

Docket: A.15-03-005
Exhibit Number: ORA-
Commissioner: C. Sandoval
Admin. Law Judge: K. Bemesderfer
ORA Project Mgr.: Ana Maria Johnson
ORA Expert Witness: Adam Clark



Office of Ratepayer Advocates
California Public Utilities Commission

**Office of Ratepayer Advocates Testimony and
Recommendations Regarding Service Quality on
Broadband Services**

- PUBLIC -

San Francisco, California
July 28, 2015

MEMORANDUM

This report was prepared Adam Clark of the Communications & Water Policy Branch of the Office of Ratepayer Advocated (ORA) under the general supervision of Program & Project Supervisor, Ana Maria Johnson. A statement of qualifications from Adam Clark is presented in Attachment A to this testimony. ORA is represented in this proceeding by legal counsel, Lindsay Brown.

This testimony is comprised of the following chapters:

Chapter	Description
I	Introduction: A brief introduction into the important role that broadband plays in this proceeding, the scope of the proceeding, and the data used to prepare this report.
II	Broadband Services, Subscriptions and Availability: A synopsis of the Joint Applicants' current broadband services, subscriptions and availability in California, and a brief discussion of the anticipated effects of the Transaction.
III	Broadband Service Quality: A detailed discussion of the Joint Applicants' broadband service quality, including: company specific processes and controls, provisioning statistics, network availability, service outages, service and call centers, customer complaints and customer satisfaction.
IV	How the Proposed Transaction Might Affect Broadband Service Quality in California: A discussion of how the proposed Transaction might affect broadband service quality, including a summary of the Joint Applicants' plans to address service quality.
V	Conclusion and Recommendations: Concluding remarks and recommendations, including several conditions the CPUC should adopt if it chooses to approve the Application.

In preparing this testimony, ORA prioritized its analysis and recommendations given the expedited schedule of the proceeding. The absence from this report of analysis or recommendations on any particular item contained within the Application, the proceeding's Amended Scoping Ruling, and/or data request responses, may be addressed during Joint Supplemental Testimony currently scheduled for September 1, 2015 and reply testimony on September 8, 2015.

TABLE OF CONTENTS

Executive Summary	1
Key Findings	2
Summary of Recommendations	4
Organization of Report.....	5
I. Introduction.....	I-1
II. Broadband Services, Subscriptions and Availability.....	II-1
A. Frontier	II-1
B. Verizon	II-2
C. Effects of the Transaction on Broadband Services, Subscriptions and Availability	II-4
III. Broadband Service Quality.....	III-1
A. The Joint Applicants’ Approach to Broadband Service Quality	III-3
1. Frontier	III-3
2. Verizon	III-7
B. Provisioning Broadband Service	III-8
C. Broadband Network Availability	III-11
1. Frontier	III-12
2. Verizon	III-12
D. Broadband Outages	III-13
1. Frontier	III-13
2. Verizon	III-20
E. Customer Service & Call Centers	III-28
1. Frontier	III-28
2. Verizon	III-30

F. Broadband Customer Complaints	III-32
1. Frontier	III-33
2. Verizon	III-38
G. Broadband Customer Satisfaction	III-44
1. Frontier	III-44
2. Verizon	III-45
IV. How the Proposed Transaction Might Affect Broadband Service Quality in California	IV-1
A. The Joint Applicants’ Plans to Improve Broadband Quality and Availability.....	IV-3
1. Connect America Fund.....	IV-4
2. California Advanced Services Fund.....	IV-6
3. Frontier’s Capital Investments	IV-7
V. Conclusion and Recommendations.....	V-1
A. Strategic Plan.....	V-1
B. Reporting of Data and Metrics	V-2
C. Practices and Procedures	V-3
D. Customer Survey	V-4
E. Broadband Deployment and Network Upgrades.....	V-5

