

California Broadband Council

October 23, 2020

Meeting Minutes

The California Broadband Council (CBC) met on Friday, October 23, 2020 at 09:30am via virtual conference (per [California Executive Order N-25-20](#)).

Agenda Item 1 – Welcome

Council Chair Amy Tong welcomed Council members.

Roll Call

A quorum was established for the meeting.

Member		Designee	Present	Absent
California Department of Technology Director	Amy Tong		X	
California Public Utilities Commission President	Marybel Batjer	Martha Guzman-Aceves	X	
California Office of Emergency Services Director	Mark Ghilarducci	Patrick Mallon	X	
Superintendent of Public Instruction	Tony Thurmond	Jerry Winkler	X	
Department of General Services Director	Daniel Kim	Brent Jamison	X	
California State Transportation Agency Secretary	David Kim	Lori Pepper	X	
California Emerging Technology Fund President	Sunne Wright McPeak		X	
California Department of Food and Agriculture	Karen Ross		X	
State Librarian	Greg Lucas	Anne Neville-Bonilla	X	
Governor's Office of the Tribal Advisor	Christina Snider*		X	
Member of the Senate	Ben Hueso	Sarah Smith	X	

Member of the Assembly	Mike Gipson			X
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*Ms. Smith joined the meeting at 9:35am.

Chair Tong noted the [first draft of the Broadband Action Plan](#) was posted to the [Council's web site](#) and that the meeting was a working meeting for Council members and an opportunity for the public to provide comment and that the Council would like to have 80% of the report complete by the November 18 Council meeting, with the remaining 20% to be completed by the December 9 meeting.

In between now and the November meeting there are additional public meetings for specific sessions. (Information about these meetings is posted on the [Action Plan page of the Council web site](#).)

California Department of Technology Deputy Director for Broadband and Digital Literacy Stephanie Tom recognized the Council members and public for their participation in the development of the Action Plan and noted that through Council meetings, listening sessions, and submitted written public comment, the Council has received input from approximately 200 organizations and individuals and is considering that input for the Action Plan and future Council actions. Ms. Tom also noted a second round of listening sessions is scheduled for October 29 (Information about these listening sessions is posted on the [Action Plan page of the Council web site](#).)

Agenda Item 2 – Action Plan Working Session

California Department of Technology Chief Strategist Justin Cohan-Shapiro explained that the Draft Action Plan is intentionally a work in progress and intentionally a draft. He noted a few framing comments about the draft plan:

1. It is structured to present the overall story of broadband plans for California.
2. There are placeholders for the types of insights and data to be leveraged in that story. Council members, staff, and the public are encouraged to make suggestions for insight and data.
3. The Action Plan is intended to drive meaningful progress for broadband. The high level actions noted at the end of the draft are not intended to be comprehensive at this point in time but instead information to start the conversation. Additional information is welcome.

Mr. Cohan-Shapiro facilitated the working session and updated the draft Action Plan as the meeting progressed (the updated draft document is attached to these meeting minutes).

- The Executive Summary section sets up the problem, is crisp about the actions being taken, and identifies who will do what.
- The Introduction will provide context behind where the plan is coming from, including highlighting the impact and importance of broadband in modern life.
- The intent of the Vision section is based around ensuring all Californians have access to reliable, affordable, high speed internet, devices, and skills training to ensure ability to engage in the various aspects of digitally enabled life.

- Where Broadband Is Today will address insufficiency of current standards versus what is needed and data limitations to help make investments and policy making decisions
- Access Today – in rural areas and urban areas
- Adoption – What the experience of adoption has been across different demographic groups, the device side
- Affordability – making sure all Californians can access and use broadband high speed internet – important component in terms of equity
- Reliability
- Digital Literacy and Skills
- Some sections that contextualize where we are today – how California in this point of time is and how the state is organized to address broadband (regulatory aspect, the Broadband Council, are we set up correctly to achieve on the aspirations)
- Contextualizing where we are in California against our peers
- COVID-19 and what it has highlighted in relation to broadband
- What we're going to do elements – where we want to go as a state
- Costs and its relation to modeling
- Better data
- Statewide governance
- Collaboration
- Making the case for incremental broadband investments
- Short term actions for delivering more access, driving adoption, driving affordability, increasing reliability, increasing digital literacy and skills, how will progress be monitored and how frequently will it be monitored – strategy and related actions

Mr. Cohan-Shapiro noted that the Council brought in contractors to assist with the writing and publishing of the plan and introduced Sara Hudson.

Note: Edits made during the session are tracked in the attached draft plan

Agenda Item 3 – Public Comment

Chair Tong opened the meeting for public comments.

Submitted written public comments to date are posted to the [Action Plan page of the Council web site](#).

The last day to submit public comment for the action plan is noon PST on Friday, November 20 and public comment can be submitted to CABroadbandCouncil@state.ca.gov.

