STATE OF CALIFORNIA Edmund G. Brown Jr., *Governor*

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE

SAN FRANCISCO, CA 94102-3298

May 17, 2017

To: Parties on the CASF Distribution (Service) List:

As part of our efforts to improve CASF program efficiency and efficacy, Communications Division (CD) staff is holding a public workshop on Thursday, May 25, 2017 to continue to engage stakeholders. At this workshop, we will discuss the following three documents available at the following link.

1. Proposed Rule/Application Changes for the CASF Program Summary

This is a summary of the proposed rule changes for the Infrastructure Grant Account, Consortia Account, and Public Housing Account.

- Infrastructure Grant Account: Remove unnecessary application requirements to streamline the process. Some of the current rules need updating to obtain the most efficient results. Ten areas have been identified as needing changes to more effectively implement the program.
- Consortia Account: Develop consortia measurement criteria requirements. The State Controller's performance audit identified there was a lack of measurement criteria.[1] Proposed changes include modifications to the guidelines, timelines, requirements, and scoring criteria in Decision 11-06-038 to establish a measurement and performance criteria.
- Public Housing Account: Proposed changes to Decision 14-12-039 to change and clarify reporting, payment, and execution and performance sections.

2. Strategies Summary

Using existing CASF 6/1.5 Mbps threshold and CD staff's current method to calculate served households, we estimate that California is currently 359,800 households short of meeting the 98% served status goal contained in statute. CD staff offers several general approaches policy makers may wish to take to reach that goal.

3. Cost Estimates

[1] CASF Second Interim Performance Audit Report (issued March 30, 2017), available at http://www.cpuc.ca.gov/General.aspx?id=9226

CD staff prepared several cost estimates assuming that 359,000 households remain to reach the 98 percent statewide goal and also calculated the cost to reach the 98 percent goal if that goal is calculated by CASF consortia region, instead of the existing statewide practice, at speeds of 10/1 and 6/1.

The workshop will take place on May 25 from 1pm to 5p m at the following location:

California Public Utilities Commission
Hearing Room A
505 Van Ness Avenue
San Francisco, CA 95102

Those wishing to listen to the staff workshop may call in using the information list below.

- Call in number: 866-918-9521
- Participant Code: 6211814#

Your participation is greatly appreciated. CD would like to gather input from participants in preparation for the CASF proceeding.

Sincerely,

Robert Wullenjohn
Manager, Broadband, Video and Market Branch
Communications Division, CPUC

Supporting Materials for May 25 Communications Division Staff Workshop on CASF Reform

May 2017
CPUC-Communications-Division

Jerry Brown, *Governor*

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I. INFRASTRUCTURE GRANT ACCOUNT: REVISE/REMOVE UNNECESSARY APPLICATION REQUIREMENTS

In Decision (D.) 12-02-015, the Commission adopted the application requirements and guidelines for the CASF Infrastructure Account (hereafter, Infrastructure Account Applications and Guidelines). Attached to this ruling are proposals for modifying D.12-02-015, prepared by the Commission's Communications Division (CD) to revise/remove unnecessary application requirements based on our experience with the CASF program.[2] CD staff also recommends a separate "fast-track" application process for the "high-impact" areas. Appendix A contains proposed Applications and Guidelines for the "non-fast track" application process and Appendix B contains proposed Applications and Guidelines for the "fast-track" application process. Appendix C contains the proposed agreement with the provisions for the approved infrastructure grants and Appendix D contains Decision 11-06-038.

SUMMARY OF PROPOSED APPLICATION REQUIREMENT CHANGES (NON-FAST TRACK)

1.1.1. ELIMINATE PROJECT AREA SUBMISSION DESIGNATION BY CENSUS BLOCK GROUP AND ZIP CODE (ITEMS 12 AND 14)

Problem: The Commission requires Applicants to describe the current broadband infrastructure and list the number of households per Census Block Group (CBG) and Zip Code. In determining the served status of an area, staff does not obtain the best results from using CBG or Zip Codes data to determine the project location due to the large geographic area in a CBG or Zip Code. There is the possibility of overstatement of availability which exists within a CBG because, if one households shows it is served the whole area will be considered as being served.

[2] The Infrastructure Account application process is currently being updated from its current format to an online form as part of the Commission's E-Fast project. Certain changes are being made to update the form and to eliminate redundancy, but the E-Fast project is designed based on Infrastructure Account Applications and Guidelines in D.12-02-015.

CBGs may provide a distorted view of the area as it may show households as being served even though there may be unserved or underserved households within the CBG several miles away. In determining the number of households to be served, Census Block (CB) data more accurately defines the project area because it is the smallest geographic unit used by the United States Census Bureau for tabulation of data collected from all households. Further, on average, there are 39 CBs in a CBG.

For example, an applicant submitted data from several sources to justify the number of households estimated to be served. The CBG data was not sufficient to determine its project. In order to determine the project location and support the number of households, the applicant needed to provide additional records, such as the CB(s), U.S. census data, and county tax assessor's records showing parcels, and addresses.

The Zip Code data can also be large and not indicative of the area. Parts of a Zip Code may have a mix of served, unserved, and underserved service but may show an area as being served if only a single household has service within the Zip Code area.

Proposed Solution: Avoid overstatement of availability by using parcel information and map boundary for project area depiction which best accurately represents availability. This allows bifurcation of census blocks so that no households are left out.

Staff recommends that applicants not be required to provide zip code and CBG information to define a project area. Instead, applicants should be required to provide an explanation of the service area by providing a description of the area, maps, and CBs. Further, applicants may submit other forms of supporting documentation such as U.S. census data, addresses, and county tax assessor's records.

Proposed Change: Eliminate the requirement for CBG and Zip Code data to be provided by applicants in Item 12 and 14. Attachment A has the proposed changes for Items 12 and 14.

- Item 12 Proposed Broadband Project Location,
- Geographic locations by Census Block (CB) where broadband facilities will be deployed (no change)
- List of CB(s),
- Number of households per CB
- ~~Median household income for each CBG that intersects the proposed project, to be based on most current Census data available (no change)~~
- Assessor's records, Census Data, and Street Addresses, for the proposed project area.

- Item 14, Assertion that area being proposed is Unserved or Underserved Area. This includes figures, in mbps, of the current:

(a) average download speed by ~~CBG(s)~~ CB(s)
~~(b) average download spped by ZIP Code(s)~~
(c) average upload speed by ~~CBG(s)~~ CB(s)
~~(d) average upload speed by ZIP code(s)~~

1.1.2. WAIVE 2-YEAR PRICING COMMITMENT (ITEMS 21 AND 22)

Problem: Applicants are required to provide a 2-year fixed monthly subscription fee. This means that if costs to provide broadband services go up due to wages and equipment costs increases, or other cost increases during the first 2-years of service, prices cannot be adjusted and must remain fixed.

In addition, some applicants have communicated to staff that the 2-year pricing commitment places an added burden on the applicant to expend additional resources and investment in order to create a separate billing system for the unique pricing. Some applicants have stated that this is not congruent with the billing and pricing structure for the larger majority of their customers.

Proposed Solution: Staff recommends that the CASF program waive the 2-year pricing commitment. Remove reference to the 2-year pricing in Item 21 and remove Item 22. Appendix A and B contain the proposed changes.

Proposed Change: Remove the 2-year fixed pricing commitment. Amend Item 21 and Remove Item 22.

- Item 21, Proposed ~~(two – years fixed)~~ monthly subscription fee and retain the waiver of installation and / or initial service connection fee for applicant's proposed broadband service(s). Item ~~22. Price Commitment Period.~~

1.1.3. ADDITIONAL INSTRUCTION FOR OBTAINING CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) FUNDS (ITEM 25)

Problem: The costs and time to undergo CEQA are substantial and have resulted in additional requests from grantees, after Commission approval, for additional funding to cover cost and prolong the start date beyond the 24-month timeline to complete a project. CEQA rules are complicated and some applicants need more guidance on what steps are needed to obtain the required PEA and CEQA review and reports. Item 25 does not provide instruction to the applicant on how to request and obtain help with the process in securing a qualified contractor and reports. Another problem that staff has seen is the applicant is not including the request for funds to cover the large costs associated with the PEA and CEQA reviews. Even though matching costs for the CEQA compliance is covered by CASF funds, some applicants have not requested adequate funds within the initial applications and have had to request additional funds to cover these costs. This results in additional workload for CD to prepare resolutions approving additional funding.

Proposed Solution: Staff recommends that there be additional guidance in the Application and Guidelines outlining the steps necessary to complete the process, to request additional funding to pay for the PEA and CEQA reviews, and where to obtain help.

Proposed Change: Provide guidance in the Application and Guidelines on obtaining a PEA and a CEQA review. Sample wording:

- The Commission is responsible for being the lead agency for CEQA review and administers mitigation monitoring plans of investor owned utility related projects.
- Information on a PEA and CEQA requirements is available on the Commission's website, http://www.cpuc.ca.gov/ceqa/.
- Instruction on the Commission website provides direction to the the applicant to contact the Supervisor of the Commission's Energy Division CEQA Unit well in advance of a contemplated filing to (a) consult with staff regarding the process of developing and filing a PEA; (b) provide for cost recovery per Rule of Practice and Procedure 2.5; (c) enter into a Memorandum of Understanding to allow the Energy Division to initiate the retention of an environmental contractor to perform the environmental review and (d) to consult with staff regarding the applicability of another agency's CEQA review.
- The applicant may file a completed CEQA review conducted by another agency acting as the Lead Agency pursuant to CEQA. Every effort should be made to ensure that the Commission's CEQA Unit is aware of and included in the CEQA process if another agency acts as the CEQA Lead Agency (Appendix A).

1.1.4. INCREASE THE AMOUNT OF FUNDING FROM 60% FOR UNDERSERVED PROJECT AREAS TO 90% AND FROM 70% FOR UNSERVED AREAS TO 100%.

Problem: Applicants have mentioned to staff that even though the CASF provides 60% or 70% matching funds, having to provide the remaining 30% or 40% of a project's funds is burdensome because some applicants have capital constraints and project may not be profitable, particularly for a smaller company.

Furthermore, the enactment of Assembly Bill 2272 (Chapter 900, Stats 2014) clarifies that CASF-subsidized projects are "public works" and are subject to prevailing wages. The additional requirement of being subject to the state prevailing wage laws has substantially increased costs for the applicant. Wages in some instances have doubled which puts an additional burden on the finances and costs of projects. One example showed wages of $16 per hour were paid and the prevailing wage increased wages to $44 per hour. These increases added an additional total labor expense of $285,408.15 to the project, which is the applicant's responsibility after receiving reimbursement from CASF.

Staff has been told by an applicant that one of reason for not applying for funds is due to the lack of funding for the entire project. It stated that these project areas do not guarantee a profit or a return on their investment and they are losing money in some of these areas. Frontier suggested in comments submitted in response to the, High Impact Broadband Availability White Paper and workshop, that the CASF program increase project funding up to 100% rather than the current 60 or 70%.[3]

Proposed Solution: Staff recommends that a review be made to evaluate whether providing increased grant funding of 90% for underserved projects and 100% for unserved projects can attract more applicants to apply for CASF money and complete projects that will help California meet its goal. In order to attract more applicants to these less populated areas a greater incentive is required to be offered.

Proposed Change:
CASF funding limits are up to 90 percent of project costs for underserved areas and 100 percent of project costs for underserved areas.

1.1.5. EXTEND THE CHALLENGE PERIOD FROM 14 DAYS TO 45 DAYS AND REQUIRE CHALLENGERS TO SUBMIT FORM 477.

[3] Frontier Communications Comments on High Impact Areas for Broadband Availability Whitepaper, March 21, 2017.

Problem: Currently, areas applied for, CBG's, shapefile and project summary are posted on the Commission's CASF website 7 days after submission and a notice is sent to the CASF Distribution List. Challenge(s) may be submitted 14 days after web posting. Challenges are frequently being received late and are being accepted as late-filed. For example, in the Digital 299 and Tuolumne and Mariposa projects late challenges were received and accepted the challenge period continued to be ongoing as there was not a firm deadline. This affects the applicant who may have already invested in obtaining permits, equipment, personnel, and other resources for the project. While the CASF program does not allow grants to fund over-build projects where broadband infrastructure capabilities at served speeds already exits, a reasonable balance is needed for applicants who may have already invested in obtaining permits, equipment, personnel, and other resources for an application.

Additionally, parties challenging applications are making representations about the availability of their service without filing broadband speed test data with the Commission. This creates undue delays in approving projects when broadband speeds need to be tested at a later date after the challenge period has ended. Staff has found another delay to Challenges is when it is alleged that an area is being served but do not provide sufficient data. Then after staff reviews the speed tests at a later date the allegation that the area is served is in reality found to be unserved which invalidates the challenge.

Proposed Solution:

Challenge Period: Conform the challenge period to the FCC.[4] Currently, the FCC allows for 45 days to file a challenge for its Connect America Phase II funds. Also, have the Challenger serve all providers on the CASF service list so they have notice and an opportunity to comment on information and due process is met. The Challenger can serve a public version of its challenge. Submission of FCC From 477 will provide speed data.

Proposed Change:

Deadline to submit written challenges is 45 days after web posting of maps, CBGs, Zip Codes, and maps of the CASF project area, and must be served on the CASF distribution list. Submission of FCC Form 477 is required as part of the challenge.

1.1.6. REQUIRE THE RIGHT OF FIRST REFUSAL TO BE FILED ON AN ANNUAL BASIS.

[4] A Basic Guide to the Challenge Process (updated 7/31/14) https://www.fcc.gov/general/connect-america-phase-ii-challenge-process.

Problem: In Resolution T-17443, the Commission describes how existing broadband providers which choose to upgrade broadband networks in its existing underserved territories can do this using its own funds. The providers could exercise their right of first refusal (ROFR) as provided under Senate Bill 740 by November 1, 2014 and had six months until May 1, 2015, to submit documents showing the project area, broadband availability, and speed tests showing served speeds. As discussed in Resolution T-17443, the ROFR gave existing providers the opportunity to prevent the CPUC from granting funds to other projects for a reasonable amount of time, although after this time expired, an existing provider may challenge future project applications after they are submitted to the Commission for consideration by demonstrating that it has upgraded its network in a particular area to provide served speeds. The ROFR was a one-time right, and it can no longer be used even though technology and existing providers' plans have evolved. Currently, a provider that files a challenge with the Commission must Provide the Commission with validation with broadband data and/or speed test results showing the area as being served and therefore is not eligible for CASF funding. Often there are challenges that are filed for areas where an existing provider has either begun a project or is planning to soon begin a project to upgrade broadband services to an area. The area may be unserved or underserved but a provider is committing to build the project with funds other than CASF funding. This can create a problem of overbuilding or providing funds to an area that is already funded.

Proposed Solution: Allow an existing service provider the opportunity to exercise the ROFR and to demonstrate that they will, within a reasonable amount of time, upgrade existing service. The time to upgrade can follow the prior ROFR and be done on an annual basis as not to be confused or take the place of a Challenge.

Proposed Change: Offer the ROFR to providers to exercise their right to upgrade their service territory and allow it to be done on an annual basis.

1.1.7. SUMMARY OF PROPOSED APPLICATION REQUIREMENT CHANGES (FAST-TRACK). (ITEMS 11, 14, AND 23)

Problem: Staff recommends creating a separate streamlined process also known as a "fast-track" process to expedite the processing of applications for the high-impact areas.[5] A fast-track application process is needed to help shorten the process and eliminate duplication and redundancy because staff has already recognized that the high-impact areas are either unserved or underserved.

Proposed Solution: Remove the following items that are already known to CD.

- Item 3, the area applied for has already been identified as unserved or underserved.

[5] CD Staff High Impact Areas Whitepaper, February 2017.