ATTACHMENTS

Attachment A: Statement of Qualifications and Experience	1
Attachment B: Sample of Verizon’s Service Quality Metrics.....	2
Attachment C: Frontier Broadband Outages Customers Affected and Duration	5
Attachment D: Frontier Broadband Outages in the Top 3 Locations by Customer-Minutes	7
Attachment E: Verizon Broadband Outages Customers Affected and Duration.....	10
Attachment F: Verizon Broadband Outages by County	12
Attachment G: Verizon Broadband Outage Customer-Minutes by County	13
Attachment H: Verizon Broadband Outages in the Top 10 Locations by Customer-Minutes	14
Attachment I: Frontier Broadband Complaints Top 20 Cities.....	15
Attachment J: Verizon Broadband Complaints Top 20 Cities.....	16
Attachment K: CAF Phase II Eligibility Maps.....	17
Attachment L: Verizon’s Broadband Service Quality Metrics.....	26

1 **EXECUTIVE SUMMARY**

2 On March 18, 2015, Frontier Communications Corporation (“Frontier”), Frontier
3 Communications of America, Inc. (“Frontier America”), Verizon California Inc. (“Verizon
4 California”), Verizon Long Distance, LLC (“Verizon LD”), and Newco West Holdings LLC
5 (collectively, “Joint Applicants”) filed an Application 15-03-005 (“Application”) seeking
6 approval from California Public Utilities Commission (“Commission” or “CPUC”) for the sale
7 and transfer of Verizon California and Verizon LD’s (collectively, “Verizon”) customer accounts
8 in Verizon California’s service territory to Frontier (“Transaction”). If the Transaction is
9 approved, Verizon California’s physical assets will be transferred to Frontier and approximately
10 2.2 million customers of Verizon California will become customers of Frontier.

11 This testimony examines how the proposed Transaction will impact the quality, reliability
12 and availability of broadband services in California.

13 The Joint Applicants state that the Transaction will result in several benefits and further
14 the public interest. The stated benefits include the operational efficiencies and increased financial
15 strength of Frontier, expanded and enhanced broadband services, improved customer service,
16 rate stability, and other economic benefits.¹ However, based on the Joint Applicants’ showing in
17 this proceeding, it is not evident that the proposed Transaction is in the public interest as it
18 pertains to maintaining or improving the quality, reliability and availability of broadband in
19 California.

20 Based on the data presented herein, the Joint Applicants’ Application and testimonies,
21 and other relevant information, if the Commission chooses to approve the Transaction, then it
22 should also adopt the mitigating measures identified below as a condition of its approval. These
23 recommended measures will help to ensure that California consumers receive high quality,
24 reliable broadband service post-Transaction.

¹ Application (A.) 15-03-005 Joint Application of Frontier Communications Corporation, Frontier Communications of America, Inc. (U 5429 C) Verizon California Inc. (U 1002 C), Verizon Long Distance, LLC (U 5732 C), and Newco West Holdings LLC for Approval of Transfer of Control Over Verizon California Inc. and Related Approval of Transfer of Assets and Certifications (“Application”) (March 18, 2015) at 14-20.

1 **Key Findings**

2 The following are key findings of this report:

- 3 • In California, Frontier is a smaller, rural service provider and had [REDACTED] broadband
4 subscriptions in 2014. Meanwhile, Verizon had [REDACTED] broadband connections
5 deployed in California at the end of 2014. If the Transaction is approved, the number
6 of Frontier’s broadband subscriptions in California will increase approximately
7 2,015%.

- 8 • Approximately [REDACTED] households in Verizon’s service territory do not have access
9 to broadband. Also, Verizon has not deployed broadband at [REDACTED] of its central offices
10 in California. Unserved areas in Verizon’s service territories include: Boron, Cantua
11 Creek, Covelo, Lucerne Valley, Laytonville, Hoopa, Knights Landing, Kernville,
12 Weldon, Willow Creek and Whitethorn. Underserved areas in Verizon’s service
13 territory include: Lake Isabella, Lindsay, Helendale and Squaw Valley.

