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Commissioner Jones, thank you for that introduction.   Thanks also to NARUC, the Committee on Telecommunications, and to everyone here in the audience for joining us today.

The topic of our panel is 911 governance, which raises many complicated questions about preserving effective oversight at the local, state, and federal levels as technologies and business models for 911 service evolve. I will start, however, with a simple message that guides the FCC's efforts: Americans must have confidence that every call to 911 will go through, and for that to happen, every link in the chain of 911 call completion must be dependable, and responsible parties need to be held accountable for their parts in ensuring reliable and resilient service.

This was never a trivial task, given the critical nature of 911 service and the high stakes of responding to emergency calls. But the transition to Next Generation 911 has revealed new challenges as IP-based 911 networks and capabilities are provided by an increasingly broad range of entities under varying forms of regulatory oversight. Recent "sunny day" 911 outages affecting millions of people in multiple states underscore these new risks to 911 reliability, as well as the challenges of coordinating recovery from a major outage among several service providers and many affected jurisdictions. (By "sunny day," I mean outages not caused by weather, cable breaks, etc., but rather but some issue within the 911 infrastructure itself) The IP

transition holds potential to vastly improve 911 service by providing call-takers and first responders with new and more complete information to assist in emergency response. But we cannot allow the transition to result in a breakdown of governance structures that have served the 911 community well, or in gaps in oversight and accountability that put public safety at risk.

The Commission recognized these challenges in a Policy Statement and Notice of Proposed Rulemaking adopted in November 2014, which initiated our ongoing proceeding in Public Safety Docket 14-193 on 911 governance and accountability. My remarks will focus on the specific proposals in that NPRM and the comment record in response, and I look forward to hearing my co-panelists' views on how the FCC can play a useful role in addressing governance challenges through that proceeding. First, however, let me start with some background on the FCC's approach to 911 reliability, which provides a foundation for the proposals the Commission is currently considering.

As you may recall, the FCC responded to the 2012 derecho storm by adopting rules requiring 911 service providers that directly serve PSAPs to take reasonable measures to provide reliable service, and certify annually whether they have implemented best practices in the areas of critical 911 circuit diversity, central office backup power, and diverse network monitoring. These rules are now in effect, and the initial certification deadline is October 15, 2015. We believe this certification process provides an important accountability mechanism for service providers with a direct contractual relationship with a PSAP or 911 authority, and we look forward to reviewing the first round of filings from providers covered by these rules.

The FCC also promotes reliability and resiliency of 911 service through requirements that communications providers report outages to the Commission and to affected PSAPs. In 2013,

the Commission strengthened requirements for 911 service providers to notify PSAPs in the event of disruptions in 911 service. Covered 911 service providers – those that directly serve PSAPs and are subject to our reliability certification requirements – must now notify PSAPs within 30 minutes of discovering a 911 outage, and follow up with additional material information within two hours. Originating service providers such as wireline, wireless, and interconnected VoIP providers must notify PSAPs of reportable outages as soon as possible, with all available information. Notably, the Commission also has proposed to allow state officials to access data from our Network Outage Reporting System (NORS) on a confidential basis, so that both state and federal officials have similar situational awareness of outages affecting each state. We encourage comments, due this Thursday, July 16, on that proposal in Public Safety Docket 15-80. Together, these outage reporting initiatives help hold covered providers accountable for reliable service and responsiveness to their PSAP customers when problems occur.

It also is no secret that the FCC will exercise its enforcement authority in cases where a 911 network failure or failure to notify affected PSAPs reflects a violation of our rules. I won't go into the details of specific cases, but I believe that this enforcement authority provides an important tool to address egregious shortfalls in 911 network architecture and operations that put public safety at risk.

These rules and policies are a good start, but we also must remain vigilant and adjust our regulatory approach as technologies and business models evolve to avoid unintended gaps in governance. While the Commission's initial 911 reliability order focused on maintaining 911 networks when challenged by storms and power outages, outage trends in 2014 revealed that we must also deal with new 911 reliability challenges as networks transition to IP. These new and transitional networks increasingly rely on consolidated infrastructure such as servers and

databases to process calls for multiple jurisdictions, giving rise to the risk of "sunny day" outages caused by poor network design or inadequate testing and maintenance.

