

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA



FILED

09/21/23

04:02 PM

R2203016

Order Instituting Rulemaking Proceeding
to Consider Amendments to General
Order 133.

Rulemaking 22-03-016

**THE PUBLIC ADVOCATES OFFICE AND CALIFORNIA BROADBAND &
VIDEO ASSOCIATION'S JOINT SUMMARY OF THE SEPTEMBER 7, 2023,
WORKSHOP DISCUSSING GENERAL ORDER 133-D**

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September 21, 2023

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I. INTRODUCTION

Pursuant to Administrative Law Judge (ALJ) Glegola’s August 21, 2023, Ruling Noticing Workshop (Ruling), the California Broadband & Video Association (CalBroadband) and the Public Advocates Office at the California Public Utilities Commission (Cal Advocates) respectfully file this Workshop Report for the hybrid workshop (Workshop) held on September 7, 2023.¹ The presentations that each of these parties presented at the Workshop are attached hereto. The entities that participated in Workshop panels and the Tribal and Local Government Roundtables are identified below.

II. PROCEDURAL BACKGROUND

In response to Petition 21-10-003, the California Public Utilities Commission (Commission) adopted on March 17, 2022, an Order Instituting Rulemaking proceeding (OIR or proceeding) to consider proposed amendments to the Commission’s General Order (GO) 133. GO 133 sets minimum service quality standards for communications services and a corresponding enforcement mechanism.

¹ Ruling at 5 (ordering that “California Broadband & Video Association and Cal Advocates shall coordinate and prepare a summary of the workshop and compile all presentations to docket in the proceeding within 14 days of the workshop.”). The hybrid workshop was held at the California Energy Commission in Sacramento and via WebEx.

On August 21, 2023, the assigned ALJ issued a Ruling noticing a Workshop and invited parties to have interactive discussion on proposed service quality metrics and enforcement.²

In accordance with the Ruling’s schedule, the following parties filed presentations³ by September 1, 2023: Pacific Bell Telephone Company d/b/a AT&T California (U 1001 C) (“AT&T California”), AT&T Corp. (U 5002 C), Teleport Communications America, LLC (U 5454 C), AT&T Mobility LLC (New Cingular Wireless PCS, LLC) (U 3050 C), AT&T Mobility Wireless Holdings, Inc. (U 3021 C), and Santa Barbara Cellular Systems, Ltd. (U 3015 C) (collectively “AT&T”); Frontier California Inc. (U-1002-C), Citizens Telecommunications Company of California Inc. (U-1024-C) and Frontier Communications of the Southwest Inc. (U-1026-C) (collectively “Frontier”); the Cellular Telephone Industries Association (CTIA); CalBroadband; Cal Advocates; Center for Accessible Technology (CforAT), Communications Workers of America (CWA) and The Utility Reform Network (TURN) (collectively “Joint Consumers”); and the Small Business Utility Advocates (SBUA).

III. WORKSHOP SUMMARY

In accordance with the August 21, 2023, Ruling, the ALJ noticed the proceeding service list, scheduled a workshop, and held a one-day, hybrid workshop on September 7, 2023, at the California Energy Commission’s Art Rosenfeld Hearing Room, at 1516 9th Street, Sacramento, California, 95814 and via WebEx.

The workshop began with a brief description of the in-person meeting protocols and agenda by ALJ Glegola, and welcoming remarks by Commissioners Darcie L. Houck and John Reynolds. The Workshop Agenda⁴ was divided into a morning session for the

² *Administrative Law Judge's Ruling Noticing Workshop*, August 21, 2023 (Workshop Notice).

³ See Attachments B, C, D, E.

⁴ See Attachment A.

consumer advocates (Advocacy Panel)⁵ and an afternoon session for the communications services carriers (Carrier Panel).⁶ The morning session included the consumer advocates' presentations on proposed Quality of Service (QoS) metrics and measurements, presentations on the enforcement mechanisms in GO 133, a round table discussion for Tribal and Local Government representatives, and a question-and-answer session. The afternoon session schedule included the Carrier Panel's presentation on proposed QoS and measurements, presentations on the enforcement mechanisms in GO 133, a round table discussion for Tribal and Local Government representatives, and a question-and-answer session.

Consistent with ALJ Glegola and Commissioner Houck's remarks, the focus of this Workshop was on voice services only. Commissioner Houck mentioned that there is some overlap between broadband service and Voice over Internet Protocol (VoIP) but reiterated this phase of the proceeding deals only with plain old telephone service (POTS), VoIP, and wireless services, and that the purpose of this Workshop was to discuss metrics and mechanisms proposed by parties (as opposed to a staff proposal, which is forthcoming). This Workshop Report is organized to mirror the agenda set forth in the Ruling. This Workshop Report is intended to provide a high-level, fair, and neutral summary of the presentations and discussions at the Workshop; it is not intended to be a detailed or comprehensive summary of the dialogue that took place at the Workshop.

⁵ The consumer advocates on the panel "shall include Small Business Utility Advocates, the Public Advocates Office at the California Public Utilities Commission, and a representative from The Utility Reform Network, the Center for Accessible Technology or Communications Workers of America." Workshop Notice at 4.

⁶ The carriers on the panel "shall include AT&T, Frontier, a cable company that is a provider of voice services using voice over the internet protocol (VoIP provider), and a wireless voice carrier." Workshop Notice at 4 (footnotes omitted).

IV. GENERAL ORDER 133 DISCUSSION

A. Consumer Advocates' Presentations

This section is a summary of the consumer advocates' presentations and of the information discussed at the workshop in the morning session. The panelists representing the consumer advocates were the following:

- Lucas Duffy, Cal Advocates
- Itzel Hayward, SBUA
- Paul Goodman, CforAT, CWA, and TURN (together Joint Consumers)

B. Consumer Advocates' Presentations on QoS Metrics and Measurements

1. Cal Advocates

Cal Advocates stated that existing GO 133-D current standards have not kept pace with customer's needs and apply only to plain old telephone service. The presentation included Cal Advocates' recommendations for modifying existing GO 133-D service quality metrics and applying them to interconnected VoIP, wireless, and broadband services. The presentation also states that there is an increasing reliance on essential communication services such as VoIP, wireless, and broadband services.

Cal Advocates emphasized how California customers need both transparency and a baseline expectation of service quality from communication services providers. The service quality metrics recommended were categorized into two main categories. First, Cal Advocates presented a table of existing GO 133-D metrics required of POTS services that it recommends should be applied to interconnected VoIP, wireless, and broadband, including Installation Intervals, Installation Commitment, Customer Trouble Reports, Out of Service Repair Intervals, and Answer Time. Cal Advocates stated that their new proposed metrics, which are not currently in GO 133-D, are related to the performance of essential services and include Latency, Jitter, Packet Loss, Packet Reorder, Network Outages, Repeat Trouble Tickets, Call Drop Rates, Call Failure Rates, and Call Setup Time. For each metric, Cal Advocates identified its proposed applicability to various

communications services, and stressed that the geographic levels at which these metrics are collected by companies differ from metric to metric. The presentation concluded by restating that customers need to know the level of service quality they are receiving and how the carriers are performing, and that GO 133-D should be modified accordingly.

2. SBUA

SBUA presented four proposed QoS metrics it stated are needed for small businesses throughout the state of California:

- **Network Availability:** SBUA stated that small businesses need reliable network availability to stay in business and that the Commission must mandate a 99.9% average of Network Availability so vulnerable Californians do not get left behind.
- **Call Completion Rate:** SBUA explained that businesses help in community development and social cohesion, and they rely on call completion to conduct business effectively and reliably. SBUA stated that each dropped call can affect the economic health of vulnerable communities, especially underserved communities.
- **Call Setup Time:** SBUA stated that longer setup times slow the pace of business.
- **Call Quality determined by Mean Opinion Score (MOS),** with “1” being worst and “5” being best: SBUA stated that measuring MOS contributes to businesses’ effective communication in making reliable calls.

SBUA’s presentation also proposed modernizing and amending current QoS metrics to align with the letter and spirit of the Commission’s Environmental Social and Justice Action Plan (ESJ plan). SBUA stressed that quality communication empowers businesses and customers. SBUA stated there are over 4.2 million small businesses that collectively make up 99.8% of California businesses and employ 7.3 million people. SBUA stated that their recommended metrics serve to increase equity among unserved and underserved communities, are essential to small businesses, and stimulate economic growth to fortify California’s economy. SBUA concluded by urging the Commission to

use a thoughtful approach so that small businesses and Californian ratepayers may all benefit from high-quality communication services.

3. Joint Consumers

Joint Consumers proposed service quality metrics in three categories: network availability, reliability, and quality. Joint Consumers recommended a Customer Trouble Report metric for all technology types. Joint Consumers presented that network availability metrics should be applicable to POTS, VoIP, and Radio Access Network (RAN)/Wireless because the metric is specifically critical for measuring wireless network congestion. Furthermore, the Joint Consumers proposed Call Setup Time to be measured monthly and reported quarterly by carriers. Joint Consumers added that Wireless minimum speeds should be at 5 Mbps downstream and 2 Mbps upstream.

Joint Consumers recommend that the Adjusted Results of the Out of Service Repair Interval metric should be revised to hold carriers responsible for outages that occur on Sundays and holidays. Joint Consumers stated that the following Call Reliability metrics should also be considered and added to GO 133-D: Call Completion Rate; Call Setup Time; Call Failure Rate; and Call Drop Rate.

Joint Consumers recommended that Call Quality be measured through a MOS (measured 1 through 5, with 5 being the best) for metrics such as Jitter, Latency, and Packet Loss. Joint Consumers stated that the minimum threshold for this metric should be between 4.3 and 5.0, and that there should be a special consideration of testing for individuals who use voice service to communicate but have some degree of hearing impairment.

C. Consumer Advocates' Presentations on Enforcement Mechanisms

1. Cal Advocates

Cal Advocates stated that GO 133-D's current enforcement mechanisms are failing to address persistent service quality issues in California and that there is little incentive for essential communications service providers to address systemic issues in

their service quality. Cal Advocates proposed four revisions to GO 133’s enforcement mechanism as a starting point:

- Establish a new maximum fine limit and treat fines as continuing in nature, in accordance with Public Utilities (PU) Code sections 2107 and 2108.
- Remove the grace period for assessing penalties, stating that companies should not be able to evade fines while failing to address their systemic service quality issues.
- Remove the “Alternate Proposal” or “Investment in Lieu of Fines” clause from GO 133-D, stating that Communications Division staff have already identified that it fails to improve service quality outcomes.
- Establish a baseline for automatic customer credits to compensate customers for service quality issues—specifically, a \$5-per-day automatic credit for customers without service and a \$10-per-day automatic credit for Tribal customers without service, based on Frontier’s Bankruptcy Settlement Agreement.⁷

2. SBUA

SBUA stated that the Commission’s Network Exam revealed a troubling pattern of disinvestment in service quality that predominately affects lower-income communities, black communities, indigenous communities, other communities of color, and underserved and unserved communities. According to SBUA, the ESJ plan specifically states that the service quality a community experiences should not be based on the racial or socioeconomic profile of that community, and thus necessitates reframing GO 133-D’s enforcement mechanism, because the current enforcement scheme creates potential for the continuation and exacerbation of existing disparities. SBUA also stressed that communication services are crucial to the small businesses that form the backbone of California’s economy. SBUA proposed three revisions to GO 133-D:

⁷ Settlement Agreement (A.) 20-05-010, Decision (D.) 21-04-008, *DECISION APPROVING CORPORATE RESTRUCTURING WITH CONDITIONS*, CPUC, December 24, 2020.

- The “Investment in Lieu of Fines” must be viewed through a lens of equity, and there should be clear directives to invest in historically unserved and underserved communities to remove any inadvertent avenue that reinforces profit-driven investments in higher income areas resulting from service quality fines.
- Require service providers to provide targeted service improvement plans, detailing specific timelines and milestones to ensure equitable service quality for all communities for enhanced transparency and accountability, including showing service quality improvements with specific breakdowns by community, demographic, and income level.
- Have regular public hearings to ensure that communities can voice their experiences and that providers can demonstrate their commitment to equitable service.

3. CforAT and TURN (Joint Consumers)

Joint Consumers stressed that the severity of GO 133-D’s enforcement mechanism should match the severity of the impacts of adverse service quality outcomes on vulnerable populations. Joint Consumers stated (1) that the consumers who file service quality complaints are a small fraction of the consumers that have service quality issues, and (2) that service quality issues are not equally distributed across a network, but often occur repeatedly in “hotspots.” Joint Consumers criticized the “Investment in Lieu of Fines” clause by referencing AT&T’s 2023 advice letter 49420B. Joint Consumers stated that AT&T stated in its advice letter that AT&T’s diverting resources away from high-speed broadband to its copper network will not benefit low-income Californians. Joint Consumers further stated that AT&T failed to mention that for years they have been diverting resources from its copper network to building out broadband, a diversion the Joint Consumers called a wealth transfer. Joint Consumers also stated that service quality issues are largely a result of underinvestment and neglect. Joint Consumers proposed the following modifications to GO 133-D:

- Increase to the statutory maximum fine amount and make it financially unviable for companies to fail to address service quality issues.
- Remove the investment cap because investments have been far too small to meaningfully affect service quality.
- Require companies in chronic failure status to pay fines for the entire period that they are out of compliance and that the Commission consider waiving fines if a provider misses a metric by less than 10 percent but returns to compliance within three months.
- Revise the Adjusted Results metric to include Sundays, because the impacts of negative service quality outcomes do not abide by days of the week.

Joint Consumers also stated that customers should be aware of bill increases due to service quality related fines. Joint Consumers also stated that research conducted by Mark Israel suggests that when provider costs increase because of fines, those costs are not only passed on to customers — the providers also tack a premium on top of the costs to the customer.

D. Tribal and Local Government Roundtable Discussion in Response to Consumer Advocates' Presentations

The roundtable representatives for Tribal and Local Government included:

- Kori Cordero, CEO of Yurok Telecommunications Corporation (Yurok Telecoms)
- Scott Armstrong, Inyo County Regional Broadband Coordinator
- Jessica Pyska, Lake County Supervisor
- Matthew Rothstein, Lake Couty Deputy County Administrative Officer
- Matt Rantanen, Director of Technology for the Southern California Tribal Chairman's Association and Director the Tribal Digital Village Initiative/Network (SCTCA) (*Virtually attended*)
- Tiffany Martinez, Clerk of the Board for the Modoc County Board of Supervisors (*Virtually attended*)

Each tribal and local government representative took turns in providing their comments to the consumer advocates presentations and highlighting issues with communications services in their respective areas as follows.

1. Lake County

Lake County emphasized the need for updated and accessible wireless coverage maps, especially in High Fire-Threat District (HFTD) areas. In addition, Lake County noted that communications service providers have a profit-driven incentive structure to invest in areas that will bring the greatest return and is also cognizant that any bill increase is a matter of significance for vulnerable Lake County property owners and businesses. Lake County also added that rural counties rely on these services to make emergency calls and messages.

2. Yurok Telecoms

Yurok Telecoms asked the Commission to consider nuances for tribal government, local government, and tribally owned corporations regarding providing service to their communities. Yurok Telecoms discussed both the benefits and complexity of the automatic \$10-per-day credit reached in the Frontier settlement, noted that the incentive of receiving credits prompted more tribal members to call in to be connected to services but that doing so still required ongoing effort from tribal members, and highlighted the need for ongoing educational programs. Yurok Telecoms also explained the importance of viable POTS on the Yurok Reservation because it is the only service available throughout the Reservation.

