actual conditions on the ground.

CETF supports the performance tiers in the Notice, but agrees with GeoLinks that the new proposal for subscribership milestones linked to full funding should not be imposed. Such a

subscriber milestone may be a disincentive for applicants. A better way to approach low subscriber is to require affordable offers from RDOF recipients, require marketing throughout the service area including to low-income and other vulnerable communities using community media or other advertising methods appropriate to that community, and funding of digital literacy and broadband education programs.

CETF commends the FCC in putting a spotlight on the lack of adequate broadband in Tribal lands, which requires additional focus, and significant funding to obtain adequate broadband speeds for its community needs. Here in California, challenges include the lack of electricity and middle mile facilities to Tribal lands. CETF would support Tribal bidding credits in the 25%-50% range to ensure bidders.

CETF Mission: Formed in 2006 by the California Public Utilities Commission with \$60 million in funds voluntarily contributed as a public benefit by SBC/AT&T and MCI/Verizon relating to corporate consolidations, CETF's mission is to close the Digital Divide in California. CETF's goal is to reach 98% of all California residences in every region with broadband infrastructure and to achieve 90% home broadband adoption by 2023. CETF strives to achieve these goals through public policy, awareness and education, digital inclusion programs, and grantmaking to non-profit community organizations and public agencies. CETF has participated in numerous FCC proceedings to date, including as to corporate consolidations and broadband policy dockets. CETF also received American Recovery and Reinvestment Act (ARRA) grants from the Department of Commerce's National Telecommunications and Information Administration for digital adoption programs which CETF successfully executed. CETF is also active before the California Public Utilities Commission, intervening in corporate consolidation proceedings to ensure public benefits relating to broadband, promoting broadband grant and

digital adoption policies and programs, and participating in dockets where broadband policies are directly impacted.

Overview. CETF commends the Commission on its NPRM proposing a RDOF fund to bring high speed broadband to rural Americans. Federal investment in broadband deployment is vital for economic development, telemedicine, public safety, education, and agriculture. At present, California is fighting unprecedented numbers of severe wildfires in our state. Many fires are in rural communities. Broadband is an important tool for utilities because it enables them to monitor weather and moisture sensors in high fire risk areas. They can also use broadband to monitor their field infrastructure 24/7 for problems which can be corrected and contained through the use of technology. For emergency responders, broadband is critical to urgent communications, situational awareness, and to send data such as maps of fire areas and evacuation routes.

In California, the State Legislature and the California Public Utilities Commission (CPUC) have partnered in providing broadband infrastructure grants for areas with no broadband service or speeds under 6 megabits per second (Mbps.) download and 1 Mbps. upload (6/1). Broadband infrastructure must be built at speeds of at least 10/1. The CPUC program also provides grants for digital adoption and public access programs. California also received ARRA grants for broadband infrastructure projects in the past. Yet despite these significant efforts, California still has many rural and remote areas lacking adequate broadband infrastructure. Our state broadband map shows many vast rural areas lacking speeds below 25 Mbps. download and 3 Mbps. upload (25/3). See maps at links which are under the “Broadband Maps by Available Speeds” heading; click on “Wireline Consumer Deployment Map” and “Fixed Wireless Consumer Deployment Map” https://www.cpuc.ca.gov/Broadband_Availability/

One problem is that broadband mapping reported on FCC Form 477 is not as accurate as it should be to reveal the actual unserved or underserved areas in a census block. Broadband providers may report a census block as served if just a single consumer is served in that census block. This historic overreporting has caused many communities to be stuck on the wrong side of the Digital Divide, unable to qualify their allegedly “served” areas for broadband grant funding. Another problem is that some of these unserved/underserved areas are located in very remote or in geographically challenging terrain. Further there is often a lack of middle mile facilities to connect the community to the Internet. Finally, these areas are sparsely populated so the business case for new infrastructure “does not pencil out” for many broadband providers. As a result, CETF strongly supports an RDOF program which will quickly bring broadband at 25/3 speeds to these rural, remote and Tribal areas.

Budget. CETF requests more transparency as to how the “at least \$20.4 billion” budget for the proposed RDOF program over the next ten years was determined to be adequate.⁴ CETF asks this question given that CETF and many other stakeholders believe the current FCC broadband map overstates actual coverage by providers.⁵ Thus, CETF recommends that the

³ The maps are official CPUC broadband maps. See Broadband Maps by Available Speeds, and click on “Wireline Consumer Deployment Map” and “Fixed Wireless Consumer Deployment Map” (PDF). Source: https://www.cpuc.ca.gov/Broadband_Availability/

⁴ NPRM, at p. 6.