- Item 14, the assertion that the proposed area is unserved or underserved. Further, applicants who have previously been approved and received CASF funding and fulfilled commitments can be considered established grantees.
- Item 23, Financials. Modify the need to provide financial information unless this is a first time applicant or if financial information is not current or has changed and reported gross income has decreased. Financial information on file with the Commission does not need to be duplicated if it is current and not more than the most recent period such as one year old. An established grantee, such as AT&T, Cal.net Inc., Frontier Telecommunications of California, Inc. or Race Telecom, and others already have financial information on file with the Commission that does not need to be duplicated. If there have been substantial changes in ownership and the financial condition has changed dramatically such as reporting losses, filing bankruptcy, sale of a company, then financial statements will be required.

Proposed Change:

Remove or modify the following requirements from the application requirement:

~~3. Area Applied for~~

~~Unserved~~

~~Underserved, with existing broadband service below advertised speed of 6 mbps download and 1.5 mbps upload, Broadband infrastructure whether existing or ongoing construction not CASF funded~~

~~Underserved, with existing broadband service below advertised speed of 6 mbps download and 1.5 mbps upload, Broadband infrastructure whether existing or ongoing construction CASF funded~~

~~14. Assertion that area being proposed is Unserved or Underserved Area. This includes figures, in mbps, of the current:~~

~~23. a) CPA Audited / Attested Financial Statements for the last three years (if applicant has been in existence for less than three years, provide financial statements for as long as applicant has been in existence, e.g. one or two years)~~

~~Balance Sheet~~

~~Income Statement~~

~~Statement of Cash Flows~~

~~(b) Pro Forma Financial Forecast over 5 years~~

~~Balance Sheet~~

~~Income Statement~~

~~Statement of Cash Flows~~

~~c) Annual EBIT (Earnings Before Income and Tax) projection over 5 years~~

~~d) Schedule of all outstanding and planned debt~~

~~e) Collateral Documentation (include depreciation schedule of assets~~

~~f) Equity Requirement of 20% of the loan amount **(For Grant / Loan Combination only)**~~

~~Equity requirement of 20% should be sustained throughout the life of the loan: 5 years~~

~~g) Minimum TIER Requirement of 1.5~~ **~~(For Grant / Loan Combination only)~~** ~~The Minimum TIER Requirement of 1.5 should be sustained throughout the life term of the loan: 5 years~~

1.1.8. ADDITIONAL CASF PROGRAM ISSUES

1. Scoring Criteria

Problem: Applications are ranked against other projects in order to determine staff priorities based on the scoring criteria set forth in D.12-02-015. There are several ranking processes for infrastructure grant/loan projects. (1) Staff ranks new projects with all pending projects. (2) Low-ranking projects are delayed relative to higher-ranking projects at the time of assignment of resources. (3) Ranking is most relevant when two or more projects have overlapping areas. In such case, staff moves forward for Commission consideration the project with the highest rank within the same project area. (4) Complications exist for ranking of applications having disparate areas—(a) Existing projects under review already may have its existing rank changed due to a new filed project. (b) This complicates matters especially if the project under review is ready for Commission consideration, but is ranked lower than the new project just received. Unless, the project impacts the same area, staff proceeds with its recommendation. (c) Because more than one worthy project is simultaneously under review, a project challenge of the highest rated project will delay review completion, and the relatively lower rated project may be awarded a grant simply due to the other projects delay. Staff has found that the current scoring criteria does not provide the expected guidance in awarding funds to grantees because there are not multiple applications being received for the same project area. Generally there is one applicant for each project area.

CD has only received one competing application since the inception of the program. Thus, staff recommends that the scoring and ranking process only applies when there are competing applications for the same project area.

Further, staff recommends the following changes to the scoring criteria because:

- There is also the question as to whether the scoring criteria is weighted appropriately to provide the best outcome to reach the 98% goal.
- Funds requested per Potential Customer is 35 points and Speed receives 20 points, these are rated high, and maximum points would be 55 for these two criteria.

- Other criteria such as, service to a Low-Income Areas is 5 points and total number of households in the Proposed Area(s) is 5 points, which is not going to score high when adding points. Yet providing broadband services to rural areas of the state with low income populations is a goal of the CASF program.

Proposed Solution: Reassess the scoring criteria to more closely align with the best outcome to reach the state's 98% goal. Another option is to award the project to the applicant that applies for funding first. The scoring and ranking process only applies when there are competing applications for the same project area. Scoring applicants on a first come first served basis eliminates the ranking which has only happened once. Giving a higher score to applications that are received first as another scoring criteria.

Proposed Change: Reassess the use of the scoring criteria in awarding grants. When there are competing applications for the same project area, award grants on the applicants who first applies for the grant. Also, reassess the amount of points for each criteria weighing those that help meet the goal higher.

2. Compliance Changes Pursuant to CASF Performance Audit

Problem: The recent CASF Second Interim Performance Audit findings from the State Controller's Office (SCO) questioned whether the resolution, which it refers to as agreements, is sufficient in holding grantees accountable.[6] SCO stated that specific program requirements are not found in the code or in the resolution and are very broad. SCO recommended that the Commission enter into signed, contractual grant agreements with grantees that require them to provide data on job creation.

Proposed Solution: In addition to the resolution, which binds the applicant to its terms and address SCO concerns, staff recommends creating a consent form that is signed by the grantee. The consent form will require the grantees signature acknowledging receipt of the resolution, and will further bind the grantee to the terms and responsibilities of the resolution authorizing the CASF award.

Proposed Change: Require the applicant to sign a consent form agreeing to the terms stated in the resolution authorizing the CASF award. The agreement will provide the name of the applicant, names of officers and members, and must be signed by the applicant. The proposed wording of the agreement is below. A sample is in Appendix C.

3. Harmonize CASF Program within the FCC's CAF II Program

[6] State Controller's Office Audit Report (July 1, 2010 through December 31, 2015), March 2017, pg. 5

Problem: California speed standards for CASF program is defined as 6 Mbps downstream and 1.5 Mbps upstream (6/1.5). The FCC Connect America Fund II (CAF II) requires 10 Mbps downstream and 1 Mbps Upstream (10/1). In California, four local exchange carriers (AT&T, Verizon, Frontier and Consolidated) accepted CAF II funding to build-out broadband infrastructure capable of at least 10/1. Some of these areas overlap areas targeted for CASF projects, but area upgrades via CAF II grants remain eligible for CASF grants to due to our 6/1.5 mbps standard. In order to better leverage program funds with federal funds, staff recommends adopting FCC's 10/1 mbps standard for the CASF program.

Proposed Solution: Harmonize CASF program with the FCC's CAF II program by changing the definition of downstream and upstream rates.

Proposed Change: CASF definition of served speeds, 10 Mbps downstream and 1 Mbps upstream. Change the definition of underserved for CASF program to match the FCC CAF II to service that is below 10/1..

CONSORTIA ACCOUNT: DEVELOP CONSORTIA MEASUREMENT CRITERIA REQUIREMENTS

On June 23, 2011, the Commission adopted Decision (D.) 11-06-038, implementing the CASF Rural and Urban Regional Broadband Consortia Account ("Consortia Grant Account"). The Consortia Grant Account funds "broadband deployment activities other than the capital cost of facilities, as specified by the Commission." Attached to this ruling (Appendix D) are proposals for modifying D.11-06-38, prepared by the Commission's Communications Division.

SUMMARY OF CHANGES TO APPLICATION FILING GUIDELINES, TIMELINES, AND REQUIREMENTS AND CONSORTIUM SCORING CRITERIA

1.1.9. PROPOSED CONSORTIA PROGRAM PERFORMANCE METRICS

Problem: The recent CASF Second Interim Performance Audit from the SCO found that there was a lack of measurement criteria for the Consortia. The auditors "determined that work performed by the Consortia met the objectives because there was no requirement to demonstrate how meaningful a task had to be to reach the overall goals of the CASF, only that the task was completed. Additionally, even when a task was completed, there was no determination as to the quality of how that task was performed."[7] The auditors recommended that the Commission establish measurement and performance criteria for the Consortia Account to demonstrate how the Consortia activities help the state's goal of reaching 98% broadband deployment.

Although there are existing administrative controls in D.11-06-038 that require the Consortia to propose functions and activities that "promote ubiquitous broadband deployment and to advance broadband adoption in unserved and underserved areas"[8] and establish performance metrics in Action and Work Plans,[9] D.11-06-038 does not refer to the state's goal of reaching 98% broadband deployment or explicitly require the Consortia to track and measure the performance of Consortia activities.

The current maximum point allocation for the Consortium Scoring Criteria (Regional Consortium Representation and Endorsements, Regional Consortium's / Members Experience, Action Plan, Work Plan, and Budget) does not favor deployment project experience.

Proposed Solutions: Staff recommends that D. 11-06-038 be revised to include reference to the state's goal of reaching 98% broadband deployment, establish measurement and performance criteria for the Consortia, and update the Consortium Scoring Criteria maximum points to underscore deployment experience. Specifically, the following changes to the existing Consortia rules are needed:

Section 6. Application Filing Guidelines, Timelines, and Requirements for the Consortia program: Staff recommends requiring each Consortium to include performance metrics in both Action and Work Plans as well as develop a plan to track and measure performance results of proposed Consortia function and activities. More specifically, each consortium is required to:

- Explain, track, and report how its activities will aid or contribute to the state's goal of reaching the 98% goal.
- Provide quantitative data to allow for an evaluation and of its value and performance. For example, number of applications filed in the region with assistance from the Consortia;

[7] State Controller's Office Audit Report (July 1, 2010 through December 31, 2015), March 2017 at 10.
[8] Decision 11-06-038, pp. 11-12.
[9] Decision 11-06-038, p. 24.

- Track funds spent per student trained, students signed up for internet service after training;
- Report progress on the state's goal of reaching 98% as a result of Consortia activities.

Attachment G – Consortium Scoring Criteria: Staff recommends redistributing the weight of application scoring to favor deployment experience. The maximum points for Scoring Criterion, Regional Consortium's / Members Experience is 35 points, broken down into community organizing experience categories (20 points) and broadband adoption, access and deployment project experience categories (15 points). To emphasize the importance of broadband project experience, specifically related to deployment, the maximum points for broadband adoption, access and deployment project experience categories have been increased to 25 points and maximum points for community organizing experience categories have been decreased to 15 points, accordingly.

Proposed Changes:

- Add reference to Public Utilities Code section 281(b)(1) as a footnote in Section 6.4.2 Action and Work Plan Requirements.

Public Utilities Code section 281(b)(1) states: "The goal of the program is, no later than December 31, 2015, to approve funding for infrastructure projects that will provide broadband access to no less than 98 percent of California households."

- Add language to Section 6.4.2. Action and Work Plan Requirements to require performance metrics (with additional clarification) and a plan to track and measure the result.

The Action Plan should reflect the priorities of the Consortium's members for broadband deployment, access, and adoption, and should set forth overall Consortium program goals, outcomes, performance metrics, and strategies to accomplish said goals. Additionally, the Action Plan should broadly describe how the Consortium would track and measure performance results with respect to broadband deployment, access, and adoption.

The Work Plan should include a timeline identifying milestone dates for completion of key Work Plan activities proposed to be funded; the timeline shall describe each of the quarterly milestones, including performance metrics to be accomplished. The Work Plan should also explain how the performance results from the proposed functions and activities will be tracked and measured following milestone dates and/or completion of functions/activities, as described in the Action Plan.

- Add language to Section 9. Disbursement of Grant Funds to require the inclusion of performance metrics in quarterly reports.

The Quarterly Progress Report shall present the results of performance metrics. Grantees must notify the Commission as soon as they become aware that they may not be able to meet performance metrics set forth in the Action and Work Plans.

- Conforming changes to Attachments B Sample of Action Plan Format.

Broadband Deployment, Access, and Adoption
How will your consortium track and measure the achievements

- Conforming changes to Attachments C Sample of Work Plan Format.

Followed up with CBO officers with email surveys to track and measure performance metrics

- In Attachment G, the maximum points for deployment experience criteria have been increased:
- Prior successes in achieving broadband adoption, access and deployment, particularly in areas where CASF-funded broadband deployment projects are underway or completed, has been increased from 10 to 15 points
- Experience managing the deployment of broadband services if using a contractor to deploy or operate the broadband facilities, demonstrated experience of consortium members managing contractors, has been increased from 5 to 10 points
- Adjusted other criteria accordingly:
- Delete Experience working with community groups (up to 5 points)
- Demonstrated success building regional, multi-party collaborative efforts focused on broadband or broadband-related issues that achieved results (up to 105 points)

PUBLIC HOUSING ACCOUNT: REVISE/AMEND REPORTING AND PAYMENT, EXECUTION AND PERFORMANCE REQUIREMENTS (BILL)

In D.14-12-039, the Commission adopted the reporting requirements for the CASF Public Housing Account. Proposals for modifying D.14-12-039, have been prepared by the CD staff to revise reporting requirements to be more specific and less frequent and have start dates in line with current expectations and requirements.

SUMMARY OF PROPOSED CHANGES

1. **Modify Reporting, Payment, Execution and Performance Requirements Specific to Public Housing Infrastructure and Adoption**

Problem: The Broadband Public Housing Account (BP) provides grants to either finance a project to connect a broadband network to a publicly supported community (infrastructure projects) or to support programs designed to increase adoption rates for broadband services by residents of a publicly supported community (adoption projects).[10] Required reporting should be specific to the type of program for which the grant was acquired. The current reporting requirements are too frequent because funded infrastructure projects are completed on average in seven months. Since both infrastructure and adoption projects are relatively simple, frequent reporting does not add much value. The requirement that CD staff determine (with the grant recipient) a project start date (as detailed in the Execution and Performance Section) is irrelevant to how the program works because of the simplicity of funded projects. Reporting requirements were also detailed in the Payments section and such requirements did not necessarily reflect requirements in the Reporting section.

Proposed Solutions:

Modify Reporting, Payment and Execution and Performance sections in order to:
1) Provide greater specificity as to what type of project is being reported on;
2) Standardize the language in the reporting and payment sections so that the payment process is consistent with reporting requirements;
3) Reduce the frequency of reporting; and
4) specify project start dates in line with current expectations.

[10] Pub. Util. Code §§ 281, subds. (h)(3)(A) & (h)(4)(A)

Proposed Changes: (Excerpt from D.14-12-039 pages B14 through B16)

a. Reporting

~~Grantees must submit quarterly progress reports on the status of the project irrespective of whether grantees request reimbursement or payment.~~ Infrastructure project grantees must submit a progress report six months after the project award date if the project has not been completed, irrespective of whether grantees request reimbursement or payment. The p~~P~~rogress report~~s~~ shall include ~~both~~ the schedule for deployment; it shall include major milestones and costs submitted in the proposals and it shall indicate the completion date of each task/milestone as well as problems/issues encountered, and the actions taken to resolve these issues/problems during project implementation and construction. Grantees must certify that each progress report is true and correct under penalty of perjury. ~~Grantees must also identify foreseeable risks that might prevent it from meeting future milestones. The grantee shall also include speed test results in its completion report. Recipients must certify that each progress report is true and correct under penalty of perjury.~~

Infrastructure project grantees must submit a project completion report describing the total project costs, including engineering, planning, material costs, and an assessment of the average speed the network is delivering to a resident during the peak hours of 7 p.m. to 11 p.m. The grantee must include speed test results in its completion report.

Adoption project grantees must submit a progress report at the end of the ramp up time before any training begins. The ramp up time must be nine months or less. A progress report is not required if the grantee will not have a ramp up time or the ramp up time is less than three months.

Adoption project grantees must submit a project completion report once 75% of all residents have been trained or after the project has been training residents for 12 months. The report must specify how many residents have been trained, how many of those trained subscribe to broadband Internet and how many are using devices in their home.

