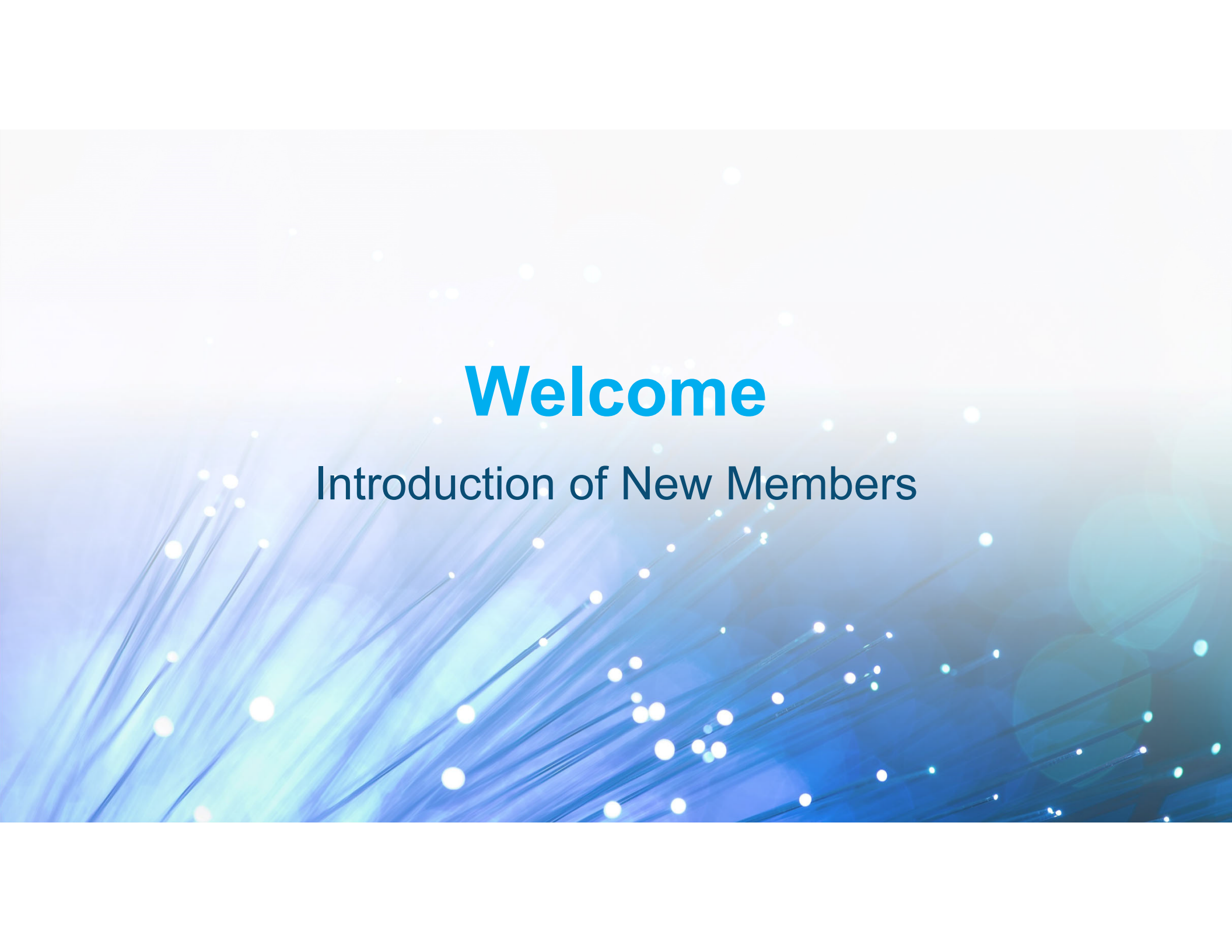


CALIFORNIA
BROADBAND COUNCIL



Welcome

Introduction of New Members

CalTrans New Contacts

Monica Kress-Wooster, Interim Broadband Manager

CalTrans Broadband Program

Monica Kress-Wooster

- mkress@dot.ca.gov
- 916 654-2729



CalTrans Broadband Facilitation

Staff Changes Since October

- Mike Keever, Deputy of Project Delivery
- Cory Binns, Deputy of Maintenance and Operations
- Monica Kress-Wooster, Interim Broadband Manager
- TBD, Broadband Coordinator



