

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Regarding
Emergency Disaster Relief Program.

Rulemaking 18-03-011
(Filed March 22, 2018)

**OPENING COMMENTS OF THE UTILITY REFORM NETWORK, ACCESS
HUMBOLDT, CENTER FOR ACCESSIBLE TECHNOLOGY,
NATIONAL CONSUMER LAW CENTER, AND COMMUNICATIONS WORKERS OF
AMERICA, DISTRICT 9
ON THE PROPOSED DECISION OF COMMISSIONER BATJER**

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TABLE OF CONTENTS

	Page
I. INTRODUCTION.....	1
II. OVERVIEW OF ISSUES.....	1
III. DISCUSSION.....	4
A. THE PD MUST ADDRESS BACKUP POWER AND RESILIENCY FOR BACKHAUL REQUIRED TO SUPPORT WIRELESS SERVICE IN ORDER TO ENSURE WIRELESS NETWORK RELIABILITY AND RESILIENCY	4
1. Backhaul and Backup Power	5
2. Backhaul and Network Resiliency Requirements.....	6
B. IN ORDER TO ENSURE RELIABLE SERVICE IN ALL HIGH FIRE THREAT AREAS, THE PD NEEDS TO ADDRESS REMOTE TERMINALS	7
C. THE PD ERRS IN PROPOSING A DEFINITION OF “PROVIDER” THAT IS TOO NARROW TO FULLY ENSURE WIRELESS RELIABILITY	9
D. THE PD ERRS BY NOT REQUIRING UPDATES TO RESILIENCY PLANS.....	11
E. NEXT STEPS.....	11
IV. CONCLUSION	13

RECOMMENDED CHANGES TO PROPOSED DECISION

TURN, Access Humboldt, CforAT, NCLC and CWA, District 9 respectfully urge the Commission to revise the Proposed Decision to adopt the following modifications.

- Address the need for reliable backhaul by explicitly adding backhaul to the next set of proposals that it intends to issue in this proceeding.
- Modify the requirements for Resiliency Plans to include GIS information, maps and logical diagrams of network facilities that will allow the Commission to understand where networks are most fragile and backhaul needs to be reinforced.
- Take initial steps to address the need improve network reliability for customers in high fire threat areas who do not have wireless service.
- Require providers to update Resiliency Plans on a quarterly basis.

I. INTRODUCTION

Pursuant to Rule 14.3 of the California Public Utilities Commission's (Commission) Rules of Practice and Procedure (Rules), The Utility Reform Network (TURN), Access Humboldt, the Center for Accessible Technology (CforAT), the National Consumer Law Center (NCLC), and Communications Workers of America, District 9 (CWA) (hereafter the Joint Consumer Advocates and CWA) hereby submit these Opening Comments on the Proposed Decision of Commissioner Batjer, Decision Adopting Wireless Provider Resiliency Strategies (the PD).

Joint Consumer Advocates and CWA support adoption of the PD and commend the Commission for moving quickly to develop a record and issue an initial order with requirements for improving wireless network reliability, including requirements for backup power and comprehensive plans to provide network resiliency. In these comments we identify technical and factual errors in the PD that should be corrected to better ensure that the goal of improving network resiliency can truly be achieved.

II. OVERVIEW OF ISSUES

By requiring wireless provider resiliency measures, the PD takes a decisive first step toward addressing the failure of many essential telecommunications networks and services that occurred during the October, 2019 public safety power outages and wildfires, as well as other natural disaster events. These initial requirements are consistent with the approach suggested by TURN/Access Humboldt, wherein we suggested that the Commission should immediately focus on short-term requirements for 72 hour backup power and resiliency, while taking preliminary

steps to develop a long-term path to broader backup power and resiliency requirements.¹ As the PD recognizes, voluntary actions taken by wireless carriers have been inadequate to ensure resilient networks and reliable service and these requirements are necessary.²

The Commission carefully and thoroughly establishes its jurisdiction to issue the orders contained in the PD, based on its authority over wireless providers and its police power providing authority to act to protect the public in emergency situations.

Not only does the Commission have authority to act in general, but there is also ample record support for the specific requirements set out in the PD, including the requirement that the wireless carrier network locations identified in the Proposed Decision must have 72 hours of power to ensure minimum service coverage is maintained. The Proposed Decision also allows carriers to provide this back up power from deployable mobile generators, including those that use fossil fuel, deferring the issue of green energy technology and onsite backup power discussion regarding longer-term solutions.