Yurok Telecoms discussed the impact of network service outages and historic service quality issues with the big providers on the Yurok Reservation. Yurok Telecoms stated that outages will last for six months for which tickets are not created, and when outages are reported they are not being addressed by Frontier. Yurok Telecoms explained that long back and forth exchanges with Frontier cause many tribal members to give up on trying to get their phones reconnected, contributes to tribal members not realizing phone service is available to them, and forces elders from the reservation to

drive dozens of miles to the tribal office and use the office landline to make an appointment regarding an issue with Frontier's service. Yurok Telecoms stated that there should be stricter service quality metrics, more auditing, and more education for the community. Yurok Telecom added that a consumer must be very persistent to get due compensation.

3. Inyo County

Inyo County discussed two recent outages and stated that it is important to focus solutions, metrics, and enforcement put in place to ensure that customers can access essential communication services for daily life and emergency communications including broadband, cellular, POTS lines, and VoIP.

4. Southern California Tribal Chairmen's Association

SCTCA appreciated all the comments from prior presenters and noted that many comments resonate with the problems Southern California tribes are experiencing. SCTCA discussed the activities of the Tribal Digital Village Network/Initiative, which it stated was created because existing infrastructure is largely insufficient to support tribal communities in that area. SCTCA stated that existing copper phone lines crack when there is rain, moisture, and heavy sunlight, causing outages.

SCTCA expressed the challenge of replacing old copper lines with fiber because more than 30% of individuals in Tribal areas will not have phone service without those lines. In addition, SCTCA stated that some roads in these areas have cell coverage, but the reservations that are adjacent to those roadways do not. SCTCA expressed concern about replacement of copper lines with fiber in Tribal areas, wireless service in Tribal areas, and service quality issues and responsibility for addressing them in Tribal areas. SCTCA also questioned what the carrier's current strategies are to address service quality.

5. Modoc County

Modoc County stated that it is a very rural area located six hours from Sacramento, California, on the border of Nevada and Oregon. Modoc County discussed

two main issues. First, a constituent complained about a particular cell service covering the area being turned off, located in the Surprise Valley, which spans Modoc County. Second, a cellular provider working with Modoc County mandated that the Code Division Multiple Access (CDMA) technology on which their cellular service relies will be turned off, due to the phase-in of 5G service. However, Modoc County emphasized that it does not have 5G service, leaving residents without any type of cellular service. Modoc County then described an outage starting on July 31, 2023, along the 299 Highway corridor due to theft and vandalism that resulted in two days of no coverage for the whole of Modoc County, leaving residents without cash stranded and unable to pay for gas at most gas stations. Modoc County asked for an exemption from CDMA shutoffs and stated that the current system is not effective enough, especially in emergency situations because cell service is essential for Modoc County.

E. Question & Answer Session for Advocacy Panel

1. Questions and Comments from Commissioners

Commissioner Houck noted that customers need to have reliable services, and that the Commission and parties are grappling with the enforcement issue in terms of where to use carrots and sticks. Commissioner Houck stated the Commission is also aware of the cost challenges associated with improving service quality outcomes. Commissioner Houck also noted that an all-hands-on-deck approach with advocates, carriers, and local and tribal governments will be needed to devise solutions. Later in the session, Commissioner Houck mentioned challenges with the workforce and development and training especially in rural areas. Commissioner Houck stated that there need to be metrics in place and a mechanism to enforce them. Commissioner Houck emphasized that everyone must be at the table for solutions before welcoming any outside-the-box ideas, and queried whether there are favorable outcomes from the Frontier bankruptcy proceeding to consider.

Commissioner Reynolds followed this discussion with a question about data points or data sources the Advocacy Panel could point to in order to help ensure that any new

metrics would reflect what customers are expecting to see in their services, particularly outside of the existing GO 133-D standards.

2. Responses to Commissioners' Questions and Comments

Yurok Telecom reflected on this discussion, stating that costs should not be born solely by the underserved communities themselves. Panelists stated that while creative solutions are needed, businesses *can* prioritize providing good service quality, and if they do, they will attract customers, as Tribal Wireless Internet Service Providers (WISPs) have exemplified. SCTCA emphasized that people need communications services, and that there have been many holes in the delivery, service quality, and reporting systems – such systems should cater to communities who need service quality for quality of life and emergency communications, not to the business priorities of carriers.

Cal Advocates responded to Commissioner Reynolds' question, stating that a new Repeat Trouble Report metric for POTS can be used to identify persistent service quality issues, and that there are data points in the proceeding record that identify how updated metrics will ensure actual performance and transparency for customers. Cal Advocates stated that standard industry practice already allows for collection of such data points, so adding those metrics to GO 133-D is a matter of public transparency. Cal Advocates added that any outside-of-the-box solutions need to start from a baseline point of safe and reliable service, such that customers receive the services they pay for.

SBUA noted that the burden of disenfranchisement cannot be placed upon the communities that have been historically disenfranchised in the first place by providers, adding that small businesses exist in every county in the State including rural areas. SBUA also suggested the Commission disaggregate data on service quality outcomes as a way to understand which communities are receiving better service quality and which are not.

Joint Consumers responded that there are a few good metrics for the Commission to consider. Joint Consumers stated that if a particular service territory is in Chronic Failure Status for long enough, the Commission should consider it unserved. Additionally, Joint Consumers stated that the Network Exam found that AT&T was

paying more to its parent company than it received in revenue, and that AT&T was purchasing services from AT&T affiliates in transactions that did not appear arms-length, which Joint Consumers said could indicate underinvestment in their networks.

Inyo County added that in the case of disasters, there should be as much transparency as possible so that all entities involved can learn how and why networks fail in disaster situations. SCTCA also called for accurate mapping for Tribal areas specifically, highlighting the need to aggregate data on voice services at the end user level.

At this point, the Assigned ALJ Glegola asked for clarification on the populations of rural areas in Inyo County to understand whether they were large enough to trigger reporting in GO 133-D, noting that he thinks it would take a really long outage.

3. Audience Question and Answer Session

Charter

Charter's representative asked a question directed to SBUA, regarding whether SBUA is aware of anything on the record that shows any issues with respect to VoIP service. SBUA replied that they did not off the top of their head. Joint Consumers added that there is plenty of data showing people having problems with service quality, and that it is therefore reasonable to apply technology-neutral service quality requirements. Additionally, Joint Consumers stated that if there are no issues with service quality, the providers should report on their service quality – that it is not about punitive measures but consumer protection.

TURN

TURN commented that it is concerned about landline telephone service quality, and asked whether the Tribal and Local Governments utilize the Watch Duty app. Lake County responded that they use it and gave an example of an emergency situation where they were able to get the alert but not able to access further data including maps.

Comcast

Comcast asked Cal Advocates about its additional proposed metrics, including what basis Cal Advocates had to claim that companies already track this information, and what communications companies track this information. Cal Advocates responded that confidential information cannot be disclosed at this time but that it came to this conclusion based on the discovery process.

Comcast

Comcast asked Cal Advocates whether the metrics Cal Advocates presented on are being measured by the carriers “as proposed”. Cal Advocates responded that there is some nuance because different carriers collect the metrics slightly differently and at different levels of geographic specificity, but in terms of general categories they are measured as proposed. Comcast followed up with a question for Joint Consumers about the testing required for individuals with hearing impairment regarding the nature of the test. Joint Consumers responded with a methodology for testing that included taking a voice recording, replicating the conditions on it, then testing it under different parameters.

Cox

Cox asked Joint Consumers about reporting on Adjusted Results Data, and whether the Joint Consumers were advocating to remove only Sundays and holidays or also all events outside the providers’ control. Joint Consumers responded that holidays and Sundays should be removed but responded that they struggle with events beyond providers’ control. Joint Consumers posed a question about how prepared infrastructure needs to be for networks to withstand events of known severity. Yurok Telecoms added that it might be helpful for carriers to assess what is happening before an incoming storm because carriers will often blame discrete events for long-term issues with the network. Lake County concurred and provided an example of its own regarding poor vegetation management by providers.

Member of the Public

An unidentified caller commented that service in Springfield (which has a population of 1,000) has not been the same since 2017. He is unable to find information when emergencies occur and sometimes his community cannot call Sheriff or Fire Department.

Cal Advocates noted that it does not speak for the wireless industry but represents the best interest of the consumer/ratepayer. Cal Advocates informed the caller that they may log consumers complaints to the Public Advisors Office (PAO) and Consumer Affairs Branch of the CPUC. Joint Consumers added that anecdotally, logging complaints with the PAO is not always consistent, and that a decade prior, PAO representatives claimed they do not take complaints for VoIP service. Joint Consumers added that the only guarantee for service quality is for communities to deploy infrastructure themselves. Cal Advocates added that the goal of this proceeding should be for transparency, and that consumers should be able to make an informed choice rather than paying out of their pockets for service that is subpar.

F. Carrier Panel Presentations

This section is a summary of the carriers' presentations and of the information discussed at the workshop in the afternoon session. The panelists representing the carriers were the following:

- Joshua Mathison, Director of Regulatory Affairs, AT&T
- Scott Pearson, Regulatory Manager, AT&T
- Aubry Shaw, Manager of VoIP Network Engineering, Frontier
(Virtually attended)
- Jenny Smith, Director, Government and Regulatory Affairs, Frontier
- Mark Settle, a Senior Engineering Advisor at the firm of Wilkinson Barker Knauer, on behalf of CTIA
- Benjamin Aron, Assistant Vice President, State Regulatory Affairs, CTIA

- Beau Jordan, Senior Director of Compliance at Comcast with a background in VoIP Network Engineering, CalBroadband⁸
- Janus Norman, President, CalBroadband

G. Carrier Panel Presentation on QoS Metrics and Measurements

1. AT&T

AT&T first addressed the assertion that investments are made based on demographics, stating that the statistics mentioned in the Advocacy Panel do not reflect how AT&T makes investments or repairs. AT&T explained that the Trouble Reports metric is the most important metric for AT&T customers because it shows those customers do not need to wait for a technician. AT&T also asserted that the current Out-of-Service Repair metric that requires restoration of POTS service within 24 hours 90% of the time is a flawed metric.

Concerning the metrics identified for discussion in the Ruling, AT&T's primary assertion was that AT&T's POTS customers receive a high quality of service. AT&T also said its POTS network is effective at providing voice service but is not an advanced network that can monitor things like network availability, or dropped calls, which could appear to the network as somebody just hanging up the phone.

AT&T concluded by saying AT&T customers are rarely out of service because AT&T cares about its network, its customers, and having a reliable network that delivers high quality service, not because it must comply with GO 133-D.

2. Frontier

Frontier described its outage reporting practices pursuant to state and federal regulations. Additionally, Frontier described its network monitoring systems, which provide network-wide data.

Frontier then addressed three of the metrics identified for discussion in the Ruling: Network Availability, Call Drop Rate, and Call Quality. Frontier indicated that it is unable to measure POTS network availability as a standalone metric. Regarding the

⁸ To comply with the Ruling, a technical expert from Comcast, a CalBroadband member, represented CalBroadband on the Carrier's QoS Metrics and Measurements Panel.

proposed Call Drop Rate metric, Frontier believes it is not a practical standard to track on the POTS network because the metric cannot be compiled unless reported by the customer. Finally, Frontier explained that the proposed Call Quality metric determined by MOS value for POTS is a subjective human measurement, which cannot be feasibly supported through a large enough sample size.

3. CTIA

CTIA explained that the proposed metrics would dictate how the providers must build and operate the networks and do not account for the inherent variability in the performance of radio frequency networks that is outside the control of the service provider. CTIA further explained several negative impacts of the proposed metrics, including disincentivizing provision of service in areas at the network edges and impeding operators from meeting other regulatory obligations.

CTIA also described how stated network performance is impacted by factors that are outside the control of the network operations, including consumer's choice of handsets, network loading, and physical characteristics that impact radio signal propagation including man-made obstructions (i.e., elevators), terrain, and weather. CTIA concluded by reiterating that measuring network performance will be based on how much radio frequency energy can be delivered to the customer.

4. CalBroadband

CalBroadband queried what specific problems each proposal is trying to solve for and noted that the cable VoIP industry either does not track the proposed metrics for voice service or does not measure the metrics in the ways proposed. CalBroadband explained that the six proposed metrics are not well-defined and therefore immeasurable, not relevant to nationwide, managed VoIP networks, and several proposed metrics would be affected by issues outside the control of providers, including problems in other carriers' networks.

CalBroadband highlighted flaws specific to each of the six proposed metrics. CalBroadband observed that the proposed Call Quality metric is a subjective metric

without standard measurement across industry and would be ineffective for assessing calls that leave a provider's network given codec variations. CalBroadband explained that the proposed network availability metric is not appropriate for VoIP networks that, unlike TDM-based voice networks, do not have local switches to measure from, and also that Network Availability is not a standardized metric and could be impacted by other carriers' networks. CalBroadband described how the proposed Call Setup Time metric would be difficult to measure because calls often do not originate and terminate on the same network. CalBroadband discussed how the proposed Call Failure Rate and Call Drop Rate metrics are not standard in the VoIP industry, and how VoIP networks are not susceptible to dropped calls except when there is a catastrophic network failure or issues outside of VoIP providers' control.

CalBroadband concluded that the proposed metrics require significant definition before carriers can factually comment on their feasibility and usefulness in evaluating service quality, and it would be inappropriate to hold providers accountable for issues outside of their control.

H. Carrier Panel Presentation on Enforcement Mechanisms

1. AT&T

AT&T discussed its recent network investments and expansion of fiber. AT&T asserted that with healthy competition, there is no need for service quality regulations, and pointed to outage and call quality complaint statistics.

AT&T commented on only some of the enforcement proposals and stated that its silence on other enforcement proposals should not be taken as an endorsement, but rather just the opposite. AT&T explained its support for Commission rules that allow AT&T to make adjustments when reporting results for the existing metrics to capture events that are outside of AT&T's control including, but not limited to, natural disasters, scheduling for weekends and holidays, and customer service and customer convenience.

AT&T explained that it makes sense to allow AT&T to improve its network by investing in it in lieu of fines, and that AT&T targets investment to areas with higher outage rates. AT&T concluded that competition, not regulation, leads to better service.

2. Frontier

Frontier agreed with other panelists that the competitive market for intermodal voice services supports less penalties, rather than drastically increased penalties as proposed by some groups. Frontier explained how increasing penalties is inconsistent with the Commission's history and the current penalty framework and that the proposals would result in excessive penalties that would impair providers' ability to make needed investments to existing plant and innovations. Frontier explained that moneys paid to the General Fund have no nexus to improving service quality and that carriers should have the opportunity to remedy underlying causes of out of service events by investing in their networks. Frontier highlighted that current rules require a carrier to demonstrate that a service quality investment project is an incremental expenditure, and the Commission can always request additional information from the provider or choose not to approve the proposed investment.

Frontier stated that the existing time period for the assessment of penalties is reasonable and should be maintained and that carriers should not be subject to penalties for events outside their control, such as wildfires and severe weather storms. Frontier provided examples of such challenges, and how, in one instance, they could have incurred a fine close to \$1 billion without the exemption for catastrophic events. Frontier also stated that it should not be penalized for customers' own scheduling needs.

Frontier concluded that competition increases service quality, and that excessive penalties ultimately going to California's General Fund does nothing to help customers or improve service quality.

3. CTIA

CTIA began by noting that concerns regarding network deployment raised in the Tribal and Local Government Roundtable would be more productively addressed in another docket. CTIA noted that there is a panoply of federal regulations that wireless providers must meet, and wireless networks are designed based on limits informed by both engineering and the FCC.

CTIA explained that the most powerful force is the market itself and the activity in this docket should foster the benefits that are being delivered to consumers. CTIA discussed a variety of statistics addressing consumer choice of and demand for wireless services and gave examples of innovation in the wireless industry.