Verbal public comments were made by:

- Rochelle Swanson, Crowne Castle
- Ernesto Falcon, Electronic Frontier Foundation
- Jeffrey Tardaguila

Chair Tong acknowledged advisory members Joy Sterling, Robert Tse, and Matthew Rantanen and noted upcoming action plan writing working sessions are public (information is available on the [Action Plan page of the Council web site](#))

Designee Pepper noted that the California Department of Transportation held its second meeting with internet service providers earlier this month, with approximately 120 participants. Information from that meeting is being considered as to how it works into the Council, the Action Plan, and the rest of the [Executive Order](#). (in addition to how it works with the California Transportation Agency and the California Department of Transportation).

Ms. Tom noted that the Council held a listening session with providers and it is reinforcing partnerships and it emphasizing where there are barriers.

The meeting adjourned at 11:23am.

Attachments:

- Zoom meeting comments
- Updated (per this meeting) Draft Action Plan

California Broadband Council

October 23, 2020

Zoom Chat

09:57:46 From Jeffery Tardaguila : are you ready to consider internet a utility ?

10:00:10 From Jeffery Tardaguila : how do you define min levels and how are you comparing to Super net running now ?

10:01:57 From Jeffery Tardaguila : universal ? all encompassing ?

10:04:21 From Jeffery Tardaguila : thank you

10:04:24 From David Griffith, Alpine County : Broadband service should be universal, like telephone and electricity.

10:04:51 From stephanie.tom : Thank you Jeffrey and David

10:06:14 From Robert.Tse : Broadband has multiple benefits that cut across all subject matter silos and a part of the triple bottom line

10:06:29 From Sunne Wright McPeak : Digital Equity is a 21st Century Civil Rights. That's been the CETF call to action for more than a decade. Do make it a right in the Action Plan.

10:07:21 From Ernesto (Mobile phone) : a right would indicate a remedy for lacking service, what is that remedy and how the state (or individuals) enforce it are important.

10:07:53 From Matthew Rantanen : +1 Marth, Sunne, Ernesto...

10:08:33 From Joy Sterling : Concerned that the reference to business needs to include working land ie ag.

10:10:00 From Matthew Rantanen : The concern that we are addressing must move toward symmetrical service base with online school and telecommuting, the asymmetry is failing us.

10:10:30 From Matthew Rantanen : CA Broadband baseline must be at minimum the definition of the FCC, if not projecting advanced considerations for the future

10:12:14 From stephanie.tom : Thank you Joy and Matthew

10:13:31 From Ernesto (Mobile phone) : The federal government has a handy write up on capacity needs based on services.

10:13:36 From Ernesto (Mobile phone) : <https://www.healthit.gov/faq/what-recommended-bandwidth-different-types-health-care-providers>

10:14:11 From Robert.Tse : The discussion on standards or benchmarks should be about what consumers need/ use for distance learning, telehealth, telework per household - to accommodate multiple high bandwidth users in the same households. And the infrastructure system capable of providing this level of service reliably. Upload speed is increasingly important.

10:15:11 From Matthew Rantanen : If 100 Mbps down, then no less than half that on the upload side.

10:15:33 From anamariajohnson : Broadband networks require a power source to work. As California faces increased wild-fires and power outages, it is a matter of public safety to ensure the Broadband Plan is clear that broadband networks are reliable and work during a power outage; both at the customer's home and at the broadband providers' facilities.

10:15:33 From Matthew Rantanen : It will incorporate the multiple person streams that are happening in every house these days.

10:16:26 From Jeffery Tardaguila : also Zoom will need more broadband with end to end encryption more problems than now

10:16:45 From Matthew Rantanen : +1 Jeffrey

10:17:36 From Bernie Orozco : Any standards adopted should be base on actual usage data. You really need to stop using anecdotal stories. There have already been a number of studies that have documented consumer usage, especially during this pandemic.

10:17:43 From travisfinch : Depending on the technologies used (wireless, GPON) there are actually technological limitations on upload speeds. These limitations should be taken into account before choosing an arbitrary upload speed.

10:18:10 From Jeffery Tardaguila : open source internet

10:18:48 From Matthew Rantanen : @Travisfinch those dilapidated systems such as DSL and such, need to be excluded as solutions to broadband

10:19:29 From Bernie Orozco : We will have to pull those for you. And post them later.

10:19:51 From Anne Neville-Bonilla : Thanks, Bernie. That will be very helpful.

10:20:10 From travisfinch : @Matthew GPON and next-gen wireless are not dilapidated and both have upload limitations.

10:20:16 From Matthew Rantanen : Thanks @ Bernie Very interested in the studies to see if they match what we are seeing at TDVNet

10:20:20 From Ernesto (Mobile phone) : if we give people asymmetric speeds, they will have asymmetric usage

10:20:48 From Matthew Rantanen : @ Travis understood, but they far exceed some of the legacy systems we are still funding.