An infrastructure project grantee is required to maintain the broadband network for five years after it has been installed. After installation, for a five year period, grantees must report for every project awarded on a biennial basis the average monthly percentage of up time, the average monthly number of individual devices that access the system and the average amount of data transferred over the network. ~~also submit quarterly reports showing the percentage of up time, the number of unique log-ons (either by individuals or by units) and the amount of data used. These can be automated reports which can be emailed~~ This data must be reported by email to CPUC_Housing@cpuc.ca.gov.

b. Payment

Payment to the project grantee will be made upon project completion and the submission of a project completion report. The infrastructure project grantee may request payment for expenditures incurred during the first six months if the grantee submits a six-month progress report, and certifies that the progress report is true and correct under penalty of perjury. The adoption project grantee may request payment for expenditures incurred during the ramp up time if the grantee submits a ramp up progress report. ~~Payment to the CASF grantee will be on a progress billing basis with the first 25 percent to be made upon the proponent's submission to the Commission staff of a progress report showing that 25 percent of the total project has been completed. Subsequent payments shall be made on 25 percent increments showing completion at 50 percent, 75 percent, and 100 percent. The CASF recipient must submit a project completion report before full payment.~~

~~For adoption projects, the first 25 percent increment represents the ramp up time before any training begins which must be nine months or less. The next 25 percent increment will be when the applicant is able to train 25 percent of residents, then when 50 percent of residents are trained and the last when75 percent of residents are trained.~~

Payment will be based upon receipt and approval of invoices/other supporting documents showing the expenditures incurred for the project in accordance with the CASF funding submitted by the CASF recipient in their application.

~~Grantees must notify the Commission as soon as they become aware that they may not be able to meet project deadlines~~.

Grantees shall submit final requests for payment 90 days after completion of the project.

Payment will be made in accordance with, and within the time specified in California Government Code § 927 *et seq*.

The Commission has the right to conduct any necessary audit, verification, and discovery during project implementation/construction to ensure that CASF funds are spent in accordance with Commission approval.

The recipient's invoices will be subject to a financial audit by the Commission at any time within three years of completion of the project.

c. Execution and Performance

The infrastructure project grantee shall start the project soon after grant approval and complete the project within a 12-month timeframe. The adoption project grantee shall start the project within nine months after the grant approval (after the ramp up time) and complete the project within a 12-month timeframe. In the event that the project grantee is unable to complete the proposed project within the required 12-month timeframe, it must notify the Commission as soon as it becomes aware of this prospect. The Commission reserves the right to reduce payment for failure to satisfy this requirement. ~~CD staff and the CASF grant recipient shall determine a project start date after the CASF grant recipient has obtained all approvals. Should the recipient or Contractor fail to commence work at the agreed upon time, the Commission, upon five (5) days written notice to the CASF recipient, reserves the right to terminate the award.~~

In the event that the CASF recipient fails to complete the project, in accordance with the terms of approval granted by the Commission, the CASF recipient must reimburse some or all of the CASF funds that it has received.

The CASF grant recipient must complete all performance under the award on or before the termination date of the award.

Material changes in the entries for this application, such as discontinuing operation or bankruptcy, or change of name (DBA), change of address, telephone, fax number or E-mail address should be reported by a letter to the CPUC, Director of the Communications Division, 505 Van Ness Avenue, San Francisco, CA 94102.

Appendix A

Proposed Applications and Guidelines for the "Non-Fast Track" Application Process

1. Project Summary

The applicant must submit a project summary which the Communications Division (CD) will post on the CASF webpage under Pending New Applications to Offer Broadband. The applicant must also submit the project summary to the CASF application distribution list. The summary must include the following information:

- Applicant's name
- Contact person
- Project title
- Proposed Project Area Location (Community / County)
- Project Type (Last Mile or Middle-Mile)
- CASF Funding Requested (Amount of Grant / Amount of Loan)
- Description of the Project
- Map of the Proposed Project
- List of Census Block Groups

The applicant may also use this summary information in its adoption and outreach efforts, i.e., in soliciting local government and community support for the proposed project, in disseminating information to the proposed communities/areas.

3. Area applied for

Applicant must specify whether it is applying for an unserved or underserved area.

10. Current Broadband Infrastructure Shapefile

Shapefile (.shp) of current service area. A shapefile is not a single file, but a collection of seven files - .dbf, .prj, .sbn, .sbx, .shx, .shp, .xml. Without all of these, the data cannot be read.

The .shp format is compatible with the ArcGIS software used by the Commission.

11. Proposed Broadband Project Description

- Description of proposed broadband project plan for which CASF funding is being requested, including the type of technology to be used
- Project size (in square miles)
- Download speed capabilities of proposed facilities
- Upload speed capabilities of proposed facilities

The proposed broadband description should include a description of the type of technology to be provided in the proposed service areas. The project description should provide enough construction detail to enable a preliminary indication of the need for a California Environmental Quality Act (CEQA) review. For example, when trenching is required, the applicant should so state and describe the manner in which the site is to be restored, post-trenching. The Commission established benchmark speed standards of advertised speeds of 6 mbps download and 1.5 mbps upload. Applicants may propose lower speeds; speed will be a criteria considered in evaluating the applications, with higher speeds being preferable.

12. Proposed Broadband Project Location

- Geographic locations by CB~~G~~(s) where broadband facilities will be deployed
- List of CB~~G~~(s),
- Number of households per CB~~G~~,
- Median household income for each CB~~G~~ that intersects the proposed project, to be based on most current Census data available,
- Additional records, Assessor's records, Census Data, and Street Addresses, for the proposed project area, and

CB~~G~~s must be based on the 2010 census. CB~~G~~s must be in a twelve digit format as follows:

State CA	County	Tract	~~Block Group~~
2 digits	3 digits	6 digits	~~1 digit~~

For example: a CBG near the town of Alturas in Lassen County: Lassen County Tract 401, Block Group 1 would have the following CBG:

State CA	County	Tract	~~Block Group~~
06	035	401.00	~~1~~

State: California is always denoted as 06.

County: Refer to County Code List

Tract: Can be denoted as 1) a number with decimal followed by 2 digits; then fill in zeroes in front to make 6 digits; or 2) as 4-6 digits, fill "0s" as needed. Drop decimal.

For the example cited; this tract/block group in Lassen would be expressed as 06-035-040100-1. For CASF purposes, we use the standard expression: 060350401001

Applicants are expected to target areas that are still unserved and underserved based on the latest available information. The most current Broadband Availability map that the applicant can use in preparing their applications is the California Broadband Interactive Map on the CASF webpage which shows the areas current served, the provider, the technology available in a particular area up to street level, the speeds in the areas served, as well as the population in these areas.

13. Proposed Broadband Project Location Shapefile

Shapefile (.shp) showing boundaries of the specific area to be served by the project. A shapefile is not a single file, but a collection of seven files - .dbf, .prj, .sbn, .sbx, .shx, .shp, .xml. Without all of these, the data cannot be read.

14. Assertion of Unserved or Underserved Area

An explanation of the basis for asserting that, to the best of the applicant's knowledge, the area is unserved or underserved (i.e. a reference to the California Interactive Broadband Map or other published reports).
This includes figures, in mbps, of the current:

- average download speed by CB~~G~~s(s);
- average upload speed by CB~~G~~s(s); and

15. Estimated Potential Subscriber Size

- Estimated number of potential broadband households (i.e. total occupied housing units) in proposed project location.
- Estimated number of potential broadband subscribers (i.e. total population) in proposed project location.
- Documentation of all assumptions and data sources used to compile estimates.
- Adoption / Sustainability plan

Applicants must submit a plan to encourage adoption of the broadband service in the proposed area(s). The plan should include the total number of households in the area, the number of households the applicant estimates will sign up for the service (the take rate), the marketing or outreach plans the applicant will employ to attract households to sign up for the service.

21. Proposed Pricing

Proposed ~~(two – years fixed)~~ monthly subscription fee and retain the waiver of installation and / or initial service connection fee for applicant's proposed broadband service(s). The monthly subscription fee should be the sum of all recurring rates and non-recurring charges (except the installation and/or initial service connection fees) the customer must pay to receive service during the initial two years of service, expressed as a monthly average. All services upon which the monthly subscription fee is based should be clearly itemized. The monthly subscription fee should not include discounts or any other promotional offerings. The monthly subscription fee should represent the maximum amount that customers will pay, on average., ~~for the duration that this price is committed (according to Item 22).~~

Also indicate, if any: service restrictions; option to bundle with other services; commitments; any requirements that customers must meet, or equipment that they must purchase or lease, in order to receive the service.

For each type and/or bundle of services that you propose to offer (or for each monthly subscription fee, if you propose to commit to more than one), provide the following:

1. Proposed ~~(two- years)~~ monthly subscription fee for applicant's proposed broadband service(s).
2. Other recurring charges;
3. All services and equipment upon which the monthly subscription fee is based;
4. Service restrictions; option to bundle with other services;
5. Any commitments and/or requirements that customers must meet, or equipment they must purchase or lease, in order to receive service.

~~**22. Price Commitment Period No Longer Required**~~

23. Financials - Financial Qualifications to Meet Commitments

A. CPA Audited / Attested Financial Statements for the last three years. The statements are to include:

- ✓ Balance Sheet
- ✓ Income Statement
- ✓ Statement of Cash Flows

B. Pro Forma Financial Forecast over the life term of the loan (i.e. 5 years) that includes a list of assumptions supporting the data. For projects applying for a grant only, the pro forma financial forecast will be over 5 years. Future projections must include the following financial statements:

- ✓ Balance Sheet
- ✓ Income Statement
- ✓ Statement of Cash Flows

C. Annual EBIT (Earnings Before Income and Tax) projection over 5 years
D. Schedule of all outstanding and planned debt
E. Collateral Documentation
    i. Include Depreciation Schedule of Assets (applicable to an applicant applying for a grant / loan combination only).

The applicant must submit an analysis of the viability (B. above) of the project and the assumptions used in the analysis such as the funding sources, the adoption rates, subscriber data and adoption rates.

CPA Audited or Attested Financial Statements will be accepted from parent companies in lieu of financial statements from subsidiaries that have no audited or attested financial statements. If applicant has been in existence for less than three years, financial statements for as long as applicant has been in existence, e.g. one or two years, will be accepted.

25. CEQA Compliance

A California Environmental Quality Act review may be necessary. An application should state whether the project is statutorily or categorically exempt from CEQA requirements and cite the relevant authority, as applicable. The Commission is the lead agency for CEQA reviews and administers mitigation monitoring plans of investor owned utility related projects. Information on a PEA and CEQA requirements is available on the Commission's website, http://www.cpuc.ca.gov/ceqa/.
The applicant should contact the Supervisor of the Commission's Energy Division CEQA Unit well in advance of a contemplated filing to (a) consult with staff regarding the process of developing and filing a PEA; (b) provide for cost recovery per Rule of Practice and Procedure 2.5; (c) enter into a Memorandum of Understanding to allow the Energy Division to initiate the retention of an environmental contractor to perform the environmental review and (d) to consult with staff regarding the applicability of another agency's CEQA review.

The applicant may file a completed CEQA review conducted by another agency acting as the Lead Agency pursuant to CEQA. Every effort should be made to ensure that the Commission's CEQA Unit is aware of and included in the CEQA process if another agency acts as the CEQA Lead Agency.

The applicants must obtain and provide the Proponent's Environmental Assessment (PEA) prior to the first 25% payment. The PEA submission should include information on any land crossing sites requiring discretionary or mandatory permits or environmental review pursuant to CEQA (include the type of permit required, the name of the permitting agency/agencies and the Lead Agency if an environmental review is required). Applicants must also agree to identify, prior to the first 25% payment, any other special permits required with a cross reference to the government agencies from which the permits will be required for the project.

Applicants should include the CEQA review timeline in its construction timeline. Costs for the PEA and CEQA should be included in the amount requested for CASF funding.

26. Affidavit of Application's Accuracy

Applicants must submit an affidavit, under penalty of perjury, that to the best of their knowledge all the statements and representations made in the application information submitted is true and correct (Attachment C).

Appendix B

CASF APPLICATION CHECKLIST

(Required for EACH proposed project)

To assist the Commission in verifying the completeness of your proposal, mark the box to the left of each item submitted.

☐	1. Project Summary	
☐	2. Type of Funds Requested (Check one only):	
	☐	Grant
	☐	Grant Amount: _____
	☐	Grant/Loan Combination
	☐	Grant Amount: _____
	☐	Loan Amount: _____
	~~3. Area Applied for shouldn't it still identify the area?~~	
	☐	~~Unserved~~
	☐	~~Underserved, with existing broadband service below advertised speed of 6 mbps download and 1.5 mbps upload, Broadband infrastructure whether existing or ongoing construction not CASF funded~~
	☐	~~Underserved, with existing broadband service below advertised speed of 6 mbps download and 1.5 mbps upload, Broadband infrastructure whether existing or ongoing construction CASF funded~~
	4. CPCN / U-Number / CPUC Registration Proof (As a single document)	
	☐	Applicant's U-Number and/or Proof of applicant's Certificate of Public Convenience and Necessity (CPCN)
	☐	Proof of CPCN application pending approval, or CPCN Application Number (in the absence of a CPCN)
	☐	CPUC registration Number (wireless carriers)

	5. Information Sheet with a Certificate of Good Standing issued by the CA Secretary of State attached	
	~~6. Organizational Chart, Company History and Readiness to Build, Manage and Operate Broadband~~	
		~~Organizational Chart~~
		~~Company History~~
		~~Readiness to Build, Manage and Operate Broadband~~
	7. CASF Key Contact Information	
		First Name
		Last Name
		Address Line1
		Address Line2
		City
		State
		Zip
		Email
		Phone
	8. Key Company Officers (list up to 5)	
		Title
		First Name
		Last Name
		Email
		Phone Number
		Resumes of key officers and management personnel

	9. Current Broadband Infrastructure Description	
		Description of the provider's current broadband infrastructure within 5 miles of the proposed project, if applicable.
		List showing number of households per CB~~G~~.
	10. Current Broadband Infrastructure	
		Shapefile (.shp) of current service area.
	11. Proposed Broadband Project Description	
		Description of proposed broadband project plan for which CASF funding is being requested, including the type of technology to be deployed
		Project size (in square miles)
	12. Proposed Broadband Project Location	
		Geographic locations by CB~~G~~(s) where broadband facilities will be deployed:
		List of CB~~G~~(s) and,
		~~ZIP Codes that intersect the proposed project.~~
	13. Proposed Broadband Project Location Shapefile	
		Shapefile (.shp) showing boundaries of the specific area to be served by the project.
	~~14. Assertion that area being proposed is Unserved or Underserved Area. This includes figures, in mbps, of the current:~~	
		~~(a) average download speed by CBG(s);~~
		~~(b) average download speed by ZIP Code(s);~~
		~~(c) average upload speed by CB(s) and;~~
		~~(d) average upload speed by ZIP Code(s).~~

	15. Estimated Potential Subscriber Size	
		Estimated number of potential broadband households in proposed project location.
		Estimated number of potential broadband subscribers in proposed project location.
		Documentation of assumptions and data sources used to compile estimates.
		Adoption Plan
	16. Deployment Schedule	
		Milestone Start and Ending Date
		Milestone Description
		Milestone Comments
		Milestone Risks
	17. Proposed Project Budget	
		a detailed breakdown of cost elements;
		the source of cost elements;
		amount of cost elements;
		availability of matching funds to be supplied by applicant; and
		the CASF funds requested.
	18. Economic Life of Assets to be Funded	
	19. Local Government and Community Support **(optional)**	
	20. Performance Bond Documentation (to be submitted after project award)	
	21. Proposed Pricing	
		Proposed recurring retail price per MBPS for applicant's proposed broadband service(s).
		Initial service connection charges, if any and any bundling of equipment in the proposed pricing.