- 14 • Both Verizon and Frontier claim to employ a broad range of business practices and
15 network management procedures to monitor and track the quality of broadband
16 services. Verizon tracks more service quality metrics than Frontier.

- 17 • Frontier fulfilled only [REDACTED] of orders for broadband service, which fell short of the
18 95% benchmark provided in General Order 133-C for telephone services. Verizon
19 does not track the service orders it received but did not complete.

- 20 • Frontier completed orders for broadband services in approximately [REDACTED] business days.
21 Verizon completed new orders for FiOS broadband services in [REDACTED] calendar days and
22 new orders for DSL broadband services in [REDACTED] calendar days. Neither company met
23 the installation interval benchmark (five business days) provided in General Order
24 133-C for telephone services.

- 25 • Both Verizon and Frontier’s network availability scores may be tolerable on an
26 aggregated statewide basis and in select distinct areas of their service territory.

1 However, both broadband providers experienced substandard network availability in
2 particular locations throughout the State.

- 3 • Both Frontier and Verizon experience many broadband outages that affect [REDACTED]
4 of customers throughout California for significant amounts of time. Frontier's
5 broadband outages are especially concentrated in [REDACTED]. Verizon's
6 broadband outages are especially concentrated in [REDACTED]
7 [REDACTED]. Both companies' broadband outages occur more frequently
8 during [REDACTED]. Verizon's DSL outages are [REDACTED]
9 than its FiOS outages.
- 10 • In 2014, Frontier operated at a ratio of [REDACTED] employees per broadband line, while
11 Verizon operated at a ratio of [REDACTED] employees per broadband line. From 2010 through
12 2014, Verizon [REDACTED] the total number of its employee's work-locations within
13 California by [REDACTED]. In 2014, Verizon had [REDACTED] employees in California than it
14 did in 2010.
- 15 • Frontier received [REDACTED] complaints per broadband line during 2014. Frontier's
16 broadband customers submitted complaints pertaining to [REDACTED]
17 more frequently than any other general category of inquiry. Customers in [REDACTED]
18 [REDACTED] produced [REDACTED] of Frontier's total broadband complaints. However, Frontier
19 received [REDACTED] broadband complaints per connection from customers in [REDACTED]
20 [REDACTED] which was [REDACTED] the average of all other counties combined.
- 21 • Verizon received [REDACTED] residential customer complaints per residential broadband line
22 during 2014. Verizon's broadband customers submitted complaints pertaining to
23 [REDACTED] more frequently than any other general category of inquiry (during 2014).
24 Customers in [REDACTED] produced [REDACTED] of Verizon's total broadband
25 complaints. However, Verizon received [REDACTED] broadband complaints per connection
26 from customers in [REDACTED], which was [REDACTED] the average of all
27 other counties combined.

- 1 • Frontier has not presented the Commission with an adequate plan to address the
2 existing instances of poor quality and reliability of broadband services. Whether the
3 Transaction results an overall benefit or harm to California’s broadband customers
4 essentially depends on the Commission’s directives and Frontier’s willingness and
5 ability to take action.

6 **Summary of Recommendations**

7 If the Commission chooses to approve the Transaction, it should also implement the
8 following mitigating measures to help ensure that California has access to high-quality, reliable
9 broadband services:

- 10 • Require Frontier to submit a strategic plan (by October 31, 2015) detailing specific
11 steps to improve broadband service quality, reliability and availability in California
12 post-Transaction.
- 13 • Require Frontier to submit service quality and availability data and performance
14 metrics, including data related (but not limited) to: customer complaints, broadband
15 service outages, instances of service degradation, installation intervals, and service
16 orders received and completed.
- 17 • Require Frontier to adopted certain practices and procedures, including (but not
18 limited to): track additional metrics, maintain its current ratio of one employee to [REDACTED]
19 broadband lines, and hire independent contractors to conduct random inspections and
20 assess technicians’ work performance.
- 21 • Require Frontier to pay for a multilingual survey of its broadband customers in order
22 to assess levels of customer satisfaction for at least 36 months after the close of the
23 Transaction.
- 24 • Require Frontier to make broadband services available at speeds of no less than the
25 Federal Communications Commission’s (“FCC”) definition of minimum broadband
26 speeds, currently 25 Mbps download and 3 Mbps upload, to 98% of households in its
27 new service territory by no later than December 31, 2020.

