The following are California Emerging Technology Fund (CETF) comments and input for shaping a General Obligation (GO) Bond Proposal to close the Digital Divide in California. It must be understood that the challenge of getting all students (and their parents and/or guardians) online with adequate bandwidth and sufficient data falls into 3 Major Challenges:

- Home Internet Access and Connectivity
- Computing Devices for Home Use
- Network Capacity to Support Simultaneous Users

Home Internet Access and Connectivity includes both the Availability of Infrastructure (often referred to as Access) and Affordability (the cost of connecting to the infrastructure which can be addressed through Interim free and available affordable offers which households use to sign up for service or hotpots and service paid for by School Districts, but that probably is not sustainable and at the very least certainly competes for limited education resources). For the affordability dimension of Home Internet Access and Connectivity, a 2-fold strategy is needed: (a) work with ISPs and stakeholders, especially Education Leaders, to extend the interim free offers, improve affordable offers, and increase marketing of available affordable offers per the CETF 10 Recommendations filed with the CPUC and in light of the distance learning realities experienced at the beginning of the new school year; and (b) support the CPUC LifeLine Proceeding (which might be completed with a new program in place by the beginning of 2022).

Computing Devices for Home Use must be provided by School Districts to all low-income students (as they do textbooks). Districts also must train students and their parents to effectively use the technology to support learning and improve academic performance (with a comprehefsive integrated approach such as School2Home). Regarding Internet connectivity, many Districts throughout the state have paid a lot for hotspots, but there are continuing problems with sustaining the connection for students living in underserved urban poor neighborhoods because the underlying infrastructure is inadequate. And, of course, hotspots don't work where there is no Internet access infrastructure. Thus, the State must invest in high-speed Internet infrastructure construction and network upgrades where the marketplace has not operated to attract private capital.

Network Capacity to Support Simultaneous Use needs to be deployed through State policy and subsidies for unserved rural communities and underserved urban poor neighborhoods. The following is an approach to quantifying the funding need.

- Unserved Areas: Conservatively, there are about 3% of all California households (HHs) that are unserved or about 390,000 HHs (in California each 1% of HHs is 129,000 HHs, so rounded to 130,000). CPUC received applications on May 4 for $510M for available $303M in CASF. It is assumed that about 300,000 HHs will remain to be connected to be conservative. Average costs per HHs deployment ranges widely depending on the terrain and scale. FCC CAF22 has averaged about $2,550 per location for 10/1. For sake of simplicity and being conservative to ensure sufficient last-mile speeds with fiber middle mile, CETF suggests $5,000 average per unserved HH for a total cost of $1.75B.

- Underserved Areas: Conservatively, 3M of 6.2M students attend Schools in low-income neighborhoods and are likely to have inadequate bandwidth for distance learning (and telehealth and telework). CENIC consulted ISPs and Crown Castle to develop projections that suggest up to $1,500 per HHs to upgrade networks in underserved urban areas. Thus, CETF suggests $1,500 average per HH for 3M locations for a total of $4.5B.

The above total for the Unserved and Unserved Areas is $6.25B. Please note that these are "conservative"—thus, intentionally inclusive to present projections for debate and to invite other analyses to "right-size" a GO Bond Measure. Also, CETF and a broad-based coalition of organizations advocate for the Legislature and Administration to authorize extended collections into CASF in a sufficient amount to support $1B in Revenue Bonds. Please also note that the actual cost of Internet infrastructure deployment can be significantly leveraged through public policy, such as procurement practices and coordination of State Agencies to expedite deployment (Dig One, Dig Smart). So, the total amount of State funding and subsidy can be reduced or offset through policy.

Streamline Construction Approval and Permitting

One of the most important policies is to streamline approvals and permitting for broadband infrastructure deployment. The State should adopt a policy to "Approve and Permit at the Speed of Construction" which will monetize for ISPs the cost-savings from reduced time delays that can be invested back into deployment and/or adoption. Thus State funding of any kind—GO Bonds, Revenue Bonds, CASF, other—should prioritize the allocation of those resources to jurisdictions that have streamlined approval and permitting processes for broadband deployment. The following is a framework for streamlining approvals and permitting.

- Make a finding that time is of the essence and that it is intended by the Legislature that construction of essential broadband infrastructure to support online learning by all students and telehealth for all residents in unconnected rural communities and high-need underconnected low-income neighborhoods shall commence no later than 6 months from the approval of funds and shall be completed in a timely manner.

- Provide that funding be prioritized for deployment in local jurisdictions (county or city or city and county) in which the government has streamlined the process for obtaining land use approvals and securing requisite permits for construction, including permits for rights-of-way encroachment, such that construction may commence within 90 days from the date of submission of a complete application for such permits.

- Direct the Governor's Office of Planning and Research (GOPR) or the California Broadband Council (CBC) to convene all relevant stakeholders, including statewide local government associations, statewide education associations, California Public Utilities Commission, and Broadband Regional Consortia to develop recommendations and a model for streamlined land use approval and construction permit processes to be adopted by the Council and posted no later than June 30, 2021.

- Assert that any broadband construction project within a jurisdiction adopting the model recommended by the GOPR or CBC shall be eligible for the funding.

State funding for Internet infrastructure also should be prioritized to assist when local Districts have passed bond measures for this purpose or where Local Governments have generated or appropriated matching funds.

In addition, the State should work with the State Building and Constructions Council and Communications Workers of America (CWA) to develop and reach consensus on: (a) recruit and train workers from high-employment low-income communities that will benefit from the deployment of broadband; and (b) a statewide project labor agreement (PLA) framework to employ skilled workers with performance standards to ensure timely quality construction.

Drive Pivot to the Future for Education Excellence with Funding for Devices

CDE is quantifying the remaining need for computing devices to support distance learning. Various sources have been tapped for acquiring both hotspot and computing devices, including private donations, CASF Adoption Account, Local Government CARES funds, and District existing funds. It should be noted that Districts collectively in California spend more than $500M annually on text books and part of those resources could be redirected to buying computing devices and hotspots. Whatever the source of funding beyond existing District dollars, allocations to Districts for devices need to be viewed as investments in "Education Excellence" that encourage and reward a "pivot to the future" to transform Education. The following are examples of conditions to prioritize funds for devices to Districts that do the following (verified by COEs):

- Adopt as part of their Local Control Accountability Plan an Education Instructional Technology Program with at least the following components: goal and acquisition plan to achieve 1:1 devices for all students that allows devices to be taken home to extend the classroom for at least those students in middle and high school grades; allocation of resources for professional development and learning for all teachers to effectively incorporate use of computing devices and Internet navigation into teaching; coaching for teachers to effectively use instructional technology; and training of parents and guardians to ensure participation by no less than 80% of all parents and guardians.

- Allocate funds for acquisition, amortization, and replacement of computing devices on a reasonable timetable to match and leverage State funds.

- Inform all students-parents about available affordable home Internet service offers through an effective communications plan.

Finally, there also must be accountability for reporting how the State funds close both the Digital Divide and the Achievement Gap. This could be a very innovative partnership with SBE, CDE, COEs, and organizations such as CSBA, ACSA, and CCEE. CETF and other non-profits could assist and support such a partnership.

Further, allocation of Bond proceeds for infrastructure should be prioritized to match those Districts that have approved local bond measures for this purpose.