While taking appropriate steps to address the issue of wireless resiliency in areas of high fire risk, the PD wisely orders that this docket remains open.³ The actions taken in the PD are an important start, but the work on communications resiliency must not stop there. As stated in the Phase 2 Scoping Memo, this phase of the Disaster Relief proceeding is to "focus on having a resilient and dependable communications network that aids first responders and allows the public to communicate in a reliable manner during disasters or public safety power shut offs...."⁴ Going forward it is important to recognize that a dependable communications network requires *all*

¹ TURN/Access Humboldt Reply, Attachment A, Declaration of Andrew Afflerbach at p. 7. [see p. 9-10 for the error in not taking initial steps.]

² PD at p. 75.

³ Ordering Paragraph (OP) 5.

⁴ January 21, 2020 Assigned Commissioner's Amended Phase 2 Scoping Memo and Ruling, at p. 2.

networks that interconnect to form California's public communications infrastructure to be reliable and resilient.

While Joint Consumer Advocates and CWA applaud the Commission for its efforts, the PD nonetheless errs in several important respects. First, the PD fails to fully ensure wireless network resiliency because it does not address the need for reliable backhaul, a portion of *wireline* networks that is necessary to ensure that *wireless* networks function including during non-emergency times, prolonged power outages and other catastrophic events.

Second, the PD errs in failing to adopt requirements that would improve network reliability for customers in high fire threat areas who do not have wireless service and are therefore greatly at risk of losing critical communications services during emergencies. While the Commission may not be prepared to adopt backup power requirements for remote terminals in this decision, it can and should take crucial steps that will allow prompt action to address this issue in subsequent decisions.

Third, the PD errs in failing to adopt requirements that would identify where networks are most fragile and where fiber and other infrastructure needs to be reinforced. Specifically, the Resiliency Plans, as defined and required by the PD, will not provide sufficient information and the definition of redundancy is insufficient to ensure that networks are reliable. Fourth, the PD errs in proposing a definition of “provider” that is too narrow to support the objective of ensuring network resiliency because it excludes wireless resellers. Finally, the PD errs in not requiring updates to Resiliency Plans.

III. DISCUSSION

A. **The PD Must Address Backup Power and Resiliency for Backhaul Required to Support Wireless Service in Order to Ensure Wireless Network Reliability and Resiliency**

The stated intent of the PD is to require California's facilities-based wireless providers to develop comprehensive resiliency strategies to prepare for catastrophic disasters and power outages.⁵ The PD takes a multi-pronged approach to wireless resiliency, including adopting a 72-hour backup power requirement for wireless carrier facilities "to ensure minimum service coverage is maintained during disasters or commercial grid outages," and directing wireless providers to file Communications Resiliency Plans that "detail their ability to maintain a minimum level of service and coverage during a disaster or a commercial power grid outage."⁶

However, the PD does not address a key structural element of the wireless network, namely that wireless providers rely on wireline providers for backhaul communications and to connect their switches to the public switched telephone network (PSTN).⁷ If a backhaul route fails, and the wireless provider does not have an alternative source of backhaul, the wireless service will fail, and the work to bolster power at cell sites will be for naught. If the Commission is to ensure reliable and resilient wireless service, it must address backhaul, both in terms of backup power and network resiliency requirements.

⁵ PD at p. 2.

⁶ PD at p. 2.

⁷ Comcast Opening at p. 6.

1. Backhaul and Backup Power

The PD errs in failing to address requirements for backup power to support the backhaul services necessary for wireless service to function, and it must correct that error by explicitly adding this issue to the next set of proposals that it intends to issue. The PD states that the Commission would not fulfill its statutory duty if it did not address the failure in wireless network and service during wildfires and PSPS events.⁸ It then seeks to fulfil this duty by adopting a 72-hour backup power requirement specifically for equipment owned by facilities-based wireless providers associated with cell sites in Tier 2 and Tier 3 high fire threat areas.⁹ The Assigned Commissioner's Proposal called for all providers, including the wireline providers of backhaul, to have on-site emergency backup power "to support all essential communications equipment...necessary to maintain service for a minimum of 72 hours immediately following a power outage."¹⁰ In response to comments, the PD only incorporates the requirements for wireless networks yet it does not address the requirements for backup power necessary to support wireline facilities that are essential to those wireless networks. The failure of backhaul facilities would undermine the Commission's effort to ensure reliable wireless service and fulfill its duty as identified in the PD, and it must develop backhaul requirements as quickly as possible following the adoption of these requirements.¹¹

⁸ PD at p. 70.