1 **Organization of Report**

2 Chapter I of this report contains a brief introduction into the important role that
3 broadband plays in this proceeding, the scope of the proceeding, and the data used to prepare this
4 report.

5 Chapter II provides a synopsis of the Joint Applicants’ current broadband services,
6 subscriptions and availability in California, and a brief discussion of the anticipated effects of the
7 Transaction.

8 Chapter III contains a detailed analysis and discussion of the quality and reliability of the
9 Joint Applicants’ existing broadband services in California. This chapter contains subsections
10 addressing each of the following: company specific processes and controls, provisioning
11 statistics, network availability, service outages, service and call centers, customer complaints and
12 customer satisfaction.

13 Chapter IV contains a discussion of how the proposed Transaction might affect
14 broadband service quality, including a summary of the Joint Applicants’ plans to address service
15 quality post-Transaction.

16 Finally, Chapter V provides concluding remarks and recommendations, including several
17 conditions the CPUC should adopt if it chooses to approve the Application.

1 **I. INTRODUCTION**

2 The proposed Transaction must be evaluated in a manner consistent with the evolving
3 landscape of the communications industry. In her testimony, Kathleen Abernathy (Frontier’s
4 Executive Vice President of External Affairs) explains that, “Telecommunications has
5 transformed in recent decades from a monopoly-based industry structure focused on providing
6 voice services to a highly-competitive industry, increasingly centered on the provision of high-
7 bandwidth data services.”² Furthermore, Frontier, the acquiring company, identified broadband
8 as the foremost growth driver of its service offerings.³ Clearly, broadband is a key component of
9 the proposed Transaction.⁴

10 Accordingly, pursuant to the July 2, 2015 Assigned Commissioner’s Amended Scoping
11 Ruling (Scoping Ruling), the ORA submits the following testimony. This testimony presents
12 data and recommendations for the Commission to consider in its review of the Application and
13 the proposed Transaction. The data and recommendations presented herein focus on the quality,
14 reliability and availability of broadband services available to consumers in California.

15 The Scoping Ruling explains that the Commission must consider and weigh the criteria
16 enumerated in Public Utility Code § 854(c) and find that the Transaction is in the public
17 interest.⁵ One of the factors that the Commission will consider and weigh in making a public
18 interest determination under Section 854(c) is whether the transaction will maintain or improve
19 the quality of service to public utility ratepayers in the state. Moreover, the Scoping Ruling lists
20 additional topics included in the scope of this proceeding, such as:

- 21 • What is the current physical condition of the Verizon landline network?

² Abernathy Testimony at 15. May 11, 2015.

³ Application at 32.

⁴ I am also informed by counsel that the CPUC has jurisdiction, and in fact, must review the impact of this Transaction on the reasonable timely deployment of broadband and take regulatory action where necessary pursuant to Section 706(a) of the 1996 Telecommunications Act and Section 710(a) of the Public Utilities Code.

⁵ *Assigned Commissioner’s Amended Scoping Ruling* (Scoping Ruling), A.14-04-013 (filed July 2, 2015), at 3.

- 1 • How capable is Frontier of absorbing 2.2 million additional customers currently served
- 2 by Verizon's landline services? Does Frontier have adequate staff and facilities to scale
- 3 up to the necessary size?
- 4 • What are the service quality and 911 implications of the transaction for Frontier's
- 5 existing and its newly acquired customers?
- 6 • What is the impact of the proposed transaction on innovation, investment, and the
- 7 economy of California?
- 8 • What are the potential negative consequences of the proposed transactions? Are any
- 9 conditions necessary or warranted to mitigate any such consequences?
- 10 • Is the proposed transaction in the public interest?