10:24:08 From travisfinch : @Matthew I agree. However if new standards are being written, the asymmetric nature of newer, non-legacy technologies need to be taken into account.

10:25:47 From Robert.Tse : We need to have data (maps) showing per dwelling lack of service by the USDA definition as part of validation for broadband program applications. A state map will help with the application process and post project confirmation that service promised is done. This is a specific in the weeds requirement.

10:26:35 From travisfinch : Also @Ernesto, with the exception of enterprise uses, most consumers download much more than they upload. We see this even on our symmetric business connections.

10:26:41 From Matthew Rantanen : +1 RobersTse

10:26:55 From stephanie.tom : Thank you Robert!

10:27:10 From twest : Vision Statement—Opening Phrase “All Californians have a need and right to access———

10:28:05 From Matthew Rantanen : Affordability is “The Barrier” when there is actually access in Indian Country.

10:30:11 From Bernie Orozco : Access in public housing is sometimes limited because local governments did not include wiring in its buildings. Broadband can be in the right-of-way but if public housing or apartments did not include the wiring, residents do not have access. ISPs cannot forcibly go into those private properties. MDUs should be required to have the proper facilities.

10:30:44 From Sunne Wright McPeak : According to Dr. John Horrigan (doing the study for Pew) identifies 3 major barriers to adopting broadband / high-speed Internet service at home for low-income households: (1) cost (including both Internet service and device appropriate for the households--smartphones are not acceptable for students or adults learning workforce skills: (b) relevance (trusted messengers are needed to communicate in language and in culture how it saves time and money for digitally-disadvantaged); and (c) digital literacy (people need to be able to know how to use the technology--both computing device and navigate the Internet).

10:31:16 From Carolyn McIntyre : Matthew, in addition to TDVNet, see Openvault.com for data related to use of the networks as it relates to upload and download speeds.

10:31:58 From Sunne Wright McPeak : Statewide Adoption Goals are needed in the Action Plan and in law. With State leadership the following is possible: 90% Adoption by 2022 and 95% Adoption by 2025.

10:31:59 From Matthew Rantanen : TDVNet is our network, so I know those numbers, but I am interested in comparison to other findings, so thanks, that helps. will do.

10:32:02 From Bernie Orozco : Cable operators ALREADY provide low cost programs to Californians. We have done so BEFORE the pandemic. Some since 2008. What you're asking for we already do WITHOUT any government subsidies.

10:32:55 From Bernie Orozco : If the state of California wanted to provide Californians with a voucher to purchase broadband service for Californians, California could enter into an agreement for such programs.

10:33:35 From Matthew Rantanen : @Bernie, Cable is only metro/suburban, so there's much more to do outside your footprint

10:34:48 From Bernie Orozco : Any ISP could enter into a "sponsored service" model for broadband. It's not unique.

10:36:49 From Jeffery Tardaguila : it will take some time to get reconnected to speak p c

10:37:53 From Bernie Orozco : What California needs is a "partnership" with ISPs rather than defaulting to a regulatory framework. We have been offering low cost broadband programs for years but have little proper coordination. We are all better than this.

10:38:19 From travisfinch : +1 Bernie

10:38:33 From Matthew Rantanen : +1 Bernie

10:40:05 From travisfinch : Obligations could also dissuade new carriers from entering the market or act as a barrier to entry. We have also seen how obligations for voice services have worked.

10:40:13 From Sunne Wright McPeak : The public benefit commitments in corporate consolidations are legal obligations, but need to be enforced by State and CPUC. CPUC should require public reporting by all ISPs about the number of low-income households being signed up. And, the State can drive all the obligations needed through procurement--which is the opportunity that DGS and CDT have to require and enforce. We need a commitment to "Net Equality" as well as "Net Neutrality".

10:44:09 From David Griffith, Alpine County : For resiliency you still have the cell network which is my backup broadband connection.

10:46:02 From travisfinch : The FCC already has requirements for battery backup requirements for non-line powered VoIP services. It really comes down to what backup power is available at the end user's location.

10:46:47 From Kimberly Lewis : I would suggest saying resiliency rather than reliability in that section, and frame it in that context.

10:46:51 From Matthew Rantanen : +1 Commish Martha but we are going to have to do BETTER than voice because Tribes only have 70% Plain old telephone service on reservation. 30% of Tribal homes can not dial 911 on a landline, and before you argue that Cell Phone is a back up, many Tribal reservations don't have cell coverage either.

10:47:39 From anamariajohnson : It's not just about backup power at the customer location, it's also about backup power at the broadband provider's facilities. If the end user has backup power at home, their Internet connection will still go down because the broadband provider's facilities are down.