		Other recurring costs
		Other non-recurring costs
	~~22. Price Commitment Period~~	
	23. Financials – Fast Track Application	
		Applicants that have received prior approval for grant funds within one year do not need to submit full financial data if the Commission has current financial documents on file.
		Report any significant financial changes in previously filed income forms such as losses, bankruptcies, substantial changes in the ownership of the entity, etc.
		~~a) CPA Audited / Attested Financial Statements for the last three years~~ ~~(if applicant has been in existence for less than three years, provide financial statements for as long as applicant has been in existence, e.g. one or two years)~~
		~~Balance Sheet~~
		~~Income Statement~~
		~~Statement of Cash Flows~~
	~~b) Pro Forma Financial Forecast over 5 years~~	
		~~Balance Sheet~~
		~~Income Statement~~
		~~Statement of Cash Flows~~
	~~c) Annual EBIT (Earnings Before Income and Tax) projection over 5 years~~	
	~~d) Schedule of all outstanding and planned debt~~	
	~~e) Collateral Documentation (include depreciation schedule of assets~~	
	~~f) Equity Requirement of 20% of the loan amount **(For Grant / Loan Combination only)** Equity requirement of 20% should be sustained throughout the life of the loan: 5 years~~	
	~~g) Minimum TIER Requirement of 1.5 **(For Grant / Loan Combination only)** The Minimum~~	

	~~TIER Requirement of 1.5 should be sustained throughout the life term of the loan: 5 years~~	
	24. Proof of Voice Service, Basic Service Is Not a Requirement, If Provided Must Meet The Following Requirements	
		Availability of basic voice service that meets FCC standards for E-911 service and battery, including:
		Listing of types of services offered;
		Timeframe of offering.
	25. CEQA Compliance	
		Proponent's Environmental Assessment (PEA)
	26. Notarized Affidavit	

APPENDIX C

CASF CONSENT FORM

Name of Applicant (Owner(s), Officer(s), Agent):

_____

Name of Project:

_____

Names of Additional Owner(s), Officer(s):

_____

_____

_____

_____

(Include additional pages if necessary)

Commission Resolution awarding grant from the California Advanced Services Fund (CASF) Infrastructure Account: Resolution T-_____, dated_____, 20 __.

The recipient of CASF grant identified above hereby agrees to comply with all grant terms, conditions, and requirements set forth in Commission Decision 12-02-015 and Commission Resolution T-_XXX. The recipient also agrees to track and provide data on jobs created in its quarterly reports.

Undersigned representative of _____ [Name of Owner, Officer, Agent] is duly authorized to execute this Agreement on behalf of the Grantee and to bind the Grantee to the terms, conditions, and requirements set forth in Commission Decision XXX and Commission Resolution T-_____.

Dated this ____ day of _____, 20__.

_____ _____

Signature Printed Name

_____

Business Address (include street address, suite/apt. number, city, state, and ZIP Code):

_____(____)_____

Telephone Number (include area code): Email Address:

Appendix D
Decision 11-06-038

1.1.10. ACTION AND WORK PLAN REQUIREMENTS

Each Consortium applicant must submit an Action Plan and Work Plan as part of the application. The Action Plan and the Work Plan will serve as the tools in the initial review of the applications.[11] The Action Plan is an outline of the Consortium's priorities as they relate to the region's needs for broadband deployment, access, and adoption. The Work Plan should include more detailed functions and activities related to implementing the Action Plan.

The Action Plan and Work Plan documents are to be tailored to fit the needs of a given region's constituents and geography, incorporating core responsibilities, including goals, measurable deliverables, expected outcomes, and specific timeline milestones as they relate to broadband deployment, access, and adoption.

The Action Plan should represent the viewpoints of its consensus of stakeholders and anchor institutions, and it should be aimed at increasing broadband deployment,[12] access, and adoption in the Consortium's respective region. The Action Plan should reflect the priorities of the Consortium's members for broadband deployment, access, and adoption, and should set forth overall Consortium program goals, outcomes, performance metrics[13], and strategies to accomplish said goals.[14] Additionally, the Action Plan should broadly describe how the Consortium would track and measure performance results with respect to broadband deployment, access, and adoption.

[11] Specific information that should be included in both the Action and Work Plans are shown in Attachment A, and sample Action Plan and Work Plan format is shown in Attachment B and Attachment C, respectively.
[12] Public Utilities Code section 281(b)(1) states; "The goal of the program is, no later than December 31, 2015, to approve funding for infrastructure projects that will provide broadband access to no less than 98 percent of California households."
[13] Metrics is a measurement used to gauge quantifiable components of performance, e.g., survey of 150 community-based organizations, provide assistance to three grant applications, 50 computers, 10 resumes, 5 job offers, 20 individuals signed up for service after training, etc.

[14] SEE SUMMARY OF CHANGES TO APPLICATION FILING GUIDELINES, TIMELINES, AND REQUIREMENTS AND CONSORTIUM SCORING CRITERIA, PP. 11-12.

The Work Plan is an expansion of the Action Plan that shows how each priority in the Action Plan will be carried out. The Work Plan should include more detailed functions and activities related to implementing the Action Plan. The Work Plan should include a timeline identifying milestone dates for completion of key Work Plan activities proposed to be funded; the timeline shall describe each of the quarterly milestones, including performance metrics to be accomplished. The Work Plan should also explain how the performance results from the proposed functions and activities will be tracked and measured using the approach described in the Action Plan. A Work Plan for each funding year is to be submitted, e.g., Work Plan Year 1, Work Plan Year 2, Work Plan Year 3. A sample Work Plan format is shown in Attachment C.

9. DISBURSEMENT OF GRANT FUNDS

The Commission's Fiscal Office is directed to administer all accounting and record keeping necessary for the Commission to oversee Consortia grant funds. Once an application for a grant is approved, actual disbursements will be made in the form of progress payments to the Fiscal Agent. All requests for progress payments and reimbursements must be supported by documentation, e.g., receipts, invoices, quotes, etc.

The grantee may request reimbursement of start-up costs equivalent to a maximum of 10% of the total award. Such payment requests should also be supported by documentation, e.g., receipts, invoices, quotes, etc. Start-up costs include administrative expenses, e.g., rental of building, hiring of personnel, purchase of office supplies, etc. Subsequent disbursements are on a progress report-review basis and are to be made at the following intervals: 15%, 25%, 25%, and 25%.

In order to receive a progress payment, the Consortium must first submit the Quarterly Progress Report to the Communications Division, together with all requests for payment and reimbursement supported by relevant invoices receipts, etc. A sample of a Quarterly Progress Report is included in Attachment I. Quarterly Progress Reports shall be based upon the approved Action Plan, Work Plan, Consent Form, timelines, milestones, and costs identified in the application. Further, the Quarterly Progress Report shall indicate the actual date of completion of each task/milestone as well as problems/issues encountered and the actions taken to resolve these problems/issues. The Quarterly Progress Report shall present the results of performance metrics. Grantees must notify the Commission as soon as they become aware that they may not be able to meet performance metrics set forth in the Action and Work Plans. The Quarterly Progress Report will be submitted and certified under penalty of perjury. As noted above, all requests for payment and reimbursement must be supported by appropriate supporting documentation, e.g., receipts, invoices, quotes.

All performance specified under the terms of any award shall be completed on or before the termination date of the award, as per the signed Consent Form between the recipient and Commission. A project completion report will be required before full payment showing that all activities in the Work Plan have been accomplished. The final disbursement will be equal to the outstanding balance due under the Consortium grant or actual expenditures, whichever is less. The grantee's final payment report, including all documentation and receipts, should be submitted no later than 60 days after project completion.

ATTACHMENT B

Sample of Action Plan Format

[Name of Regional Consortium]

[Name of Project]

ACTION PLAN

---EXAMPLE SECTIONS---

I. Executive Summary
- An overview of your consortium
- An overview of your project
- Summarize your key points

II. Vision Statement
- A picture of your consortium in the future
- Your framework for strategic planning

III. Background
- History of your consortium
- Inception of your project
- Importance of your project

IV. Organizational Structure
- Design of your consortium's allocation of authority, roles and responsibilities, communications (how information flows between different levels), etc.

V. Activities
- A description of your consortium's actions in achieving goals and objectives

VI. Investment Strategy
- A description of the ways in which your consortium will maximize investments

VII. Broadband Deployment, Access, and Adoption

- How will your consortium achieve broadband deployment (assist in broadband infrastructure projects), access (getting information out on broadband availability, services, etc.), and utilization/adoption (getting residents to subscribe to broadband services)
- How will your consortium track and measure the achievements

VIII. Budget and Expenditures

- Include itemization of budget items and expenditures including documentation (receipt, invoices, quotes, etc.)

IX. Next Steps

- Your consortium's project plans and activities in the future (e.g., what does your consortium plan to accomplish within the next three-to-five years)

X. Appendix

(END OF ATTACHMENT B)

ATTACHMENT C

Sample of Work Plan Format

[Name of Regional Consortium]

[Name of Project]

WORK PLAN – [MONTH, YEAR]

Activity(ies)	Timeline	Responsible Party(ies)	Performance Measure(s)
Identify, recruit, and train community-based organizations (CBOs) to conduct outreach • Identify CBOs and develop database • Secure commit-ments for CBO participa-tion • Train CBO officers • Convene meetings and facilitate planning • Followed up with CBO officers to track performance metrics	1/1/11 – 12/21/11 • Identify CBOs and develop database: 1/1/11-1/8/11 • Secure commitments: 1/9/11-2/9/11 • Train CBO officers: 1/9/11-4/29/11 • Convene meetings: 1/9/11-12/15/11	• Joseph Lee, Community Relations Manager • Stephanie Singh, Marketing Director • Ashley Marino, CIO	• Reach at least 80% of CBOs in region • Train CBO officers or designated representatives • Conduct two meetings per month • Conduct one conference call per week

(END OF ATTACHMENT C)

ATTACHMENT G

CASF Rural and Urban Regional Broadband Consortia Grant Account

Consortium Scoring Criteria

– Total Maximum Points Available: 100 –

– Minimum Points Needed To Be Considered For Funding: 70 –

Criterion	Maximum Points
1. Regional Consortium Representation and Endorsements	**15**
• Consortium is representative of organizations, including, but not limited to, local and regional government, public safety, K-12 education, health care, libraries, higher education, community-based organizations, tourism, parks and recreation, agricultural, and business (up to 10 points)	
• Endorsed by regional government entities (such as City and county government), and non-profit/for-profit organizations (such as community-based organizations, associations, schools, health care organizations, libraries, businesses, consumers, etc.) by letters or resolutions (up to 5 points)	
2. Regional Consortium's / Members Experience	**35**
• ~~Experience working with community groups (up to 5 points)~~	
• Prior successes in achieving broadband adoption, access and deployment, particularly in areas where CASF-funded broadband deployment projects are underway or completed (up to ~~10~~ 15 points)	
• Demonstrated success building regional, multi-party collaborative efforts focused on broadband or broadband-related issues that	

achieved results (up to ~~10~~ 5 points)

- Experience managing the deployment of broadband services (if using a contractor to deploy or operate the broadband facilities, demonstrated experience of consortium members managing contractors) (up to ~~5~~10 points)
- Proven track record of working successfully with culturally and linguistically diverse communities (up to 5 points)

3. Action Plan **20**

- Submission of a completed, detailed Action Plan that includes program goals, deliverables, expected outcomes, timelines, track and measure performance metrics, strategies to accomplish said goals, and core responsibilities as listed in Attachment A (up to 20 points)

4. Work Plan **20**

- Submission of a completed, detailed Work Plan that includes Timelines, activities designed to implement the Action Plan as listed in Attachment A (up to 20 points)

5. Budget **10**

- A budget that is clear, detailed, comprehensive, cost-effective and easily traceable to the goals and activities referenced in the Action Plan and Work Plan (up to 10 points)

(END OF ATTACHMENT G)

2. CASF STRATEGIES DOCUMENT

1. Introduction

In this document, CD staff outlines strategies to achieve the State of California goal of providing broadband access to 98 percent of California households.[15] Using current Commission rules and practices, 359,800 households still need access to broadband at served speeds in order to meet this goal. The majority of these households are in sparsely populated areas, creating a rural vs. urban digital divide. CD staff believes there are a number of options policy makers could choose to close this divide, from modifying the current CASF program to considering new approaches.

2. Background

Under Pub. Util. Code section 281 (b) (1), the goal of the CASF program is to approve by December 31, 2015, funding for infrastructure projects that will provide broadband access to no less than 98 percent of California households. Depending on how one defines or calculates "access" determines the number of households remaining to reach the goal.

The data source is deployment data the Commission collects from broadband providers in California on an annual basis, the latest data reflecting providers' service as of December 31, 2015. The 2016 CASF Annual Report identified that of the 12,941,948 households in California, broadband availability by all technologies reaches 97.6 percent. Based on the Commission's availability speed criteria[16] and considering the availability of wireline, fixed wireless and mobile technologies combined, CD estimates that the State is 52,000 households short of meeting this goal. However, using staff's practice current Commission rules and practices, 359,800 households still need access to broadband at served speeds in order to meet this goal.

[15] Pub. Util. Code section 281(b)(1) states; "The goal of the program is, no later than December 31, 2015, to approve funding for infrastructure projects that will provide broadband access to no less than 98 percent of California households."

[16] Currently the Commission defines "served speeds" as access to advertised speeds of 6 Mbps downstream and 1.5 Mbps upstream.

As noted in the CASF Annual Report, CD staff cautions that the combined technology numbers may overstate broadband availability by possibly double counting households with multiple available technologies.[17] Therefore, the report separates availability by the three wireline, fixed wireless and mobile technologies and focuses its analysis on wireline availability.[18] When considering wireline availability data alone, the state is about 359,800 households short of meeting this goal. [19]

The CASF Annual Report also includes a "gap analysis" to show by county how many households are needed to be served to reach 98 percent. When such goal is applied to each county rather than statewide, the total count of households to be served rises. For example, to reach the 98 percent availability goal for each county, the number of households lacking "wireline" availability increases to about 424,000.[20]

Regardless of whether the combined technology numbers or the wireline data are used for evaluation, there is no question that a broadband availability divide exists between urban and rural areas. For the following analysis we rely on wireline availability numbers because the data is most reliable, and because wireline broadband generally offers consumers faster, more reliable and more cost-effective service. We also rely on the statewide rather than the county gap. Therefore the baseline number of households needing broadband availability in order to reach the 98 percent goal is 359,800.

While market forces have made significant progress in broadband deployment, data suggests that only limited options for market expansion remain, meaning that deployment may soon plateau (in the near-term) absent government subsidies. The FCC concurred with this assessment when implementing CAF:

[17] CASF 2016 Annual Report published April 3, 2017, (Annual Report) pages 5 and 35. Further discussion was included in the "High Impact Areas for Broadband Availability", Staff White Paper, February 2017, page 3.

[18] Id at pp. 37 – 44.

[19] Id at pp. 35 – 36, identifies that testing of fixed-wireless and mobile availability via CalSPEED provides the opportunity to confirm whether an area is grant eligible or not.

[20] The comparative statewide 360,000 households-short number includes all urban areas, whereas the 98 percent in each county excludes the effect of out of county urban areas on its calculation, thereby increasing the sum of all counties in California short count.

> While we acknowledge that marketplace forces may bring new competitors to high-cost areas where Phase II support is provided, we make the predictive judgment that such an outcome is unlikely to occur due to the high-cost nature of these areas; if those areas could be cost-effectively served without government support, we believe competitors would already be serving them.[21]

The most logical locations for providers to expand their deployment footprints are in unserved blocks adjacent to their existing footprint. As of December 2015, 182,174 households were located in 22,017 unserved census blocks that are adjacent to served or underserved blocks. With an average household density of just over four households per census block, it is quite clear than many of these blocks currently lack sufficient household density to support a network expansion.

With these facts in mind, we offer the following strategies the Commission may wish to employ to meet the 98 percent goal.