11 In order to review and assess the facts, ORA issued Data Requests to the Joint Applicants
12 related to the aforementioned topics of scope. Based on the Joint Applicants' responses to
13 ORA's Data Requests, and other sources of information, this testimony provides ORA's findings
14 specifically pertaining to the Joint Applicants' broadband services and the potential effects of the
15 proposed Transaction on those services.

16 On July 21, 2015, Verizon provided additional information regarding trouble reporting,
17 outage data and network and service issues for several service areas, including: Banning,
18 Claremont, Palm Springs and Rancho Mirage.⁶ As Verizon supplied this information at such a
19 late date, this testimony does not include an analysis of that data. ORA will provide an analysis
20 of that data in supplemental testimony.

⁶ Verizon's response to ORA Data Request PPH. See "A15-03-005 Response of Vz to ORA pph Questions 7-19-2015 CONFIDENTIAL final2.pdf"

1 **II. BROADBAND SERVICES, SUBSCRIPTIONS AND AVAILABILITY**

2 **A. FRONTIER**

3 Frontier is a wireline communications company, and the fourth largest ILEC in the
4 United States.⁷ In 2014, Frontier provided telecommunications services to more than 3.5 million
5 customers in 28 states, with approximately 2.3 million broadband customers and 586,600 video
6 customers.⁸ Frontier employs roughly 17,000 employees, including some 200 employees in
7 California.⁹

8 As of December 31, 2014, Frontier served 74,101 residential customers in California,
9 which equaled 2.3% of the company’s total residential customers nationwide (3,519,572).¹⁰ In
10 California, Frontier’s service territory is primarily in the northern parts of the state, and consists
11 mostly of rural areas. Frontier also has networks in the south-eastern region of the state. Frontier
12 operates its California networks across [REDACTED] central offices, [REDACTED] of which are in the northern half of
13 the state.¹¹

14 In addition to telephone and video services, Frontier also offers broadband services in the
15 vast majority of its California footprint. Frontier provisions broadband primarily via digital
16 subscriber lines (DSL) or fiber technologies, and offers customers both bundled and standalone
17 services.¹²

18 In 2014, Frontier serviced [REDACTED] broadband subscriptions in California.¹³ From 2010
19 through 2014, Frontier’s total broadband subscriptions [REDACTED] on average, [REDACTED] annually. In
20 California, Frontier’s fastest residential broadband services reach speeds of [REDACTED] download

⁷ Application at 5.

⁸ Abernathy Testimony at 12. May 11, 2015.

⁹ Abernathy Testimony at 12. May 11, 2015.

¹⁰ Abernathy Testimony at 14. May 11, 2015.

¹¹ Frontier’s response to ORA’s Data Request No.002. April 23, 2015. See “ORA Set 2 No 1 - Network Availability.xlsx”

¹² White Testimony at 9. May 11, 2015.

¹³ Frontier’s response to ORA’s Data Request No.003. June 3, 2015. See “ORA Set 2 No 16 - broadband subscriptions.xlsx”

1 and [REDACTED] upload.¹⁴ While Frontier has stated its commitment to deploying fiber based
2 broadband¹⁵, [REDACTED] of Frontier’s broadband customers in California receive DSL services.¹⁶

3 **B. VERIZON**

4 In California, Verizon provides communications services to approximately 2.2 million
5 customers in 266 exchanges, primarily in southern parts of the state.¹⁷ Verizon currently has
6 broadband deployed throughout most of its service area and offers its customers a variety of
7 broadband services.