We learned in 2014 that this was not a theoretical concern. The April 2014 multistate 911 outage, which shut down 911 service for six hours throughout portions of seven states, showed that a single software error can be just as damaging to 911 service as a hurricane or other natural disaster. Other outages in 2014, including statewide outages affecting Vermont and Hawaii, as well as a nationwide wireless carrier outage, underscore this point. A single 911 call today can involve several companies operating in different locations across the country, and that means a single failure in one location can leave people without 911 service across multiple states, indeed across the nation. States and localities play an essential role in 911 governance, and their continued oversight is vital to ensuring that 911 service remains effective and reliable in every community across the country.

But technology transitions have shown that 911 networks increasingly span multiple jurisdictions and provide capabilities that may extend beyond traditional methods of governance and oversight. Our combined approach to 911 reliability must respond to these new risks.

That brings me to our 911 governance NPRM, which sought comment on additional proposals to improve 911 network reliability in an IP-based environment and reduce the risk and impact of large-scale 911 outages in cooperation with state and local partners. The item set forth two guiding principles: First, any new elements of 911 architecture or service should have the necessary redundancy and reliability safeguards – along with the appropriate governance mechanisms – to maximize reliability and protect public safety. Second, any significant changes in 911 service as technologies evolve should be coordinated in a transparent manner with the

Commission and with state and local authorities. Accordingly, the NPRM proposed a regulatory framework to ensure that the nation's 911 governance structure keeps pace with evolving technology so that all entities providing 911 service remain accountable for reliable call completion and accurate situational awareness.

We have heard in recent months that this proposed framework is broad, ambitious – and many other things. I agree. These are complicated issues, and we understand that there may not be easy solutions. What we did NOT hear – and I want to stress the consensus on this point – is that these issues are unimportant or that they don't have real consequences for public safety. Virtually everyone who commented on the NPRM recognizes that 911 is changing, and while these changes hold potential to improve service functionality and reliability, they also may introduce new risks if not managed appropriately and proactively. We may not agree on everything in the NPRM, and we are open to alternative proposals if commenters can come forward with more elegant solutions to the governance and accountability problems we have identified. The bottom line, however, is that these problems are real and demand thoughtful consideration now, before they become impediments to the adoption of NG911 and before they threaten to reduce public confidence in the nation's 911 system.

Let me emphasize that we see this as a partnership, and that the FCC does not intend this rulemaking to supplant state regulation of 911 service or to interfere with the right of state and local 911 authorities to contract for the services they desire. We recognize that many decisions regarding 911 deployment, operations, and cost recovery are best made at the state and local level, and continued oversight by states and localities is vital to ensuring that 911 service remains effective and reliable in every community across the country. Our purpose in addressing 911 governance is not to take over, but to ensure that our collective jurisdiction and oversight - local,

state, tribal, and federal - covers every link in the chain of call completion without gaps in accountability.

Now let me turn to the specific proposals in the NPRM. First, the item proposed to amend the Commission's current 911 reliability certification rules to cover new entities and network reliability practices. Recall that the Commission's 911 reliability rules focus on "Covered 911 Service Providers," meaning those that provide core 911 capabilities such as call routing and number or location information directly to a PSAP or emergency authority. The proposed rules would cover a more comprehensive range of entities involved in 911 call completion, including any entity that provides call routing, number or location information, text-to-911, or any other capability required for delivery of 911 calls (or the functional equivalent), regardless of whether they have a direct contractual relationship with a PSAP or emergency authority.

There is robust debate among commenters about the extent to which this definition should extend to originating service providers, such as wireless carriers and interconnected VoIP providers that operate 911 network infrastructure. We also have heard a range of views on whether our rules should cover vendors and subcontractors, or focus on one primary provider in each jurisdiction to be held accountable for the acts and omissions of its agents and subordinates. Any rules we adopt should create the right incentives to improve 911 reliability throughout the IP transition without creating perverse incentives that will raise costs to PSAPs and consumers or limit innovation and competition for 911 services.