[21] FCC, In the Matters of Connect America Fund (WC Docket No. 10-90), Universal Service Reform – Mobility Fund (WT Docket No. 10-208), ETC Annual Reports and Certifications (WC Docket No. 14-58), Establishing Just and Reasonable Rates for Local Exchange Carriers (WC Docket No. 07-135), Developing an Unified Intercarrier Compensation Regime (CC Docket No. 01-92), Order, Declaratory Ruling, and Further Notice of Proposed Rulemaking, FCC 14-54, released June 10, 2014, ¶ 36.

STRATEGY 1: RELY ON CHARTER AND FRONTIER BUILDOUT OBLIGATIONS

Both Frontier and Charter Communications have network buildout obligations as conditions for the Commission approving license transfers from Verizon California to Frontier, and from Time Warner to Charter. As a condition of the Commission approving its acquisition of Verizon California in December 2015, Frontier agreed to:

- provide 25/2-3 to an additional 400,000 households by December 31, 2022;
- provide 10/1 an additional 100,000 unserved households beyond its CAF II commitments by December 31, 2020; and to
- deploy 6/1.5 to 250,000 households.[22]

As a condition of the Commission approving its merger with Time Warner in May 2016, Charter agreed to:

- complete deployment to 70,000 new households in analog-only cable service areas in Kern, Kings, Modoc, Monterey, San Bernardino and Tulare counties
- deliver broadband speeds of at least 100 Mbps to all homes passed in its service area within three years of the closing
- offer Internet service with speeds of at least 300 Mbps download to all households with current broadband availability in its California network by December 31, 2019.[23]

Discussion

It appears that relying on Frontier and Charter's obligations could meet the 98 percent goal, as the companies collectively must provide 720,000 households with broadband access at served speeds as conditioned in their respective acquisition approvals. However, CD staff is not currently able to evaluate the impact of the buildout obligations on the 98 percent goal because the Commission did not require submission of deployment plans. Further, Charter's submission of its Compliance Report Required by D.16-05-007 is vague and only reports broadband Internet service with speeds of at least 300 Mbps download for its entire network. It provides no data to assess buildout resulting from the merger. Additionally, Frontier has thus far provided data only at the county level and not for prospective builds in years past 2018. Finally, it is difficult to assess buildout given that some improvements will occur in areas already deemed "served" on the CASF eligibility map, given that other providers may already provide

[22] See Commission Decision 15-12-005, pp. 57-58.

[23] D.16-05-007, Order Paragraph 2 e-h

service at "served" speeds and/or not all households in a "served" census block may have access to that service.[24]

Conclusion

The strategy cannot be prospectively measured. Currently, only post hoc analysis of system wide service availability can be conducted for each entity.

[24] Data is reported to the Commission at the census block level, meaning if one household in a census block is served, the entire census block is served and CD staff attempts to validate the data using various procedures, which resulted in over ten thousand census blocks being changed from "served" to "unserved". (See; "California Broadband Validation Methodology" http://www.cpuc.ca.gov/General.aspx?id=2529)

STRATEGY 2: RELY ON CAF PHASE II COMMITMENTS

Phase II of the Federal Communications Commission's (FCC) Connect America Fund (CAF or CAF II) program will provide time-limited annual support for rural broadband networks capable of delivering speeds of at least 10/1 to homes and businesses in census blocks identified by the FCC as high cost.[25] In 2015, the three largest wireline telephone corporations in the State accepted CAF Phase II support. AT&T will receive over $60 million annually through 2020 to provide access to over 141,000 locations.[26] Including Verizon's commitments with Frontier's (Frontier subsequently purchased Verizon California's wireline network),[27] Frontier will receive $45 million annually through 2020 to provide access to over 90,000 locations.[28] Network upgrades are to be complete until the end of 2020.

Discussion

The potential impact of CAF II on the CASF's 98 percent goal is unclear for several reasons. First, the CAF upload speed standard is 500 Kbps below the CASF upload speed standard of 1.5 Mbps, meaning that the CAF II beneficiaries would still be "underserved" under the current CASF standard.

Second, CAF II areas reflect data as of June 2015 and will not reflect areas that have been subsequently improved by a non-CAF II provider.

[25] An area was classified as "eligible" if it was not already served by an unsubsidized competitor at advertised speeds of 4 Mbps downstream and 1 Mbps upstream and the average monthly cost-per-location for that census block, subsidized by a subsidized wireline competitor, and if the costs to serve, as calculated by the Connect America Cost Model (version 4.3), was above $52.50 per line but below $198.60 per line and the areas was not subject to specific types of bids in the rural broadband experiments. Carriers receiving CAF support must build out broadband to 40% of funded locations by the end 2017, 60% by end of 2018, and 100% by the end of 2020. FCC CAFII - Final Adopted Model for Offer of Model - Based Support to Price Cap Carriers - CAM 4.3, April 29, 2015.

[26] FCC Press Release "AT&T Accepts Nearly $428 Million in Annual Support from Connect America Fund to Expand and Support Broadband for Over 2.2 Million Rural Consumers in 18 States" August 27, 2015.

[27] FCC Press Release, "Carriers Accept Over $1.5 Billion in Annual Support from Connect America Fund to Expand and Support Broadband for Nearly 7.3 Million Rural Consumers in 45 States and One Territory," August 27, 2015. See also FCC Press Release "Frontier Communications Accepts Over $283 Million Connect America Fund Offer to Expand and Support Broadband for 1.3 Million Rural Americans," June 16, 2015.

[28] More information on the Census tracts with CAF Phase II eligible locations is available at http://www.cpuc.ca.gov/General.aspx?id=9295

Third, the CPUC and FCC identify different entities to support. The CASF program specifically identifies the number of "occupied" households, while CAF support is provided for individual "locations" inclusive of households, unoccupied housing units and businesses. Adding to the mystery is the FCC's admission that the sites of its locations may not be exact, noting that in some instances the actual physical location of its "locations" and the counts of its "locations" may be inaccurate.[29]

Fourth, the FCC affords providers flexibility in reaching buildout requirements, as a provider may build out only to 95 percent of locations and still be deemed to meet its commitments.[30]

Fifth, not all of the households within each CAF II eligible census block will be upgraded, because extremely costs to serve households are considered by the FCC to be CAF II ineligible.

For these prior reasons CD can only estimate the impact the CAF II program will have on increased availability. Table 1 below summarizes the number of eligible CASF households and eligible CAF locations. Because CASF "households" and CAF II locations are not synonymous, estimations of the impact can be made assuming the percentage of locations that are households.

Table 1. Unserved and Underserved Households in CAF II Supported Census Blocks[31]

California	**Underserved** (by Wireline broadband)	**Unserved** (by Wireline broadband)
Total CASF Eligible Households	325,955	292,764
CAF II Supported Locations Within CAF II Census Blocks	79,117	129,490

[29] FCC Report and Order, In the Matters of: Connect America Fund (WC Docket No. 10-90), ETC Annual Reports and Certifications (WC Docket No. 14-58) and Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160(c) from Obsolete ILEC Regulatory Obligations that Inhibit Deployment of Next-Generation Networks (WC Docket No. 14-192), FCC 14-190, Released December 18, 2014, ¶ 38.

[30] *Id* at ¶ 39: "we will require deployment to at least 95 percent of the funded locations, but in order for a price cap carrier to take advantage of this flexibility, we require them to identify by December 31, 2015, any specific census blocks where they do not intend to meet their deployment commitments, with those blocks covering at least two percent of their total eligible locations in a state… For those carriers that elect to take advantage of this flexibility, we then allow them to identify an additional number of the eligible locations left unserved at of the end of the term, up to three percent."

[31] Sources: Broadband availability data collected and validated by the CPUC as of December 31, 2015. Household data from CA DOF 1/1/2016 estimate. CAF II Supported Locations data from FCC Wireline Competition Bureau, April 2015.

Table 2 below shows the impact of CAF on meeting the 98 percent served goal using both the current Commission speed threshold of 6/1.5 and the 10/1 speed threshold. If the served speed threshold is 10/1 and all CAF II locations are considered to be households, the State would be 19,037 households short of reaching the 98 percent goal (using 2016 household estimates and assuming 100 percent of the CAF locations are served by the end of 2020). If 75 percent of CAF locations are households under the same scenario, the State is 71,189 households short of the goal. If half of the CAF II supported locations are households, the State is 123,340 households short.

Table 2. Estimated Changes in Wireline Broadband Availability Due to CAF II[32]

Scenario of CAF Locations that are Households	Total CA Households 2016	Served at 6/1.5		Underserved at 6/1.5		Unserved at 6/1.5		Served at 10/1		Underserved at 10/1		Unserved at 10/1	
If 100%	12,941,948	12,323,231	95.22%	455,445	3.52%	163,272	1.26%	12,664,074	97.85%	114,602	0.89%	163,272	1.26%
If 75%	12,941,948	12,323,231	95.22%	423,073	3.27%	195,645	1.51%	12,611,922	97.45%	134,381	1.04%	195,645	1.51%
If 50%	12,941,948	12,323,231	95.22%	390,700	3.02%	228,017	1.76%	12,559,771	97.05%	154,161	1.19%	228,017	1.76%
If 0%	12,941,948	12,323,231	95.22%	325,955	2.52%	292,762	2.26%	12,455,467	96.24%	193,719	1.50%	292,762	2.26%

Conclusion

Using existing CPUC definitions and staff practices, roughly 130,000 unserved households will become underserved following implementation of CAF II. If the Commission's speed threshold is changed from 6/1.5 to 10/1, CAF II implementation will bring the State closer to its 98 percent goal. If all CAF II locations were households, which is improbable, 97.85 percent of California households would be served, leaving the State 19,037 households short of the 98 percent goal (assuming 100 percent of the CAF locations are served by the end of 2020).

[32] This relies on the standard CPUC and FCC methodology of determining served status at the census block level. Thus if one household has access to Internet service at served speeds, all households in the census block are deemed served.

STRATEGY 3: ALIGN CASF PROGRAM WITH THE FCC'S CAF II PROGRAM

We have outlined the CAF II program above. Policy makers in Sacramento, certain broadband providers and other stakeholders have advocated for greater alignment with the FCC to leverage federal funding. Below we offer several proposals intended to do that.

3.a: Adjust CASF Speed Threshold to 10/1 Mbps

The Commission defines served speeds for purposes of CASF eligibility at 6/1.5, while the FCC's minimum performance standard is 10/1. Thus, the Commission would need to adjust the CASF speed threshold if it wanted to align with the FCC's program.

Discussion

Given the expense of building broadband Internet infrastructure,[33] adjusting the CASF speed criteria to that of the CAF minimum performance standard makes sense in order to leverage federal resources. Further, aligning speeds among the two programs would immediately result in 132,236 currently underserved households being served, thus reducing the number of households needed to reach the 98 percent goal to 227,644 households. An added benefit is the economies of scale such an alignment would create, as the current CAF II recipients would not need to alter engineering/planning and network buildout plans in order to participate in CASF. Thus CAF II upgrades could easily be expanded to nearby households in unserved and underserved census blocks.

Consumer groups have argued that higher speeds are necessary to bridge the digital divide. For example, the Office of Ratepayer Advocates has argued in favor of a 25/3 speed threshold, contending that "the future requires faster broadband speeds."[34] In response to the CD staff whitepaper on High Impact Areas for Broadband Availability, the Central Coast Regional Broadband Consortium wrote the following:

[33] CD staff estimates range from roughly $436 million to over $5.6 billion, depending on the technology used, to provide access to 359,880 households (fixed wireless, upgrades to existing wireline infrastructure or a new aerial wireline build). Under a scenario where half of the households become served by upgrading existing infrastructure, and a quarter each become served by fixed wireless and aerial new wireline builds, it would cost roughly $1.7 billion to meet the 98 percent goal. Note that CostQuest Associates, the firm employed by the Federal Communications Commission to develop the cost model used for the Connect America Fund program, in March 2017 estimated capital costs to build fiber based Internet service to unserved and underserved households at $6,262,194,878.

[34] Reply Comments of the Office of Ratepayer Advocates on the Proposed Decision, Investigation 15-11-007, November 14, 2016, p. 4.

> Adopting the 10 Mbps download/1 Mbps upload speed standard…is a step backward for California, rather than a sorely needed leap forward. The technology and infrastructure required to deliver service at that level is inferior to that required to meet the CPUC's current minimum service level of 6 Mbps download/1.5 Mbps upload speeds…
>
> Instead, the commission should base its needs assessment on the availability of service that meets the federal 25 Mbps download/3 Mbps upload standard for advanced services and complies with the same kind of quality, reliability and integrity requirements that the commission mandates for other telecommunications service providers.[35]

The issue of raising the CASF minimum speed standard to 25/3 is problematic given the expansion of areas eligible to receive subsidies and the costs associated with ensuring build out to each area.

Conclusion

Given limited State resources, it makes sense to align the CASF and CAF speed thresholds. However, the Commission can expect pushback from consumer groups, arguing that speeds of 10/1 do not meet existing or future community needs.

3.b: Focus CASF Resources of CAF II "Gaps"

Since the FCC provides support through CAF on a per location basis, and not every location in a census block is eligible for CAF support, the CPUC could award CASF funds to ensure deployment to the remaining households in unserved and underserved areas. Additionally, CASF funds could be used to ensure that unserved and underserved households in adjacent blocks are served.

Discussion

CD estimates there are 172,990 households in unserved and underserved census blocks with CAF eligible locations (104,749 unserved and 68,241 underserved). The FCC will provide support for 208,607 locations in these blocks. Thus some of these households may not benefit from the network upgrades, as there is no requirement that a buildout to a CAF II location result in increased broadband availability other locations in the same census block.

[35] Letter from Joel Staker and Steve Blum, on behalf of the Central Coast Regional Broadband Consortium, March 17, 2017.

Beyond filling in the gaps between CAF eligible locations, CASF funds also could be leveraged to offer service in nearby census blocks, as there are 11,559 unserved and underserved blocks with households that are not CAF-eligible, but are adjacent to CAF-eligible blocks. Within these blocks there are 96,531 households, 37,664 households in unserved blocks and 58,867 households in underserved blocks.[36] In informal comments to the CD whitepaper identifying "High Impact Areas" for broadband deployment, Frontier suggested that that the Commission identify potential CASF projects adjacent to CAF areas and give priority CASF funding for those areas. Thus, a provider doing a CAF build can efficiently expand broadband access to more areas with combined federal and state funding.[37]

Conclusion

Using CASF funds to fill in the CAF II "gaps," both in census blocks with households beyond just CAF eligible locations and in adjacent unserved and underserved census blocks is a solid opportunity to upgrade or build out broadband Internet service to as many as 269,521 households.

3.b: Adapt CASF Processes to CAF II?

The Commission may want to consider other changes to CASF rules and processes to further align the CAF II and CASF programs. Examples are below.

- CAF II support tends to focus almost exclusively on financing ILEC upgrades and buildouts (at least in California), while CASF projects have been undertaken mostly by non-ILECs.
- The payout schedule for CAF II is a set monthly amount while CASF applicants are reimbursed for project costs in 25 percent intervals, after a review of invoices.
- The CAF II model identifies the amount the FCC will pay a provider to serve a location while CASF pays the amount authorized in the resolution, which is determined, in almost all cases, by the applicant.
- The FCC determines areas it will fund in advance, including a period to challenge determinations of served status, and then opens the areas for acceptance, while the CASF considers challenges both during the official challenge period two weeks after an application is posted publicly and also up to when Commissioners vote on a draft resolution.
- The FCC determines eligibility for an entire census block and, unlike the CPUC, does not entertain challenges to partial areas in the census block.

[36] Note this is after removing overlapping blocks. 239 of these blocks are adjacent to CAF-eligible blocks with more than one ILEC. For example, an unserved block may be adjacent to an ATT CAF block and also adjacent to a Verizon California (now Frontier) CAF block.

[37] Letter from Jacqueline R. Kinney, Vice President State Government Affairs – California, Frontier Communications, RE: Comments on CASF Staff White Paper "High Impact Areas for Broadband Availability", May 21, 2017.