Activity

Successful meeting with Industry in January 2020

Facilitating Standalone Projects:

- Improving clarity of permitting policy and processes
- Developing template for Complex Utility Partnership Agreement (CUPA)

Facilitating Partnership Projects

- Improve website information: maps, contacts, guidance
- Updating conduit and construction methods standard plans and specifications

Facilitating a proactive approach with internal team



2020 Strategy and Planning

The background of the slide is an abstract composition of soft, out-of-focus blue and teal tones. It features numerous thin, diagonal light streaks that create a sense of motion and depth. Scattered throughout the scene are many small, bright white and light blue circular bokeh spots, which vary in size and intensity, adding to the ethereal and futuristic feel of the design.



Guest Speakers: Susan Strachan and David Espinoza

**CAPABILITIES ASSESSMENT OF PUBLIC SAFETY
BROADBAND INFRASTRUCTURE AT FAIRGROUNDS
SERVING AS
EVACUATION CENTERS**



GEOGRAPHICAL
INFORMATION CENTER
California State University, Chico

Capabilities Assessment of Public Safety Broadband Infrastructure at Fairgrounds Serving as Evacuation Centers

- Public Review Draft Report

Issue and Objective

Issue – Fairgrounds serve as both emergency response command centers and evacuation centers, with increasingly large-scale evacuations needing improved communication infrastructure.

Objective – Develop a deployment plan that will inform policy makers about upgrades necessary to establish sufficient communication infrastructure and the costs associated with these upgrades.



Tasks

- Measured mobile broadband performance at 74 fairgrounds.
- Measured fixed broadband performance at 54 fairgrounds.
- Gathered cost data from Internet service providers on provision of 10 Gbps symmetrical and developed costs estimates for a wireless network capable of serving 10,000 evacuees.
- Recommended an approach to implementing infrastructure upgrades.



Why 10 Gbps Symmetrical?

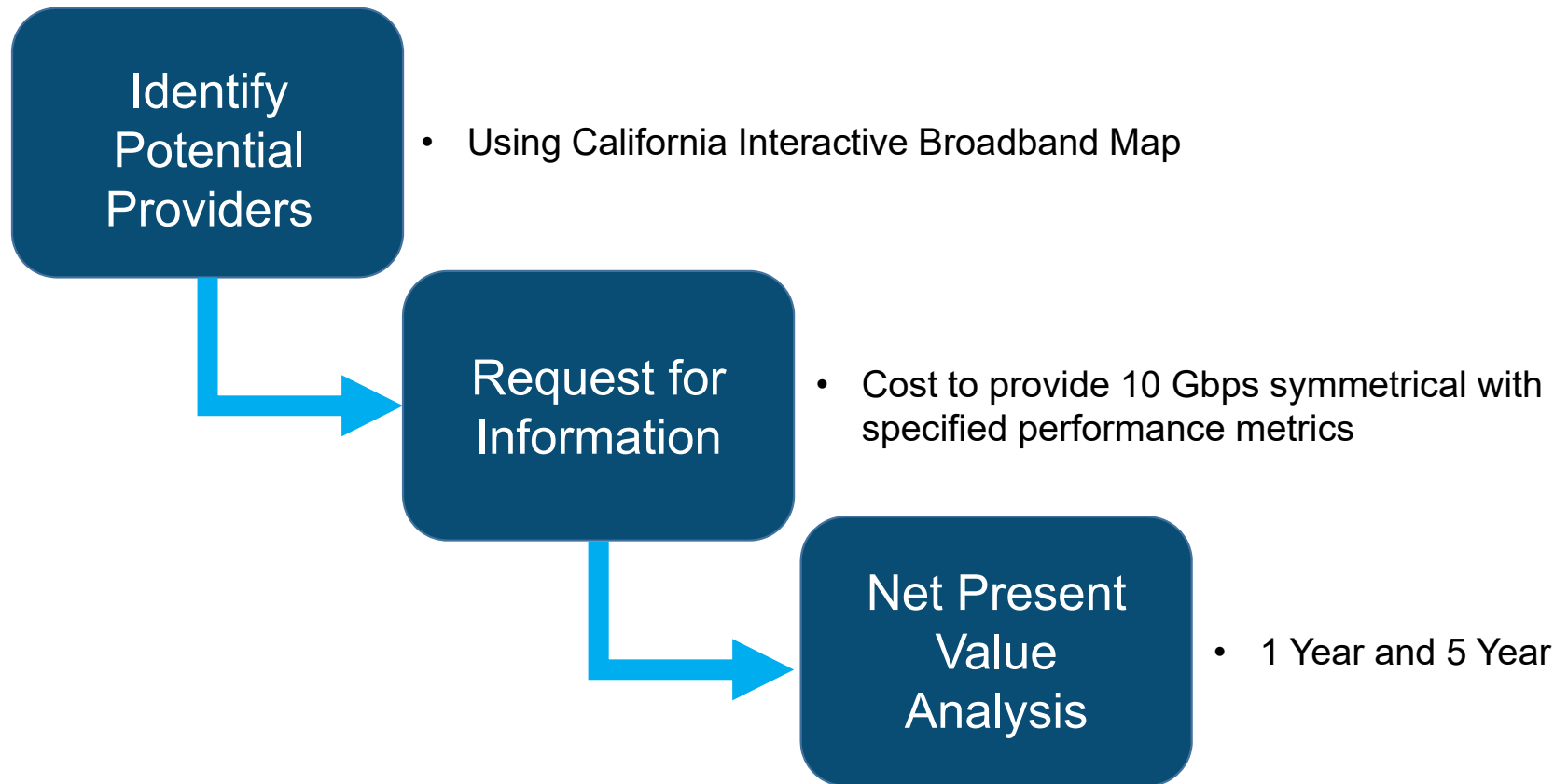
Provides
communications
for large numbers
of evacuees