The NPRM would also amend our rules to set forth a general reasonableness standard for efforts to provide reliable 911 service. This would include – but not be limited to – the existing areas of circuit diversity, central-office backup power, and diverse network monitoring.

We also proposed to update our annual reliability certification requirements to address IP-based network vulnerabilities such as software and database testing and maintenance, as well as efforts to improve situational awareness and information sharing. Among other things, covered providers would be required to certify whether any IP-based network architecture is geographically distributed, load balanced, and capable of automatic reroutes in the event of a software or database failure, as well as whether the provider has implemented reasonable measures to maintain continuity of 911 service during planned maintenance and software upgrades. As with our existing certification requirements, providers would also have the option of certifying reasonable alternative measures in cases where the specified standards cannot be met.

Many commenters see a role for multi-stakeholder bodies such as our CSRIC advisory committee to continue developing security and reliability best practices for NG911 networks. We agree and note that CSRIC continues to consider a variety of 911 issues, including vital work on cybersecurity. That said, we also believe that existing best practices and lessons learned from recent outages provide actionable guidance that can – and should – be implemented now, before preventable outages reoccur.

Second, the NPRM proposed to require service providers planning major changes in multi-state 911 network architecture and services to file a public notification so that PSAPs and other stakeholders serving the affected areas are aware of potential impacts. These filings would

be similar to the network change notifications that the FCC already requires for changes affecting interconnection with incumbent carriers. For example, 911 service providers would be required to disclose changes in network architecture or vendor/subcontractor relationships affecting routing or processing of 911 calls for jurisdictions in more than one state. I note, though, that the proposal would not apply where network changes are initiated by a PSAP or emergency authority. Debate on this proposal has focused on which changes should be considered "major" for purposes of triggering any notification requirement, as well as whether such notifications should be targeted at PSAPs specifically or the general public. These are fair questions, and we continue to welcome your input.

If a 911 provider seeks to discontinue, reduce, or otherwise impair existing 911 services in a way that does not trigger existing approval requirements under section 214 of the Communications Act, the NPRM also proposed a similar FCC review process so that communities that have historically relied on such services are not left without adequate alternatives. I believe such a mechanism would be especially important in small communities and rural areas where options for 911 service may already be limited and the withdrawal of an incumbent could be devastating without adequate time for transition. Other commenters, however, caution that incumbents cannot be locked in to providing existing services forever, and that such a mandate would be counterproductive to innovation and competition in NG911. Again, these are fair points, and we seek to strike an appropriate balance.

Third, the NPRM proposed to require entities seeking to offer new 911 capabilities and services to certify that they have the technical and operational capability to do so reliably. For example, providers of new capabilities would be required to certify that they have conducted a reliability and security risk analysis of any network components, infrastructure, and databases or

software used to support 911 call completion. The intent here was not to create a barrier to entry in the market for 911 services, but simply to ensure that any new services and functions introduced into the 911 ecosystem meet baseline standards of reliability and accountability that PSAPs and the public expect from existing 911 services. The Commission does not contemplate an onerous review process or anything resembling "permission to innovate" in the 911 space, but rather a mechanism for an increasingly diverse range of 911 providers to self-certify their ability and intent to meet high standards of reliability. Comments on this proposal generally support a process for good actors in the NG911 community to be recognized for their commitments to public safety-grade service. Still, we acknowledge that the devil is in the details, and any certification for new capabilities should not stand as a deterrent to investment, innovation, or market entry.

Finally, to improve situational awareness and information sharing among multiple service providers during 911 outages, the NPRM proposed to establish a class of 911 providers with certain lead coordination responsibilities. We referred to these entities as "911 NOC providers," but regardless of the terminology, the idea was to establish clearer expectations for communication and cooperation when several providers are affected by an outage. Under this proposal, the 911 service provider responsible for transport of 911 calls and associated information to the PSAP in each jurisdiction would act as a clearinghouse for outage information, sharing situational awareness among other service providers, state and local officials, and the FCC. In addition, other covered 911 service providers would be responsible for sharing relevant information with the NOC provider. Notably, the NOC provider would not be responsible for correcting failures outside its own network or for telling other service providers how to run their operations; its function would be to share basic information – like a "heartbeat"

for 911 service in each jurisdiction – so that all entities involved in 911 call completion have a common understanding of the situation.