PROPOSAL 4: FUND COST EFFECTIVE SOLUTIONS

Given limited funds available to address existing infrastructure needs, coupled with the large number of unserved and underserved households that remain, policy makers may wish to pursue more cost effective solutions to meet the 98 percent goal.

Strategy 4.a: Focus on Unserved and Underserved Households in Territories of Frontier and AT&T

The State could meet the 98 percent goal simply by funding projects in the territories of AT&T and Frontier.

Discussion

With Frontier's acquisition in 2015 of Verizon California, two large ILECs cover the majority of California: Frontier and AT&T California. Combined, these two ILECs have 314,750 underserved households and 278,694 unserved households in their territories.[38] Thus far, AT&T California, Verizon California and Frontier's participation in the CASF program has been very limited.[39] If these two ILECs participated to a greater extent in the CASF program, or otherwise expanded their Internet service offerings to underserved and unserved households in their ILEC territories, it potentially would be an efficient and cost-effective way to reach the 98 percent goal. While policy makers may wish to consider factors beyond cost (e.g., the speeds of the broadband service offered to residents or if there is a need to "future proof" the network infrastructure), if cost and efficiency are the main determinants in meeting the 98 percent goal, Frontier and AT&T, the two large remaining ILECs in California combined have 314,750 underserved households and 278,694 unserved households in their service territories and are able to expand or upgrade their networks at significantly lower costs than other providers due to their ability to leverage their existing infrastructure and in-house staff.[40] This may be one reason why the FCC chose to prioritize the large ILECs when announcing CAF awards. That said, this solution also will offer residents lower speeds than some may consider adequate.

[38] Note while the ILECs may be required to offer voice service in their territories, neither the CPUC nor the FCC has the authority to compel them to offer broadband service to all households within their respective footprints.

[39] In total, the Commission awarded AT&T California $550,378 for ten CASF projects and Frontier $1,401,141 for nine CASF projects. Before its purchase by Frontier, Verizon California also was awarded $2,332,415 for three CASF projects. Note that Verizon did not seek reimburse for any of the three projects.

[40] Confidential cost data submitted in other proceedings confirms our conclusion.

Conclusion

The State could meet the 98 percent goal by focusing on unserved and underserved households in the territories of the two large ILECs in California. This represents a cost effective solution and would provide service upgrades well above the CASF minimums to those customers whose household location is nearest the distribution equipment (DSLAM or equivalent). However, those furthest from the distribution equipment would receive service at CASF minimum speeds.

Strategy 4.b: Focus on Underserved Households in General

Cost conscious policy makers also may consider spending in underserved locations as a more efficient use of public funds by leveraging a provider's ability to upgrade existing facilities.

Discussion

There is some obvious merit to this argument, given the significant presence of existing network and utility support infrastructure in underserved areas. We estimate providing the 325,955 households in underserved census blocks in the state, plus 33,925 households in unserved census blocks (to ensure meeting the 98 percent goal) would cost between $740,943,635 (if all projects were able to use existing conduit) to $6,922,913,365 (if all projects required new infrastructure for aerial builds). We estimate that a scenario where 71 percent of the households are served using upgrades to existing infrastructure and 29 percent are served with new aerial builds would cost $2,649,567,732. Although this option potentially represents a more efficient choice in an effort to reduce costs, policy makers should keep in mind that it also leads to the most remote communities remaining unserved.

Conclusion

Focusing on underserved households is a cost effective solution, though the risk is that unserved communities will remain unserved.

Strategy 4.c: Rely on Fixed Wireless

Another less expensive option is greater fixed wireless deployments. Using data from approved CASF infrastructure grant applications, CD staff estimates it would cost $462,597,927 to "serve" 359,880 households with fixed wireless broadband.

Discussion

While deploying fixed wireless solutions may meet the needs of certain communities, a key limitation of fixed wireless technology is that the antenna at the consumer's premises and the provider's ground station must have a direct line of sight. Thus, after closer examination, areas with rugged terrain (i.e., hills and valleys) or heavy foliage may only be partially served by fixed wireless providers. For example, CD staff has noted language such as the following on the website of fixed wireless providers:

> Sometimes areas within the coverage area will not be able to receive service directly from an existing Access Point due to obstructions, mainly hills and/or trees. In these circumstances we can always get you service, by installing additional equipment to provide coverage.[41]

Wireless propagation in heavily forested areas is negatively affected by the scattering effects of randomly distributed leaves, branches and tree trunks, which can cause attenuation, scattering, diffractions and absorption of fixed wireless radio signals.[42] Fiber-to-the-premises service, on the other hand, is not subject to terrain variability.

Vantage Point Solutions, a telecommunications engineering firm, concludes:

> There are several factors that limit a wireless network's broadband quality which do not impact wireline broadband networks. Specifically, lack of spectrum limits both speed and capacity. In addition, weather and obstacles, such as terrain, attenuate the wireless signal thus limiting availability and reducing reliability. Finally, the speed of the network is a function of the number of users and the proximity of those users to the wireless tower. These factors keep wireless technologies from being economically scalable to higher broadband speeds.[43]

Conclusion

Fixed wireless Internet service is significantly less costly to provision than wireline services, however it suffers from bandwidth limitations. In order to ensure service availability to all project area households, despite variations in obstructions or terrain, CASF grants have required that fixed-wireless providers guarantee availability to all households within their project area at the same rates and charges.

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[41] http://www.smarterbroadband.com/Availability.htm, accessed November 30, 2015.

[42] Meng, Y.S. & Lee, Y.H. (2010). Investigations of Foliage Effect on Modern Wireless Communications Systems: A Review. *Progress in Electromagnetics Research, 101*, 313-332.

[43] Vantage Point, "Wireless Broadband is Not a Viable Substitute for Wireline Broadband," March 2015, p. 1.

STRATEGY 5: FUND COMMISSION IDENTIFIED AREAS

The current process for CASF infrastructure grant applications is that the Commission reviews applications that are submitted. The Commission could revise the program. Commission leadership has asked if more planning could assure the best use of remaining funds and have requested how this approach may look. Legislators have also asked about the feasibility of a more directive approach.

In response to those inquiries, CD staff published a whitepaper identifying high-impact areas for broadband deployment. Initially, the white paper identified thirteen areas containing 34,228 households we believed represented the best "bang for the buck" for deploying broadband Internet infrastructure to more California households. In identifying these high impact areas, we specifically searched for areas with sufficient potential subscribers to maintain a network, relatively high household density, the presence of unserved households, the lack of significant competition and the lack of challenging terrain that would drive up deployment costs. CD staff first analyzed household density, creating 46 "areas of interest" comprising groups of census blocks with a household density of higher than 150 households per square mile. CD staff refined this list by removing areas lacking unserved households, areas partially served by fixed wireless, areas where 60 percent or more of households already have Internet service at speeds of 10/1 and areas with challenging terrain. CD staff hosted a public workshop on February 28, 2017 and also requested received written public comment from twenty parties. Based on public comments CD staff added three additional areas of interest and removed five of the high impact areas from the list. Eight high impact areas remain totaling 5,676 households, as noted below in Table 1.

Table 1. High Impact Areas Identified[44]

Community	Households	Weighted Median Income
Oasis	810	$ 26,017
Desert Shores	344	$ 30,735
Lucerne Valley	1619	$ 36,231
Apple Valley	922	$ 45,264
Apple Valley North	622	$ 64,970
Bolinas	579	$ 74,310
Lancaster Northwest	608	$ 92,652
Ranch Santa Fe Fairbanks Ranch	172	$ 138,810
Total	**5,676**	

[44] Note that the following communities, identified as High Impact Areas in the Staff Report, were removed based on public comments asserting that a provider served these communities: Arroyo Grande Nipomo, Bear Valley Springs, Cobb, Phelan and Prunedale/Aromas/Salinas. At this time CD staff has not verified these statements.

Given that only 5,676 households remain using the existing methodology, CD staff revised its existing approach. Seven revised high impact areas are shown in Tables 2-8. Each of the seven scenarios include one, two, or three of the following filters used in the staff whitepaper:

- areas partially served by fixed wireless (Fixed Wireless Filter);
- areas where 60 percent or more of households have Internet service at speeds of 10/1 (60% Filter); and
- areas with challenging terrain (Challenging Terrain Filter).

Staff did not remove the unserved households filter from its methodology.

Table 2. Areas of Interest with Fixed Wireless Filter: On 60% Filter: Off, Terrain Filter: Off

Community	Households
Alta Sierra	2991
Oasis	810
Desert Shores	344
Avalon	1194
Bear Valley Springs	1036
Lucerne Valley	1619
Coalinga	3953
Cutler Orosi	2928
Apple Valley	922
Frazier Park	1142
Gonzales	1965
Greenfield	3524
Gustine	1912
Hasley Canyon	383
Huron	1532

King City	3007
Apple Valley North	622
Bolinas	579
Mammoth Lakes	2766
North Shore	294
Lancaster Northwest	608
Palermo/Oroville East	1108
Planada	1080
Potrero Canyon	542
Ranch Santa Fe Fairbanks Ranch	172
Renegade	851
Soledad	3,580
Thermal	503
West Point	1228
Total	**43,195**

Table 3. Areas of Interest with 60% Filter: On
Fixed Wireless Filter: Off, Terrain Filter: Off

Community	Households
Allendale Vacaville Winters	1458
Alta Sierra	2991
Anderson City	1113
Oasis	810
Desert Shores	344
Avalon	1194
Bella Vista/Millville/Mountain Gate/Palo Cedro	4091
Lucerne Valley	1619
Cutler Orosi	2928
Apple Valley	922
Garberville Benbow Redway	1184
Harold/Galt/Wilton	2608
Hasley Canyon	383
Lake Shasta	971
Apple Valley North	622
LCB Lightsaber (San Martin)	570
Los Molinos	2066
Bolinas	579
North Auburn Newcastle	7234
Lancaster Northwest	608

Palermo/Oroville East	1108
Potrero Canyon	542
Quincy	2061
Ranch Santa Fe Fairbanks Ranch	172
Rancho Tehama Reserve	7650
Redding West Shasta/Keswick	2938
Renegade	851
San Martin	3118
Shelter Cove	349
Spring Valley	359
Surfnet LasCumbres	202
Willow Creek	1020
Total	**54,665**

Table 4. Areas of Interest with Terrain Filter: On 60% Filter: Off, Fixed Wireless Filter: Off

Community	Households
Allendale Vacaville Winters	1458
Anderson City	1113
Oasis	810
Desert Shores	344
Bella Vista/Millville/Mountain Gate/Palo Cedro	4091
Lucerne Valley	1619
Coalinga	3953
Cutler Orosi	2928
Apple Valley	922
Frazier Park	1142
Gonzales	1965
Greenfield	3524
Gustine	1912
Harold/Galt/Wilton	2608
Huron	1532
King City	3007
Lake Shasta	971
Apple Valley North	622
LCB Lightsaber (San Martin)	570
Los Molinos	2066

Bolinas	579
Mammoth Lakes	2766
North Auburn Newcastle	7234
North Shore	294
Lancaster Northwest	608
Palermo/Oroville East	1108
Planada	1080
Quincy	2061
Ranch Santa Fe Fairbanks Ranch	172
Rancho Tehama Reserve	7650
Redding West Shasta/Keswick	2938
Renegade	851
San Martin	3118
Shelter Cove	349
Soledad	3,580
Thermal	503
West Point	1228
Total	**73,276**

Table 5. Areas of Interest with Fixed Wireless and 60% Filters: On Terrain Filter: Off

Community	Households
Alta Sierra	2991
Oasis	810
Desert Shores	344
Avalon	1194
Lucerne Valley	1619
Cutler Orosi	2928
Apple Valley	922
Hasley Canyon	383
Apple Valley North	622
Bolinas	579
Lancaster Northwest	608
Palermo/Oroville East	1108
Potrero Canyon	542
Ranch Santa Fe Fairbanks Ranch	172
Renegade	851
Total	**15,673**

Table 6. Areas of Interest with Fixed Wireless and Terrain Filters: On 60% Filter: Off

Community	Households
Oasis	810
Desert Shores	344
Lucerne Valley	1619
Coalinga	3953
Cutler Orosi	2928
Apple Valley	922
Frazier Park	1142
Gonzales	1965
Greenfield	3524
Gustine	1912
Huron	1532
King City	3007
Apple Valley North	622
Bolinas	579
Mammoth Lakes	2766
North Shore	294
Lancaster Northwest	608
Palermo/Oroville East	1108
Planada	1080
Ranch Santa Fe Fairbanks Ranch	172
Renegade	851

Soledad	3,580
Thermal	503
West Point	1228
Total	**37,049**

Table 7. Areas of Interest with 60% and Terrain Filters: On Fixed Wireless: Off

Community	Households
Allendale Vacaville Winters	1458
Anderson City	1113
Oasis	810
Desert Shores	344
Bella Vista/Millville/Mountain Gate/Palo Cedro	4091
Lucerne Valley	1619
Cutler Orosi	2928
Apple Valley	922
Harold/Galt/Wilton	2608
Lake Shasta	971
Apple Valley North	622
LCB Lightsaber (San Martin)	570
Los Molinos	2066

Bolinas	579
North Auburn Newcastle	7234
Lancaster Northwest	608
Palermo/Oroville East	1108
Quincy	2061
Ranch Santa Fe Fairbanks Ranch	172
Rancho Tehama Reserve	7650
Redding West Shasta/Keswick	2938
Renegade	851
San Martin	3118
Shelter Cove	349
Total	**46,790**

Table 8. Revision 7: Areas of Interest with Three Filters: On

Community	Households
Oasis	810
Desert Shores	344
Lucerne Valley	1619
Cutler Orosi	2928
Apple Valley	922
Apple Valley North	622
Bolinas	579
Lancaster Northwest	608
Palermo/Oroville East	1108
Ranch Santa Fe Fairbanks Ranch	172
Renegade	851
Total	**10,563**

Discussion

Identifying how the Commission would identify priority areas is one challenge; a second challenge is what the Commission should do to encourage applications in those identified areas. Below we outline three strategies the Commission may wish to use to encourage applications to serve identified areas:

- "Fast tracking" the applications;
- Using a request for applications process; and
- An auction or reverse auction.

"Fast track"

Similar to the expedited review the Commission created for the CASF Public Housing Account, the Commission could create a separate track, instructing staff to prioritize applications proposing to serve areas identified in advance by the Commission. In theory at least, these areas have already been vetted, so staff could proceed with reviewing the quality of the project, with eligibility already being assumed. Since staff currently uses criteria adopted in previous Commission decisions to evaluate CASF applications, the Commission would need to revise CASF rules, either via a resolution instructing staff to prioritize applications to serve these identified areas, or through a formal proceeding revising the entire CASF process. A fast track, where priority applications are processed quicker also still allows for the staff to review applications to serve areas that have not been identified.

Request for Applications

The Commission also could publish a list of the identified areas, along with a request for applications to serve the communities, similar to the latest initiative in Massachusetts. In November 2016, the Massachusetts Broadband Institute (MBI) announced a request for proposals (RFP) that it will identify qualified private firms willing to build and operate for 15 years broadband Internet networks in 40 unserved towns. The RFP seeks proposals for broadband networks from firms that have an established track record of financial and technical expertise in the management and operation of residential broadband networks in the U.S. Distinctly different from the CASF process, MBI notes that the individual towns retain final approval authority.[45]

In March of 2014, CASF regional consortia, with general guidance from CD staff, identified priority areas for broadband projects in each of their regions.[46] These consortia, as well as four unrepresented counties, identified 182 priority areas in 47 counties based on several considerations including social and economic impact, feasibility, anchor institutions, income levels, opportunities for resource management and number of households without broadband access at served speeds. In hopes that such "priority identification" would assist service providers and spur CASF participation, the Commission subsequently recognized and approved the priority areas by resolution.[47] Whenever a CASF project is brought for CPUC consideration,

[45] Massachusetts Broadband Institute Press Release, MBI Launches RFP to Identify Private Sector Options to Close 'Last Mile' Broadband Gaps," November 21, 2016.