Sufficient to
transfer large
video files –
upload and
download

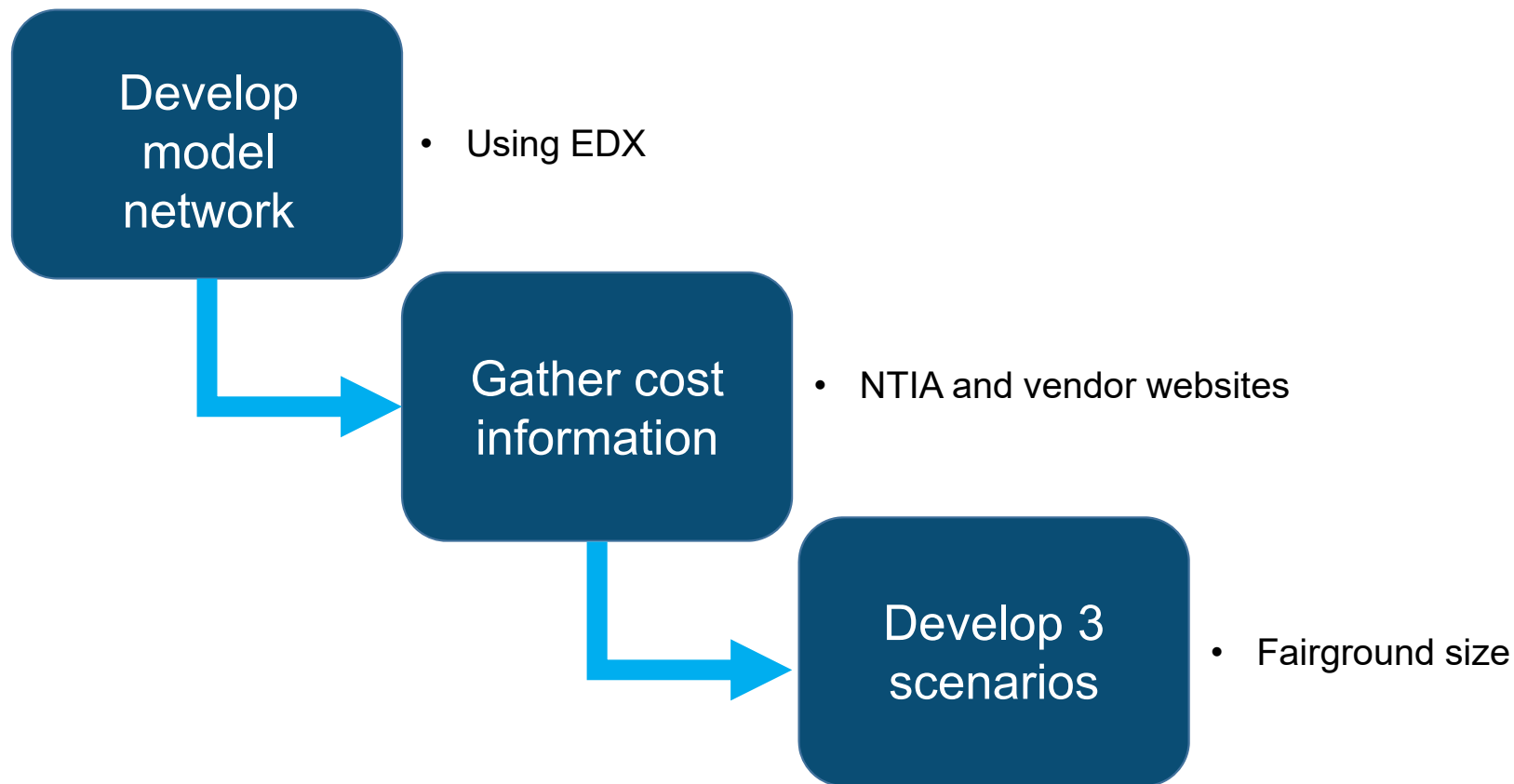
Achievable through
multiple
technologies: fiber
optics, cable model
and fixed wireless