10:48:04 From Matthew Rantanen : +1anamaria

10:50:08 From travisfinch : @anamaria I agree but that depends on the provider and the distribution technology used. GPON is unpowered so as long as a central office has backup power, it comes down to the enduser backup.

10:52:51 From Sunne Wright McPeak : CETF has recommended in several CPUC and FCC proceedings for affordable offers in the range of \$10-\$20 per month based on a lot of focus groups in language and in culture with low-income households who have never had a computing device or home Internet service. And, the vast majority of low-income households we reach are willing to subscribe at this price point when low-income residents are engaged by a trusted messenger. However, the existing affordable offers are now inadequate in light of the experience during the pandemic with 12M+ people online simultaneously every day and the need to support distance learning and telehealth and the ISPs need to improve these offers and remove barriers--both Comcast and Charter require existing customers who become eligible for affordable offers (more households are falling off the Digital Cliff into deeper poverty and greater isolation) to discontinue existing service for 90 and 30 days respectively before they sign up for Internet Essentials or Spectrum Assist.

10:52:54 From Matthew Rantanen : +1 Anne, CENIC has started to support Tribal Connection as well.

10:53:38 From Jerry Winkler : I need to jump on another call. Geoff is taking over for me. Thanks everyone!

10:54:01 From Nate Solov : FYI many of the goals in the Action Plan can't be achieved unless barriers to deployment at the local level are addressed. Companies are trying to deploy broadband every day in CA and are being prevented and delayed by local governments. It often takes years for some local governments to approve broadband permits when others are approving it in 30-90 days. There are currently thousands of broadband permits pending with local governments that could provide an immediate benefit to Californians. The state needs to step in and mandate that local governments approve existing and future broadband permits within 90 days. Please see Crown Castle's submission to the Council for a list of specific reforms to address barriers to deployment. Thank you

10:55:04 From travisfinch : +1 Nate

10:55:42 From travisfinch : Federal land management agencies, such as the USFS are also a huge barrier to deployment in rural areas.

10:56:23 From Sunne Wright McPeak : CPUC has a LifeLine proceeding to help define the affordability issue. But, as we've testified, residents in publicly-subsidized housing need a different solution, beginning with the State adopting law stating it is the policy of the State to ensure that all residents in publicly-subsidized housing are connected to high-speed Internet service in their homes (all residential units) as well as community facilities in these complexes.,

10:56:23 From Geoff Belleau : +1 Travis

10:57:39 From stephanie.tom : Appreciate the lively comments! We will open up for public comment in 3 mins. allowing for 2 mins. maximum per speaker. We would like to hear from as many people as possible.

Gentle reminder comments can also be submitted via email at:
CABroadbandCouncil@state.ca.gov

10:58:46 From Matthew Rantanen : @ Stephanie, can CBC please accept the chat as public comment as well? There's a good record here.

11:00:36 From Sunne Wright McPeak : Procurement and CPUC regulation can force / facilitate that.

11:02:26 From Mike Hewitt : Is anyone on the Council engaged in any conversations with SpaceX/Starlink?

11:02:27 From Matthew Rantanen : +1 Commissioner Guzman-Aceves, those that don't serve due to ROI concerns should be able to provide backhaul so the community can serve themselves.

11:02:28 From stephanie.tom : Yes on accepting chat as public comment

11:03:13 From Jules : <https://broadbandcouncil.ca.gov/action-plan/>

11:03:16 From stephanie.tom : Yes we are actively engaged with Starlink and met with them last week. Access will not be available by the end of 2020

11:03:52 From Matthew Rantanen : I think we typed them all... lol

11:03:53 From Rochelle Swanson - Crown Castle : I would Like to make a brief comment

11:03:55 From Ernesto Falcon : how do we register wanting to speak?

11:04:41 From Ernesto Falcon : I would like to be in queue for speaking shortly

11:05:01 From KATHERINE MILTON : You'll be next Ernesto

11:05:09 From Ernesto Falcon : thank you

11:05:10 From KATHERINE MILTON : Thank you

11:07:53 From Matthew Rantanen : +1Ernesto!

11:08:07 From Robert.Tse : Make sure to use mapping to set the platform and help with broadband development. Mapping on 3 levels: Map what is served/unserved; Maps to meet federal broadband requirements (FCC, USDA, EDA, NTIA); Maps to identify broadband service on crop land to support ag tech adoption. Prototype already created by UCANR; Utilize mapping expertise at UCANR Cooperative Extension for rural maps. This is what Penn State did.

11:11:51 From Kate Beck : Will this updated draft of this document be available to comment on?

11:12:32 From Jules : Yes, we will post the updated document to the Council web site. We will also post the video of the meeting, chat notes, and a meeting recap.

11:19:24 From Bernie Orozco : Kudos to Caltans. That was a great webinar. We appreciated it.

