California Broadband Council Meeting Minutes   **August 23, 2017**

The California Broadband Council (BC) met on Wednesday, August 23, 2017 at 1:30 p.m. in the California State Teachers Retirement System Board Room, 100 Waterfront Place, West Sacramento, CA.

Roll Call

A quorum was met to begin the meeting.

The following members or designees were in attendance:
Amy Tong, Director, California Department of Technology (CDT)
Carla Peterman, Commissioner, California Public Utilities Commission (PUC)
Sunne Wright-McPeak, President, California Emerging Technology Fund (CETF)
Ben De Alba, Asst. Secretary, CA State Transportation Agency (CalSTA) (for Secretary Brian Kelly)
Mitch Medigovich, Dep. Director, CA Office of Emergency Services (CalOES) (for Dir. Mark Ghilarducci)
Jerry Winkler, Director, California Department of Education (for Superintendent Tom Torlakson)
Brent Jamison, Deputy Director, Department of General Services (for Director Daniel Kim)

Not present:
Senator Ben Hueso
Assemblymember Mike Gipson

Agenda Item 1 – Welcome
Chair Amy Tong convened the meeting with opening remarks. The Chair spoke about the Informational Hearing on "Broadband Infrastructure in Rural California" being held by the Select Committee on Economic Development and Investment in Rural California on August 29, 2017.

The Chair announced the California Department of Technology has added broadband services to the CALNET contract.

Agenda Item 2—Caltrans AB 1549 Update

Chris Schmidt, Division Chief, Transportation Planning, Caltrans provided an update on AB 1549 (Chapter 505, Statutes of 2016), which requires the Caltrans to work with broadband providers and others to lay conduit during certain highway construction projects.

Caltrans is updating internal directives to staff regarding commitments to broadband. The department is developing guidelines for broadband implementation. Efforts include:
1. Developing guidelines for Caltrans staff working on internal broadband projects
2. Working with industry
3. Project information website
4. Identifying existing fiber infrastructure that could be leveraged
5. Identifying funding sources
6. Process and challenges for project approval for encroachment permits
7. Discussions about shared use facilities – changing how Caltrans operates with regards to collocation.
8. Maintenance –how to fix assets damaged by Caltrans or contractors
9. Worker safety

10. Siting criteria that is most environmentally responsible and most cost effective
11. Infrastructure specifications
12. Cost and compensation responsibilities
13. Conflict resolution between parties
14. Review of best practices from other states regarding a "dig smarter" policy

Mr. Schmidt also demonstrated the "Proposed Highway Improvement and Repair Projects" website that is a Geographic Information System (GIS) representation of existing and upcoming projects. The website contains data layers that allow the user to overlay information such as highway projects CPUC served layers of wireline and wireless with details on each project available by clicking on the graphic representation of each project. The website displays data current through 2016. Caltrans will be adding 600 more projects through 2018. The site will show dates when projects will be advertised for construction. Data for counties, legislative districts and tribal lands are also available.

Questions from Council Members:

Mitch Medigovich asked what deployment means: underground or overhead? Mr. Schmidt responded that Caltrans wants to show the universe of projects that are in the "shop" that are funded by one set of funds. Mr. Medigovich also asked about an outreach plan. Mr. Schmidt answered that outreach will be through the districts, internal guidance and specific training for key points of contact.

Ben De Alba commented that Caltrans has had 2 stakeholder meetings and is currently drafting guidelines. Mr. Schmidt agreed and stated that the target was to finish by the end of the year.

Carla Peterman asked when will the database be available to the public? Mr. Schmidt responded that the site is available now and a detailed URL will be shared with the minutes.
http://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=9323116b932e4755a6acb55ba9311558

Sunne Wright-McPeak commented that 85% of transportation money goes to regions, so the big deployment projects will be done with planning and money at the regional level. The conversation needs to happen across all regions, the California Transportation Commission, and CalTrans. In order to take advantage of this information, there must be a conversation with industry, the regions, and the CPUC. Ms. Wright-McPeak asked how is industry going to reach the state wide goal of 98% deployment? Can CPUC's Communications Division, CASF team, get stakeholders together and use this database to get the conversations going on deploying fiber to close the digital divide? How to get mobility - get people and goods across the state? The most environmental and cost-effective way is through virtual movement over the internet (the "virtual trip").

Agenda Item 2—FirstNet Update

Patrick Mallon, Assistant Director, California Office of Emergency Services (CalOES), Public Safety Communications and State Point of Contact for FirstNet, provided and update on FirstNet efforts.

Mr. Mallon gave an overview of FirstNet law that requires 10MHz of Band 14 to be reserved for FirstNet and oversight has been assigned to the National Telecommunications and Information Agency. He stated 15 states have sent letters of commitment to FirstNet to Opt In. He then laid out the California First Responder's Network (CalFRN) organizational structure and activities.