CTIA emphasized that wireless carriers continue to invest heavily in networks and build and deploy infrastructure, all while wireless service prices continue to decrease. CTIA concluded that competition should be allowed to prevail, and the Commission should avoid applying a utility-style regulation that was developed 100 years ago to the networks of tomorrow.

4. CalBroadband

CalBroadband discussed how competition has created consumer choice of quality services, noting large network investments by cable VoIP providers despite declining VoIP subscribership. CalBroadband noted that the Network Exam Report at issue in this proceeding only looked at two providers of legacy technology, while data available from two cable VoIP providers that voluntarily report under GO 133-D showcases VoIP providers strong performance. CalBroadband also explained that outages are not necessarily tied to service quality, and that public outage data again shows strong VoIP performance.

CalBroadband discussed its proposal for the Commission to collect technology-neutral GO 133-D metrics across all voice providers for a two-year period and analyze that data to see whether service quality standards should be expanded, urging the Commission to look before it leaps.

CalBroadband urged the Commission to reject the automatic consumer credit proposal on the basis that the record does not support a change from the Commission's prior rejection of this proposal. CalBroadband also urged the Commission to reject proposals that that would penalize providers for factors outside a providers' control, such as natural disasters or PSPS events.

CalBroadband concluded that there is a lack of a demonstrated problem with VoIP service, and a record that shows strong VoIP performance, and cautioned against adopting proposals which would impose massive costs with no consumer benefits.

I. Tribal and Local Government Roundtable in Response to Carrier Panel Presentations

The roundtable representatives for Tribal and Local Government included:

- Kori Cordero, CEO of Yurok Telecoms
- Matthew Speygee, Broadband Manager of ACORN Wireless, Houpa Valley Public Utilities District (HVPUD) (*Virtually attended*)
- Matt Rantanen, Director of Technology for the SCTCA and Director the Tribal Digital Village Initiative/Network (*Virtually attended*)
- Scott Armstrong, Inyo County Regional Broadband Coordinator
- Jessica Pyska, Lake County Supervisor
- Matthew Rothstein, Lake Couty Deputy County Administrative Officer
- Tiffany Martinez, Clerk of the Board for the Modoc County Board of Supervisors (*Virtually attended*)

Each representative was given the opportunity to speak and did so in the order reflected herein.

1. Yurok Telecoms

Yurok Telecoms explained that voice service for the Yurok reservation is provided solely by Frontier's copper networks. Yurok Telecoms suggested that providers should contact customers to determine whether their voice lines are operational, and also shared (i) challenges of reporting outages where no communications service is available, (ii) experiences reporting outages that the provider claimed were not ongoing, and (iii) identifying chronic, pre-existing problems that, when reported, were instead attributed to weather events. Yurok Telecoms expressed concern that tickets are either not being created or being closed without the issue being resolved.

Yurok Telecoms proposed a Tribal pilot to gather more granular data in areas that are less populated or have no voice competition. Yurok Telecoms also proposed affording customers the option of paper complaints and educational materials.

Yurok Telecoms addressed the AT&T discussion about weekend and holiday exemptions by pointing to prior CWA assertions that there are fewer union members and more contractors working on disconnection issues.

2. HVPUD

HVPUD explained that Frontier is the carrier of last resort in the Hoopa Valley area, and they only have POTS and T1 lines. HVPUD stated they increased throughput through microwave hops, and now receive a significant amount of data about customer up and down time. HVPUD asserted that if network equipment were upgraded and funded appropriately, they would be able to tell if the customer is up or down.

HVPUD suggested that antiquated POTS be phased out for VoIP service and updated technologies, and that where carriers are not investing in such a transition, communities can innovate because they have different responsibilities. HVPUD explained that the Hoopa Valley Tribe is a recipient of a grant from the National Digital Inclusion Alliance's Digital Navigator Corp, a Digital Navigator that helps customers with digital equity issues such as understanding billing and using communications devices.

3. SCTCA

SCTCA stated that providers have warehoused spectrum that could be used to serve rural and tribal communities via microwave hops, but that providers are not making that spectrum available. SCTCA also stated that while it is frustrating that legacy systems cannot identify when customers are down, if carriers are unwilling to upgrade that infrastructure, they should be utilizing other means to identify whether customers are connected to POTS. SCTCA suggested that companies should move to more current technology platforms that meet today's communications needs and legal obligations to provide reliable service.

4. Inyo County

Inyo County strongly agreed that the Commission needs more data and explained how it tracks outages and escalates issues directly to a designated representative at a certain provider (customers create a ticket with the provider and it also gets sent to Inyo County representatives). Inyo County stated that developing this tool was a positive experiment because it (i) confirmed that there was no massive failure on the providers' part, (ii) identified recurring issues to be addressed, and (iii) provided Inyo County data it needed (which is also informative in proceedings such as this one). Inyo County is creating the tool for other providers in the area and looking to expand to additional counties. The tool keeps providers updated on the issues and allows the County to report back to constituents the actual scale (e.g., only 3-4 people) of an issue.

Inyo County stated that regardless of a community's population, the return on investment for the provider, or the technology currently available in the area, people need phone service, and they need to be able to call 911. Inyo County stated that they will continue to use the tool because there is no competition to incentivize replacement of aging infrastructure in the area. Inyo County encouraged stakeholders to collaborate to identify data that is available and that can be provided.

5. Lake County

Lake County explained that its residents need: (i) improvements in connectivity, (ii) resilient networks supported by network investments and resiliency efforts such as vegetation management, and (iii) the same level of quality for essential services as the rest of California. Lake County explained that many of its constituents do not have cell coverage, VoIP, or broadband, and the county is too large to microgrid to avoid power outages. Therefore, POTS needs to be maintained.

Lake County also explained that carriers' presentations emphasized accomplishments such as high-quality services driven by competition, but the same force may also increase the gap for unserved communities. Lake County also reiterated that the reliability of telecommunications services is a critical public safety concern, and that no workshop participants aim to discourage innovation and investment in the best

possible network and services. Lake County asked the Commission to consider (i) whether it is reasonable to expect competition alone to incentivize private carriers to act consistent with public agencies or non-profits, and (ii) who should pay for the investments needed to ensure reliable services in areas that are not readily profitable. Lake County stated that carriers need to be a part of ensuring the lowest cost and best service available for all Californians.

6. Modoc County

Modoc County expressed that the issues its constituents experience are similar to those described by the other Roundtable representatives. Modoc County stated that it has a few wireless providers, including two major providers, and a POTS provider, and there is zero competition in the area.

Modoc County offered the following recommended changes to GO 133-D: (i) regionalize data to specific counties or tribal areas, and (ii) wireless coverage maps should show where exactly and under what conditions users “will expect” to receive a signal strength.

Modoc County agreed with Yurok Telecoms that a paper form to file complaints would be helpful and shared an experience where a constituent collected physical signatures to escalate a complaint through a wireless provider. Modoc County also explained that education, especially when the provider knows issues are going to be occurring, is important, but updates must be made available through mediums the customers have access to locally (e.g., social media and local papers).

J. Question & Answer Session for Carrier Panel

1. Questions and Comments from Commissioners

Commissioner Houck asked whether CDMA is mandated to be replaced by the FCC with 5G or other options as it is retired. CTIA responded that CDMA is being retired along with 3G so the spectrum can be used for 5G and the timing to turn off networks is carrier specific and driven by multiple factors including technology. CTIA also explained that despite carriers’ efforts, they cannot force customers to turn in older handsets.

Finally, CTIA agreed that private companies will not serve areas they cannot afford to go to, and suggested stakeholders participate in the BEAD docket to influence deployment issues.

Yurok Telecoms stated that service quality regulations are needed so funds being invested in infrastructure in unserved and underserved areas now receive high-quality services in the future. Yurok Telecoms explained that at least with respect to non-cable providers, history has proven that reinvestment in subsidized networks does not occur.

CalBroadband explained that cable VoIP providers have a history of investment in their networks, and that cable VoIP providers maintain, monitor, and upgrade their infrastructure in a ubiquitous fashion. CalBroadband encouraged Tribal and Local Government representatives' voices to be heard in the BEAD and FFA dockets.

Commissioner Houck asked whether there is a gap in service left during the transition from 3G and 4G to 5G. CTIA stated that 3G technology is being phased out and replaced with 4G or 5G technology, and in instances where consumers report no coverage, it is unclear if that is due to the network or something else, such as the consumers' device age and compatibility.

Modoc County noted that there is a gap in wireless coverage because of 3G CDMA sunseting in that area, and it is imperative that residents have cell service to be able to call 911 because landlines are not being maintained.

ALJ Glegola referred to data in the Staff Report in this docket and asked providers if they stand by the fact that competition addresses service quality and outage issues. CTIA stated that the Staff Report has a number of flaws, should be viewed with some skepticism, and is not representative of all outages (e.g., it does not separate out outages for planned maintenance or that last less than 24 hours). CTIA explained that no network can be 100% resilient, giving an example where a fire melted underground conduit, but providers can and do have mitigation and restoration plans in place for outages and weather events. CTIA pointed out that there is agreement that extreme weather events are a problem and suggested that the Commission focus on ensuring electric companies

are providing communications companies with the information and notice they need to respond to outages. AT&T supported the comments made by CTIA.

CalBroadband explained that the Cal OES data comparing VoIP and wireless outages was an apples to oranges comparison because the wireless standard is different from the VoIP standard, and the data actually shows that VoIP outages are relatively limited and decreasing over time.

2. Audience Question and Answer Session

Questions were asked by the in-person audience and Commission staff read questions from the virtual audience asked in the WebEx Chat function. Cal Advocates asked (i) what service quality measures do providers use in advertisements to attract customers and should that data be made available to customers so that they can make informed choices, and (ii) how are VoIP networks currently measured, if not in the ways proposed by parties.

CTIA responded that to the extent the question was about enforcing advertisements, other California laws and agencies regulate providers' marketing actions, and that there are a number of publicly available resources detailing availability (e.g., FCC's coverage map, speed testing, etc.).

CalBroadband responded that cable VoIP providers use many metrics to assess VoIP service quality and pointed the Workshop audience to the CalBroadband proposal put forth in this proceeding.

Cal Advocates also asked of the Tribal and Local Government representatives during the Carrier Panel Question & Answer Session whether the representatives felt the carriers' arguments have been evasive or dismissive.

From the Tribal and Local Government Roundtable, Lake County responded that it is following deployment dockets but needs help with service quality issues and lack of service now, and that these complex issues need effective partnership amongst all stakeholders. SCTCA stated that it receives negative comments each time it joins Commission proceedings, and it is looking for partners to proactively solve problems not duck responsibility. HVPUD stated that their conversations with carriers often do not

encompass all of the information needed to serve a community thoroughly, noting that coverage maps do not provide important aspects like uplink capacity and spectrum availability. Yurok Telecoms stated that it is consistently lied to and gaslit, and that it appears the carriers engage in fraudulent behavior in their area.

CforAT asked carriers to quantify how compliance with the FCC's service quality rules for individuals with hearing aids affected their ability to innovate, and each of the carriers that responded stated that they did not have information available at that time.

Comments were also made by audience members, including that (i) Verizon decommissioned 3G but not 4G, and are working on deploying 5G, but it takes approximately ten years to deploy ubiquitously, (ii) competition best regulates service quality, as demonstrated by customers' transition to wireless, (iii) the burden should be on providers to deliver reliable voice service, (iv) the Commission should regulate broadband services now, and (v) it takes time to build a trusting partnership with a Tribe, which is necessary for any successful collaboration to bring new or improved service to a tribal area.

V. ACKNOWLEDGEMENTS

Cal Advocates and CalBroadband wish to thank the Commission for including a provision in D.22-03-016 for this public workshop and thank the Commission's Communications Division, ALJ Glegola, and Commissioners Houck and Reynolds. Cal Advocates and CalBroadband also thank all the panelists and participants for their willingness to work in a good faith manner and to engage in an interactive discussion.

Respectfully submitted,

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ATTACHMENT A

R.22-03-016 QoS and Enforcement Workshop
Thursday, September 07, 2023
The California Energy Commission
Art Rosenfeld Hearing Room,
1516 9th Street
Sacramento, California, 95814
9:00 a.m. – 4:00 p.m.

Time	Activity
9:00 a.m.	Agenda Overview and Workshop Ground Rules - 5 minutes
9:05 a.m.	Welcome (by Commissioner(s)) - 10 minutes
9:15 a.m.	Advocacy Panel Presentation (QoS metrics and measurements) - 30 minutes
9:45 a.m.	Advocacy panel presentation (enforcement) - 45 minutes
10:30 a.m.	Break - 15 minutes
10:45 a.m.	Tribal and Local Government roundtable discussion in response to Advocacy panel - 30 minutes
11:15 a.m.	Question and Answer session for Advocacy panel - 45 minutes
12:00 noon	Lunch - 1 hour
1:00 p.m.	Carriers panel presentation (QoS metrics and measurements) - 30 minutes
1:30 p.m.	Carriers panel presentation (enforcements) - 45 minutes
2:15 p.m.	Break - 15 minutes
2:30 p.m.	Tribal and Local Government roundtable discussion in response to Carriers panel - 30 minutes
3:00 p.m.	Questions and Answer session for Carriers panel - 45 minutes
3:45 p.m.	Closing / next steps - 15 minutes
4:00 p.m.	Workshop concludes

ATTACHMENT B

Consumer Quality of Service Presentations



The Public
ADVOCATES
OFFICE

QoS Metrics and Measurements

Advocacy Panel Presentation
September 07, 2023 – Workshop
Rulemaking (R.) 22-04-016

Service Quality for Essential Communications Services

1. **Safe and Reliable Service** - Ensure that wireless, VoIP, and Internet customers relying on Essential Services have reliable service.
2. **Performance & Transparency** - Ensure customers are receiving the quality essential communications services they subscribe to and pay for.
3. **Accountability** - Hold companies accountable to provide quality service to all customers.

Essential Communications Services Includes Broadband Services

- Californians rely on POTS, Wireless, VoIP and Broadband services
- The COVID-19 Pandemic has clearly illustrated the importance of reliable broadband service:
 - **40%** of Californians can perform their **work remotely**.¹
 - **93%** of US households with school age children reported using a form of **distance learning** in August 2020.²
 - **26%** of households, and **40%** of low-income households, with school age children in California **do not have reliable home broadband**.³
 - March 2020 had an **154% increase** in **telehealth** visits across the US.⁴

California 9-1-1 Statistics

- Wireless Service has become the dominant way Californians contact emergency services:
 - In 2022, **86%** of **9-1-1** calls were **wireless calls** and 90,326 text messages were sent to 9-1-1.⁵
 - **First responders rely on wireless service** and are negatively impacted by service degradations.

California Essential Communications Services Subscriptions

- For California, which has 13.2 million households,⁶ the Federal Communications Commission (FCC) reported **2021** subscription numbers as approximately^{7,8}:
 - 45.1 million wireless subscribers,
 - 8.0 million VoIP subscribers,
 - 3.7 million POTS subscribers, and
 - 13.6 million broadband Internet subscribers

Customers Want Better Service Quality

"I speak with my doctors... and **a lot of times they cannot get ahold of me through the computer or the phone lines**; and this has been going on for 28 years, and **we faithfully pay our bill for everything that we are not getting**. And when they say that they will make it right with us, and they never do... I thank you for your time; and I hope this can be straightened up."

How Should the Commission Modify GO 133-D?