11:21:51 From Jules : Videos of those listening sessions and information about the October 29 listening sessions are on the Action Plan page of the Council web site <https://broadbandcouncil.ca.gov/action-plan/>

11:22:01 From Matthew Rantanen : Thanks!

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Action Plan
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EXECUTIVE SUMMARY

[Placeholder - This section will provide a concise overview of the Action Plan, including the context, what problems we are solving, unknowns (e.g., RDOF, administration transition), the strategy we will pursue, including specific actions we will take in the next 6 and 18 months, and the impact we expect those actions to have. To be developed following the full draft's completion.]

INTRODUCTION

[Placeholder – This section will provide context behind the problem, vision and this action plan, including the importance of broadband for modern life. To be drafted following the rest of the plan.]

VISION

All Californians must have access, both in their places of business and residence, to affordable, reliable, high-speed internet, devices and skills training to ensure equity – the universal ability to engage in all aspects of social and economic opportunity.

Access to high speed internet service and digital literacy skills is foundational to economic opportunity, quality of life, and public safety. Ensuring all Californians have access to affordable, reliable, high-speed internet and current devices, paired with the experience and skills to use it is an essential is key to achieving racial, social, and economic equity in California.

We will build on the foundation set legislatively and programmatically across the state, and raise the commitment to reflect the urgency and needs of Californians overall.

Notes

- Other foundational impacts to consider weaving throughout: critical/essential services and outcomes (e.g., healthcare, education, environmental protection), and everything else in modern life
- Treat broadband access as a “right” to change frame towards actions as obligations (i.e., not just incentives alone, need holistic approach to serving entire communities); also organizing structure to better tap into pots of money – MGA, KR, LP
 - Ensure appropriate Federal frame to leverage appropriate resources

BROADBAND IN CALIFORNIA TODAY

Insufficient Standards

Existing broadband threshold speeds do not do justice to how households and businesses use the internet in daily life. For example, AB 1665 indicates that broadband access requires at least 6 mbps download and 1 mbps upload, and permits the CPUC to subsidize broadband infrastructure that provides at least 10 mbps download and 1 mbps upload. There is an urgent need for broadband infrastructure that supports distance learning, telehealth with a dynamic threshold and performance standard for adequate speeds based on what residents need to participate in these essential functions.

- Federal standard is 25/3 and has latency standards
- Incorporate new EO standard, and address question of standard

To put this in context, a household that had more than one person on a video conference at the same time —e.g., a child attending class and a parent working from home—would exceed this standard and result in significant frustration with dropped calls or inability to participate for a struggling family.

- Consider adding more feedback / input from schools and health systems

When you consider network infrastructure impacts, it's clear that there may not be sufficient bandwidth to cover spiking demand in particular service territories. Moreover, existing definitions do not incorporate additional information that are critical for base level of service quality, such as latency.

Follow up: Bernie to share studies on actual usage data.

Limited Data

This data is in the public interest, and should be in the public hands, especially in the context of the “right” to broadband access. Much of the data exists today, but is classified as confidential data and need to explicitly indicate that this is critical data to enable appropriate public action.

A foundational issue is the lack of sufficient, detailed data to fully understand where we are today, and therefore inform our policy making and investment decisions.

California needs better data to inform its investment and policy decisions. We have anecdotes and incomplete survey data to begin to determine signal from noise, but we lack the robust data and evidence base to inform our policymaking.

California's Data Strategy's first strategic objective is to build “enduring longitudinal datasets” (i.e., data that helps us understand how things change over time) to better understand the relationship between critical services, policies, and subsequent outcomes. Throughout this Action Plan we will leverage the best available data. Where

PRELIMINARY DRAFT

there are gaps, we will triangulate the best available information, and actively welcome suggestions. When it comes to broadband, we are missing several critical elements, including:

- *Address-level broadband service data*
- *Small business broadband needs and existing*
- *Tribal and agricultural service data*
- *Actual download and upload usages*
- *Detailed data on adoption and usage of existing low-income broadband offers*
- *Comparable price transparency across services available at minimum census block level*
- *Quality of service*
- *Data and visualizations that are easily accessible and useful for the public*
- *Better mechanism(s) to enable feedback and ground-truthing on data*
- *Maps of existing, readily accessible middle-mile broadband infrastructure, indicating census blocks with no fiber middle mile interconnection built out*
- *Maps of infrastructure in the public right-of-way that could be used to expand broadband such as utility rights-of-way poles, telecom and transmission towers and conduit*
- *M&O costs for operating network infrastructure across providers and parts of the state*