Process to Develop Cost Estimates for High Capacity Backbone



Process to Develop Cost Estimates for Fixed Wireless Network



Cost Estimate – Fiber Backbone

Responses to RFI provided two approaches

- Monthly recurring costs only
- A combination of upfront deployment costs and monthly recurring costs thereafter

One respondent offered the ability to ramp service down from 10 Gbps symmetrical during on-emergency periods.

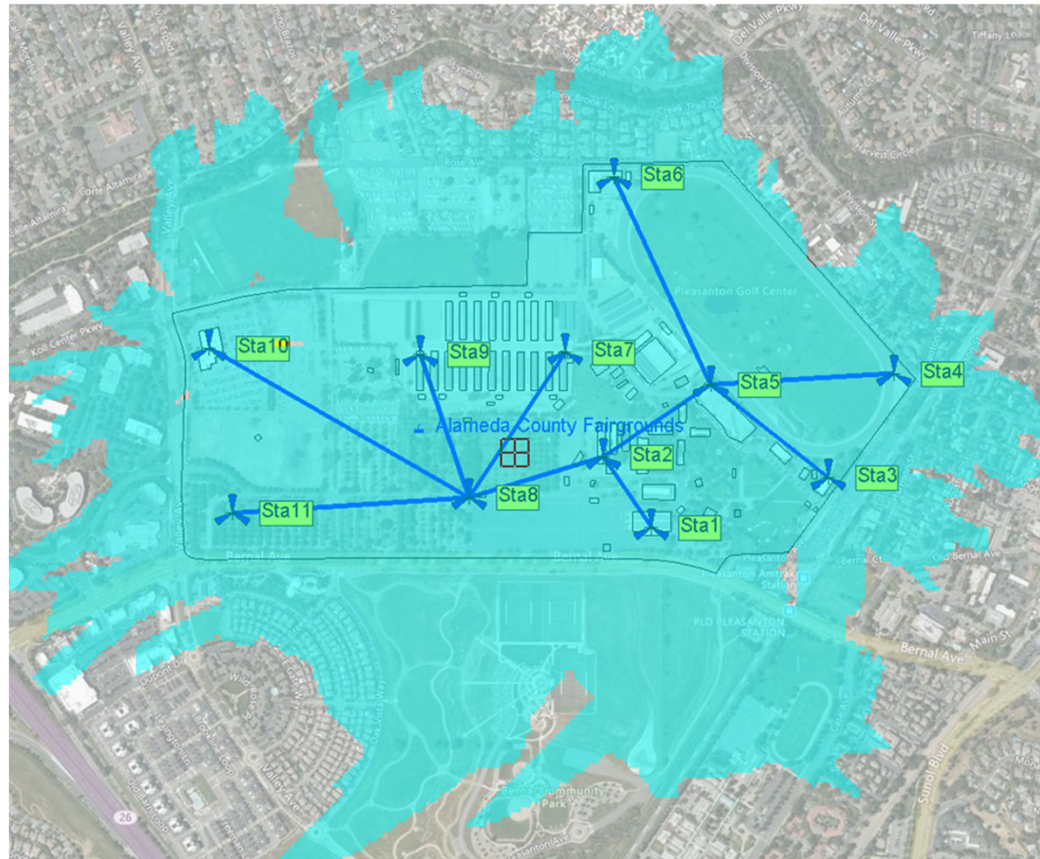


Cost Estimate – Fiber Backbone

	Lowest Pricing Option Backbone NPV Year 1 Adjusted (Lower Range Value)	Second Lowest Pricing Option Backbone NPV Year 1 Adjusted (Lower Range Value)
Total Cost for 74 Fairgrounds	\$8,628,906	\$43,388,389
Minimum	\$64,002	\$43,566
Maximum	\$555,594	\$13,386,088
Mean	\$116,607	\$586,330
Standard Deviation	\$107,436	\$2,167,154
Median	\$110,090	\$191,457



Fixed Wireless Network



Cost Estimate - Fixed Wireless Network

Deployment Cost – Low (Nonrecurring Cost)	Deployment Cost – High (Nonrecurring Cost)	Deployment Cost – Average (Nonrecurring Cost)
\$22,027,200	\$81,001,800	\$51,514,500



Cost Estimate – Total Deployment Year 1

	Deployment Cost – Backbone and Wireless Networks Low (Nonrecurring Cost)	Deployment Cost – Backbone and Wireless Networks High (Nonrecurring Cost)
Total Cost 74 Fairgrounds	\$30,656,106	\$124,290,189



Monthly Recurring Costs

Removing outliers of

- Humboldt (\$15,000)
- Placer County (\$7,500)