Current GO 133-D Standards Should Apply to Wireless, VoIP, Broadband Services

GO-133 D Standard (Current)	POTS (Current)	Wireless	Interconnected-VoIP	Broadband
Installation Interval	✓		✓	✓
Installation Commitment	✓		✓	✓
Customer Trouble Reports	✓	✓	✓	✓
Out of Service Repair Intervals	✓	✓	✓	✓
Answer Time	✓	✓	✓	✓

Additional Service Quality Metrics

- **Delivered Network Speed** is designed to measure **Internet speed** and let customers know whether their Internet speed is **reliable**.
- **Latency, Jitter, Packet Loss** and **Packet Reorder** measure how quickly and smoothly **information travels** in a network.
- **Outages** capture incidents when a network is totally unavailable.
- **Call Drop** and **Failure** rates measure how often a network fails to place or maintain calls, while **Call Setup Time** measures how long it takes a call to activate.
- **Repeat Trouble Tickets** can be used to identify areas with persistent issues

Additional Recommended Service Quality Metrics

Tech Type	Delivered Network Speeds	Latency	Jitter	Packet Loss	Packet Reorder	Outages	Call Failure Rate	Call Drop Rate	Call Setup Time	Repeat Trouble Reports
Wireless		✓	✓	✓	✓	✓	✓	✓	✓	✓
VoIP		✓	✓	✓	✓	✓	✓	✓	✓	✓
Broadband	✓	✓	✓	✓	✓	✓				✓

NOTE: In most cases, communications companies already track this information

Conclusion

1. California Customers rely on modern Essential Communication Services including VoIP, wireless services, and broadband and the Commission's service quality standards have not kept pace.
2. Customers need both **transparency** and a **baseline expectation** of service quality.
3. The Commission should apply GO 133-D's **existing** metrics to all Essential Communication Services, and apply **new** metrics to each technology type.

End Notes

1. California Legislative Analyst's Office
2. U.S. Census Bureau
3. Public Policy Institute of California
4. U.S. Center for Disease Control
5. *State 9-1-1 Advisory Board*, Governor's Office of Emergency Services (Cal OES), August 16, 2023. At 9. Available at: https://www.caloes.ca.gov/wp-content/uploads/PSC_Documents/9-1-1-Advisory-Board-Slides-August-2023.pdf
6. *U.S. Census Bureau QuickFacts: California*, United States Census Bureau, Available at: [U.S. Census Bureau QuickFacts: California](https://www.census.gov/quickfacts/california)
7. *Voice Telephone Services Report – State-Level Subscriptions*, FCC, June 2021. Available at: <https://docs.fcc.gov/public/attachments/DOC-396138A1.pdf>
8. *Residential Fixed Connections and Households by State as of December 31, 2021*, FCC. Available at: <https://docs.fcc.gov/public/attachments/DOC-392960A1.pdf>

Supporting Information: Cal Advocates' SQ Metrics Recommendation

VoIP - Service Quality Benchmarks

- All existing G.O. 133-D Standards should apply to VoIP, in addition to proposed:

Service Quality Benchmarks Proposed by Cal Advocates								
	Latency	Jitter	Packet Loss	Packet Reorder	Call Failure Rate	Call Drop Rate	Call Setup Time	Repeat Trouble Reports
INTERCONNECTED VoIP	✓	✓	✓	✓	✓	✓	✓	✓

Wireless-Service Quality Benchmarks

- Existing G.O. 133-D Standards of Customer Trouble Reports and Answer should apply to Wireless, in addition to proposed:

Service Quality Benchmarks Proposed by Cal Advocates								
	Latency	Jitter	Packet Loss	Packet Reorder	Call Failure Rate	Call Drop Rate	Call Setup Time	Repeat Trouble Reports
WIRELESS	✓	✓	✓	✓	✓	✓	✓	✓

Broadband-Service Quality Benchmarks

- All existing G.O. 133-D Service Quality standards should apply to Broadband, in addition to the proposed:

Service Quality Benchmarks Proposed by Cal Advocates							
	Delivered Network Speeds	Latency	Jitter	Packet Loss	Packet Reorder	Outages	Repeat Trouble Reports
BROADBAND	✓	✓	✓	✓	✓	✓	✓

Service Quality Benchmarks- DEFINITIONS

Benchmark	Delivered Network Speeds	Latency	Jitter	Packet Loss	Packet Reorder	Call Failure Rate	Call Drop Rate	Call Setup Time	Repeat Trouble Reports
DEFINITION	Network speeds delivered to a customer's premises as a percentage of the average network speeds at a customer premises during peak hours divided by speeds a customer is subscribed to. Delivered Network Speed applies to Community Anchor Institutions, residential, and small business customers.	Measure of time it takes in milliseconds, defined as either one-way or round trip, for a packet to travel from one point in a network to another. Latency applies to Community Anchor Institutions, residential, and small business customers.	Variance in end-to-end delay of information travelling on a network. Jitter is measured through the difference between actual time of arrival and expected time of arrival. Jitter applies to Community Anchor Institutions, residential, and small business customers.	Defined by the event where sent information is not acknowledged by the receiver or it is received with a round trip latency delay that is greater than 3 seconds. Packet Loss applies to Community Anchor Institutions, residential, and small business customers.	Defined by the event where sent information arrives at the receiver in the incorrect order. Packet Reordering applies to Community Anchor Institutions, residential, and small business customers.	A measure of the number of calls that are unable to initiate due to adverse network conditions such as traffic and congestion. Calls that are terminated before initiation due to actions of the customer are not considered failed calls. Call Failure Rate applies to residential and small business customers.	A measure of the amount of prematurely terminated calls on a communications network. A call is dropped when it is ended by the network, not either user. Call Drop Rate applies to residential and small business customers.	The amount of time it takes a network to connect the calling device to the called device and produce a ringing tone. Carriers will select a random sample of 100 calls from each reporting unit.	Service affecting and out of service trouble reports submitted by the same customer or user relating to dissatisfaction with communication service provider's services within 30 days after a previous trouble report was cleared for the same issue.

Measurement and Metrics

Paul Goodman

Center for Accessible Technology

On behalf of Joint Intervenors

September 7, 2023

Proposed Metrics/Measurements: Categories

Availability

- Customer Trouble Reports
- *Network Availability (POTS/VoIP, RAN/Wireless)*
- *Service Availability (4G Data, Voice)*

Reliability

- Customer Trouble Reports
- Out of Service Repair Interval
- *Call completion rate*
- *Call setup time*
- *Call failure rate*
- *Call drop rate*

Quality

- Customer Trouble Reports
- *Call quality*

Call Availability

- Joint Advocates support the proposed Network Availability (POTS/VoIP, RAN/Wireless).
- The Commission should add a service availability measure requiring regular testing of power backup and reporting on the results of that testing.

Wireless Service Availability:

- “Outdoors and stationary” is anachronistic and contrary to the purpose of the service quality standards.
- Customers should be confident that their service will not stop working inside their home.
- Customers should not have to stop moving to make a wireless call.

DETAILED STEPS

Use the AT&T Network Coverage Map

It's easy to check our network coverage in your location:

1. Go to the [AT&T Network Coverage Map](#).
2. Enter an address, state, or ZIP Code, and select the search icon.

In an area with limited or no coverage? Try these options:

- Move closer to a window
- Go outside
- Use [Wi-Fi Calling](#)

Network Congestion

- Difference between network being up and network being usable.
- Length of time all cell services are unavailable on the radio network
- Possible addition: % of cell sites that were up:
 - At least 24 hours
 - At least 7 days
 - At least 30 days

Wireless Service Availability:

Minimum Speeds should be 5/2.

Verizon	Verizon 4G LTE wireless broadband is 10 times faster than 3G — able to handle download speeds between 5 and 12 Mbps (Megabits per second) and upload speeds between 2 and 5 Mbps, with peak download speeds approaching 50 Mbps.								
AT&T	<table><tr><th>Technology</th><th>Download Range (in Mbps)</th><th>Upload Range (in Mbps)</th></tr><tr><td>4G LTE</td><td>11.0 – 64.4</td><td>1.2 – 10.4</td></tr></table>			Technology	Download Range (in Mbps)	Upload Range (in Mbps)	4G LTE	11.0 – 64.4	1.2 – 10.4
Technology	Download Range (in Mbps)	Upload Range (in Mbps)							
4G LTE	11.0 – 64.4	1.2 – 10.4							
T-Mobile	<div>4G LTE Network (On-Device):</div> <ul style="list-style-type: none">• Download Speed: Typically between 19 – 76 Mbps• Upload Speed: Typically between 4 – 20 Mbps• Latency: Typically between 24 – 40 ms								

Call Reliability

- Joint Advocates support the proposed Call Reliability measures (call completion rate, call setup time, call failure rate, call drop rate).

Call Quality

- Joint Advocates generally support the proposed Call Quality measures.
- Mean Opinion Score should use R-Factor values derived from metrics such as jitter, latency and packet loss.
- Should include testing for individuals who use voice service to communicate but have some degree of hearing impairment.

Workshop Presentation
Rulemaking 22-03-016
September 7, 2023

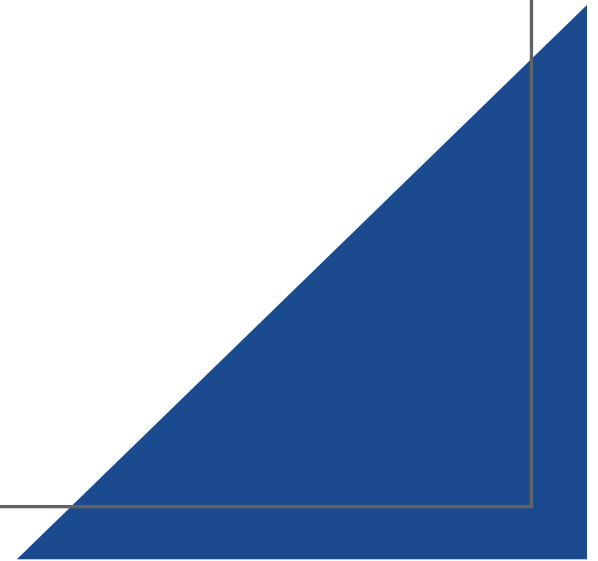
Presenter: Itzel Hayward

Small Business Utility Advocates

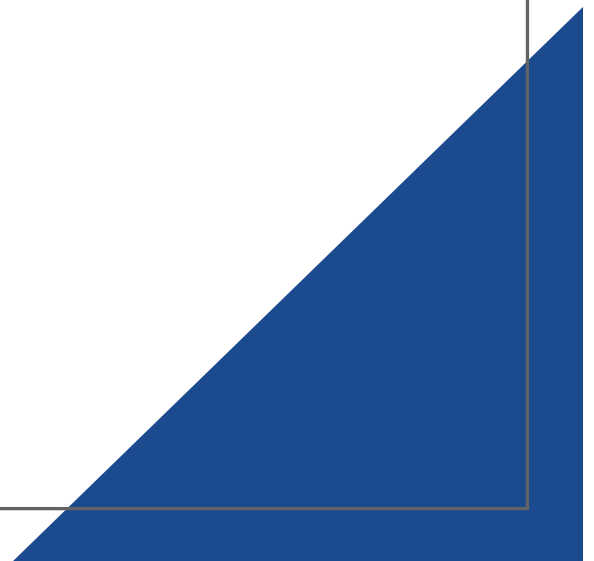


Quality of Service (QoS) Measures

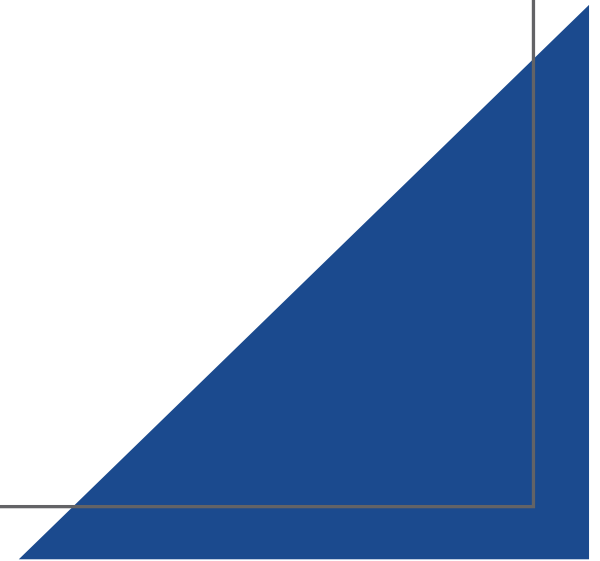
Network availability



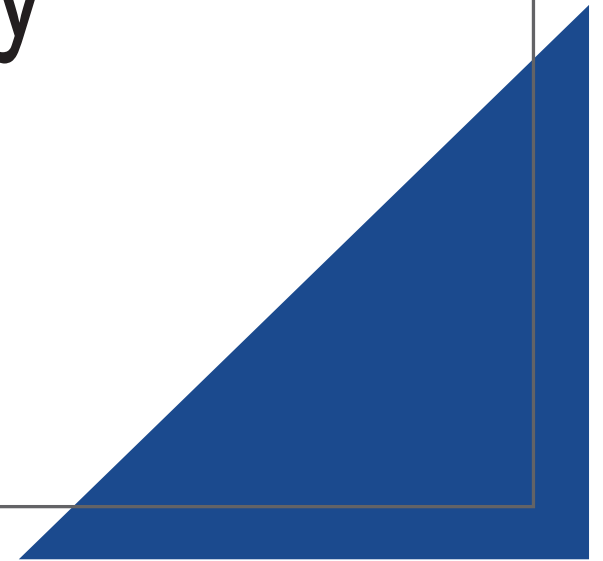
Call completion rate



Call set-up time

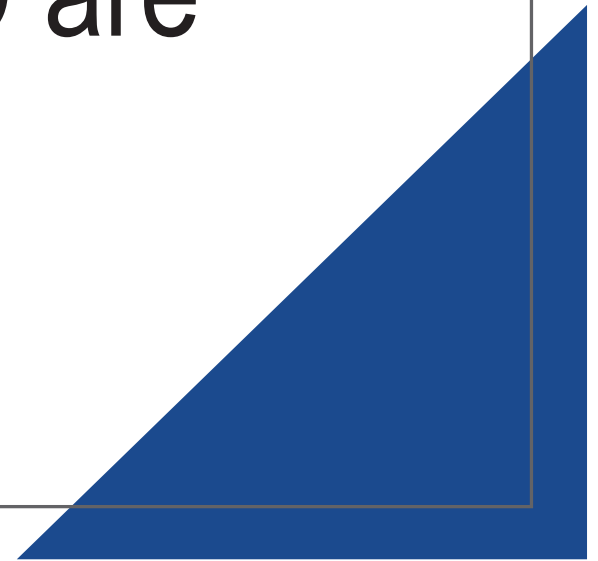


Call quality: determined by
mean opinion score



Enforcement

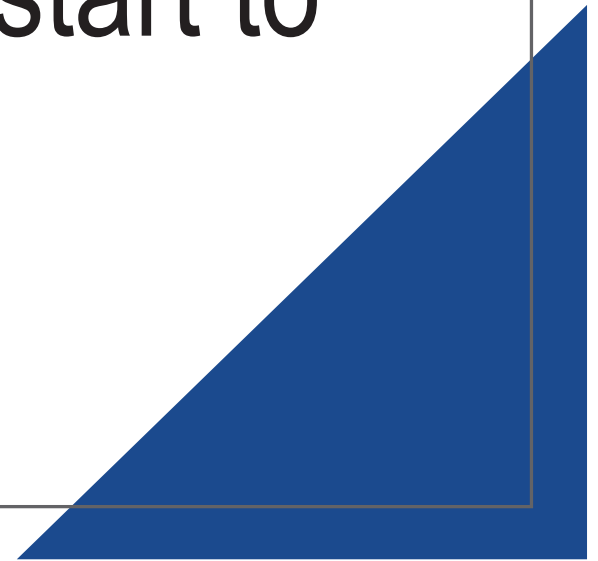
The current enforcement fine mechanisms in GO 133-D are inadequate



Investment-in-lieu-of-fines is
insufficient as an enforcement
mechanism



The enforcement updates under consideration are a good start to improving service quality



The Commission should
consider other changes to
improve carriers service quality



Workshop Presentation
Rulemaking 22-03-016
September 7, 2023

Thank you



ATTACHMENT C

Consumer Enforcement Presentations



The Public
ADVOCATES
OFFICE

G.O. 133-D Enforcement Mechanism

Advocacy Panel Presentation
September 07, 2023 Workshop
Rulemaking (R.) 22-04-016

Why Revisit G.O. 133-D Enforcement Mechanisms?