Access

- **Rural areas:** At most 2/3 of rural Californian households have broadband available, and this likely overstates availability. For example, [BroadbandNow](#) recently manually checked 11,000+ addresses where the FCC indicated that one or more ISP currently provide service in that census block and used that to revise estimates of actual service. In California, the estimate indicates a revision from 1.17 million Californians who are unserved to 2.35 million Californians.
 - *How has available broadband changed over the last 5 years?*
 - *What percentage of rural / tribal census blocks have access to more than 2 providers at the 25 mbps down / 3 mbps up standard?*
 - *Add definition of Census blocks vs. tracts, and what they mean, either in appendix or as a sidebar in this section*
 - *Actual service availability (e.g., only available for new service if someone disconnects)*
- **Urban areas:** While there is significant internet provision within urban areas, the quality and speed of the service varies dramatically by the income of the community.
 - *Neighborhoods in urban areas with maximum internet speeds sorted by average household income?*
 - *Analysis of fiber deployment in urban areas overlaid with historical redlining? Where can we find this data?*

Potential sources of insight

- **CPUC to help in showing full picture on this**
- **Affordability as key driver of expected adoption; could potentially incorporate into Access or Adoption**
- **Deployment**

PRELIMINARY DRAFT

- Crown Castle point towards comment on enabling deployment of projects in pipeline

Adoption

Cable statutory adoption threshold (DIVCA) for low-income customers in the state, run at a community level. Lack an explicit obligation today. Providers have low income programs today, but need to be better – i.e., more affordable, meet performance standard (tbc), and need to address literacy and devices.

We have high-level adoption goals, but lack obligations and goals for specific demographic groups.

- Under-adoption by certain demographic populations: [Pew found](#) that the two most commonly cited reasons nationally for not subscribing to home broadband are: 1) that their smartphone can do everything they need (45%), and 2) that it's too expensive (50%). Delving deeper into specific populations in California using California Emerging Technology Fund (CETF) annual surveys, the following household types have broadband subscriptions (does not include smartphone only):
 - No high school diploma: 2015 = 34%; 2019 = 53%
 - Seniors: 2015 = 56%; 2019 = 71% (note 2019 data is 65-74 years old vs. 65+ for 2015)
 - Disabled: 2015 = 51%; 2019 = 64%
 - Spanish-speaking: 2015 = 42%; 2019 = 57%
 - Less than \$20K p.a.: 2015 = 49%; 2019 = 52%
 - Tribes: = TBD; **Change from 2015 to 2019**
- Lack devices: According to the 2019 CETF survey, 10% of Californian households only have access to broadband at home through smartphones. This percentage remains stable for households with school aged children. This appears to underestimate the extent of the issue. A study conducted by Common Sense Media and the Boston Consulting Group found that 25% of K-12 students lack adequate connection (25 down/3 up) and 17% lack adequate devices at home for distance learning.

Additional sources of insight

- **Pew surveys of households with children during COVID. Consumer perspective changed in the context of pandemic, particularly around distance learning and word processing**

Potentially indicate in the standards or goal section that smart phones are not a substitute for broadband access

Affordability

The cost of broadband subscriptions is one of the largest barriers to adoption, and a critical issue we must grapple with to ensure all Californians can participate in 21st century life. Affordability needs to account for other costs such as connection fees,

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PRELIMINARY DRAFT

contract obligations and the retail costs for devices and accessories. Unfortunately, there is limited information available currently on broadband pricing across the State of California. We can understand the issue through a few examples and stories, and look at some of the limited available data. We are open and would like to partner to have greater transparency statewide

- *Provide anecdotal illustration of available subscription offer(s) in a low-income urban neighborhood, and put it in context of family economics*
- *Perhaps leverage data from [here](#) to illustrate access to affordable offer?*

Reliability

Given the increasing centrality of broadband as a utility for modern life, it must be reliable and robust to ensure families, schools, businesses, and governments can expect it to be available in places of business and residence, on demand and 24/7.

- *Lack redundancy for middle mile broadband infrastructure (i.e., the infrastructure that connects local or last mile networks to other network service providers and the greater internet). Criticality for business, essential functions and emergency response.*
 - **Potential action: fiber loop**
- *Highlight issues that have emerged in recent wildfires*
- *Highlight issues that have emerged during COVID, work/learn from home*

During PSPS reliability of VOIP is troubling, need to encourage hardening of services for back-up power in the context of PSPS. Cellular carriers have made progress on this, and broadband has not. OES advised that VOIP systems using 911 have gone down – resilience and redundancy required.

Just because it's a different type of hardware doesn't mean not a telco service. Need to recognize it as a telco service to ensure it has the same type of obligations. Issue at the FCC level.

Digital Literacy and Skills: TBD

- **An essential pillar of adoption, and important to be provided through schools. But need to also address non-school age children, including seniors, homeless populations, etc.**

California's current investment approach and funding

- *How much have we invested in broadband statewide? And in what (e.g., deployment w breakdown of speeds by funding \$\$, adoption etc.)*
- *What is ROI of investments in high speed Internet infrastructure?*
- *What is the performance of regional consortia?*

Funding of public service program comes from voice, those that are voice only pay a greater percentage of their bill towards these programs. Regressive current structure, particularly those with the poorest existing infrastructure. Requires reform to surcharge.

