

Infrastructure Advisory Council
Meeting Minutes
February 15, 2018

Attendees

- Colleen Bailie — West Haven Public Library
- Joe Campbell — CT Technical High School System
- Doug Casey — Commission for Educational Technology
- George Claffey — Charter Oak College
- Tom Dillon — Independent
- Fred Kass — Trinity College
- Kerri Kearney — Manchester Public Schools
- Ryan Kocsondy — Connecticut Education Network (CEN)
- Michael Mundrane — University of Connecticut
- Sabina Sitaru — Independent

Agenda

- Equity Toolkit
- E-Rate Supports and Assessment
- Wireless Services and Needs
- Connectivity Measurement
- Member Topics
 - Research into Reaching the Most Learners, Both Children and Adults
 - CEN Updates

Meeting Notes

The points below represent an assimilation of ideas rather than a strict verbatim or chronological record of points shared.

Welcome

The meeting convened at 2:00 PM with a welcome by Tom Dillon, Infrastructure Advisory Council Chair, and Doug Casey of the Commission. Tom provided the group with an overview of the agenda items and transitioned into an overview of the Digital Equity Toolkit.

Digital Equity Toolkit

To help communities connect learners to broadband outside of traditional educational institutions (e.g., colleges, schools, and libraries), the Infrastructure Advisory Council developed and released the Digital Equity Toolkit (www.bit.ly/CT_Digital_Equity) in early January. The document provides guidance on assembling a leadership team, gauging audience needs, and existing programs and resources. Tom mentioned discussions underway in his town of Stratford to leverage the Toolkit's resources, and Doug encouraged members of the Advisory Council to share the document with their own communities to stimulate engagement around this topic. Towns may already have programs in place to provide families with resources to connect students to broadband, equipped with dependable devices and the training they need to make the most of technology for learning. The Commission's hope is for the Toolkit to become a compendium of case studies that facilitate collaboration across communities to bridge the digital divide. He cited work at the Hartford Public Library (HPL), with funding from the Hartford Foundation for Public Giving, to get low-income adult learners online and asked Sabina Sitaru to share details about this initiative.

The scope of work for the HPL project includes the provision of 120 wireless tablets to low-income individuals enrolled in adult education programs. Community groups will support the rollout and technical assistance needs of participants. In addition, the project design includes the use of "TV white space," or low-bandwidth frequencies dedicated for educational use, for Internet access. Leaders from Metro-Hartford Information Systems, which Sabina used to lead as Hartford's chief information officer, and HPL are exploring the technology and supports needed to pilot the use of white space to connect businesses in the north Main Street area of Hartford. Work will continue on both these efforts through the summer, with reporting due in the fall of 2018.

On the topic of TV white space, Ryan Kocsondy pointed to a program by Microsoft (see whitespaces.microsoftspectrum.com), targeted at rural communities that generally do not have strong connectivity options from commercial carriers. Ryan shared that Michigan's research and education network, merit (www.merit.edu), has experience in planning and deploying white space solutions in that state. The technology includes an antenna to transmit signals and a receiver at each location leveraging the connection, with a throughput of 10 Mbps or less. Fred Kass noted that the receiver hardware remains relatively expensive as compared with 3G or 4G devices, thus reducing the cost savings that comes from leveraging free spectrum. Sabina noted that the organization [Gigabit Libraries](#) has awarded TV white space funding, and she shared past efforts to provide public broadband through the installation of hot spots in Bushnell Park in Hartford.

Colleen suggested ways of increasing awareness of the Toolkit to educational institutions. Doug has worked with the Connecticut Association of Boards of Education (CABE) and the Connecticut Association of Public School Superintendents (CAPSS) to share the Toolkit with members and has promoted the resource through social and

traditional media outlets. He encouraged all of the members to share it with their colleagues and constituents.

Doug solicited ideas to expand the Equity Toolkit, with Sabina offering the research in her report for HPL and Ryan offering to contact merit in Michigan to learn more about their TV white space initiatives.

E-Rate Supports and Assessment

Tom transitioned the discussion to the challenge of how best to leverage federal Universal Service Fund dollars through the E-rate program. This work is one of the eight initiatives in the Commission's five-year state [Educational Technology Goals and Plan](#), with the intent to gather insights into why some schools and libraries do not fully leverage available funds, especially for internal school and library networks. For example, a given district may have a 60 percent reimbursement rate through the E-rate program but may not have the matching funds to purchase hardware. Gathering input on this topic from schools and libraries may help identify ways of supporting these institutions and inform the national E-rate program administration.

Doug also mentioned the Commission's partnership with the national non-profit Education Superhighway, which advocates for the full use of available E-rate funds and provides schools with free training, technical support, and procurement assistance. The Connecting Connecticut Classrooms (C3) program has resulted in outreach to 77 districts to offer assistance.

Michael Mundrane highlighted the importance of planning for and championing the rationale behind capital investments in technology. Organizations need to tie expenditures, especially long-term investments, to outcomes. Ryan agreed and pointed to the need for superintendents and school business officers to understand how plans to support digital learning depend on technology investments. Joe Campbell pointed to school boards, as the budget authorizers, as key stakeholders in the discussion. Colleen Bailie drew parallels to library boards, many but not all of which understand the importance of investing in technology to support libraries' core mission of serving patrons. Challenges exist in depending on E-rate allocations in one fiscal year that do not reach districts until the next fiscal year, making planning difficult. Filing remains highly bureaucratic as well. Sabina pointed to the need to track carefully all hardware and circuits provisioned through the program, which requires staff time to oversee. Colleen reminded the group that some library leaders have not pursued E-rate funding because of the requirement to filter content, seen by some as a form of censorship.