8 At the end of 2014, Verizon had [REDACTED] broadband connections deployed in
9 California.¹⁸ The majority of Verizon’s broadband customers receive DSL or fiber-to-the-home
10 (FTTH) technologies. Verizon branded its FTTH services as “FiOS”, and its DSL service as
11 “High Speed Internet”¹⁹ or “HSI”. The majority of Verizon’s FiOS and DSL services are in the
12 southern part of the state, namely in Los Angeles and the surrounding areas.

13 Recent trends suggest Verizon is [REDACTED]. From 2012 through
14 2014, the number of Verizon’s residential broadband lines in service [REDACTED] at a rate of [REDACTED]
15 per year.²⁰ Figure 1 below depicts Verizon’s total number of residential broadband lines in
16 service throughout California from 2010 through 2014.

¹⁴ Frontier’s response to ORA’s Data Request No.003. June 3, 2015. See “ORA 3.3 FCC 477 CA Dec 2014 BB subscription confidential.xlsx”

¹⁵ Application at 17.

¹⁶ Frontier’s response to ORA’s Data Request No.003. June 3, 2015. See “ORA 3.3 FCC 477 CA Dec 2014 BB subscription confidential.xlsx”

¹⁷ Application at 8.

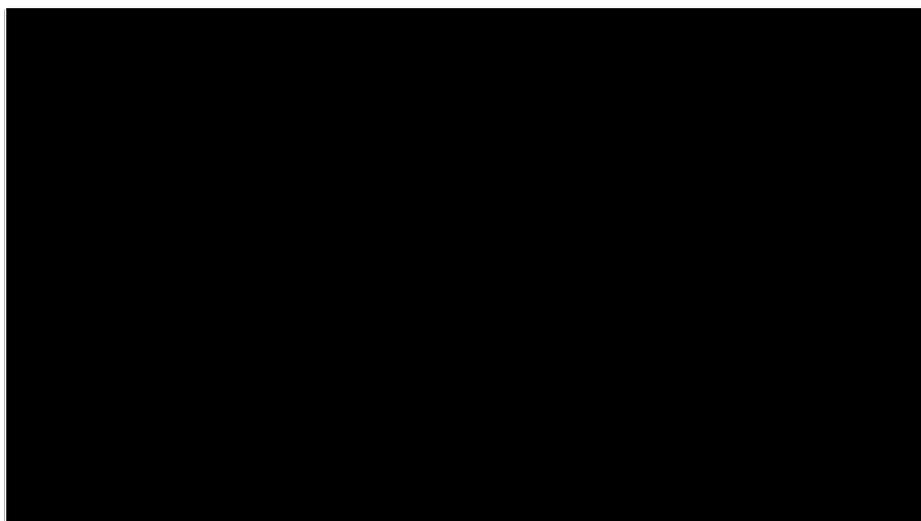
¹⁸ Verizon’s response to ORA’s Data Request No.003. June 9, 2015. See “ORA_VZ3.3_Attachment 2_CA FCC Form 477_A1503005VZ110004_CONFIDENTIAL.xlsx”

¹⁹ This is not to be confused with the FCC’s definition of broadband (also known as high-speed broadband). Typically, DSL does not and cannot (and will not) meet the FCC’s current (and future) definition of broadband.

²⁰ Verizon’s response to ORA’s Data Request No.004. June 25, 2015. See “ORA_VZ4 13_Attachment 1_A1503005VZ_120001_CONFIDENTIAL.xlsx”

1 **Figure 1**

2 **Verizon - Residential Broadband Lines in Service (CA)²¹**



3
4 Verizon has not deployed broadband in all of its California footprint. The company
5 estimates that approximately [REDACTED] households in its service territory do not have access to
6 broadband.²² The proposed Transaction includes [REDACTED] central offices where broadband is not
7 currently deployed.²³ These central offices are primarily located in rural areas.²⁴

8 Commission staff also recently identified several areas within Verizon's service territory
9 that lack wireline access to broadband altogether, or receive wireline broadband at underserved
10 speeds.²⁵ The areas that Commission staff identified as unserved are: Boron, Cantua Creek,
11 Covelo, Lucerne Valley, Laytonville, Hoopa, Knights Landing, Kernville, Weldon, Willow

²¹ *Id.*

²² White Testimony. *See* Exhibit MW-2 at 3. May 11, 2015.