⁵ This is because in their FCC Form 477 filings, broadband providers are allowed to claim an entire census block is served if one subscriber is served in that census block. This practice greatly overstates actual coverage and often blocks the entire census block from receiving federal or California funding for broadband infrastructure. We appreciate the FCC opening its new docket on broadband mapping to correct these deficiencies.

RDOF funding amount be subject to adjustment once improved broadband mapping results become available.

CETF supports the proposed two-phase approach for RDOF funding with emphasis on unserved areas first in Phase I (\$16 billion), and underserved areas next (\$4.1 billion). The CPUC California Advanced Services Fund grant program originally took this approach also, prioritizing unserved areas for its first funding tranche, and then underserved areas for the second funding tranche.

CETF supports using a 10-year support model, as in other Connect America Fund programs. To entice broadband providers to serve these rural, remote and Tribal areas, this long-term support gives providers' time to build subscribership and make the endeavor worthwhile financially. In these rural and remote areas, digital literacy, broadband education and basic computer training are often necessary to educate residents on these 21st century skills. CETF strongly encourages the FCC to consider funding for public computer access, broadband education, and digital literacy programs in order to educate residents on the benefits of being online, basic online skills, cybersecurity, and how to obtain and operate a computer. This is equally as important as delivering broadband access to these rural communities.

Deployment Obligations. CETF strongly commends the FCC for proposing increased minimum speeds in the RDOF grants from 10/1 to 25/3 with minimum monthly usage allowances. The NPRM proposes three Performance Tiers: (1) the minimum Baseline Performance Tier to speeds of at least 25/3 Mbps. with 150 gigabytes (GB) of monthly usage or average usage of a majority of fixed broadband customers, whatever is higher; (2) the Above-Baseline Performance Tier at 100/20, with 2 terabytes (TB) of monthly usage; and (3) the Gigabit Performance Tier at 1 Gbps/500 Mbps. with 2 TB of monthly usage. CETF observes

that if an RDOF service area contains an anchor institution (such as a school, library or hospital) or a first responder that requires higher speeds and more capacity, the RDOF applicant should be required to apply with speeds in the Above-Baseline or Gigabit Performance Tiers to ensure it can provide adequate bandwidth for the residents and anchor institutions that desire to be connected by the project.⁶

CETF requests that the FCC adopt a process to ensure that these deployment speeds and other performance standards keep pace with speeds deployed to nearby urban areas. Bluntly, the FCC and states agencies seem content to allow providers to provide much higher speeds in urban areas, but then allow providers to provide rural, remote and Tribal areas with significantly slower speeds that may be minimally adequate for residences but not for businesses or anchor institutions.⁷ The urban/rural speed divide is growing; this does not comport to the universal service provisions of the Telecommunications Act of 1996 which mandates reasonably comparable services at rates reasonably comparable to urban areas for high cost fund programs like the Connect American Fund. Thus, CETF recommends that during the program's life (10 years), the FCC continue to monitor speed and usage requirements of the average consumer to ensure that rural Americans are not consigned to slower speeds than urban consumers. Second, while the lowest Performance Tier speed may be adequate for residential consumers, 25/3 speeds

⁶ In the past, the FCC adopted 25 Mbps download/3 Mbps upload as the new benchmark for advanced telecommunications capacity for residential service. Relying on the FCC's own E-rate Modernization docket and order, the Commission also pegged advanced telecommunications capacity for schools and libraries at, for now, 100 Mbps per 1,000 students and staff and, in the long-term, 1 Gigabit per second per 1,000 students and staff.

⁷ California's AB1665 allows broadband providers to obtain grants for areas with speeds below 6/1 and bring 10/1 speeds to eligible rural areas, a speed well below the FCC's benchmark speed of 25/3.

may be woefully inadequate for business users and anchor institutions.⁸ RDOF applicants should be required to apply for the Performance Tier that meets all the users' needs.

Further, CETF finds it disappointing that one of the few times anchor institutions are mentioned is at paragraph 32 of the Notice, where RDOF support recipients would be required to identify anchor institutions to which they provided new service in the last calendar year. CETF strongly supports the comments of the SHLB Coalition calling for the FCC to include community anchor institutions – and not just residences -- in the “locations” to be served by broadband providers. CETF agrees with SHLB that high capacity broadband is the key infrastructure that libraries, K-12 schools, community colleges, colleges, universities, health clinics, public media, public housing, first responders and other anchor institutions need for the 21st century challenges we face. Further ensuring anchor institutions have broadband capability allows them to better serve our most vulnerable segments of our rural, remote and Tribal population: low income consumers, disabled and elderly persons, students, minorities, and others. If the FCC is going to fund broadband deployment to rural, remote and Tribal areas, the performance tiers should take into account the broadband needs of businesses and anchor institutions in the rural areas to ensure *all* broadband needs of the community are met, not just residential users. The emphasis on residential locations for past telephone universal service programs makes no sense in a broadband era when businesses and anchor institutes as well as residents require state-of-the-art broadband services.