- Trinity County (\$23,513)
- Tule Lake-Butte Valley (\$23,513)

Range of Monthly Costs	Average Monthly Cost
\$2,150 - \$4,659	\$3,733



Backbone Deployment

Request for Proposals provides cost effectiveness by leveraging competition, nearby infrastructure.

- *Technical specifications – determine that competing proposals provide equivalent quality.*
- *Resiliency – will the proposed technology function during natural disasters (rain, smoke, multiple fire locations)*
- *Redundancy – can the provider reroute if resiliency fails*
- *Potential tradeoffs – between high initial capital costs and lower monthly costs over time*
- *Flexibility – can 10 Gbps be ramped up during disasters and back down for typical use*
- *Bundling – how to evacuate cost proposals that are contingent on being awarded a minimum number of sites*



California Environmental Quality Act

- *Most sites likely to qualify for Categorical Exemptions*
- *Four sites with particularly high costs should be evaluated to determine what likely project is*
 - *Humboldt, Placer, Trinity, Tule Lake – Butte Valley*
 - *Will these sites require an EIR?*
- *Cost estimate if no EIR and work through California Fair Services Authority likely in the range of \$650,000*



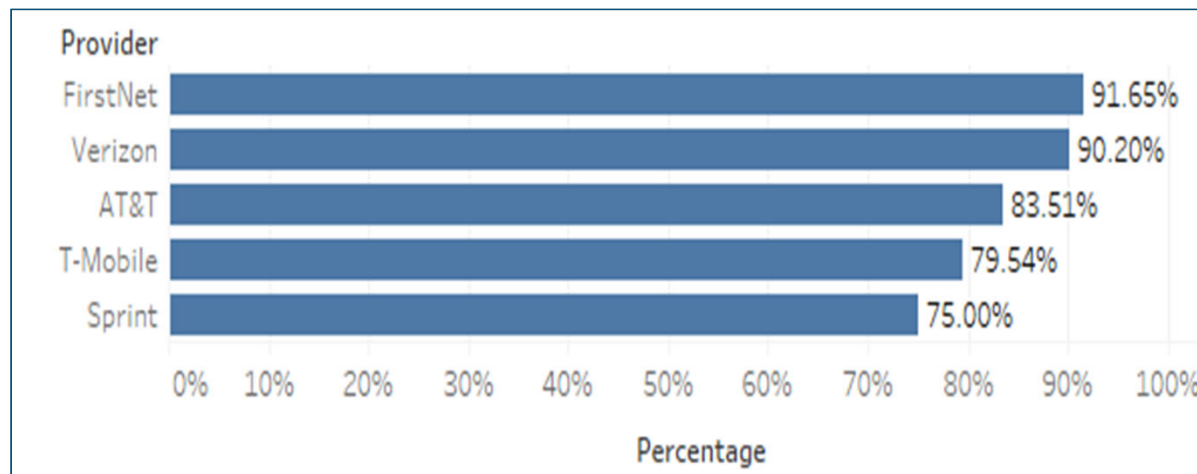
Mobile Testing Caveats

- Mobile testing is just a snapshot in time
- Can indicate limited patterns, but actionable conclusions need additional data