- General Order (G.O.) 133-D Commission's alternate penalty mechanisms for non-compliance **are not producing desired outcomes.**
 - Commission Staff have identified several shortcomings
- Neither existing nor new service quality requirements accomplish their desired intent without functioning enforcement mechanisms.

Existing Shortfalls of G.O. 133-D's Enforcement Mechanisms

- The magnitude of fines is limited by an outdated maximum amount and an arbitrary scaling factor which does not accurately reflect the impact of persistent service quality issues.
- The grace-period for noncompliance means that even companies with persistent service quality issues can evade fines.
- There is no way of providing recompense to customers whose lives are drastically affected by service quality issues.

Accountability is Extremely Important to Customers

- ...[E]ven just a few days back, I tried to contact the bank, my service provider, **I wasn't able to do that**. And this is **very frustrating**; because **even with paying more, I'm not getting better service... it feels fraudulent**.
- And I know with new equipment... **it should work** and even work better, but... I can't call, [I have] dropped calls, can't take calls, and **it's just horrendous**. And I feel like there isn't enough time and attention to put to that as well as **compensation which would be a credit**.

How should the Commission modify G.O. 133-D
to improve the enforcement mechanisms?

Set a new maximum fine amount

- In accordance with the maximum limit set by P.U. Code Sections 2107 and 2108, the Commission should utilize the penalty range adopted in P.U. Code section 2107 and count each violation as continuing in nature.
- Additionally, the Commission should remove the grace period that limits imposition of fines.

Remove the "Alternate Proposal" from the G.O.

- The Commission, in concurrence with multiple parties, has identified that the "Investment plans in lieu of fines have been ineffective in improving service quality."
- Therefore, the "Alternate Proposal" should be removed entirely.

Establish a baseline for automatic customer refunds

- Customers should not have to spend hours of their time calling service representatives in order to seek compensation for service outages.
- As a baseline, the Commission should establish an automatic customer credit process totaling \$5 per day for each day a customer is without service.

Conclusion

1. The existing enforcement mechanisms in G.O. 133-D are **not working**, as evidenced by independent analysis, Commission analysis, and ratepayer testimonials.
2. The Commission should remove dysfunctional enforcement mechanisms from G.O. 133-D by setting a new maximum fine amount, removing the grace period, and removing the Alternate Proposal.
3. The Commission should establish a baseline for automatic customer refunds.

Enforcement

Paul Goodman

Center for Accessible Technology

On behalf of Joint Intervenors

September 7, 2023

Starting Points:

- Commission has authority to impose fines on a technology-neutral basis.
 - Jurisdiction
 - Wireless Terms and Conditions.
- Customer Trouble Reports are a fraction of actual service interruptions.
- The harms caused by service quality problems are not equally distributed among all customers—service quality problems are likely to occur in the same area, over and over.
- It's likely that service quality issues and their duration disproportionately impact ESJ communities.
- The public interest in disclosure of information regarding service quality problems far outweighs the public interest in keeping information regarding service quality problems confidential.

Our Guiding Principle:

The greater a provider's noncompliance with service quality requirements, the **more societal harm that provider causes to the public interest**, and fines should reflect that fact.

The current enforcement fine mechanism in GO 133-D is not working.

- While the current enforcement fine mechanism appears to be a modest incentive for some providers to improve service quality (i.e., Frontier), it is woefully insufficient for others.
- Lack of technical neutrality skews investment.
- Service quality failures are overwhelmingly caused by underinvestment and neglect.

The current enforcement fine mechanism in GO 133-D is not working.

- The Commission needs to adjust the enforcement fine mechanism to:
 - Impose reasonable fines on providers who make good-faith efforts to meet the service quality requirements.
 - For repeat/excessive offenders, make it financially unviable to fail to address service quality issues.
- Some argue that fines would discourage investment.
 - Public interest in having quality phone service outweighs the public interest in having a larger number of providers, all of whom fail to meet service quality standards.

Is investment-in-lieu-of-fines working as an enforcement mechanism?

- No.
- The Commission should eliminate the investment-in-lieu of fines mechanism.

Would the potential changes to the enforcement mechanism in GO 133-D, as shown in Attachment B, improve service quality?

If so, discuss how these changes would be effective. If not, discuss why not and what alternative changes or revisions to the enforcement mechanism in GO-133 should be made.

- Increased base fine
- Chronic failure status
- Adjusted results
- Fine calculation (severity)
- Fine calculation (duration)

Base Fine

- Joint Advocates support increasing the maximum level of fines.
 - Service Quality interruptions create costs far beyond customers paying for service they're not receiving.
 - Businesses that rely on service.
 - Health care
 - Education
- Base Fines should reflect societal costs of outages.

Chronic failure status

- A provider in chronic failure status should have to pay fines for the entire period they are out of compliance.
- However, there should be some leniency for providers that have occasional, lower-impact service quality issues which they address quickly and effectively.
 - Lower-impact: miss metric by less than 10%
 - Address quickly and effectively: reach target by month 3 and continue to meet all service quality metrics until month 12.
 - If the provider meets these requirements, Commission should waive fines for months 1 and 2.

Adjusted Results

- From a consumer perspective, it doesn't matter that an outage occurs on a Sunday or holiday.

Fine calculation (duration) and Fine calculation (severity)

- The greater a provider's noncompliance with service quality requirements, the **more societal harm that provider causes to the public interest**, and fines should reflect that fact.
- This justifies higher fines for service quality failures that have longer durations and/or greater impacts.

Alternative changes or revisions to the enforcement mechanism in GO-133

- The Commission should impose fines based on equity principles.
- Commission should require that providers track service quality “hot spots”
 - Location
 - Frequency
 - Time to restore service/come into compliance re: metrics.
 - Whether affected area includes any rural and/or ESJ communities.
- If data shows a repeated pattern that service quality issues disproportionately affect rural and/or ESJ communities, or that service restoration/compliance takes longer in those communities, the Commission should impose a larger fine.

Notice:

- Notice of fines paid should be presented prominently on all customer bills and provider websites.
- Notice of any bill increases as a result of paying fines/remediation of service quality issues should be presented prominently on all customer bills and provider websites.
 - Include cost per customer so that customer can compare to bill increase.
- Any announcements, notices, press releases, etc. about projects funded by any “investment-in-lieu” mechanism should note that the provider is investing rather than paying a fine for poor service quality.

ATTACHMENT D

Carrier Quality of Service Presentations



California

CPUC Workshop
Service Quality Metrics

September 7, 2023



AT&T California Customers Are Rarely Out of Service

Low Customer Trouble Reports

- **AT&T meets the GO 133-D standards for Customer Trouble Reports.** This means AT&T's network is providing customers high quality service.

Rapid Access to Customer Care

- **AT&T meets the GO 133-D standards for Answer Time.** This means AT&T's customers are reaching a live agent quickly.

Out of Service Standard (Service Restoral)

Require **restoral of POTS service** within 24 hours 90% of the time.

- **The number of affected customers is small.**
- Today, only about **6% of households** in AT&T California's service territory **have POTS lines**.
- In 2022, an **average of 0.7% per month** of AT&T's POTS customers experienced out of service condition not resolved within 24 hours. This means that **AT&T California customers are rarely out of service for more than 24 hours**.

Out of Service Standard (Service Restoral)

- AT&T California covers a **very large service territory** and AT&T California **lost 89 percent of its POTS** lines from 2000 to 2021.
- This very sparse POTS service line density means that technicians must travel further to reach POTS customers.

The Out of Service metric does not properly measure AT&T service quality and the metric should be eliminated. And this metric no longer makes sense given the **competitive choices** available from a variety of wired and wireless providers.

Network Availability Proposal

- **QoS Measure:** Network Availability
- **Description:** Measures percentage of time that the network is available for use by customers.
- **Measurement:** Up time / Total time (up time + down time)
- **Minimum Standard:** $\geq 99.9\%$

Call Drop Rate Proposal

- **QoS Measure:** Call drop rate
- **Description:** Measures prematurely terminated calls on a telephone network.
- **Measurement:** Number of calls ended prematurely / total number of calls placed over the network.
- **Minimum Standard:** <1%

Call Quality Proposal

- **QoS Measure:** Call quality: determined by mean opinion score (MOS value)
- **Description:** The Mean Opinion Score (MOS) is a commonly used measure of human-judged evaluation of video, audio, and audiovisual experience. MOS is rated on a scale of 1 (worst) to 5 (best).
- **Measurement:** Average of all MOS provided during an assessment period.
- **Minimum Standard:** ≥ 3.5



California Broadband & Video Association Metrics Panel Presentation

Beau Jordan
September 7, 2023
Sacramento, California

INTRODUCTION

- CalBroadband is a cable trade association whose members deliver high-quality voice services via cable VoIP networks
- VoIP is voice service running over digital, packet-switched networks that allow for superior quality of service
- Service quality regulations do not appear tied to any demonstrated problem with VoIP
- If regulations are imposed, CalBroadband previously presented a reasonable proposal, which CalBroadband President Janus Norman will address

THE SIX PROPOSED METRICS

- Cable VoIP experts evaluated 6 proposed metrics identified in ALJ Ruling.
- Generally, 6 identified metrics are:
 - **Irrelevant for nationwide VoIP networks:** Several may be more appropriate for POTS or wireless services but do not have analogous measures for VoIP networks
 - **Ill-defined:** For most metrics, unclear what is to be measured and where within the network it applies, which could result in providers reporting differently, and making comparisons difficult and enforcement arbitrary
 - **Not measurable:** Making them incapable of being tracked by VoIP providers
 - **Extraneous:** Many measures may involve factors beyond VoIP providers' control (e.g., another network's issue, commercial power outages, etc.), which, if included, would distort any value of the measurement

PROPOSED CALL QUALITY METRIC (POTS, VOIP, & WIRELESS)

- **What It Is:** Uses a Mean Opinion Score to measure “human-judged evaluation of video, audio, and audiovisual experience.” Rated on scale of 1 (worst) to 5 (best)
- **Proposed Standard:** Minimum MOS standard of 3.5 averaged during assessment period
- **Overbroad:** Metric addresses more than voice (i.e., the audio component); the video and audiovisual components implicate broadband services, which are outside the scope of this phase of the proceeding
- **Subjective:** Metrics should not include any subjective elements, such as “human-judged evaluation”

PROPOSED CALL QUALITY METRIC (POTS, VOIP & WIRELESS) - CONTINUED

- MOS is not a standard used to monitor and measure voice service quality across the network in VoIP industry. It would be **inefficient** to do so because:
 - Can be impacted by network on other side of call, which is outside measuring provider's control
 - May be difficult to isolate for California customers given telephone number portability
 - Monitoring all calls would require extreme amount of data storage, especially if that data needs to be retained for regulatory reporting
 - Would be inconvenient for customers to have to self-report on their satisfaction with respect to any call placed/received

PROPOSED NETWORK AVAILABILITY METRIC (POTS & VOIP)

- **What It Is:** Measured by percentage of time that network is available for use by customers
- **Proposed Standard:** 99.9%, measured by network up time divided by total time (up + down time)
- **POTS focused:** Network availability is a traditional *POTS* metric designed for networks with local switches
- **Network Distinctions:** VoIP networks do not have local switches that could be used to measure network availability as proposed on local/state level

PROPOSED CALL COMPLETION RATE METRIC (VOIP & WIRELESS)

- **What It Is:** Measured by percentage of calls that are successfully completed without being dropped or disconnected, as calculated by using number of completed calls / total calls (completed calls + disconnected calls)
- **Proposed Standard:** Minimum call completion rate of 95% per month
- **Not Technology-Neutral:** No explanation as to why it would/could apply to VoIP

PROPOSED CALL COMPLETION RATE METRIC (VOIP & WIRELESS) - CONTINUED

- Lacks specificity:
 - Creates confusion on what types of calls would be captured – and whether providers could actually track such calls
 - Ignores complexity of addressing calls resulting in busy signal or that otherwise fail due to user behavior (e.g., called party returns a busy signal, calling party hangs up before call is completed, called party does not answer)
 - Ignores challenges on how to treat calls that are blocked as suspicious fraudulent/illegal robocall traffic under applicable FCC regulations

PROPOSED CALL SETUP TIME METRIC (VOIP & WIRELESS)

- **What It Is:** Measured by time it takes for call to be established from moment call is initiated
- **Proposed standard:** Less than 5 seconds
- **Not technology-neutral**
- **Infeasible:** To implement in way to capture California-specific calls
- **Lack of meaningful data:**
 - Many elements beyond providers' control
 - Could capture other anomalies (e.g., international calls, which take longer to set up, and calls that are destined for other providers' networks)

PROPOSED CALL FAILURE RATE METRIC (VOIP & WIRELESS)

- **What It Is:** Measured by number of calls that are unable to initiate due to adverse network conditions such as traffic and congestion
- **Proposed Standard:** Less than 1% per month
- **Not applicable to VoIP:** Not VoIP industry standard to measure call failure rate as proposed
- **Immeasurable:** Not measurable in way that would produce meaningful data

PROPOSED CALL DROP RATE METRIC (POTS, VOIP, & WIRELESS)

- **What It Is:** Measured by amount of prematurely terminated calls on a telephone network
- **Proposed Standard:** Less than 1% per month
- **Not applicable to VoIP:** Not standard in VoIP industry to measure call drop rate
- **Immeasurable:** Not measurable in way that would produce meaningful data

Thank You!

calbroadband.org





Metrics Panel

Mark A. Settle

Senior Engineering Advisor, Wilkinson Barker Knauer LLP



Performance Metrics and Signal Strength

- The metrics the Commission proposes would be measured or determined largely as a function of radiofrequency (RF) signal strength at the handset.
- Wireless providers use a variety of tools to maximize signal strength, including but not limited to:
 - Siting transmitter (cell site) locations strategically.
 - Managing operating power and emissions of transmission equipment.
 - Avoiding interference with other spectrum licensees and users.

Proposed Metrics – Concerns

- The proposed metrics raise numerous concerns including :
 - The proposed metrics would effectively dictate how wireless providers build and operate their networks.
 - The proposed metrics do not account for the inherent variability in the performance of RF networks.

The proposed metrics would effectively dictate how wireless providers build and operate their networks.

- Proposed metrics would discourage wireless providers from engineering their networks to maximize coverage at the cell/network edge.
 - Metrics-imposed performance levels would incentivize wireless providers to define cell and network edges to exclude calls or data traffic beyond where mandated performance levels are most certain to be met. (Precludes “network-stretching” to benefit consumers.)
 - Wireless providers might also have to exclude lower-performing handsets (which may also be low-cost handsets).
- Providers would be discouraged from siting stand-alone towers in remote locales to serve isolated communities.
- The manner in which providers employ spectrum bands in their networks in California may be altered, impacting wireless coverage, capacity, and spectrum auction proceeds.
- Some proposed metrics could conflict with providers’ ability to fulfill federally imposed Wireless Priority Service obligations.
- Some proposed metrics could conflict with providers’ ability to assist and prioritize public safety entities’ communications during emergencies.