Many commenters recognize that the increasing fragmentation of 911 service from being offered by a single incumbent carrier to being shared among multiple competitive providers creates real challenges to effective communication and rapid recovery when problems occur. But to be candid, both industry and public safety found flaws in the construct we proposed. Some questioned whether this proposal would duplicate existing outage reports to the FCC and affected PSAPs, distracting from critical efforts to restore service. Others expressed concerns about sharing proprietary information with competitors or limiting PSAPs' options when contracting for 911 services and associated technical support. These are legitimate concerns that need to be worked out. Still, we believe this is a critical issue that extends beyond outage reporting to the FCC, which serves a different purpose than information sharing among service providers themselves. The specifics of our proposal may need to be refined, but the core point remains that the division of responsibility for 911 call completion cannot mean that no one is responsible when something goes wrong.

The 911 governance docket remains open, and these proposals remain pending, so I can't say much more about any next steps or direction that the Commission may take on the current record. Still, I hope I have given you all a fair characterization of the proposals in the NPRM, as well as an appreciation for the complexity of the issues we are trying to address. The NPRM sets forth a framework and a set of principles. As such it will draw opinion and counterarguments. We welcome a stimulating dialog on these important issues because we know that is what will lead to solutions we can all support. That dialog continues today, and I look forward to hearing the perspectives of my co-panelists.

Briefly, however, I would like to touch on a few other efforts at the FCC that may help put our 911 governance proposals in context. The Commission is committed to ensuring that the 911 system reaches and works consistently for all individuals, and as such, governance of 911 necessarily impacts every fiber in that 911 web – from ensuring accessibility to 911 and the ability to successfully locate 911 callers, to supporting effective communication with other public safety entities, to long-term planning for Next Generation 911. We focused here today on 911 network reliability and resiliency, but in truth, 911 decision-makers have a much broader portfolio of governance issues facing them on a daily basis.

One issue currently facing 911 authorities is the decision whether to implement text-to-911 in their jurisdictions. The Commission adopted rules in 2014 requiring wireless carriers and interconnected text providers to be "text-capable" by December 31, 2014, but on the PSAP side, the decision to implement text-to-911 remains within the discretion of state and local authorities. We've seen slow but steady adoption of text-to-911 by PSAPs, and we've been encouraged by the positive experiences of PSAPs that have adopted it so far. Nevertheless, most Americans still do not have access to text-to-911 in their communities. We believe that a concerted effort to accelerate the roll-out of text-to-911 is needed, and we stand ready to assist state and local 911 authorities in such an effort. .

Wireless location accuracy for 911 is another area implicating 911 governance. The ability to locate wireless 911 callers, to dispatch first responders and eventually find the caller as quickly as possible, is critical to the effectiveness of 911. Today's 911 system isn't always successful in locating callers, particularly when the caller is located indoors. The Commission has long since mandated location accuracy requirements for outdoor 911 calls, but as more and more consumers "cut the cord" and have access only to a wireless phone, whether inside or

outdoors, the ability to locate indoor wireless 911 calls has become increasingly important. What's more, new and emerging technologies such as Wi-Fi, Bluetooth, and barometric pressure sensors offer opportunities to enhance the current system's effectiveness and capabilities, including the ability to locate callers vertically. Accordingly, earlier this year, the Commission established new requirements and timetables for improving the location information provided with all wireless 911 calls, particularly those originating indoors, and did so with the support of the wireless industry. The Commission is actively engaged with the four nationwide wireless carriers as they make improvements to wireless location accuracy, which, once implemented, will save time and ultimately lives.

Another major task on the horizon for 911 authorities is addressing the Tech Transition and deciding when and how to upgrade to Next Generation 911. As you all know, the 911 system today is a patchwork quilt of old and new, and consumer technology has outpaced 911 technology in most regards. By leveraging and utilizing new communications tools and technologies that have become commonplace in recent years, NG911 will provide the public a more advanced system for reaching emergency services, and will provide public safety professionals with better tools to analyze and respond effectively to emergencies. This includes the ability for PSAPs to send and receive information using text and multimedia messaging, as well as a number of IP-based communications platforms and functions.