California's current statewide broadband approach

- *Highlight limitations to current state approach to broadband (e.g., council, CPUC, CDE & library grant programs)*

Also needs to include broader non-private role of players in broadband provision and adoption – e.g., regional consortia, CETF, CENIC, and other partners.

How we compare to leading US States (e.g., Texas, Arizona, New York, top ten in terms of population)

- *Benchmark on the indicators above*
- *Compare funding investments vs. return on investment (as possible)*

How we compare to leading cities and countries abroad

- *Benchmark on the indicators above*
- *Compare funding investments vs. return on investment (as possible)*

HOW 2020 HAS EXPOSED THE CHALLENGES AND INEQUITIES

We had been discussing the importance of broadband for regional economic development in 2019 and early 2020. COVID-19 laid bare the criticality of broadband for the remainder of modern life.

- *Families with kids suddenly needed to be on video-conferences while kids are on Zoom doing distance learning*
- *Schools suddenly needed to ensure all of their kids had devices, access to internet, and the ability to use technology*
- *Doctors and therapists suddenly had to shift their visits to more online platforms*
- *Telework – private and public employees*
- *Business now doing more online services which impacts business in rural communities who can't provide online services, and millions of employees used home broadband connections to continue to work and keep businesses operating*
- *Farms needing to sell direct to consumer online as distribution to restaurants disappeared*
- *Isolated seniors*

The inadequacies of the status quo were immediately apparent.

- *Home broadband networks were overloaded and inadequate for simultaneous video conferences*
- *The digital divide was for all to see with poorer families without devices and access to internet*

We met the immediacy of this moment in partnership with companies and organizations from across the state.

PRELIMINARY DRAFT

- *The State's surplus equipment program led by the Department of General Services (DGS) was immediately tapped to accelerate distribution of refurbished computer equipment to the underserved.*
- *The Recovery Task Force was created to establish a dedicated public and private network to help solve some of the biggest challenges regarding broadband access.*
- *The Department of Education created a Digital Divide Task Force in collaboration with legislators to partner with providers in creating solutions to bridge the digital divide for K-12 students.*
- *The Department of Technology partnered with the Department of Aging to specifically address the broadband needs of California's aging population*
- *Several public-private partnerships catapulted broadband adoption efforts including Google's device donation to K-12 students and the aging population, and Verizon's extended efforts to provide affordable Internet access and devices to 125,000 students in the Los Angeles Unified School District.*
- *The Public Utilities Commission, in cooperation with the Department of Education, made \$30M available to subsidize over 100,000 mobile hotspots for more than 400 school districts and, over 16,000 computing devices for 14 school districts.*

Although many ad-hoc broadband initiatives came to fruition in response to the COVID pandemic, the need for better broadband access, increased broadband adoption and improved computer skills became a matter of survival.

AS A RESULT, WE WANT TO RECONSIDER BROADBAND STANDARDS

We want to reconsider broadband standards according to guiding principles:

1. *At a minimum, technology should be sufficient to meet emergency shelter-in-place orders in response to pandemics and emergencies to ensure protection of public health and safety.*
 - a. *Include the major elements of broadband performance, including speed, latency, outage time, etc.*
2. *New builds should also be future proof to expected demand shifts based on the total cost of ownership TCO over infrastructure lifetime*

Informed by a few data points (that require fleshing out):

1. *Current network usage and performance data for key residential use cases (e.g., telework, telemedicine, distance learning) [e.g., include a table that ties speed and latency requirements to specific residential use cases]*
2. *User feedback on specific network experiences based on technology*
3. *Historical trajectory of usage changes over the last 15 years*
4. *Forecasts of usage changes*
5. *International corollaries to triangulate requirements*
6. *Operational and network upgrade costs of different technologies (e.g., comparative analysis of total cost of ownership of future-proof deployment (fiber) versus shorter-term alternatives)*

PRELIMINARY DRAFT

As a result, we are proposing the following standards to ensure sufficient performance supporting distance learning, telework, telehealth and public safety:

- *Middle mile = TBD*
- *Last mile with density < X = TBD*
- *Last mile with density > X = TBD*

HOW WE CAN ACHIEVE OUR VISION

We have a long way to go to achieve our vision. Specifically:

- *Insert a “from” / “to” table with baselines and where we want to be in 5 years*
 - *5 years may be necessary for the deployment actions, but can measure other elements in shorter time frames*
- *Synthesize high-level strategy to frame actions below, potentially including high level roles and responsibilities*