⁹ PD at P. 74 - 79

¹⁰ Assigned Commissioner's Ruling and Proposal, issued on March 6, 2020 (ACR Proposal), Attachment A at p. 3.

¹¹ PD at p. 70.

2. Backhaul and Network Resiliency Requirements

The PD requires wireless providers to submit Resiliency Plans intended to provide a foundation for collaboration between the Commission and wireless providers to meet future challenges, as well as a demonstration of each wireless provider's ability to maintain service during disasters and outages.¹² The PD requires each provider to describe its “ability to replace damaged facilities, including logical and physical network route diversity and temporary facilities (e.g., mobile cell sites and temporary microwave backhaul).”¹³ Although the PD requires a Plan with important information, it does not clearly require the information in a form that would support Commission efforts to improve network reliability going forward. The requirement for the Resiliency Plans should be modified to require providers to include information that will allow the Commission to understand where the networks are most fragile and where backhaul such as fiber and microwave routes needs to be reinforced. The PD should be modified to specify that Resiliency Plans must include maps and logical diagrams of network facilities, including, especially, backhaul routes.¹⁴ As one example, the Commission should be able to analyze where "a single fiber cut could result in widespread outages," which would disrupt many wireless, wireline and broadband services.¹⁵ The requirement that providers provide the Commission with "GIS information with specific location of network facilities and backhaul routes" was included in the Assigned Commissioner's Proposals¹⁶ and should be included in the PD. While the Commission may not address wireline back-up power in this

¹² PD at p. 86.

¹³ Proposed Decision at pp. 91-92.

¹⁴ TURN/Access Humboldt Opening, Attachment A, Declaration of Andrew Afflerbach, pp 9-11; TURN/Access Humboldt Reply, Attachment A, Declaration of Andrew Afflerbach, p. 7.

¹⁵ Rural Counties Opening at p. 11; TURN/Access Humboldt Reply, Attachment A, Declaration of Andrew Afflerbach, p. 11.

¹⁶ Assigned Commissioner's Ruling and Proposal, issued on March 6, 2020 (ACR Proposal), Attachment A at p. 9-11.

Decision, it should still take the vital step of obtaining this critical network reliability data, including backhaul and, as discussed below, the location of key remote terminals that must function in high fire threat areas where wireless service is not available.

Reliable backhaul is absolutely critical to reliable wireless service (and virtually all telecommunications and information services). If a network in a region has a single point of failure that affects many sites (a daisy chain or long branch of several sites), then the impact of failed backhaul is greater than lack of backup power—leading to the failure of many sites, not just the single site. Going forward, the Commission should use these Resiliency Plans to study provider infrastructure to identify points of failure and establish a benchmark based on the population affected. If providers show that the cost and lack of resources make it impossible to provide redundancy, it should become a priority for the industry and the Commission to address the issue, through mandates to providers or through broadband planning and deployment.

B. In Order to Ensure Reliable Service in All High Fire Threat Areas, the PD Needs to Address Remote Terminals

The PD errs in failing to adopt requirements that would allow the Commission to act expeditiously to improve network reliability for customers in high fire threat areas who do not have wireless service and are therefore at increased risk of losing critical communications services during emergencies. While the Commission may not be prepared to adopt backup power requirements for remote terminals in this decision, it can and should take crucial steps that will allow prompt action to address this issue in subsequent decisions.

Joint Consumer Advocates and CWA appreciate the need for the Commission to move quickly and understand the decision to focus its initial effort on resiliency in the wireless network. But the record reflects the fact that there are customers in Tier 2 and 3 high fire threat

areas who do not have wireless service and rely on landlines served by remote terminals and the Commission errs by failing to address the need for improved reliability for these customers, who are at great risk during fire season.¹⁷ If the Commission is not prepared to tackle back-up power to remote terminals in this decision, it should at least modify the PD to adopt the proposal of TURN and Access Humboldt to take basic steps necessary to address this problem as quickly as possible.¹⁸ Specifically, the Commission should begin working with the ILECs to:

1. Identify the size of the problem (e.g., how many customers require an operational remote terminal or VRAD to receive service; are they located in cities, suburbs, or rural areas, and how many lines are served from an individual remote terminal or VRAD)
2. Identify how many of those customers can receive mobile service at their locations as an alternative in an emergency.
3. Prioritize Tier Two and Tier Three High Fire Threat Districts to ensure equipment in these areas has appropriate back up power.
4. Identify technical approaches to extend the duration of backup power, such as updating or modifying remote terminal equipment.