²³ White Testimony at 13. May 11, 2015.

²⁴ *Id.* at 13.

²⁵ Underserved areas have access to broadband, but only at download speeds less than 6 Mbps *and* upload speeds less than 1.5 Mbps.

1 Creek and Whitethorn.²⁶ These areas that Commission staff identified as underserved are: Lake
2 Isabella, Lindsay, Helendale and Squaw Valley.²⁷

3 **C. EFFECTS OF THE TRANSACTION ON BROADBAND**
4 **SERVICES, SUBSCRIPTIONS AND AVAILABILITY**

5 The proposed Transaction will increase Frontier’s broadband footprint and customer base
6 tremendously. In California, Frontier stands to grow from a small predominately rural provider
7 in California into one of the state’s largest broadband providers.

8 **Figure 2**
9 **Broadband Subscriptions in California**

As of 2014		Post Transaction	Scale of Increase
Frontier	Verizon	Frontier	
			2,015%

10
11 Furthermore, the proposed transaction would radically change the geographical
12 composition of Frontier’s operations. Frontier currently serves broadband customers across the
13 country. Today, its California operations are a small portion of the total business.²⁸ After the
14 Transaction, Frontier’s California operations would be the Company’s largest subsidiary.²⁹

15 The rapid and considerable expansion of Frontier’s operations in California has
16 significant potential to affect the levels of customer service, service quality and availability for
17 broadband services in California, as further discussed below.

²⁶ California Public Utilities Commission Policy & Planning Division. “Comparative Analysis of Utility Services & Rates in California”. April 14, 2015. *See* <http://www.Commission.ca.gov/NR/rdonlyres/8AEF5361-FC3B-4518-A88A-72E3010263A4/0/PPDComparativeAnalysisofUtilityServicesRatesinCAFfinal3.pdf>

²⁷ *Id.* at 26.

²⁸ Application at 5.

²⁹ Abernathy Testimony at 41. May 11, 2015.

1111. BROADBAND SERVICE QUALITY

2 It is critical that the Commission, in its review of the Application, carefully examine the
3 quality and reliability of the broadband services offered by the Joint Applicants. The Joint
4 Applicants provide broadband services that are essential to everyday life. The quality and
5 reliability of those services is vital to California customers. Broadband is an indispensable means
6 of communication, and poor service quality or insufficient reliability is detrimental to the
7 public’s health and safety, children’s education, local economic development and the State’s
8 economy.

9 In general, the Commission should be concerned with the current levels of broadband
10 service quality, the present condition of Verizon’s network, and the potential harmful effects of
11 the proposed Transaction.

12 Verizon California claims that its network is in good condition.³⁰ The data provided
13 below, however, paints a different picture. In fact, the Commission already has before it ample
14 evidence demonstrating the poor condition of Verizon California’s copper plant.³¹ In the ongoing
15 Service Quality Rulemaking (R.) 11-12-001, for example, parties have filed numerous comments
16 and data that illustrate the substandard condition of Verizon’s copper networks, over which
17 Verizon provides DSL broadband services. Verizon is accused of providing inadequate service
18 quality and failing to maintain its landline networks.³²

19 In Decision (D.) 13-02-23, the Commission found that, “[a] study of carrier network
20 infrastructure, facilities, policies, and practices... [is necessary] to help gauge the condition of
21 carrier infrastructure and facilities and ensure the facilities support a level of service consistent
22 with public safety and customer needs.”³³ While ORA awaits the results and findings of this
23 study, it has remained diligent in monitoring and assessing broadband service quality in
24 California, especially in relation to the proposed Transaction.

³⁰ McCallion Testimony at 5. May 11, 2015.