[46] March 3-4, 2014, CD staff hosted its 2nd annual Regional Consortia Learning Summit. The focus of the summit was to discuss and identify priority areas throughout the State in need of broadband infrastructure deployment in order to create a list of priority areas for which CASF project proposals will be sought.

[47] Commission Resolution T-17443, dated June 26, 2014, p. 10. The priority areas are depicted online; http://arcg.is/2kLX1NB

the staff resolution makes note of the areas designated as "high priority." However, the "high-priority" designation has not in itself affected which projects are approved, nor is it clear to staff that the identification of "high-priority" areas has directly led to more grant applications.

Auction or Reverse Auction

A reverse auction is a type of auction in which the roles of buyer and seller are reversed. In an ordinary auction (also known as a 'forward auction'), buyers compete to obtain goods or services by offering increasingly higher prices. In a reverse auction, the sellers compete to obtain business from the buyer and prices will typically decrease as the sellers underbid each other.

When creating the CASF program, the CPUC considered using a reverse auction process to meet its universal service goals on a forward-looking basis.[48] In an auction process carriers would bid for the lowest amount needed from the fund in order to become the primary carrier for the specified area. Grant or other financial support would be awarded to the lowest bidder in a particular geographic region rather than multiple operators in one region.[49] The Commission also considered using an auction process in the event a Carrier of Last Resort (COLR) withdrew from serving a particular high cost area. The Commission would then hold an auction and designate a new COLR with the lowest bid to serve the area. The Commission ordered workshops to assist in developing an auction mechanism for serving high cost areas. However, the auction mechanism explored in those workshops was never put in place and further proceedings would be required before an auction could be implemented.[50]

Other states also have used an auction process similar. For example, New York plans to evaluate broadband project applications by selecting those projects providing broadband access that require the lowest state investment on a dollars-per-unit-served basis and based on the cost to pass a unit.[51] Additionally, the FCC awarded support as part of its Rural Broadband Experiments using a reverse auction focused primarily on cost (either cost effectiveness, when compared to a figure determined by the FCC model, or, in the case of one category, lowest cost).[52]

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[48] D. 07-12-054, issued December 21, 2007, p.36.

[49] Order Instituting Rulemaking into the Review of the California High Cost Fund B Program (R. 06-06-028), issued June 29, 2006, p. 42-43.

[50] *Id* at p. 40-41

[51] For more information see New NY Broadband Program: Phase 3 Request for Proposal Guidelines, issued March 30, 2017.

[52] For more information on the FCC's Rural Broadband Experiments, see https://www.fcc.gov/general/rural-broadband-experiments

Conclusion

The Commission has already attempted publishing a list of priority communities for broadband deployment (the Consortia priorities) which at best was a limited success. Simply publishing another list of priority applications likely will lead to more of the same. Further, an auction or reverse auction relies on there being applicants, thus it likely would not succeed under the current CASF program. Given that reality, the Commission needs to find some additional incentive to encourage applications to serve identified communities. A fast track process may be helpful in that effort.

STRATEGY 6: FUND LINE EXTENSIONS

A line extension is an increase in the size and/or length of an existing telecommunications facility, typically to serve new or existing homes and businesses within a provider's service area. Generally a line extension shall commence at a node or a splice point, but it may also involve new facilities or improvements to existing facilities including, but not limited to: wireless devices, distribution towers, nodes, splices, cables, switches, vaults, cabinets, conduits, poles and other telecommunications facilities. The Commission has in the past supported line extensions for telephone corporation service[53] and it may be worthwhile to consider doing the same for broadband Internet service.

Discussion

Line extensions typically provide service to households that are just beyond the current service footprint. The most granular deployment data we currently have is at the census block level, which may not be sufficient to provide estimates about households that could be served by line extensions. Because not all households in a census block must have access to broadband at served speeds in order for that census block to be deemed "served," many households that could use a line extension may technically be located in served census blocks. However, there are roughly 180,000 households in unserved and underserved census blocks that are directly adjacent to served blocks. Some of these households may be good candidates for line extension funding, depending on a more granular analysis of their proximity to existing facilities.

Under current CASF rules, the Commission may award grants to fixed facilities based providers to finance up to 70 percent of construction costs. Thus, no changes in CASF rules are necessary to fund line extensions, unless the grantee is an entity other than a provider. However, rules changes would be necessary if the grantee is not a service provider. For example, a third party network infrastructure construction entity could be a grant recipient that would coordinate consumer line-extension construction requests, construct the facilities in accordance with network standards and hand off ownership of the facilities to the network provider. There are procedures and standards that would need to be agreed upon by the network owner and the construction company.

Conclusion

CD staff believes line extensions could be a consumer driven opportunity to identify and serve households lacking broadband service. The Commission likely would need to initiate or support legislative changes to allow a non-service provider to be the applicant, though ultimately the service provider eventually receives the facilities constructed by the grant.

[53] For example, in approving T- 17204 in April 2009, the Commission authorized the Executive Director to enter into a $969,000 contract for construction of Nordheimer Flat Project located in Siskiyou Telephone Company's service area.

STRATEGY 7: FUND EXPENSES BEYOND DEPLOYMENT COSTS

Providers have repeatedly told CD staff that serving many of the remaining unserved communities are uneconomic, even if CASF were to finance all construction costs, not just the current 60 to 70 percent subsidies.

Discussion

Adjusting for inflation, the FCC estimated that ongoing costs (ongoing capital expenses, network operating expenses and sales, general and administrative expenses) account for roughly 35 percent of expenses during a network's 20-year life. Many of the remaining unserved and underserved communities in California lack sufficient potential subscribers to fund those costs, let alone provide the company with a profit. Thus, it may be necessary either to increase the percentage of capital costs CASF finances, or fund ongoing costs.

Providing subsidies to support expenses beyond initial capital costs is not new. The FCC offers per line support for telephone service with its High Cost Fund, and continues to support broadband in this manner with the Connect America Fund. The CPUC currently operates two High Cost Funds for telephone service: the "A" Fund, which subsidizes small rural ILECs and the "B" Fund, which supports large ILECs. The explicit subsidy provided by the B-Fund applies only to the cost of the first (or primary) residential line that the COLR provides to each household in designated "high cost" areas. The subsidy is intended to compensate the COLR for costs related to eligible high cost lines in excess of the amount recovered in rates, thereby keeping rates affordable.

Conclusion

It may make sense for the CASF to fund more than capital expenses or for the Commission to modify the B Fund so that it supports broadband infrastructure deployment (note this requires changes in statute). However, in addition to a significant modification of either program's rules, one also should note the prohibition contained in Pub. Util. Code § 710 against the CPUC regulating IP-enabled services, combined with the FCC preempting states from collecting revenue on broadband service. Both complicate the CPUC's ability to create a mechanism like the B Fund for broadband service.

3. COST ESTIMATES (SECTION ADDED MAY 23, 2017)

COST ESTIMATES FOR EXPANDING ACCESS TO BROADBAND INFRASTRUCTURE[54]

The following provides policy makers an estimate of the cost to deploy broadband infrastructure in unserved and underserved areas. In this analysis, we focus on scenarios to reach the State of California's goal of providing broadband access at served speeds to 98 percent of California households, both using current Commission definitions and also estimates calculating the 98 percent goal by CASF Consortia region, as proposed in the current amended version of AB 1665.[55]

There is a range of program cost estimates depending on what speed and technologies are considered. These affect the number of program eligible households. We offer the following observations:

- The latest CASF Annual Report finds when considering wireline availability at 6/1.5 Mbps that about 359,880 households remain to reach the 98 percent goal, and 46,768 households when considering wireline and wireless availability.[56] However, for the eligibility speed proposed in AB 1665, as amended on May 2, the number of eligible households is reduced to 127,141 based on wireline availability and 19,660 based on wireline and wireless availability.
- Providing 100/100 Mbps in unserved and underserved areas requires new fiber builds, having about 12 times greater deployment costs than DSL upgrades or fixed wireless. Using new fiber builds as the sole deployment solution would necessitate billions of subsidy dollars. A mix of technology solutions greatly moderates the expense.
- Given the current CASF program and various mixes of technology deployments, the cost to reach the 98 percent goal could range from roughly $155 million to $4.7 billion (Scenarios 3 and 6). However, if half of the households are to be served by existing provider infrastructure upgrades and a quarter each are to be served by fixed wireless and new fiber builds, it would cost much less, between $226 million and $1.7 billion (Scenario 4).
- Given the proposed criteria in AB 1665 and various mixes of technology deployments, the cost to reach the 98 percent regional goals could range from roughly $181 million to

[54] Note that under Robert Wullenjohn's direction, Tom Glegola, Rob Osborn and Clover Sellden contributed significant research and analysis to this memorandum.

[55] Currently the Commission defines "served speeds" as access to advertised speeds of 6 Mbps downstream and 1.5 Mbps upstream, a.k.a., 6/1.5 Mbps. AB 1665 currently proposes an eligibility speed of 6/1 Mbps, though a minimum of 10/1 Mbps would have to be provisioned.

[56] CASF 2016 Annual Report, April 3, 2017, p 5-6. While wireline combined with wireless data suggests that availability is nearly at the 98 percent goal, substantive caveats must be considered: fixed-wireless providers may not serve all households within identified census block reporting areas, the consortia and public have expressed a preference for wireline service and there is debate about whether mobile is an adequate substitute service (e.g. mobile service is variable and has relatively low data caps). Further, the CPUC determined in the recent market competition preceding that mobile broadband was not a substitute for wireline broadband, Decision 16-12-025, Finding of Fact 7(g).

over $1.76 billion (Scenarios 3 and 6). However, if half of the households are to be served by existing provider infrastructure upgrades and a quarter each are to be served by fixed wireless and new wireline builds, it would cost less, between roughly $210 million to $730 million to meet the goals (Scenario 4).

- Harmonizing the CASF program to match the FCC CAF II program 10/1 Mbps speed criteria has CASF administrative merit, would benefit regions having speeds at less than 10/1, and would not significantly increase program costs over 6/1 Mbps criteria. Reducing the CASF upload speed alone as proposed in the May 2 revise of AB 1665, is not harmonious with the Federal program and dooms the non-CAF II areas to remain at below CAF II speeds.
- Fixed wireless deployments and deployments that upgrade existing networks appear to have similar cost per household. However, DSL solutions have speed limitations compared to fiber builds, and fixed-wireless solutions have some limitations that make them only a preferred application where wireline facilities are prohibitive.

1. PRELIMINARY DATA

We base our estimate of total cost based on determination of (1) the quantity of the households that are program eligible and (2) the historical cost experience from existing CASF Infrastructure Grant awards.

Estimating Quantity of Eligible Households

Household eligibility is based on determination of availability of services using wireline or wireline and wireless technologies. Because of data anomalies, the truth of actual availability is likely somewhere in the middle, and estimates are provided for both methods.[57]

Table 9, below, shows the number of households by consortia region to reach 98 percent of households having wireline access at speeds of 6/1 Mbps. In sum, 127,141 households remain to reach goal. Twelve of the seventeen consortia regions have households to reach the 98% goal. The region having the greatest number of households is the Northeast regions. Under AB 1665, the number of households remaining to reach the 98% for wireline technology would be reduced by 65%.

[57] Using wireline alone leaves uncounted those areas with adequate wireless. Using wireline and wireless overstates adequate wireless availability. See http://www.cpuc.ca.gov/General.aspx?id=2529 for an explanation of California Broadband Validation Methods the CD employs.

Table 9. CASF-eligible Households, Excluding CAF II Blocks and Wireline at 6/1 or Greater

Consortium	Total HH	HH ≥ 6/1 or CAF II	HH to get to 98%
Bay Area	1,248,443	1,227,785	-
Capital Area	655,740	636,207	6,419
Central Coast	240,806	229,175	6,814
Central Sierra	63,416	57,835	4,313
East Bay	1,109,698	1,091,817	-
Eastern Sierra	13,889	12,583	1,028
Gold Country	250,964	229,853	16,091
Inland Empire	1,344,217	1,328,739	-
Los Angeles	3,308,022	3,300,908	-
North Bay North Coast	379,571	364,827	7,153
Northeast	224,746	185,051	35,200
Orange County	1,024,810	990,967	13,347
Pacific Coast	523,007	513,724	-
Redwood Coast	71,526	63,802	6,293
San Diego	1,175,840	1,148,683	3,641
San Joaquin	1,263,434	1,217,662	20,503
Upstate	43,819	36,604	6,339
Grand Total	**12,941,948**	**12,636,222**	**127,141**

Table 10, below, shows the number of households by consortia region to reach 98 percent of households having wireline and wireless access at speeds of 6/1 Mbps. In sum, only 19,660 households remain to reach the goal. Notable is that of the seventeen consortia regions, only six have households to reach the 98% goal and Orange County would provide the greatest number of households. Under AB 1665, the number of households remaining to reach the 98% for wireline and wireless technology would be reduced by 58%.

Table 10. CASF-eligible Households, Excluding CAF II Blocks and Wireline and Wireless at 6/1 or Greater

Consortium	Total HH	HH ≥ 6/1 or CAF II	HH to get to 98%
Bay Area	1,248,443	1,247,360	
Capital Area	655,740	654,547	
Central Coast	240,806	231,541	4,449
Central Sierra	63,416	61,198	949
East Bay	1,109,698	1,103,509	
Eastern Sierra	13,889	13,096	515
Gold Country	250,964	248,849	
Inland Empire	1,344,217	1,329,353	
Los Angeles	3,308,022	3,301,377	
North Bay North Coast	379,571	373,723	
Northeast	224,746	220,927	
Orange County	1,024,810	990,987	13,327
Pacific Coast	523,007	514,258	
Redwood Coast	71,526	69,873	223
San Diego	1,175,840	1,153,235	
San Joaquin	1,263,434	1,252,910	
Upstate	43,819	42,746	197
Grand Total	**12,941,948**	**12,809,487**	**19,660**

Estimating Cost by Project Type

Table 11, below, summarizes the cost per household of CASF infrastructure grant projects that are primarily either an Upgrade of Existing Facilities, Fiber To The Home, or Fixed-Wireless deployment awarded after January 1, 2015 to account for prevailing wages, as required by AB 2272.[58] Note that no mobile wireless CASF project applications have been received.[59]

Table 11. Average Costs Per Household of CASF Infrastructure Grant Awards by Project Type [60]

Resolution Number	Project	Total Project Cost per Household (Grant & Grantee Contribution)
Profile Type: Upgrades Using Existing Infrastructure[61]		**$1,212 per household**
Resolution T-17478	Ultimate Internet Access Helendale	$1,327
Resolution T-17503	Anza Electric Cooperative Connect Anza	$1,183
Resolution T-17484	Frontier Communications Petrolia	$2,446
Resolution T-17522	Frontier Communications Shingletown	$894
Profile Type: New Fiber To The Home Build[62]		**$15,650 per household**
Resolution T-17480	Race Communications Gigafy Backus	$10,656
Resolution T-17488	Race Communications Five Mining Communities	$16,813
Resolution T- 17477	Race Communications Gigafy Mono	$23,155
Resolution T-17524	Race Communications Gigafy Occidental	$23,977
Resolution T-17523	Inyo Networks Nicasio	$11,505
Resolution T-17541	Race Communications Gigafy North 395	$11,729
Resolution T-17495	Bright Fiber Network, Inc.	$14,030
Profile Type: Fixed Wireless		**$1,285 per household**
Resolution T-17497	Cal.net El Dorado North	$1,236
Resolution T-17498	Cal.net El Dorado South and East	$1,551
Resolution T-17501	Cal.net Amador Calaveras and Alpine	$960
Resolution T-17502	Cal.net Tuolumne and Mariposa	$1,645

2. TECHNOLOGY COST EXAMPLE: BOLINAS

For illustrative purposes, we will apply the cost estimates of deploying either an Upgrade to Existing Infrastructure, a Fiber To The Home or a Fixed Wireless project to Bolinas, an unincorporated community in Marin County within AT&T California's ILEC footprint. Figure 1, below, is a map of Bolinas. As noted in the High Impact Areas for Broadband Availability whitepaper report CD staff prepared, 579 households reside in the unserved (red) and underserved (yellow) census blocks in

[58] California Labor Code section 1720

[59] Note that this is not an engineering approach to determine how much it would cost to serve a specific community. The estimates are on a per household basis, while providers generally calculate their costs on a per-foot or per-mile basis. Although we could obtain confidential cost data from the providers, we thought it best to use public information on which others may also rely.