On the last point, for example, an optical network terminal in a fiber-to-the-premises network can operate for an extended period with only the telephone line operational—perhaps the same is true for a remote terminal that could use less power in an emergency if temporarily operated in a reduced mode. It is clear that ensuring sufficient power for extended outages in telephone networks is a large-scale and long-term problem, but one where a thoughtful and

¹⁷ Rural Counties Opening at p. 11; cited in TURN/Access Humboldt Reply, Attachment A., Declaration of Andrew Afflerbach at p. 11.

¹⁸ TURN/Access Humboldt Reply, Attachment A., Declaration of Andrew Afflerbach at pp. 5-6.

targeted approach, accompanied by conscientious inspections, staffing and maintenance, can make a substantial difference, especially in the areas that may be hardest-hit by fire or PSPS.¹⁹

C. The PD Errs in Proposing a Definition of “Provider” That is Too Narrow to Fully Ensure Wireless Reliability

The Assigned Commissioner Proposal's definition of "provider" included resellers.²⁰ PD's definition of "provider" excludes wireless resellers. The PD changed the definition to exclude resellers, citing the argument that "while resellers provide essential services, their service is provided through the infrastructure of the facilities-based providers. This is irrefutably true. However the PD errs in assuming that resellers do not own and utilize their own network equipment that is necessary for their services to function and for their customers to reach 9-1-1 and 2-1-1.

In commercial wireless service, some reseller arrangements have the reseller operating the switch and the connection to the public network and therefore 9-1-1.²¹ The PD's revised definition is not tailored to ensure compliance over all communications service providers. One significant gap is that it does not include resellers of communications services that may operate Essential Communications Equipment as listed in the Assigned Commissioner's Proposal.²² For example, resellers may operate telephone switches that interconnect with the telephone lines operated by telephone companies and would be used by the resellers to connect to 9-1-1, so the

¹⁹ *Id.*

²⁰ PD at 48.

²¹ TURN/Access Humboldt Opening, Attachment A, Declaration of Andrew Afflerbach, at p. 1.

²² ACR Proposal, Attachment A at p. 3

backup power requirement needs to apply to that and any other Essential Communications Equipment.

Although it is true as stated in the PD that for wireless infrastructure providers "quality and level of service is managed and directed by the facilities-based wireless providers," this direction is through an arms-length contracting relationship and the day-to-day management is the responsibility of the reseller provider. In any given small wireless facility, the facilities-based infrastructure provider, such as Extenet, is responsible for the physical hardware, with the exception of the radio cards or the radio which are provided by the facilities-based wireless provider (such as Verizon Wireless, AT&T Mobility or T-Mobile).²³ The facilities-based infrastructure provider is responsible for permitting and construction, connecting power and the relationship with the power company, and working to restore power to the facility. It is responsible for batteries and backup power for the main infrastructure. The facilities-based wireless provider is responsible for radio cards or the radio itself and other types of equipment, which require maintenance and the radio or other equipment may require backup power. All of this equipment is necessary for a wireless customer to receive service. Therefore, both the infrastructure provider and the facilities-based wireless provider need to be included in requirements to ensure network resiliency. The PD should be modified to define wireless facilities-based provider including, but not limited to, carriers that own and operate wireless network infrastructure, and facilities-based infrastructure providers and resellers that own and operate essential communications equipment that is necessary for a facilities-based wireless provider to provide service.

²³ Extenet Opening at p. 2.

D. The PD Errs by Not Requiring Updates to Resiliency Plans

The Proposed Decision requires providers to submit Resiliency Plans, but does not explicitly require updates. While the PD directs Communications Division to develop a template and a “submittal schedule,” it is unclear whether the intention is that providers will submit these Plans on a regular basis.²⁴ Many of the items in the Resiliency Plan, including infrastructure status, staffing, contracts, and wireless network and resilient power technology, change rapidly. Furthermore, it is important for the Commission to track progress in advance of the yearly fire season. Therefore, in addition to annual plans, providers should submit quarterly updates describing changes to key network elements that have taken place during the quarter.²⁵