WHAT IT WILL COST TO GET THERE

- *Explain assumptions used to build out the network according to proposed standard(s)*
- *Show outputs of cost model from CPUC under different scenarios, using a range to illustrate potential higher costs possible given non-optimal conditions*
 - *California Broadband Cost Model based on Connect America Cost Model*
 - *Scenarios to address unserved and underserved at different speed scenarios (e.g., all unserved to 100 symmetrical, all underserved to 100 symmetrical)*
 - *Geographical map & % of population in CA that live in areas where fiber won't pencil out economically (i.e., the hockey-stick graph, which ideally we'd extract from the model ASAP as already exists)*
 - *Assumptions around how we will serve the ~2% (i.e., technology types)*
 - *Ranged cost estimates given technologies to provide order of magnitude sense of cost for this 2%*
 - *Assumptions around what kind of performance can be expected both in the majority of the state and what's associated with the tech chosen for the 2% (i.e., bandwidth, speeds, latency)*
 - *Model will include opex and capex costs*

ACTIONS WE WILL TAKE OVER THE NEXT 6 AND 18 MONTHS

[This section will include actions such as: governance changes, funding opportunities, data collection, etc. that have been noted as problems above. We have shared a separate list of proposed or requested actions that have been surfaced to date to help inform this section. The below includes a high-level set of categories and bullets to generate discussion.]

Obligate wholesale leasing of fiber access to other providers to enable last mile service provision

Cross-cutting themes

- Gather better detailed data to inform policymaking and investment decisions
- Restructure Statewide governance of broadband, including revisiting funding programs
- Collaborate with local governments to facilitate cross-jurisdictional learning
- Make the case for incremental broadband investment (e.g., model socio-economic impacts)

How we can deliver more access to high-speed internet

Within 6 months

- *Coordinate/support application for federal funding opportunities*
- *Share list of funding opportunities in simple, easy to use format*
- *Accelerate the availability of public data to facilitate broadband deployment [Q - what specific public data must be available?]*
- *Create programs to provide technical assistance for public entities (local governments, Tribes, school districts, etc.) at the appropriate political level to assist public and private entities to productively deploy broadband infrastructure. [Q - What type of technical assistance is required? Can we illustrate this by adding specificity]*
- *Leverage state contract vehicles to support accelerate broadband deployments*

Within 18 months

- *Adjust existing funding instruments to enable incremental broadband deployment in specific areas (e.g., schools, transportation, water infrastructure)*
- *Review and propose revisions to existing California broadband funding programs, including exploring potential bond issuance in order to more quickly and effectively deploy more*
- *Maximize deployment in state, local, and tribal government agency rights of way to close the middle-mile gap*
- *Implement a policy for state, local, and tribal government agency and service provider coordination to facilitate deployment [Q – what type of policy? What lever(s) do we want to consider / what's the problem we are trying to solve?]*
- *Develop and implement a State of California Dig Smart policy by incorporating broadband into the planning, design, engineering, and construction of all major infrastructure development projects by default, and adjusting based on appropriateness, feasibility, and cost considerations*
 - *Need to define major infrastructure projects, and set useful standards to ensure reasonable ROI on the investments*

How we can drive adoption

Within 6 months

- *Motivate and involve philanthropy*
- *Leverage key low-income programs (e.g., CalEITC, CalFresh, CalWorks) to promote affordable internet offers*
- *Updates to Lifeline program to support underserved*

Within 18 months

- *Fund detailed user research to understand why people aren't using low-income or free programs, estimate utilization in CA, and run randomized control trial to drive adoption*
 - *This should include reviewing adoption data from free COVID-19 programs*
- *Create anonymous data sharing hub for data on low income programs to be shared w state*
- *Develop consumer-oriented search tool for broadband availability, low-cost programs, devices, etc. Engage ODI and alpha team to build something similar to the food banks.*
- *Create sustained funding mechanism to drive adoption (e.g., devices, training, support for immigrant communities)*
- *Other ideas for local govts? Libraries? etc.*
- *Implement low-income and affordable offer requirements, metrics, accountability, and standards.*

How we can drive affordability

Within 6 months

- *Publish pricing data on a per MB basis, including low-income programs*

Within 18 months

- *Analyze and publish essential service broadband affordability data. TBD*

How we can boost reliability

Within 6 months

- *Set reliability and resilience standards based on detailed review of failure during recent disasters*

Within 18 months

- *TBD*

How we can improve digital literacy and skills

Within 6 months

- *Support sustained, regular meetings of local governments leading on digital inclusion (and interested parties), publish findings and actively share with other communities*
- *Codify best practices and highlight evidence-based programs at a State level*

PRELIMINARY DRAFT

Within 18 months

- *Support local digital skills training programs (either through funding or other support), as part of broader economic recovery efforts*
- *Date for local broadband infrastructure deployment and digital equity plans.*

IMPLEMENTATION APPROACH

This section will include information on:

- *How we will monitor implementation*
- *How frequently we will revisit these recommendations*

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