[60] Note these cost estimates are for the total cost to construct the project, not just the CASF grant. Thus, operational and other ongoing expenses are not included in the estimates.

[61] Both ILECs and non-ILEC providers

[62] Predominantly aerial installations

Bolinas and our analysis shows that the average household has access to speeds of 1.97 Mbps downstream and 0.67 Mbps upstream.

Figure 1. Bolinas[63]

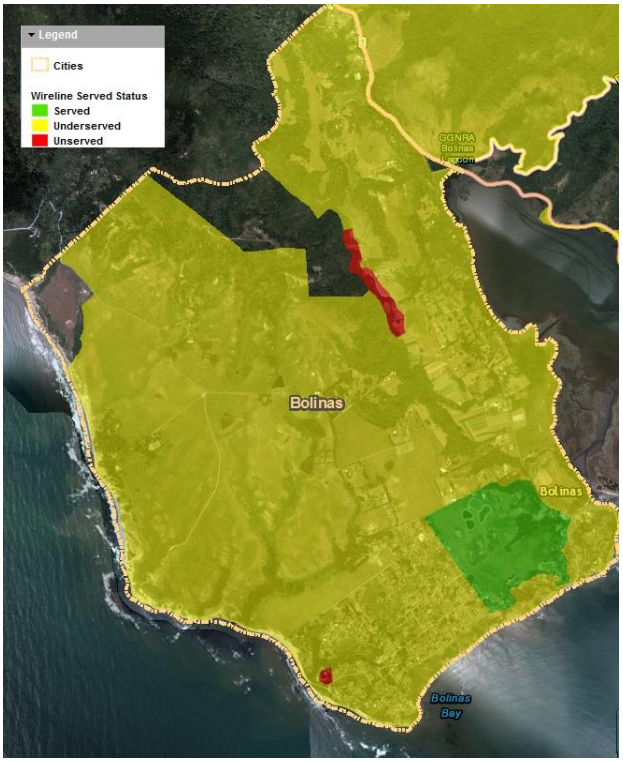

Table 12, below, shows the estimated cost to serve Bolinas by technology deployed using costs identified in Table 11 above.

Table 12. Estimated Total Project Cost to Serve Bolinas[64]

Project Type	Estimated Cost
100% upgrades using existing infrastructure	579 households * $1,212 per household = $701,748
100% fixed wireless	579 households * $1,285 per household = $744,015
100% new fiber to the premise build	579 households * $15,650 per household = $9,061,350

Notable is that the estimated project costs range from a low of $701,748 for a solution that upgrades existing infrastructure (most likely by the ILEC upgrading DSL facilities) to over $9 million for a new fiber build. This example illustrates the cost trade-off between cost and outcome; the relatively low-cost upgrade provides broadband meeting program standard but it has less performance than fiber.

[63] Source: California Broadband Map, data as of December 31, 2015.

[64] Note that this is not a precise estimate of costs to serve Bolinas. CD staff has not reviewed engineering plans to serve this community. Pole replacement costs, the ability to construct in existing right-of-way, the need to underground the build, complications with access to middle mile infrastructure, a lack of capacity and environmental mitigation measures, among other items, could impact the cost of deploying to this community.

3. COST COMPARISON: AB 1665 AND CURRENT PROGRAM

The tables below compare the existing CASF program criteria (Tables 5 and 6) to the proposed AB 1665 criteria (Tables 7 and 8) by project type and eligible households based on wireline only, and wireline and wireless availability. Note how the household counts diminish as the AB 1665 upload speed threshold is lowered and also when including wireless availability. Further, note the large range of costs; between a low of $24 million for AB 1665 criteria, using wireline and wireless availability and only existing infrastructure upgrades (Table 8) and a cost of $5.6 billion to deploy new fiber builds under current program criteria using only wireline availability data (Table 13). The method is further refined in the next section.

Table 13. Cost Estimates to Reach 98 Percent Statewide Goal Wireline Only at 6/1.5 Mbps Availability (Current Program)

Solution	Percent	HHs[65]	Cost Per HH	Cost
Upgrades using existing infrastructure	100%	359,880	$1,212	$436,174,560
Fixed Wireless	100%	359,880	$1,285	$462,445,800
Aerial New Wireline Build	100%	359,880	$15,650	$5,632,122,000

Table 14. Cost Estimates to Reach 98 Percent Statewide Goal Wireline and Wireless at 6/1.5 Mbps Availability (Current Program)

Solution	Percent	HHs	Cost Per HH	Cost
Upgrades using existing infrastructure	100%	46,768	$1,212	$56,682,445
Fixed Wireless	100%	46,768	$1,285	$60,096,487
Aerial New Wireline Build	100%	46,768	$15,650	$731,914,415

Table 15. Cost Estimates to Reach 98 Percent Regional Goals Excluding CAF II and Wireline Only at 6/1 Mbps Availability (AB 1665)

Solution	Percent	HHs	Cost Per HH	Cost
Upgrades using existing infrastructure	100%	127,141	$1,212	$154,095,289
Fixed Wireless	100%	127,141	$1,285	$163,376,606
Aerial New Wireline Build	100%	127,141	$15,650	$1,989,761,777

Table 16. Cost Estimates to Reach 98 Percent Regional Goals Excluding CAF II and Wireline and Wireless at 6/1 Mbps Availability (AB 1665)

Solution	Percent	HHs	Cost Per HH	Cost
Upgrades using existing infrastructure	100%	19,660	$1,212	$23,827,872
Fixed Wireless	100%	19,660	$1,285	$25,263,049
Aerial New Wireline Build	100%	19,660	$15,650	$307,678,381

[65] Household estimate is based on consortia-level aggregation. Consortia-level aggregation yields more CASF-eligible households than statewide aggregation but less than county-level aggregation, which is the most granular of the three options. The May 2 version of AB 1665 also excludes CAF II designated areas as program eligible.

4. COST COMPARISON WITH TECHNOLOGY SCENARIOS

Although it is possible to serve a community using one project type, applying one solution, as identified in **Table 13** through **Table 16** above, to 100 percent of the State is not realistic. For example, where new fiber builds are cost prohibitive fixed wireless may be the appropriate solution. Therefore, a better estimate of statewide costs will reflect a mix of technologies to be deployed.

Table 17, below, shows the estimated cost to meet the statewide 98 percent goal using six scenarios having different mixes of deployed technology. The cost estimates for the six scenarios range from $439 million to almost $4.7 billion for the current program. Consistent with Tables 5-8, the cost is significantly impacted by the technologies used. The greater the dependency on new fiber builds, the greater the cost. Conversely, reliance on fixed wireless installations and upgrades to existing infrastructure dramatically reduce costs.

Table 17. Cost Estimates Based on Current Program and Wireline Availability

Solution	Percent of Households to Reach 98 Percent Goal & Cost (in millions)											
	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5		Scenario 6	
	%	$	%	$	%	$	%	$	%	$	%	$
Upgrade Using Existing Infrastructure	87	**381**	35	**152**	71	**308**	50	**218**	20	**87**	19	**81**
Fixed Wireless	13	**58**	65	**301**	14.5	**68**	25	**116**	40	**185**	0	**--**
New Fiber Build	0	**--**	0	**--**	14.5	**825**	25	**1,408**	40	**2,253**	81	**4,582**
Total Estimated Cost (in millions)	**$439**		**$453**		**$1,201**		**$1,742**		**$2,525**		**$4,663**	

Table 18. Cost Estimates Based on Current Program and Wireline and Wireless Availability

Solution	Percent of Households to Reach 98 Percent Goal & Cost (in millions)											
	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5		Scenario 6	
	%	$	%	$	%	$	%	$	%	$	%	$
Upgrade Using Existing Infrastructure	87	**49**	35	**20**	71	**40**	50	**28**	20	**11**	19	**11**
Fixed Wireless	13	**8**	65	**39**	14.5	**9**	25	**15**	40	**24**	0	**0**
New Fiber Build	0	**-**	0	**-**	14.5	**106**	25	**183**	40	**293**	81	**593**
Total Estimated Cost (in millions)	**$57**		**$59**		**$155**		**$226**		**$328**		**$604**	

Table 19and Table 20, below, provide cost estimates for these same scenarios, using the 98 percent by region goals, as shown in Table 9 and Table 10. Cost estimates to meet the 98 percent goal by region range from $155 million to over $1.6 billion to provide access to speeds of 6/1 Mbps[66]. These costs are similarly impacted by technology deployed as in the above tables, but are also less in every respect due to the reduced number of eligible households.

Table 19. Cost Estimates Based on AB 1665 Criteria and Wireline Availability

Solution	Percent of Households to Reach 98 Percent Goal & Cost (in millions)											
	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5		Scenario 6	
	%	$	%	$	%	$	%	$	%	$	%	$
Upgrade Using Existing Infrastructure	87	**134**	35	**54**	71	**109**	50	**77**	20	**31**	19	**29**
Fixed Wireless	13	**21**	65	**106**	14.5	**24**	25	**41**	40	**65**	0	**--**
New Fiber Build	0	**--**	0	**--**	14.5	**289**	25	**497**	40	**796**	81	**1,612**
Total Estimated Cost (in millions)	**$155**		**$160**		**$422**		**$615**		**$892**		**$1,641**	

Table 20. Cost Estimates Based on AB 1665 Criteria and Wireline and Wireless Availability

Solution	Percent of Households to Reach 98 Percent Goal & Cost (in millions)											
	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5		Scenario 6	
	%	$	%	$	%	$	%	$	%	$	%	$
Upgrade Using Existing Infrastructure	87	**21**	35	**8**	71	**17**	50	**12**	20	**5**	19	**5**
Fixed Wireless	13	**3**	65	**16**	14.5	**4**	25	**6**	40	**10**	0	**0**
New Fiber Build	0	**-**	0	**-**	14.5	**45**	25	**77**	40	**123**	81	**249**
Total Estimated Cost (in millions)	**$24**		**$24**		**$66**		**$95**		**$138**		**$254**	

Tables 9 through 12 do not include estimated costs of middle mile facilities. Our estimates are further refined below.

[66] Equivalent analysis using speeds of 10/1 Mbps results in a range of $181 million to just over $1.9 billion to meet regional goals. Under a 10/1 speed criteria there are 147,529, eligible households based on wireline availability. Because outcomes are similar tables are excluded for simplicity.

5. ADDITION OF MIDDLE MILE COSTS

Providing cost estimates to meet the 98 percent goal on a regional basis is more complicated than a statewide estimate, because a statewide goal inherently assumes excluding at least some of the most expensive to serve communities. Meeting the 98 percent goal on a regional basis requires that some of those excluded communities, including potentially those not located within reasonable proximity to middle mile facilities, must be served.

To address the additional cost of middle mile facilities, we estimate the cost of four large middle mile builds, totaling roughly 470 miles and two smaller builds, totaling roughly 100 miles at a cost between $150,000 and $250,000 per mile[67]. CASF applications and grant awards show that construction costs vary considerably depending on if laying the fiber requires trenching or boring, which can raise costs from $10-$15 per foot to as high as $245 per foot. For example, the fiber route from the main Digital 395 trunk to June Lake in Mono County cost $1,069,731,[68] or roughly $140 per foot to bore through 5,500 feet of rock. We estimate that middle mile builds will add $115 million regardless of the various mix of technologies deployed within scenarios 3 through 6.

Table 21, below, provides cost estimates to meet the 98 percent statewide goal for the current program and 98 percent goal by region per AB 1665, taking into account the additional estimated costs for middle mile needs in the regional areas.

Table 21. Total Cost Estimate to Reach 98 Percent Goal Including Middle Mile[69]
(In millions)

	Current Program Statewide 98% Goal		AB 1665 Criteria Consortia Region 98% Goal	
	6/1.5 Wireline	6/1.5 Wireline and Wireless	6/1 Wireline	6/1 Wireline and Wireless
Scenario 3	**$1,201**	$155	**$537**	$181
Scenario 4	**$1,742**	$226	**$730**	$210
Scenario 5	**$2,525**	$328	**$1,007**	$253
Scenario 6	**$4,663**	$604	**$1,756**	$369

Of note is that the range of potential costs within scenarios varies much less under the AB 1665 criteria than that of the current program criteria. This is a result of how eligible households are determined by wireline only and wireline and wireless availability relative to the different upload speed criteria.

Further, the additional cost associated with the need for middle mile facilities in regional areas is moderated by the reduction in eligible households. The AB 1165 criteria results in a large decrease in overall estimated program cost to reach regional goals. As noted prior in

[67] Estimates based on review of the recently approved Inyo Networks 299 Project, which in total is expected to cost roughly $228,439 per mile to build, plus other estimates for other potential projects that we have received, though we note that, depending on conditions on the ground, the costs could be even higher.

[68] CPUC Resolution T-17408, Additional CASF Funding to complete the Digital 395 Project, approved September 5, 2013, p. 14.

[69] For Scenarios 1 and 2 we assume no additional middle mile needs.

footnote 13, a speed criteria of 10/1 Mbps will not significantly change program cost as in increases the number of program eligible households by 16 percent. A rough estimate is that such would be in concomitant increase program costs should 10/1 Mbps criteria be used.

CONCLUSIONS

Based on our analysis, we offer some general conclusions.

1. Increased speeds lead to increased deployment costs. Policy makers will need to choose between higher Internet service speeds and cost-effectiveness. Providing 100/100 Mbps in unserved and underserved areas requires new fiber builds, while providing speeds of 10/1 can be accomplished in large part with upgrades to existing networks and infrastructure. That choice will determine how much funding is needed for the CASF to meet the 98 percent goal. The FCC's analysis, shown in Figure 1, concurs with our observation.

Figure 2. Dependence of the Broadband Costs on Speed of Broadband Considered[70]

Broadband Speed (downstream)	Number of unserved HUs (millions)	Technology	Total cost ($ billions)	Investment gap per technology ($ billions)
1.5 Mbps	6.3	15,000-foot DSL	21.9	15.3
4 Mbps (base-case)	7.0	12,000-foot DSL	26.2	18.6
		4G wireless	18.3	12.9
6 Mbps	7.1	5,000-foot DSL	62.8	43.4
		3,000-foot DSL	76.9	57.3
50 Mbps	13.7	HFC/RFoG	124.9	85.0
100 Mbps	130.0	FTTP	669.6	321.8

2. Fixed wireless deployments and deployments that upgrade existing networks or rely on existing infrastructure existing infrastructure generally are the most cost effective solutions,[71] though those deployments likely offer significantly slower speeds than a new fiber build.

6. NEXT STEPS

CD will hold public workshop on the afternoon of May 25 to gather input from participants in preparation for a proceeding, with the intent to improve CASF program efficiency and efficacy and prepare for any legislation that may occur. CD staff has already distributed a strawman proposal for improvements to the CASF program and has shared a strategies document to outline program options.

[70] Source: FCC, The Broadband Availability Gap, OBI Technical Paper No. 1, April 2010, p. 45.

[71] Note: CD staff experience has shown that the existence of fixed-wireless providers does not guarantee availability to all households within a census block.