E. Next Steps

Looking to future work in this proceeding, is important for the Commission to consider three points and Joint Consumer Advocates and CWA suggest that the Proposed Decision be revised to include a clear roadmap of the path forward for this proceeding that includes these points. First, it is crucial that the Commission continue its work to address reliability and resiliency for *all* telecommunications networks and services, including the wireline networks operated by Incumbent Local Exchange Carriers (ILECs or telephone companies) and resellers, cable VoIP providers and competitive local exchange carriers. The need for the Commission to address as thoroughly as possible backup power and resiliency for all types of telecommunications infrastructure is reflected in the Assigned Commissioner's Proposals, which stated, “[d]uring the recent wildfire and Public Safety Power Shutoff (PSPS) events, widespread

²⁴ TURN Opening, Attachment A, Declaration of Andrew Afflerbach, at p. 8, 10 (proposing quarterly updates describing modifications and annual submissions of revised plans regarding the Back Up Power Plan proposed in the ACR Proposal; also proposing quarterly updates to the Critical Facility Location Info Sharing reports.)

²⁵ *Id.*

communications outages occurred across all sectors: in the facilities used to provide wireless telephone service, traditional landline telephone service, cable video service, Voice over Internet Protocol service, and broadband internet access service."²⁶ Importantly, many areas of the state that are in high fire threat areas do not have reliable wireless service and requiring wireless networks to be more resilient without addressing wireline service does not enhance the safety of people living and working in those areas.²⁷ It is also vitally important to include both wireless and wireline resellers, including resellers of DSL and fiber services, in these requirements. Resellers offer retail and wholesale services utilizing the physical plant of other carriers, but they also utilize their own equipment in conjunction with the services that they are reselling, and that equipment must also be resilient.²⁸

Second, while Joint Consumer Advocates and CWA agree that Tier 2 and Tier 3 High-Fire Threat Districts warrant priority attention, many communities that are not in high fire threat areas had significant power outages -- and, consequently, telecommunications outages -- during the PSPS events of 2019, affecting customers who rely on essential communications services. Additionally, the need for network resiliency is not limited to times when electric utilities deliberately shut off the power or even to areas at risk of wildfire. Regions of the state that are not included in the high fire danger areas face other threats (e.g., earthquakes, weather) and need the Commission to require resilient networks and have their providers adopt and use best practices.²⁹ Further, low-income consumers live in all areas of the state, not just areas at high

²⁶ R. 18-03-011, Assigned Commissioner's Ruling and Proposal, Appendix A, Communications Service Provide Resiliency and Disaster Response Requirements, Assigned Commissioner Proposals, March 6, 2020 at p 1.

²⁷ TURN/Access Humboldt Reply, Attachment A, Declaration of Andrew Afflerbach at p. 3; Rural County Representatives of California (Rural Counties) Opening at p. 3.

²⁸ TURN/Access Humboldt Opening, Attachment A, Declaration of Andrew Afflerbach at p. 1.

²⁹ See, CforAT/NCLC Reply Comments, pp. 2-4, and p. 3, fn 6.

fire risk. These customers often lack the financial flexibility of other households, and they are less likely to be able to afford to purchase backup power, while also more likely to be disproportionately dependent on one communications carrier and without (or with highly limited) internet access.³⁰

Third, as CforAT and NCLC pointed out, it is imperative that the Commission address power at the customer premises. It does not enhance customer safety to keep the network running if customers cannot use their own communication devices in an emergency.

IV. CONCLUSION

For the foregoing reasons, the Joint Consumer Parties and CWA urge the Commission to adopt the Proposed Decision with the modifications recommended in these Comments and move expeditiously to continue the effort to improve California's telecommunications network reliability.

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³⁰ Greenlining Reply at p. 3-4; Rural Counties Opening at

Attachment A

Proposed Findings of Fact, Conclusions of Law and
Ordering Paragraphs

Finding of Fact

50. Without a clear backup power requirement for wireless providers and the backhaul providers that they rely on, operating in the State of California, the public will be harmed during disasters and commercial grid outage events.

60. The Communications Resiliency Plan will demonstrate that the wireless providers and the backhaul providers that they rely on, can maintain service during disasters and outages.

61. The Communications Resiliency Plan will need to be regularly updated to help prepare both the Commission and the wireless providers to face emerging challenges and implement key learnings as conditions change and we observe response efficacy and effectiveness.

X. The Communications Resiliency Plan will allow the Commission to identify parts of the wireless network, including backhaul facilities, that are susceptible to outages because of single-points-of-failure, lack of redundancy, and weaknesses in or unreliability of the facilities.

X. Customers in areas with unreliable access to wireless services rely on wireline services, often served by remote terminals in the network and similar equipment.