The group discussed the preponderance of districts that outsource their E-rate functions (e.g., filing, tracking, etc.) to third-party consultants, which charge a percentage of each institution's awards for their services. Ryan asked the group to consider what pooling these charges to an in-state service might offer to schools and libraries. Kerri Kearney welcomed the idea but underscored that any in-state service would need to maintain the same level of support that her consultant currently offers. Colleen, Ryan, and Joe remarked on the outstanding job that Maria Bernier of the State Library offers

local libraries to support their use of the E-rate program, a model for what Connecticut could achieve for similar consulting services for schools.

Doug asked the Advisory Council members for their assistance in designing a survey to gather input from schools and libraries to identify and address barriers to leveraging the E-rate program and quantify the spend on external consultants. Those willing to participate in designing the survey included Colleen and Joe, with the suggestion of enlisting Maria Bernier and Bethany Silver from Bloomfield.

Wireless Services and Needs

Once districts and libraries procure wireless hardware through E-rate and other funding sources, they need to install, configure, and manage these resources. To that end, Doug raised the topic of collective wireless solutions. As context, he mentioned a working group that he and other members of the State Educational Technology Directors Association have engaged in to explore existing models and share best practices.

Ryan expressed interest in identifying the phases of planning and deployment of CEN members to conduct a large-scale RFP for cost-effective purchasing. He also pointed to Eduroam as a possible service to support authentication of students and patrons. Sabina mentioned a tool known as Data Dive (www.gmis.org/page/DataDive) from Government Management Information Systems (GMIS), the government technology professional organization, that collects and shares technology infrastructure procurement information, as a possible source of existing spend, at least on the town side. Leveraging this data and the results of a district and library survey would provide greater insights on the technology types (brands) and lifecycle of network equipment.

The group explored wireless network consortium purchasing, noting that most institutions use either a Cisco or HP solution, and Fred mentioned that higher education also leverages the hardware and services of more niche players such as Apogee. Ryan underscored the potential of volume purchasing as a lever to drive down price, add training and other services, or both. Fred encouraged the group to explore other existing programs, such as the [Massachusetts Higher Education Consortium \(MHEC\)](#).

The group explored the potential of Eduroam as a federation service to provide authentication on- and off-campus to wireless networks and to students' school systems (e.g., Web mail or Blackboard), as a form of single sign-on (SSO). Doug pointed to the need for SSO solutions in schools, which often provision a dozen or more sets of separate credentials to students, faculty, and parents. Kerri expressed concerns of storing credentials in Eduroam servers, a potential privacy concern. Fred explained that the Eduroam service does not store credentials locally, operating more as a "handshake" between access points and an institution's broader authentication system. Tom recalled the Eduroam server costs (software only) at approximately \$10,000, with individual user license costs at \$0.10. Both Fred and Michael felt that the value of supporting Eduroam within an institution justifies the cost of supporting the service, and Tom pointed to the solution as a means of bridging the digital divide. Ryan

offered a model whereby CEN or the RESCs could provide support to member institutions and drive license costs below the \$0.10 list price.

The group concluded the discussion on this topic with a commitment to reach out to local and regional professional groups such as GMIS to identify areas of efficiency and cost savings.

Connectivity Measurement

Tom shifted the conversation to address the Commission's statutory obligation to measure and report on connectivity in educational institutions. Doug elaborated by suggesting different approaches, including looking at data from E-rate procurement by location as well as speeds measured at the point of delivery through national online testing providers such as the American Institute of Research, which administers the Smarter Balanced Assessment Consortium (SBAC) test to Connecticut K – 12 public school students.

Even accurate measures remain limited in their value, given that different districts may leverage available broadband to effect more or less effective educational outcomes. For example, one building may consume high levels of broadband to stream non-instructional videos, and another school may have a more measured level of consumption that leverages highly interactive but less data-intensive tools for teaching and learning. Sabina suggested the creation of a "maturity model" of broadband and technology use to support education, possibly for inclusion in the Digital Equity Toolkit. Michael suggested that examples of effective use would help guide institutions, and Kerri pointed to existing models (e.g., SAMR). Ryan pointed out that measuring consumption according to different models would help providers understand real instructional needs from a broadband perspective. Fred suggested that analyzing usage would also help identify service and configuration needs, such as caching.

Ryan highlighted the difference in actual commitment from various providers. Some offer throughput below the provisioned levels, whereas others (e.g., CEN) allow for spiking above contracted broadband limits. He has made the case to Education Superhighway that the organization conduct more accurate measures of actual broadband consumption, rather than simply levels of provision.

Member Topics

In response to Kerri's request for updates on CEN, Ryan mentioned the recent hiring of Rachel Collard, the Network's marketing coordinator. Her expertise will prove critical in supporting the May 18 Conference and in communicating the value of the Network to its members. He also expressed appreciation for the support of Tom Dillon in his assistance to CEN.

Tom thanked the group for their time and input and concluded the meeting at approximately 4:00 PM.