Next Generation 911 will inevitably raise novel governance questions as new technologies are integrated into the 911 system, because new technologies will beget new roles and responsibilities, but also new opportunities. On the flip side of this, we must also consider how best to phase out *old* technologies and procedures. For example, we are currently proposing to sunset the rule that requires wireless carriers to forward 911 calls from non-service initialized

phones. Clearly a change is needed, given the ample evidence in the record that a majority of

911 calls coming from non-service initialized phones are non-emergency and often harassing

calls that drain PSAP resources and divert them from responding to legitimate emergency calls.

But we must also make sure that any change we make does not restrict the public's ability to

easily and reliably access 911 when a legitimate emergency arises. So, as you can see, letting go

of old technology can prompt governance questions in the same way as adopting new

technology.

Our goal at the Commission is to embrace the "art of the possible" in all elements of 911

service and what we can achieve by harnessing technology. In addition to the other things I

mentioned, the Bureau is examining ways to create a communications model in which the

Emergency Alert System and other "one-to-many" systems work hand-in-glove with "many-to-

one" services, such as 911. Linking these systems will allow the public to reach out to

government to inform it of a particular danger, and then enable the government to quickly reach

back to provide life-saving information to the general public. PSAPs are exposed to real-time

information from 911 callers that make them a logical fit for playing a part in emergency

alerting, but under current governance models, many PSAPs lack the authority to do so.   With

public safety increasingly having to do more with less, it may be appropriate for PSAPs to have a

role in emergency alerting, particularly in a Next Generation 911 environment where a PSAP can

"push" information to third parties. The FCC is committed to facilitating effective, robust

communication among public safety authorities at the local, regional, state, and federal levels,

which is and will continue to be critical to successful 911 governance.

I would be remiss if I didn't mention the important work being done by some of our

Federal Advisory Committees on topics that interrelate with 911 governance. The recently

formed Task Force on the Optimization of PSAP Architecture has been looking at ways PSAPs

and regional and state 911 authorities can improve the efficiency of available resources and how

they can plan for the future. The Task Force has been taking a deep dive into which functions in

the 911 call process could benefit from being consolidated or virtualized, including cybersecurity

functions, as well as how resources would be best deployed with respect to personnel and

technology adoption. As the PSAPs of tomorrow become a reality, our governance and

accountability models may need to evolve as well. Our esteemed host Phil Jones has been

heading up the working group tasked with identifying optimal strategies for resource allocation

for PSAPs, and we look forward to hearing their report later this month. We also recently re-

chartered CSRIC, the Communications Security, Reliability, and Interoperability Council. While

working group topics have not yet be set in stone, CSRIC could be a fertile environment for

examining next generation governance issues as they arise. These two committees provide the

Commission with valuable insight and recommendations for developing policies around good

911 governance, and we look forward to their future recommendations.

Conclusion

In closing, I want to thank NARUC and the Committee on Telecommunications for

hosting this important event and for bringing these distinguished panelists together. I also want

to end with a challenge to everyone here – and to the 911 community at large. We may not all

agree on exactly how to address the complex governance challenges identified in our NPRM,

and reasonable minds can differ on the appropriate balance of federal, state, and local oversight

of various components of 911 service. But what is evident from the comment record – and from

recent outages that have brought new reliability and governance challenges home to communities

across the nation – is that these are real problems that demand serious consideration and

coordinated action by our respective organizations. Proposals can always be improved, and

further study is never a bad thing, but one option that is NOT on the table is to do nothing.

Together, I am optimistic that we can solve the problems identified in the NPRM through

consensus measures that promote cooperative governance of the nation's 911 networks and

preserve accountability for reliable service. But we won't let the perfect become the enemy of

the good. In the coming months, the Commission will do its part to move forward toward the

governance and accountability goals that I've described, and I challenge our partners in industry,

state and local government, and the public safety community to play a constructive role in that

process. We can't get this right without your help, and the stakes are too high to get it wrong.

Please join us in addressing these new governance and reliability challenges head-on so that 911

– and NG911 – will continue to provide a life-saving benefit to all Americans, both today and in

the future. Thank you.