X. Backhaul is an element of wireline networks that is necessary to ensure that wireless networks function during prolonged power outages

Conclusions of Law

6. Uninterrupted transport of communications, including use of backhaul for wireless traffic, is an essential precondition to the ability of public safety officials to communicate and coordinate with each other and with the public

52. It is reasonable to require each wireless provider to submit an annual Communications Resiliency Plan via a Tier 2 Advice Letter within 6 months from the effective date of this decision and to update the Communications Resiliency Plan quarterly in the event of significant modifications, in addition to annual updates.

53. It is reasonable to require the Communications Resiliency Plan to include, but not be limited to, the following information:

.....

[keep existing and add items described as the following]

- Facilities with and without battery backup, fixed generation, and mobile generator hookups, their location including maps and logical diagrams, and the estimated length of time the facilities will operate during a grid outage with and without refueling at each site
- GIS information with specific location of network facilities and backhaul routes

X. It is reasonable to require Communications Division Staff to investigate the impact of lack of commercial power to remote terminals and gather data including:

1. Identify the size of the problem (e.g., how many customers require an operational remote terminal or VRAD to receive service; are they located in cities, suburbs, or rural areas, and how many lines are served from an individual remote terminal or VRAD)
2. Identify how many of those customers can receive mobile service at their locations as an alternative in an emergency.
3. Prioritize Tier Two and Tier Three High Fire Threat Districts to ensure equipment in these areas has appropriate back up power.
4. Identify technical approaches to extend the duration of backup power, such as updating or modifying remote terminal equipment.

X. It is reasonable for us to consider, in a forth coming decision, promulgating resiliency requirements for other providers, including backhaul networks, wireline resellers and other providers of facilities based networks including cable and VoIP. We will also consider issues related to on-premises back up battery requirements, impact of power outages due to natural disaster and planned PSPS on non-High Fire Threat areas, and on specific demographic groups including low income and those with disabilities.

X. It is reasonable for us to define “facilities based provider” to include, but not limited to, carriers that own and operate wireless network infrastructure, facilities based infrastructure providers and wireless resellers that own and

operate essential communications equipment that is necessary for the reseller to provide service.

Ordering Paragraphs

1. Facilities-based wireless providers, including wireless providers that own and operate wireless network infrastructure, facilities based infrastructure providers and wireless resellers that own and operate essential communications equipment that is necessary for the reseller to provide service, shall annually file a Communications Resiliency Plan pursuant to Section 6.5.2 of this decision, within six (6) months of the effective date of this decision, to the Communications Division via Tier 2 Advice Letter that describes how the wireless provider shall maintain a minimum level of service and coverage to preserve access to 9-1-1 and 2-1-1, maintain the ability to receive emergency notifications, and access to internet browsing for emergency notices for their customers in the event of a power outage. The Communications Resiliency Plan shall be updated quarterly in the event of significant modifications by the wireless providers. The Communications Resiliency Plan shall include, but is not limited to, the following information:

.....

[keep existing and add items described as the following]

- Facilities with and without battery backup, fixed generation, and mobile generator hookups, their location including maps and logical diagrams, and the estimated length of time the facilities will operate during a grid outage with and without refueling at each site;
- GIS information with specific location of network facilities and backhaul routes

We direct the Communications Division to develop and adopt standardized reporting templates as well as a ~~submittal~~-schedule for annual submissions of the Communications Resiliency Plans within 30 days from the adoption of this decision.

X. Direct Communications Division Staff to investigate the impact of lack of commercial power to remote terminals and within 90 days of the effective date of this Decision to submit a data request to wireline facilities based providers to request information, including but not limited to:

1. Identify the size of the problem (e.g., how many customers require an operational remote terminal or VRAD to receive service; are they located in cities, suburbs, or rural areas, and how many lines are served from an individual remote terminal or VRAD)
2. Identify how many of those customers can receive mobile service at their locations as an alternative in an emergency.
3. Prioritize Tier Two and Tier Three High Fire Threat Districts to ensure equipment in these areas has appropriate back up power.
4. Identify technical approaches to extend the duration of backup power, such as updating or modifying remote terminal equipment.

5. Rulemaking 18-03-011 remains open and will consider in a forthcoming decision promulgating resiliency requirements for other providers, including backhaul networks, wireline resellers and other providers of facilities based networks including cable and VoIP. We will also consider issues related to on-premises back up battery requirements, impact of power outages due to natural disaster and planned PSPS on non-High Fire Threat areas, and on specific demographic groups including low income and those with disabilities.