The FCC's rules comprehensively and exclusively regulate how wireless providers may use their RF spectrum to serve customers.

- Wireless providers' access to RF spectrum and use of it (including network deployment) are governed by the FCC's comprehensive rules for use of radio spectrum.
- FCC's CMRS rules contain detailed requirements and technical standards – some examples:
 - Service areas to be covered (including “adequate service” and “substantial service” in relevant areas) and construction requirements (47 C.F.R. §§ 22.911, 24.203, 27.14)
 - Signal strength requirements (id., §§ 22.911, 24.236, 27.55);
 - Maximum power and antenna height limits for operating cellular transmitters and fixed transmitters (id., §§ 22.913, 24.232, 27.50);
 - Maximum emission limits (id., §§ 24.238, 27.53);
 - Signal interference restrictions (§§ 22.970-22.972, § 27.57); and
 - mandates to discontinue service in certain situations (§ 22.352, § 27.64)
- In some instances, it may be impossible to comply both with the proposed metrics and with the FCC requirements.

The proposed metrics do not account for the inherent variability in the performance of RF networks.

- Wireless network performance is affected by a variety of factors including:
 - The type of handset the customer is using
 - Whether the signal is physically obstructed (e.g., customer enters a building or elevator)
 - The propagation of the signal is affected by topography (mountainous and high-altitude areas)
 - Weather
 - Network load
 - Other factors beyond the provider's control

Consumer Groups' Proposed Service Quality Metrics – Attachment A

Frontier's Service Quality Metrics and Monitoring

- NORS Reports
- “Community Isolation” Reports
- Network Operations Center
- Network Monitoring, Analysis and Reporting System (“NMARS”)

Proposed New Metrics for POTS in Attachment A to ALJ Ruling

- Network Availability
- Call Drop Rate
- Call Quality

Network Availability

- Not proposed for POTS by SBUA
- Existing Reporting of Outages – NORS and Community Isolation Reports
- Feasibility Concerns re: Granular Network Availability for POTS

Call Drop Rate

- Requires Customer Reporting
- Causation Problems

Call Quality: determined by mean opinion score (MOS value)

- Not proposed for POTS by SBUA.
- Lack of clear definition or measurement
- Infeasible for POTS

ATTACHMENT E

Carrier Enforcement Presentations



California

CPUC Workshop
Service Quality Enforcement

September 7, 2023



AT&T Network Accomplishments

Committed to bridging the digital divide in California.

- Invested nearly \$8.6 billion in our network from 2020-2022.
- Placed over 10 million miles of fiber across the state.
- Nearly 3 million locations with access to AT&T fiber, as of 2022.

The Record Confirms Service Quality Regulation is Unnecessary

- Of the 57 million working lines across POTS, wireless, and VoIP:
 - Consumer Affairs Branch Data:
 - **Only 0.001%** outage complaints
 - **Only 0.0004%** call quality complaints
 - Public Comments:
 - **Only 0.003%** negative SQ written comments*
 - **Only 0.0002%** negative comments at PPHs

The record indicates **regulatory intervention is not necessary.**

California Public Utilities Commission. Communications Division Staff Report (R.22-03-016) (2023)

*As of June 2, 2023

Any Enforcement Must Continue to Allow for Reasonable Adjustments

These adjustments reflect issues beyond AT&T's control, employee needs, and customer preferences.

- Natural disasters
- Sundays, holidays
- Customer preference (customer requests for a later time for technician)

Investments in Lieu of Fines Benefit Customers

Continuing enforcement that requires **incremental network investment** rather than paying fines to the General Fund better supports customers and communities.

- **Target areas** with high levels of trouble tickets.
- **Significantly fewer trouble tickets** in the communities where the investments have been made.
- AT&T, after CPUC review and resolution, has **used this option three separate times.**



California Broadband & Video Association Enforcement Panel Presentation

Janus L. Norman, President
September 7, 2023
Sacramento, California

The State of Competitive VoIP Services

- CalBroadband is a trade association whose members offer high-quality interconnected VoIP services to millions of Californians
 - CalBroadband has presented in this proceeding a proposal for addressing service quality, also addressed in this presentation
 - If there can be more time, and a less formal format that is typical of workshops, parties can fully discuss the benefits of CalBroadband's proposal in an open setting in these forums
- **Unique Technology.** VoIP is voice service running over digital, packet-switched networks that allow for superior quality of service
- **Competitive.** California's voice services market is highly competitive: over 99% of California households are in census blocks with access to 3 or more voice providers (including those that offer VoIP services)
- **Massive Investment.** Fierce competition has led to innovation. CalBroadband members invested \$2.6 billion in infrastructure and networks in California in 2022 alone

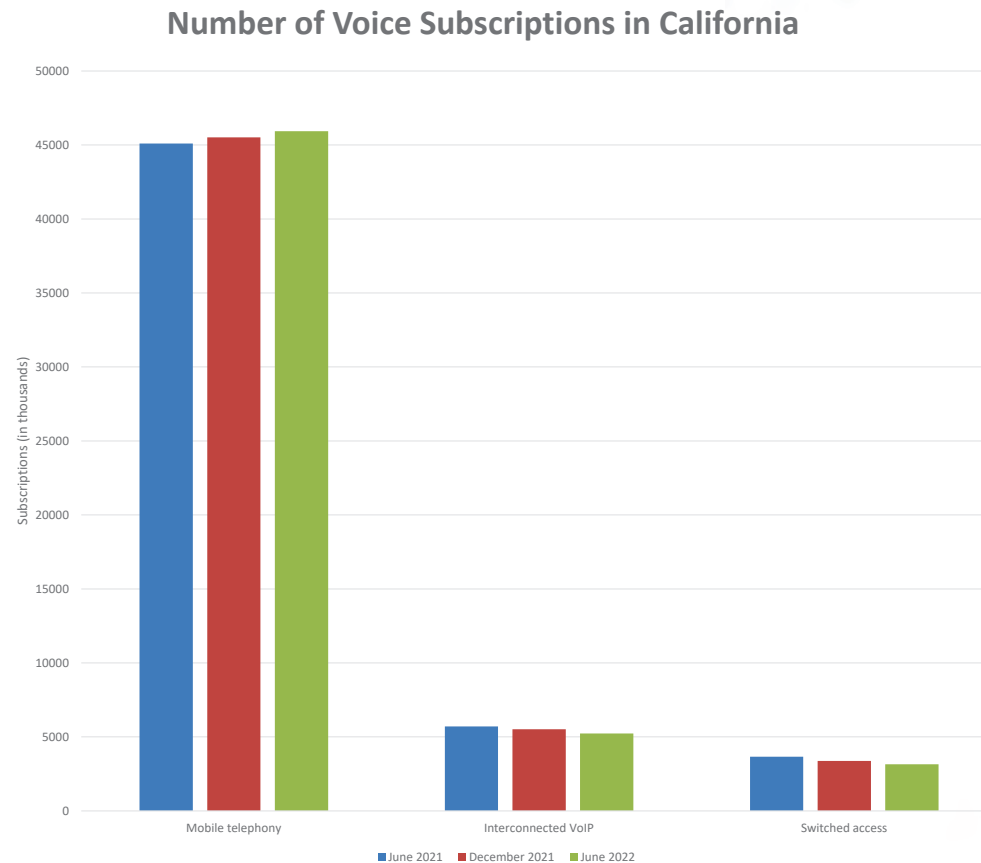
No Demonstrated Need for VoIP Service Quality Regulation

- **Fails to Align with CPUC Precedent:** Less than 5 years ago, the CPUC declined to extend service quality standards to VoIP because “non-traditional services such as ... VoIP have always been treated differently from wireline services,” and because existing VoIP competition “ensures reasonable service and rates”
 - Today, we are discussing proposals from parties that seek to override CPUC precedent by imposing heavy-handed service quality regulation on innovative VoIP services
- **Avoid Backwards Policymaking:** Good public policy offer solutions tailored to specific problems. However, there has been no demonstrated problem with VoIP service quality
- **No Demonstrated Problem:** None of the arguments on record for expanding service quality regulations to VoIP services are valid
 - Each of the key pro-regulation arguments are addressed herein...

No Demonstrated Need for Service Quality Regulation

Claim #1: Consumers increasingly rely on VoIP

- Not true
- Consumers now prefer wireless and apps (e.g., WhatsApp) for voice service
- Small and decreasing portion of California households rely on interconnected VoIP for voice service
- More users does not mean there is a problem that needs addressing



No Demonstrated Need for Service Quality Regulation

Claim #2: The Network Exam Report recommends expanding service quality regulations to VoIP

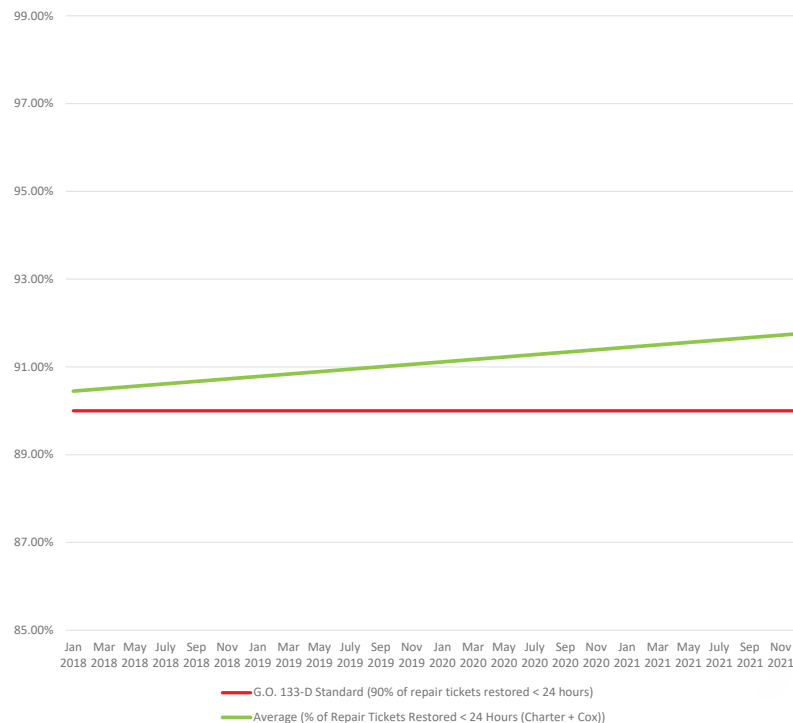
- Not applicable
- Network Exam Report is entirely focused on two carriers that operate copper-based networks. Cable VoIP uses different technologies and is offered under a different business model
- Network Exam Report also acknowledges that competition drives higher service quality

No Demonstrated Need for Service Quality Regulation

Claim #3: VoIP providers have a relatively high number of outages

- **Not true**
- **Outages ≠ Quality Issue.** Outages issues do not equate to a service quality problem
- **Relatively Limited VoIP Outages:** CPUC Staff Report showed that VoIP outages are decreasing and proportionately less than other technologies (~5% wireline voice outages)
- **Force Majeure Outages:** Many VoIP outages are outside of VoIP providers' control, e.g., natural disasters and PSPS events
- **Meeting Out-of-Service (OOS) Standards:** Cable VoIP providers that voluntarily report on G.O. 133 measures have excelled in meeting OOS standards

% of Repair Tickets Restored < 24 Hours
(Cable VoIP)



No Demonstrated Need for Service Quality Regulation

Claim #4: Anecdotal national data on telephone service generally shows poor customer satisfaction

- Not applicable
- Data cited by advocates is neither specific to VoIP, nor California
- California VoIP-specific data show minimal customer complaints with VoIP
- Fewer than 1% of communications-related complaints to CPUC involved cable VoIP
- ~3% of total comments at the public hearings held in this docket specifically addressed cable VoIP service quality. (Note: public comments are uncorroborated)

Use the Right Tool for the Right Job

- CPUC staff has determined that 98% of GO 133-D penalties have been assessed on two companies providing POTS service
- **VoIP is Performing Well.** Cable VoIP companies reporting on GO 133-D are generally meeting standards; there is no basis to extend enforcement mechanisms to VoIP
- **No Showing of Impact on Performance.** Increasing the magnitude and frequency of penalties does not necessarily lead to better performance
- **Massive Costs, No Consumer Benefit.** Over-enforcement is likely to impose massive costs on both the CPUC and providers, and discourage new entrants into the voice market, with no demonstrable benefit for consumers

Measured Approach: CalBroadband's Proposal

- **CalBroadband Proposal:** If CPUC extends service quality regulations to VoIP, then align with existing G.O. 133-D as CalBroadband has already proposed in this proceeding
 - Conduct a two-year pilot study of the impacts and effectiveness of existing G.O. 133 metrics on all voice services before considering any changes or penalties for VoIP
 - Proposal aligns requirements with those the CPUC (less than 7 years ago) determined are adequate measures of service quality
 - CPUC staff have experience collecting and interpreting this data
- **No basis to extend metrics or penalties to VoIP**
 - As CPUC has previously acknowledged, there are legal barriers for application to VoIP

Eliminating Adjusted Results Rule

- Current rules call for reporting Out-of-Service Repair Interval metrics adjusted for catastrophic events, weekends, and holidays
- Adjusted Results rule should not be eliminated for the following reasons:
- **Overbroad.** This proposal would unfairly impose liability for circumstances outside of providers' control
- **Impact on Workers.** This proposal would also override protections for communications service workers and existing labor agreements protecting work schedules
- **Contradicts CPUC Precedent.** CPUC previously rejected proposals to eliminate this adjustment
 - No new or changed circumstances that warrant revisiting this decision

Automatic Customer Credits / Investment in Lieu of Fines

- Proposal would impose automatic customer credit refunds in addition to any revised penalty amounts
- Automatic Credits should not be required:
 - **Contradicts CPUC Precedent.** CPUC previously rejected proposal for automatic customer credit refunds on multiple occasions
 - **No new or changed circumstances** warrant revisiting this determination
- Investment in lieu of fines rules should remain:
 - **Money Directed to Problem.** If improving service quality is the goal, then increasing network investment is reasonable. Unlike fines, investment directly addresses the source of the quality issues
 - Consider practical suggestions, e.g., Sonic's proposal to increase accuracy and specificity network investments made in lieu of penalties

Chronic Failure Status Rule

- Current rules impose penalties when a provider does not comply with service quality standards for at least three consecutive months
- Chronic Failure Status rule should not be eliminated:
 - **Most Providers are Consistently Performing Well.** Accusations of abuse are limited to a few entities; CPUC has other mechanisms to address outliers
 - If imposed on providers that never had to report on most of these measures before, there is no demonstrated evidence that there is actually a problem
 - **Hyper-Punitive.** This proposal would unnecessarily ignore the reality of occasional hiccups that come with even the most robust and innovative networks in favor of a hyper-punitive approach

Other Proposals

- CalBroadband further opposes the other proposals set forth in the ALJ Ruling attachment but due to limited time for presentation, reserves its right to address these proposals at a later time

Thank You!