CalFRN has held statewide outreach meetings with stakeholders to discuss overlaid 911 calls with AT&T coverage. The following issues have been identified: coverage, network architecture, priority and preemption, and cost. Cost and coverage are significant concerns. Other activities include identifying user types and defining priority through quality of services, priority and preemption. Preemption should occur in 1Q2018. Also discussed was FirstNet monitoring with local control and device management.

The state held a kick-off meeting with AT&T June 7 and 8, 2017. A final state plan is expected by September 19, 2017. California will have 90 days thereafter to decide whether or not to opt in. CalOES will make recommendations to the Governor during this 90-day period. There have been 12 outreach meetings held on the state plan across California. CalOES received 687 comments. Of these, 53 percent were related to coverage.

CalOES is continuing to work with AT&T on how they will harden sites at community anchor institutions with backup generators and increase rural and tribal coverage.

To finalize, CalOES is currently working on the Opt in/Opt out analysis. If the Opt-out decision is made, an Opt-out Request for Proposal will be drafted. The state has 180 days after opt-out to come with with a contractor identified.

Questions:
Sunne McPeak: Q. How does priority/preemption work? A. Priority places first responders at the head of the queue on spectrum. If a cell site is concentrating on a house fire, one sector of that site will be busy. If the sector can support 10 users and 20 users are waiting, first responders would be put on #11. Preemption means moving to #1. An example might be where a special weapons team uses a drone. The drone would get priority or preemption over other users. Control of that would be done by a local incident commander. Q: Is FirstNet going to interoperate with other providers? If so, how will that work? A: Verizon recently announced they'll provide priority/preemption to public safety users as well as a dedicated safety user core network. Interoperability can still happen over the internet.

Carla Peterman: Q. Are other states on track? A. 15 states have indicated based on draft plans have opted in. Arizona is one of them. Q. What coverage solutions is AT&T bringing to the negotiation? CalOES has identified 350 additional sites needed. All new sites will have Band 14; Connect America Fund sites will also be possibilities.

Agenda Item 3—Microsoft – Investment in America's Rural Broadband Technology

Ryan P. Harkins, Director, State Affairs and Public Policy Microsoft Legal and Corporate Affairs provided a presentation titled "A Rural Broadband Strategy."   He stated that 34 million Americans don't have access to broadband and 23 million live in rural communities. As services move to the cloud, this broadband gag creates an opportunity gap. Microsoft is promoting whitespace TV fixed wireless as a way to connect rural America. The advantages of TV white spaces are as follows:
1. TV white space has a very good penetration due to its low frequencies and this makes non-line of sight transmission possible.
2. Cost is low compared to fiber which costs up to $30,000 per mile to build

Currently, Microsoft has completed 20 white space broadband projects around the world.   The FCC implemented the first rules on white space in 2008. Brad Smith, Chief Legal Officer, has announced that Microsoft plans to close the broadband gap in 5 years. However, TV white spaces are not the silver bullet to fix the problem and there needs to be a mixture of solutions. For communities with 200 people

per square mile, TV white space is good and this addresses 80% of rural communities. For smaller communities, satellite is a better option.

Microsoft has launched the "Rural Broadband Initiative." This initiative is a series of 12 pilot projects across the country over the next 12 months. California is not on the list of projects, but Microsoft is currently working on projects in California. Each project requires a local ISP. Microsoft provides the capital infrastructure and the ISP runs the business. The effort is done through a revenue sharing arrangement for Microsoft to recoup the investment. Once the investment is recouped, Microsoft will invest in another project. Microsoft's motivation is partly philanthropic but also partly to promote its cloud computing business.

The two videos shown during the meeting:
- The FarmBeats project at Dancing Crow Farm: https://www.youtube.com/watch?v=pDgjOHY7sMI.
- The Homework Gap solution in Virginia: https://www.youtube.com/watch?v=N-NaWrSHsRU.

Microsoft is investing in digital skills training with 4H to train teenagers in communities that are receiving broadband access so they are able to train other community members.

Another goal is to stimulate the market by licensing its technology. Microsoft has nearly 40 patents plus source code for TV white space. The source code is available to ISPs royalty free.

There is a public role in this effort. First, Microsoft is asking the FCC to reserve at least 3 broadcast channels in each community to use for broadband—not limited to Microsoft, but available to the public.

Mitch Medigovich asked what is the challenge here? Mr. Harkins answered that in rural America, TV white spaces will be used for broadband access, but they could also be used for augmenting WiFi coverage outside.