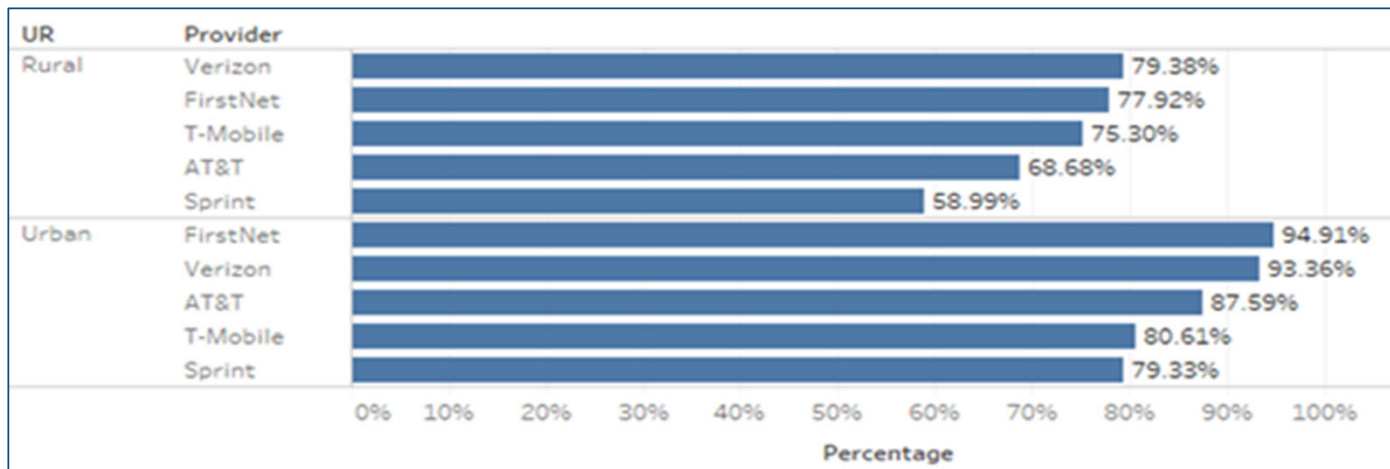
Mobile Testing

Excluding failed tests, FirstNet has the highest percentage tests over the 3.2 Mbps / 2.6 Mbps recommended speeds for two-person video calls



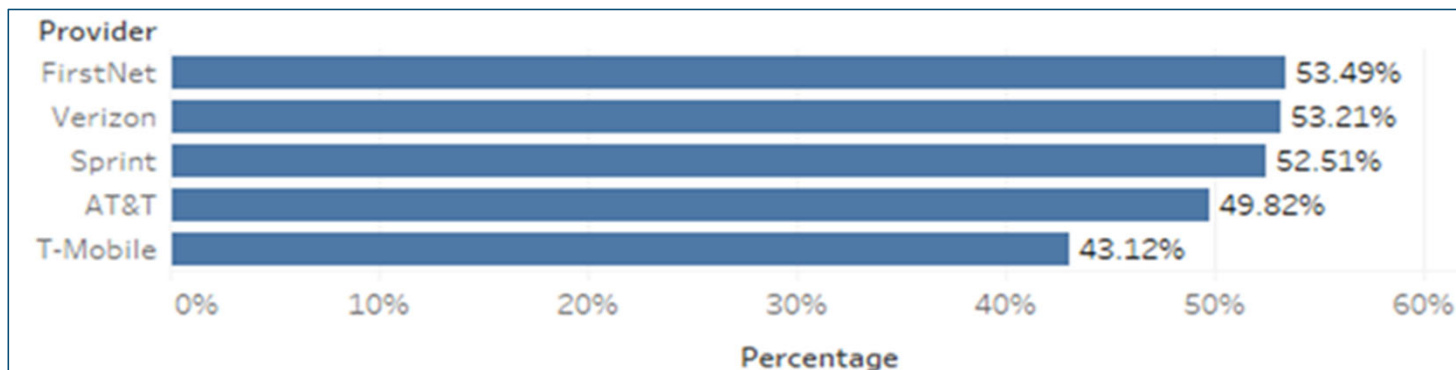
Mobile Testing

Rural fairgrounds are 15-20% less likely to have connection speeds capable of two-person video