calbroadband.org

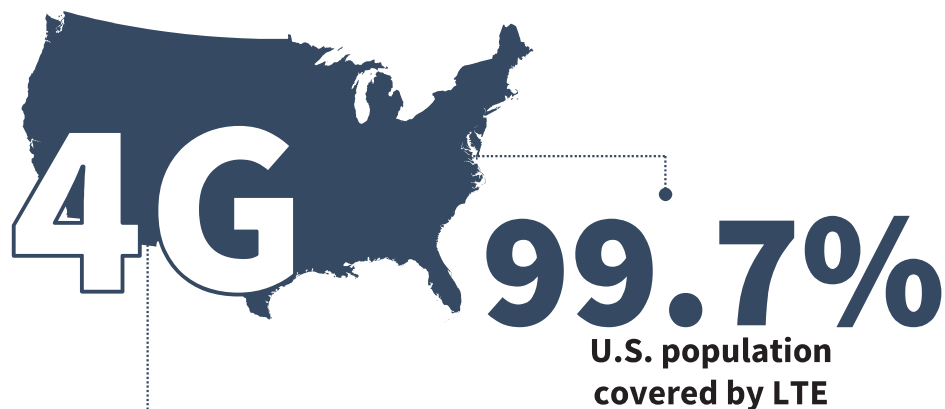


Competition Regulates Wireless, Meeting Consumers' Demands

Benjamin J. Aron
Assistant Vice President, State Regulatory Affairs
CTIA
September 7, 2023

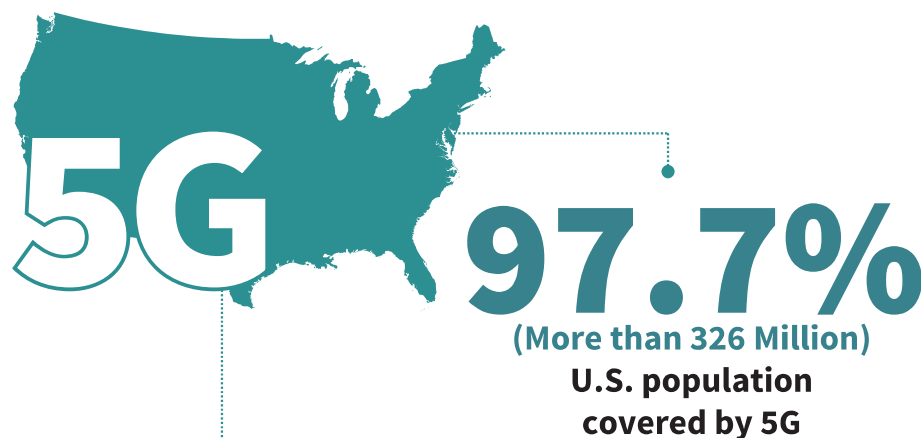
Wireless Coverage and Choice

As of Year-End 2021



94.5%

Had a choice of 3 LTE-based service providers

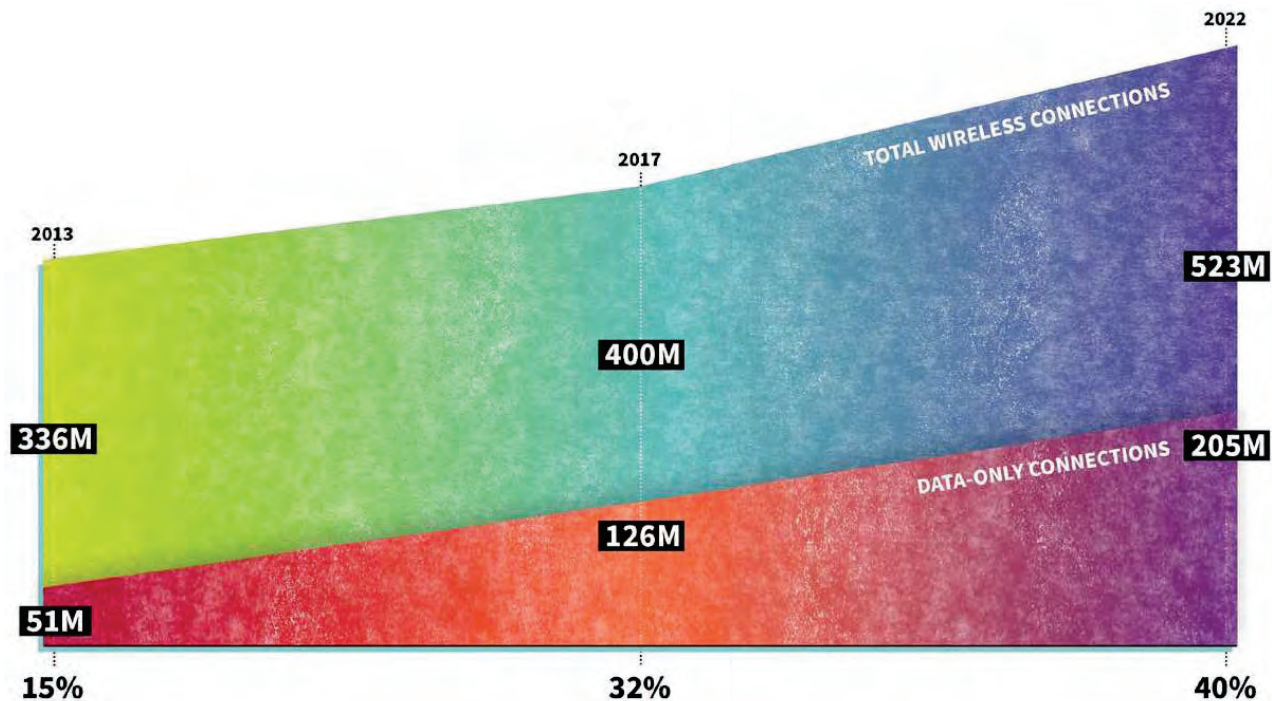


58%

Had a choice of 3 5G-based service providers



Wireless Networks Connecting Everyone and Everything



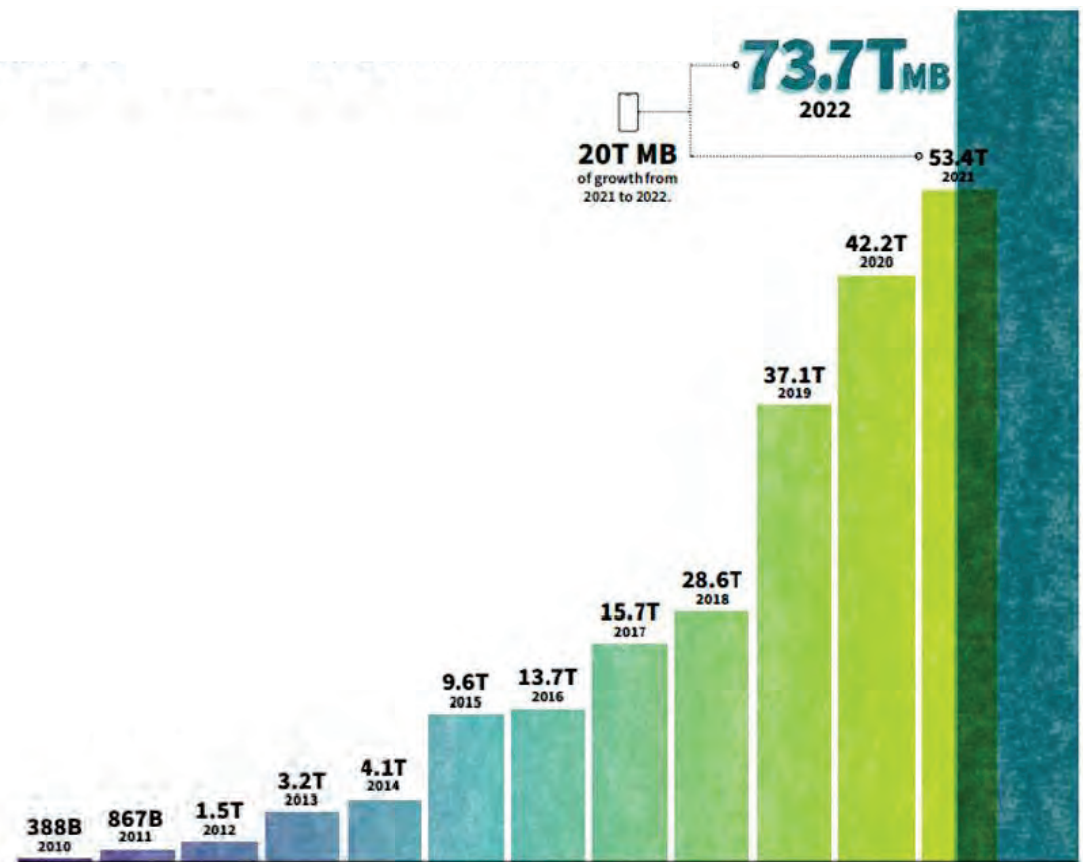
As of 2022, wireless carriers' networks connect:

- **523M** total wireless connections
- **307M** smartphones
- **205M** data-only devices – including wearable devices for personal use and devices for agricultural, smart homes, manufacturing, asset tracking, fleet management, and more

Data Traffic has Grown 190x Since 2010

2022 was another record-breaking year for wireless data traffic, with the nation's wireless networks supporting more than 73.7 trillion MB of traffic—20 trillion MB, or 38%, more than in 2021.

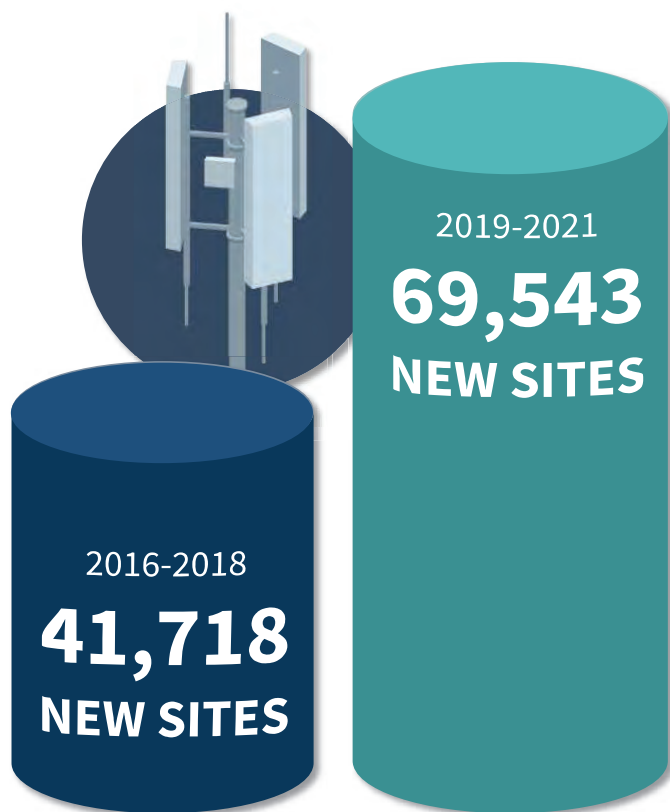
This is the greatest increase in mobile data traffic ever and nearly double the year-over-year increase from 2020 to 2021.



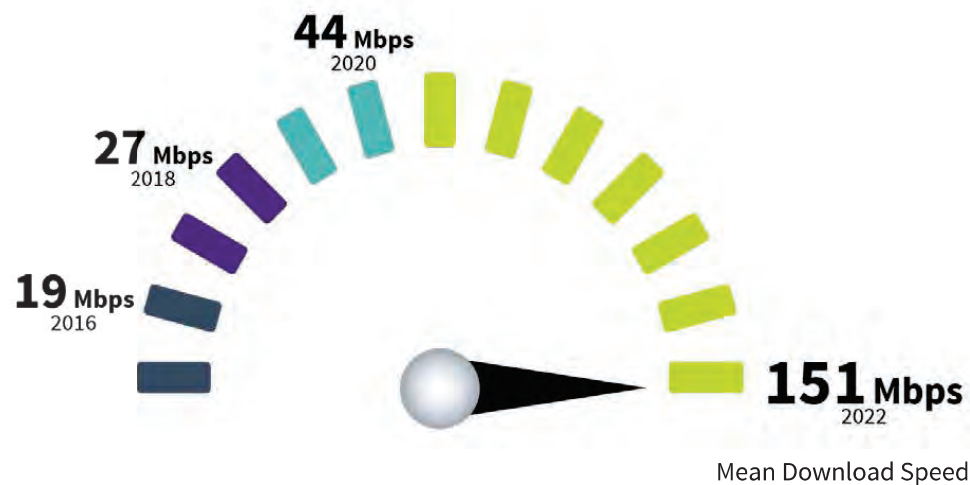
Mobile Wireless Data Traffic

Meeting Demand With More Sites, Increased Speeds

As consumer demand for wireless broadband grows exponentially, the industry is deploying sites at a faster pace than ever – and constantly accelerating wireless broadband speeds as well.

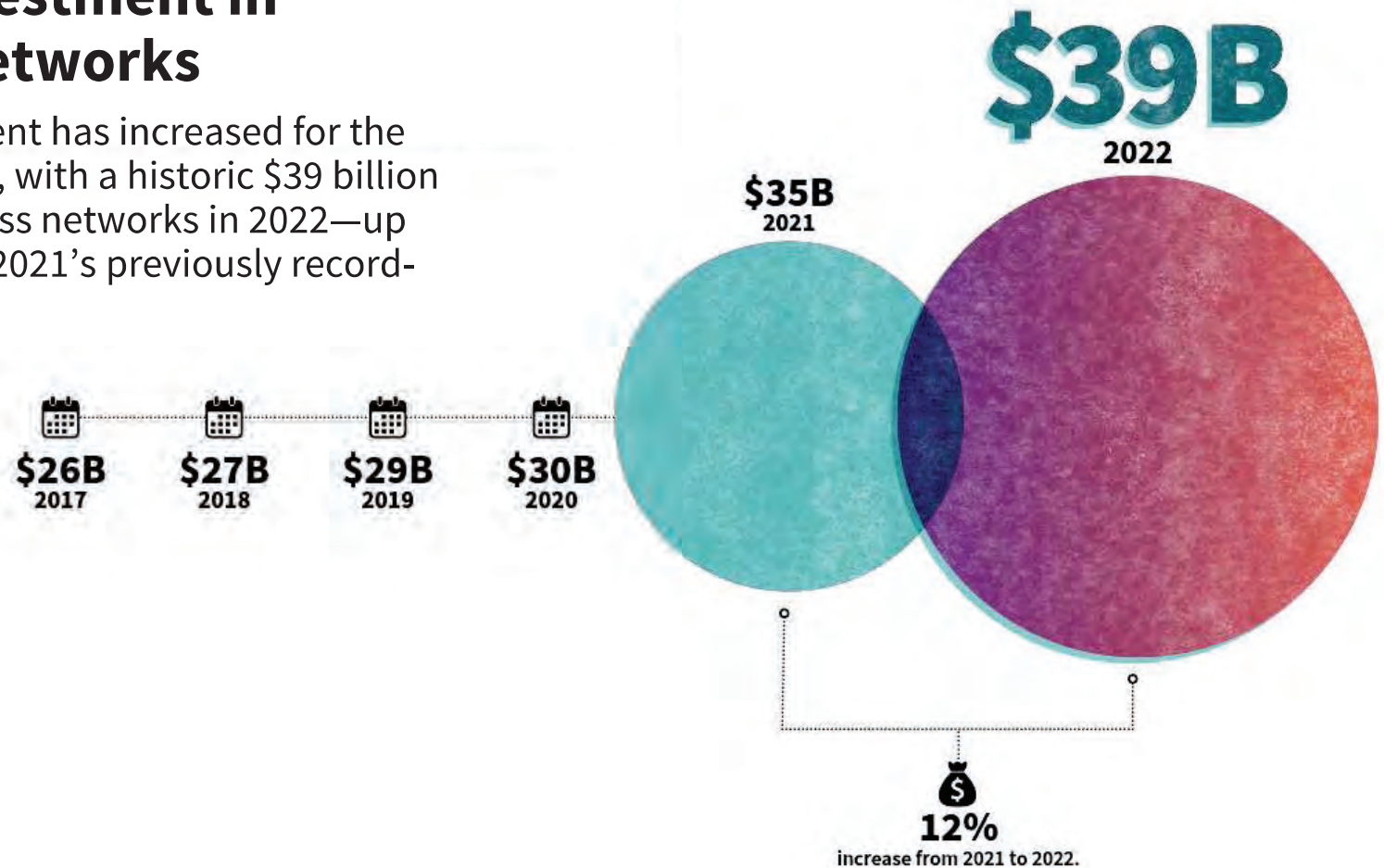


Operational U.S. Cell Sites



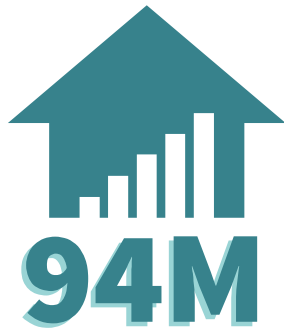
Record Investment in Wireless Networks

Wireless investment has increased for the fifth year in a row, with a historic \$39 billion invested in wireless networks in 2022—up nearly 12% from 2021’s previously record-setting total.