⁸ By “anchor institutions,” we refer broadly to schools, libraries, community colleges, universities, colleges, health care facilities, hospitals, first responders, local government agencies, community non-profit organizations, community centers, and the like. CETF does not limit the phrase to only schools, libraries, and health care providers.

Return on investment in broadband deployment in Rural America should be related to the economic value of the activity on the land. Current rural definitions relate more to sparse populations and less to actual agricultural production. Yet broadband is increasingly important for agricultural production. Farmers need modern technology tools to monitor crops, weather, markets, etc. California provides the nation's most valuable agricultural food products for domestic consumption and international trade, including export of specialty crops which have the highest value for international trade. *Broadband connectivity is essential to efficient resource application and crop yield.*

CETF funded an AgTech Pilot Project where two studies were carried out by Fresno State University and Valley Vision, a research and policy organization in the Sacramento area. These AgTech Pilot projects were some of the first studies of the use of broadband to improve the efficiency and output of three types of crops: grapes, almonds and tomatoes. In the studies, real-time water sensors were installed in the fields. Data models measured specific water flow within a field and help make real time recommendations, considering all factors affecting growth development and harvest as deployed in parcels of three farms. All equipment was connected via wireless broadband. Attachment C is a PowerPoint presentation about the pilot projects which show the results of the studies at page 12. As the results show, using broadband brought many efficiencies for the farmers including a 10%-20% decrease in water usage, a 10%-15% decrease in energy usage, a 12%-15% decrease in labor, and 12%-18% percent increase in crop yield. This AgTech study confirms the many benefits of broadband to rural agriculture and underscores the importance of broadband to agricultural fields, even if these lands are lightly populated. Thus, CETF requests that farmlands where a farmer wishes to deploy broadband to his/her farmlands be allowed to be included as a funded "location" for the RDOF program.

CETF recommends that the FCC should prioritize the funding of rural deployment in states in which there are matching dollars provided by the state. This practice would maximize public dollars to achieve specific broadband projects. Further, all federal agencies, such as USDA Rural Utilities Service, should be encouraged to be innovative in consolidating available funds to better leverage other federal, state and other public funding for greater impact on broadband deployment. CETF is aware of grantees of the California broadband infrastructure program that were not able to obtain an RUS grant due to different eligibility requirements and timeframes relating to the grant. The RDOF program should allow and put a priority on pooling federal, state and local dollars to achieve rural broadband, and should not operate in a silo.

In the Notice, under Deployment, at paragraph 23, it is promised that RDOF support recipients will be required to offer standalone voice service and voice plus broadband services at rates that are “reasonably comparable to rates offered in urban areas.” CETF urges the FCC to retain and enforce this important part of the Notice in the program. CETF’s data collected over a decade in California shows that affordability is one major reason for lack of adoption by consumers.⁹ In focus groups conducted with low-income families, CETF has learned that an “affordable” broadband rate is between \$10 and \$20 per month. Thus, CETF urges the FCC to ensure that every provider be required to propose a low-income package with a rate not to exceed \$20 to ensure that affordability is not a barrier. A rate for low-income households should not exceed \$20/month with no installation fees, additional modem fees, or credit checks.

⁹ In addition to cost, lack of a computer device is also a barrier. See this link for CETF’s Annual Survey on Adoption over the years which tracks the progress of broadband deployment and adoption in California since 2008. <http://www.cetfund.org/progress/annualsurvey>

Service Milestones. In the Notice, the FCC discusses the disparity between the number of locations specified by the Connect America Cost Model and the “facts on the ground.”¹⁰ In California, more granular information about actual broadband coverage is being gathered by the CPUC as to broadband providers that are improving coverage using Connect America Fund II (CAF II) grants, or are subject to voluntary commitments to update infrastructure after a corporate consolidation. This more granular broadband data is being input into the CPUC state broadband map.¹¹ Given this state initiative and the coming improvements in FCC Form 477 reporting over the next few years, CETF recommends that if a state broadband map shows that an area is unserved, this data may be used by an applicant to apply for Phase 1 RDOF funding, even if the FCC’s broadband map shows it as being served at a speed that makes it ineligible for Phase 1. Alternatively, state commissions should send any updated or more granular mapping data to the FCC and have it included prior to the first RDOF applications.