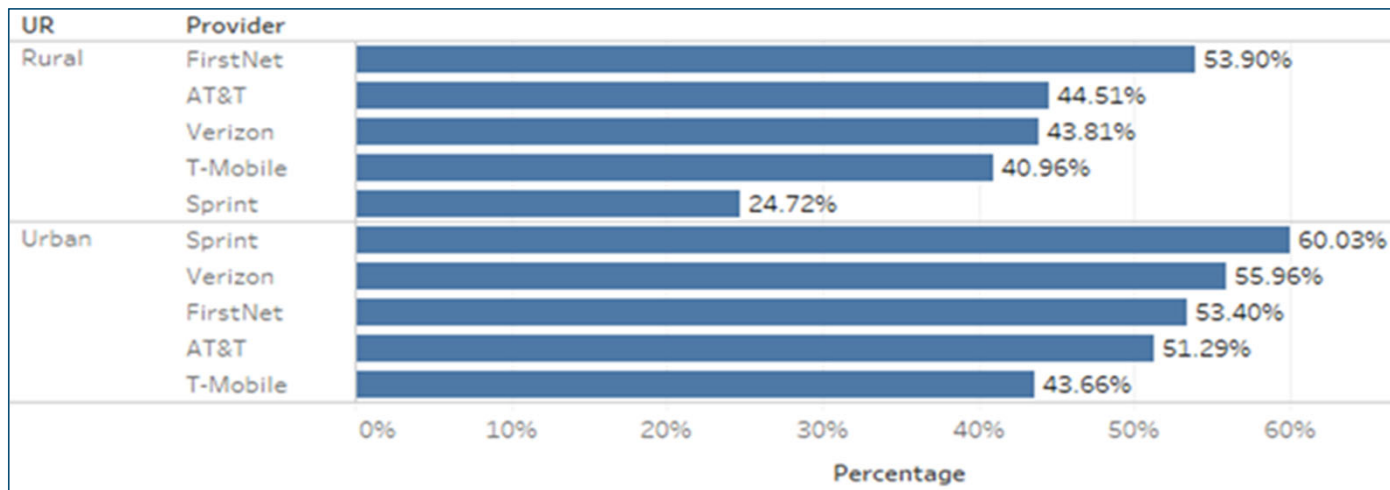
Mobile Testing

Excluding locations with failed tests, FirstNet also has the highest percentage of tests over the FCC standard of 25 Mbps /3 Mbps



Mobile Testing

FirstNet does not see a reduction in test locations with service at 25/3 in rural areas



Questions regarding FirstNet Failure Rates

- *100% failure rates at Trinity and Modoc*
- *100% failure rates at Amador, Calaveras, Mother Lode, and Placer*
 - *Parent network AT&T did not experience failure*
 - *Potential technical issue during testing?*
- *Mariposa, Nevada and Tehama fairgrounds experienced test failures at 45%, 14%, and 36% respectively*



Fixed Broadband Testing

- *54 of 74 fairgrounds deployed CalSPEED boxes*
- *21 of those provided their subscription plan information*
- *Most fairgrounds received subscribed speeds*
- *Sonoma County, Santa Clara County, and Alameda County Fairgrounds had measured download speeds falling well below the subscribed service*



Public Comment

The background of the slide is an abstract composition of soft, out-of-focus light. It features numerous thin, diagonal streaks of light in shades of blue and white, creating a sense of motion or data flow. Interspersed among these streaks are larger, circular bokeh light spots, some appearing as bright white highlights and others as softer, teal-colored glows. The overall color palette is dominated by cool blues and whites, giving it a high-tech or digital aesthetic.

The background features a soft, ethereal glow with a gradient from light blue at the top to a deeper blue at the bottom. Numerous thin, white, diagonal streaks resembling fiber optic cables or light trails sweep across the frame from the bottom left towards the top right. Interspersed among these streaks are many small, out-of-focus white and light blue circular spots, creating a bokeh effect that adds depth and a sense of movement to the composition.

Thank You!