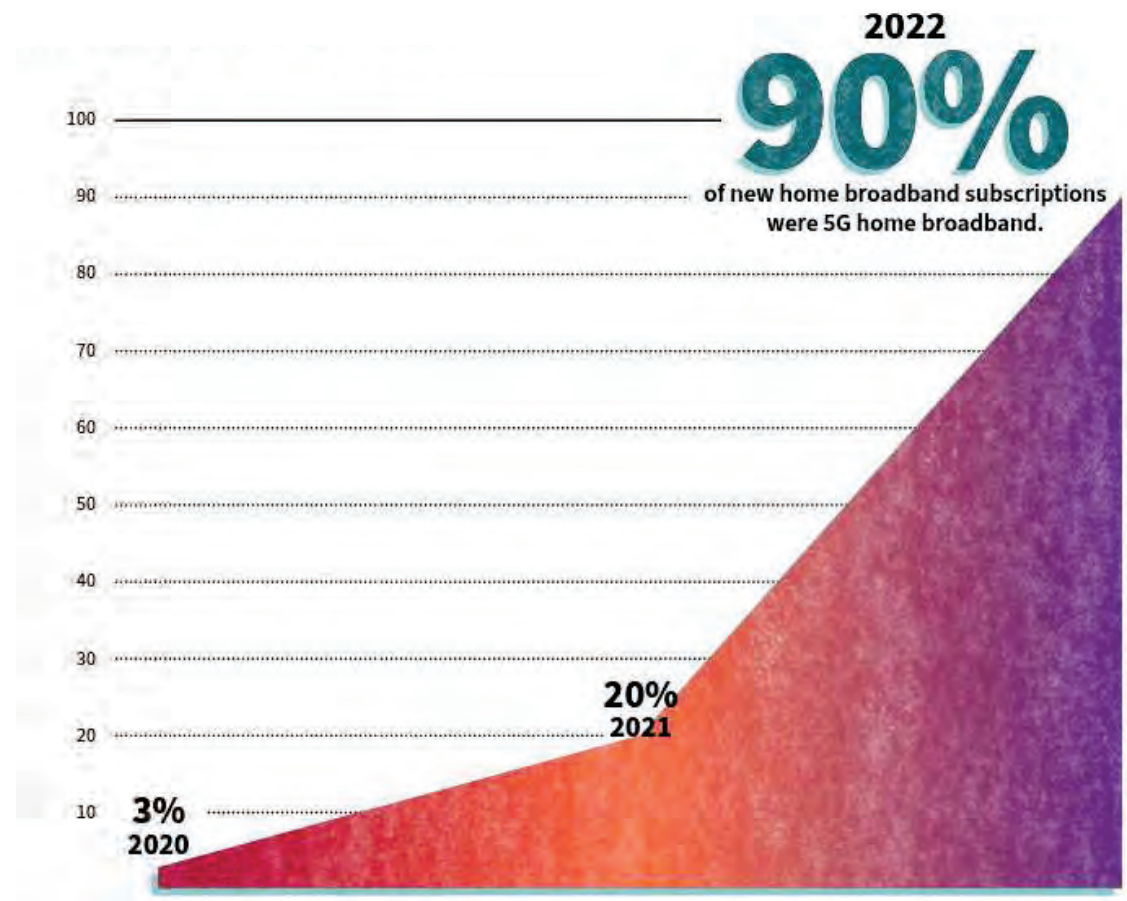


5G Home Broadband

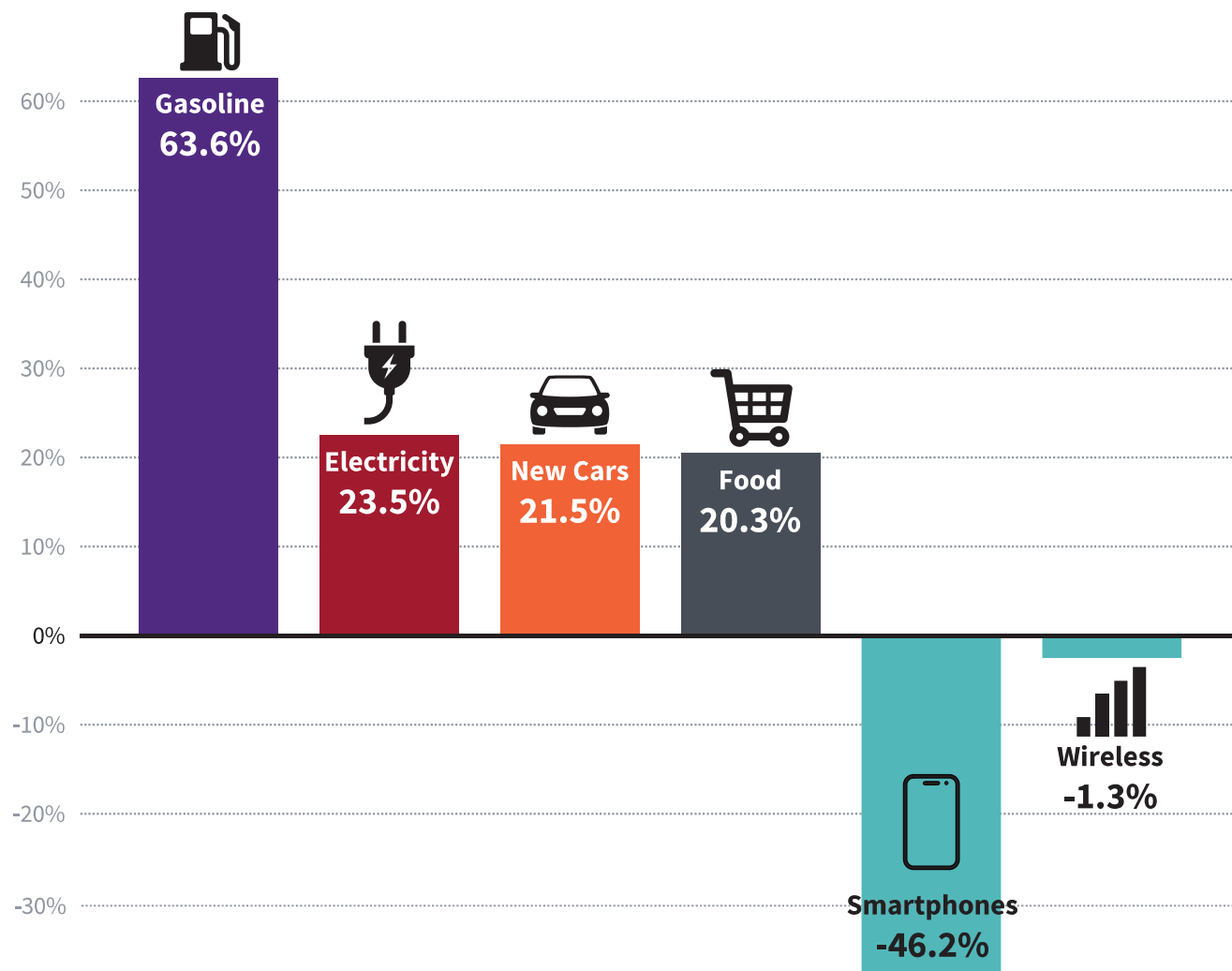
Fixed Wireless Access as a successful use case.



households are covered
by 5G home broadband,
a 2.4x increase from
2021 to 2022.



Wireless Prices Decrease in Face of Historic Inflation



73%

of goods/services tracked increased in price over last year

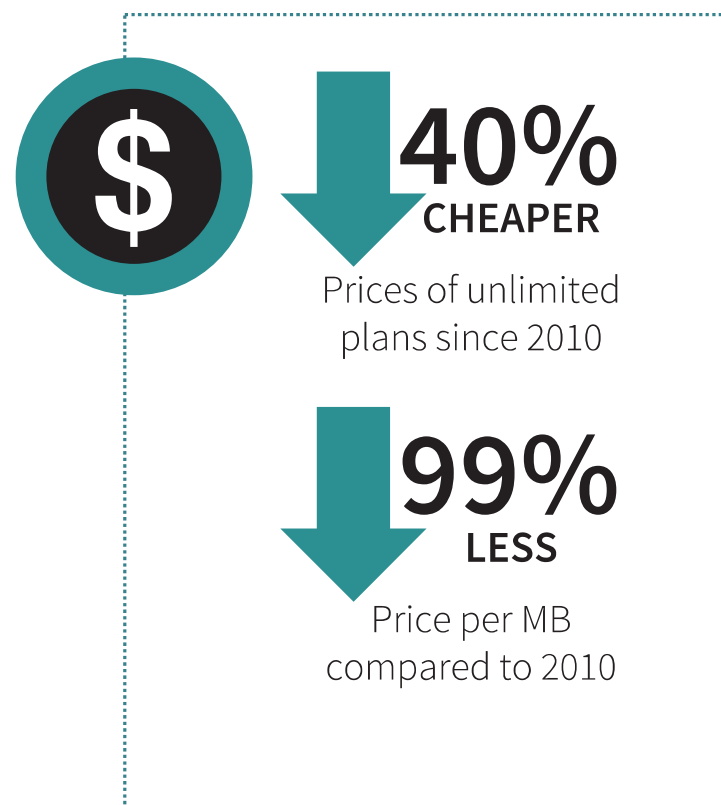
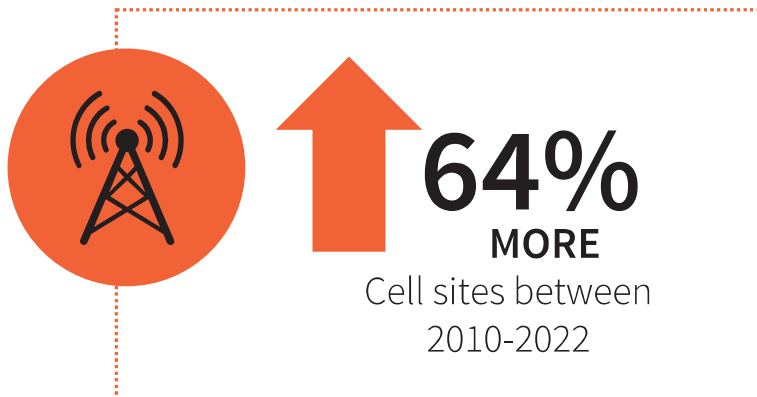
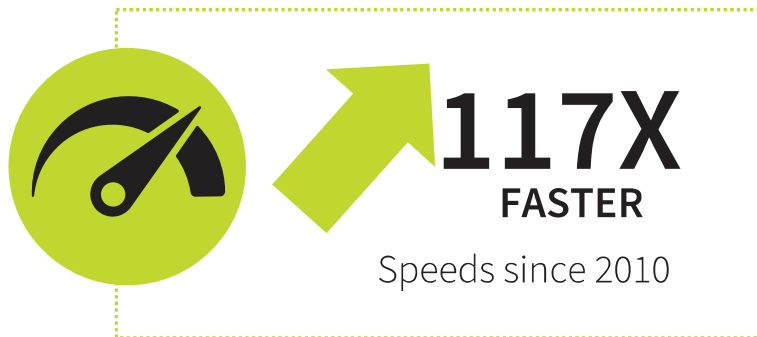
Two items that went down in price—

**Wireless Service
& Smartphones**

July 2020-July 2023

Who Wins With Fierce Wireless Competition? Consumers

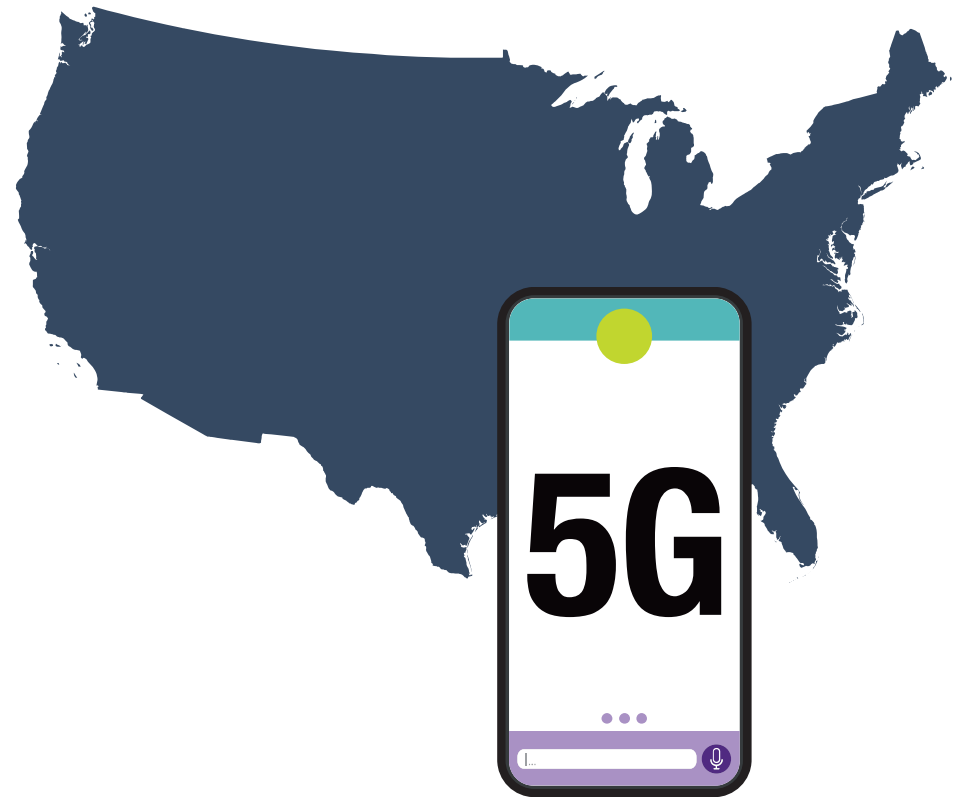
Robust competition within the industry has incentivized wireless carriers to keep quality high – without monopoly-era regulation.



Keep Pro-competition Regulatory Structure

The U.S. regulatory regime drives wireless investment and innovation. Regulators need to:

- Avoid utility-style regulation of wireless services
- Continue to allow the competitive wireless market to generate consumer benefits



Consumer Groups' Proposed Enforcement Changes – Attachment B

Increase in Intermodal Voice Competition and Declining POTS Access Lines Since G.O. 133-D Adopted

Commission's Service Quality Framework Should Focus on Rehabilitation Versus Retribution

- The Commission Should Promote Investments and Innovation.
- Excessive Penalties to the General Fund Detract from Needed Investments and Innovation.

**Investment in Lieu of Penalties is Vital to the
Public Interest and Promotes Improved Service
Quality.**

The Existing Grace Period and Adjustment Mechanisms Are Reasonable and Necessary to Promote Compliance.

- Regulation Could Not Impact Factors Outside of Carriers' Control.