Additional Performance Targets: CETF supports the service milestones proposed in the NPRM as they are similar to the CAF auction requirements. However, CETF joins with GeoLinks, a California Internet Service Provider, in opposing a new proposal in the Notice to require *subscribership* milestones for RDOF support recipients, which may include a provision that the FCC could withhold a portion of support if the recipient does not meet specific subscribership milestones, i.e. 70%.¹² CETF has concerns that such a subscribership

¹⁰ NPRM, at para. 30, at p.11.

¹² NPRM, at paras. 40-42, at pp. 14-15 (Commission proposes to adopt subscribership milestones for RDOF support recipients and suggests the proposal could set milestones at 70% (the subscribership level assumed by the CAM of the yearly deployment benchmark). The FCC would condition a portion of the recipient’s support on meeting specific subscribership milestones.).

requirement may discourage prospective providers from bidding if support could be reduced in the future for lack of subscribership.

As a practical matter, borrowing a line from the movie “Field of Dreams,” just because you build it, does not mean that subscribers will come. CETF’s 2017-2018 Digital Divide Surveys¹³ found that while progress is being made in connecting low income households to high speed Internet, the cost of service and lack of awareness of more affordable subscriptions are major barriers to closing the Digital Divide. CETF’s 2017 survey found that 31% of California households are unconnected or under-connected to the Internet.¹⁴ Thirteen percent have no high-speed Internet service at home and 18% connect to the Internet only with a mobile phone. A cellphone-only connection limits the ability of students to gain skills necessary to compete in the global economy and adults to successfully apply for jobs. The 2018 CETF Follow-up Survey finds that among those currently unconnected or under-connected to the Internet at home, 82% cited the full connected service as “too expensive” and 54% say cost is the primary reason for going without Internet home access. The 2018 survey further revealed there is low awareness of discount Internet service offers that broadband providers make available to unconnected households. Nearly three-quarters of survey respondents in these households report that they have not heard about a discount offer. In light of CETF’s surveys, CETF recommends that the subscribership milestones not be adopted as they may discourage program participation. Instead RDOF support recipients should be required: (1) to offer low-income offers to unconnected and under-connected households; and/or (2) to market these offers throughout the entire service area

¹³ <http://www.cetfund.org/node/9660>

¹⁴ CETF defines “under-connected households” as those where they connect to the Internet only through a mobile device. Obviously, mobile devices provide some Internet connectivity but one cannot write a term paper on a mobile phone or perform other more complex tasks which require a personal computer or tablet with keyboards and larger screens.

with special emphasis to low-income or vulnerable communities using community media, or other advertising methods that are appropriate to that community.

Areas Eligible for Phase I and Phase II Auction. CETF proposes that included in the eligibility for Phase I are areas where a state public utility agency has found that the actual data shows an area is unserved at speeds below 25/3. As noted above, the California PUC is requiring more granular reporting by CAF II support recipients to report on what locations it connected using CAF II funds. The CPUC is marking locations that remain unserved on the California Broadband Map. CETF urges the FCC to include as eligible areas census blocks where any unconnected locations remain for Phase I, as determined by a state utility commission. For Phase II, CETF urges the FCC to include as eligible areas census blocks where any unconnected locations with broadband service below speeds of 25/3 remain. The current broadband maps often overstate actual broadband service in census blocks. As a result CETF does not believe the challenge process proposed at para. 48 of the Notice is adequate to address the many discrepancies in the FCC broadband map.

Tribal. CETF commends the FCC for putting a spotlight on the lack of adequate broadband in Tribal lands. Indeed Tribal broadband requires additional focus and efforts, along with significant funding to obtain adequate broadband speeds for its community needs. CETF supports incentives that will bring bids to serve unserved and underserved Tribal areas, particularly those with less dense populations. CETF observes that Tribal areas are behind in connectivity due to a lack of middle mile facilities to the Tribal lands, electricity in some cases, and broadband providers willing to serve Tribal nations. For this reason, CETF supports a Tribal bidding credit and would find acceptable a credit between 25% to 50% for less densely

populated Tribal lands. It is important to have technology neutral requirements and allow creativity to reach remote areas.

WHEREFORE, CETF respectfully requests that the Commission amend its RDOF proposals consistent with CETF's comments above.

Respectfully submitted,

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