Second, public funding to increase the number of pilots. A video clip of Carnation in the State of Washington showing the Internet of Things in action. The project showed data-driven farming. The project allowed the farmer to collect and analyze data to predict future plantings.

Another video clip was played related to broadband in education and bridging the homework gap in communities that didn't previously have access—Charlotte and Halifax counties.

The presentation also include efforts in California. Microsoft is partnering with a host of California wireless tech companies. Agriculture efforts related to this initiative include the DuPont farm in Woodland and another farm in Chowchilla.

Questions:

Sunne Wright-McPeak: Q. What % of California should have satellite only? A. A single channel can handle 10 Mbps for a single channel; channel bonding doubles that. 10 mile radius. As you go out, the signal strength decreases, so does capacity.

Jerry Winkler: Q. How many of these devices will it take before they become affordable? A. We think that if the FCC reserves 3 channels per community, the price could come down to the price of a WiFi router. The regulatory uncertainty since 2012 has made people pause; that's why there hasn't been full scale ramp-up of manufacturing

Brent Jamison: Q. How were the states/sites collected? A. A combination of terrain challenges, communities, etc. Q. What there any public funding in any of the examples? A. Not so far, but we're just starting to have that conversation regarding if they can expand the projects
Sunne Wright-McPeak: Q. Who puts up the capital? A. MS does. The ISP runs the business. Q. What's the magnitude? A. In southern Virginia, they're reaching 6,000 households. Q. How many antennas? A. I don't know.

Agenda Item 5—Practical Needs for Broadband at County Fairgrounds

Teresa Burrola, CEO Merced County Fair – 35th DAA presented on the needs of county fairgrounds.

The Merced County Fairgrounds host many community events such as weddings, quincineras, and funerals. She mentioned that the Hmong community holds 3-day funerals at the fairground.

Other activities at the fairgrounds include auto racing, annual fair and many others. The Merced County Fair generates $23 million per year. Statewide, fairs generate $2.3 billion with $66 million in tax revenue through the 74 fairs in the state.

On July 18, 2007, CalFire needed the Merced Fairgrounds for an emergency—the Detwiler Fire. They needed internet access which was not available on the fairgrounds. Xfinity and AT&T had to be called to provide broadband access at the Fairgrounds.

CalFire took over the entire grounds. Pictures were provided depicting the fenced-off areas, pallets of paper, porta-potties and housing set up on the grounds. Along with CalFire staff, there were CDCR inmates to provide support for CalFire for cooking, cleaning and laundry. Over 3,000 people were fed daily.

The community recently funded and built a new barn on the fairgrounds.

Last year, fairs lost funding in the amount of $168,000. This required budget cuts, layoffs, reducing the fair to 5 days from 6, and delay facility repairs.

The Merced County Fair would like to have broadband installed in conjunction with the UC Merced's lab project.

Questions:

Sunne Wright-McPeak: Are you talking about the need for broadband with other county fairs?
Ms. Burrola: Yes

Mitch Medigovich thanked Ms. Burrola for her work during the emergency.

Carla Peterman asked if fairs have been included in the FirstNet stakeholder meetings?
Sunne Wright-McPeak stated that there are still a large number of people who still lack access.

Public Comment:

Mike Nichols, Sonoma and Mendocino Consortium - primarily interested in FirstNet in Sonoma County - currently no AT&T connectivity in Sonoma or Mendocino counties. He was very concerned about whether local broadband can be collocated on FirstNet towers.

Mitch Medigovich responded that any new buildout by a California selected user would be available to the public.

Stephen Ross with MediaCom stated that they've spent $400K to provide high speed internet using microwave backhaul, $1 million has been spent trying to get permits through Bureau of Land Management. Once permits have been approved, they should be up and running in a month. MediaCom would like the Council's help to get Caltrans and BLM to move their applications forward. He stated that MediaCom in Kernville provided broadband to CalFire during a major fire.

Robert Tse - State Broadband Coordinator, Department of Agriculture, stated that they were looking at farmland for telecom policy; $20B of $50B in farm produce is exported. He stated that data-driven farming can help farmers meet regulatory requirements, measure ecosystem services, and improve yield/profit. What is needed is the underlying platform is broadband. We need to map broadband on the farm field. The CPUC and CETF ($75K each pilot invested, total of $150K) have helped do the first two pilots in Yolo and Fresno counties. This hasn't been done in other states. Sunne Wright-McPeak asked that Robert Tse report back to Council on the findings at the next Council meeting.

Brian Wintueria is a resident in rural El Dorado County that has fiber running 100 feet from his house. It's being used for government services and they have been trying to access it for the 1,100 homes in the community. They have not been able to get access to the poles. Carla Peterman commented that they could help him get connected to staff.

The meeting was adjourned by Chair Amy Tong at 3:50 p.m.