³¹ See the Comments of Center for Accessible Technology, *et. al.*, filed to Rulemaking 11-12-001 on May 7, 2014.

³² See Emergency Motion of The Utility Reform Network (TURN) Urging the Commission to take Immediate Action to Protect Verizon Customers and Prevent Further Deterioration of Verizon’s Landline Network, filed to Rulemaking 11-12-001 on March 17, 2014.

³³ See D.13-02-023 at 7. Finding of Fact 1.

1 The data presented below contains more evidence of poor service quality and the suspect
2 condition of broadband networks. In all, the data strongly suggests that Verizon California has
3 not adequately maintained its copper networks in California. As a result, the quality of
4 broadband services in California is substandard for many of Verizon’s current customers and
5 requires immediate attention.

6 The Joint Applicants provided minimal evidence to support their claim³⁴ that the
7 proposed merger will not adversely impact the quality of their broadband services offered in
8 California. The Commission should be concerned that the proposed Transaction might not
9 provide Frontier with sufficient incentives or resources to improve the broadband infrastructure it
10 seeks to acquire or even maintain the networks it currently operates.

11 Today, there is a lack of explicit standards with regard to an acceptable “quality of
12 service” as it pertains to broadband services. As such, this analysis uses various sources,
13 including Federal standards, to form benchmarks and metrics to analyze the quality of the Joint
14 Applicants’ broadband services and the effects of the proposed merger. One such source is the
15 Commission’s General Order 133-C, which established uniform minimum standards of service
16 for certain telephone corporations.³⁵

17 General Order 133-C includes five measures of service quality and their respective
18 standards,³⁶ which certain carriers are expected to meet:

- 19 (1) telephone service installation intervals (five business days);
- 20 (2) installation commitments (95%);
- 21 (3) customer trouble reports (six reports per 100 lines for
22 reporting units with 3,000 or more working lines; eight reports
23 per 100 working lines for reporting units with 1,001-2,999
24 working lines; and ten reports per 100 working lines for
25 reporting units with 1,000 or fewer working lines);

³⁴ Application at 14-20.

³⁵ D.09-07-019, Ordering Paragraph 1 at 92.

³⁶ According to D.09-07-019, “[m]easures are the aspects or features of service subject to evaluation and reporting. Standards are the minimum acceptable values that measures must meet to be in compliance with the Commission’s requirements. Existing measures include held primary service orders, installation-line energizing commitments, trouble reports, dial tone speed, dial service, toll operator answering time, directory assistance operator answering time, trouble report service answering time, and business office answering time.” D.09-07 019, mimeo, at p.2, n.1.

1 (4) out of service repair intervals (90% within 24 hours excluding
2 Sundays and federal holidays, catastrophic events and
3 widespread outages); and,

4 (5) answer time (80% within 60 seconds related to trouble reports
5 and billing and non-billing issues) with the option to speak to
6 a live agent, preferably in the first set of options (reporting
7 units are limited to traffic offices with 10,000 or more lines).³⁷

8 General Order 133-C's five measures and standards became effective January 1, 2010.

9 Sections III-A through III-G below provide data related to the quality and reliability of
10 the Joint Applicants' broadband services. First, Section III-A includes a summary of the Joint
11 Applicants' broadband service quality metrics, standards and practices used to track the quality
12 of broadband services. Then, Sections III-B through III-F present more specific broadband
13 services quality data related to: service orders and installations, network availability, service
14 outages, service and call centers, and customer complaints. Lastly, Section III-G summarizes
15 customer ratings and satisfaction data pertaining to the Joint Applicants broadband services.

16 The data presented below pertains specifically to California services, customers and
17 networks, unless otherwise stated.

18 **A. THE JOINT APPLICANTS' APPROACH TO**
19 **BROADBAND SERVICE QUALITY**

20 **1. Frontier**

21 Frontier defines broadband service quality as, "providing safe and reliable service,
22 meeting service installation and repair commitments, and answering customer calls to its
23 business office(s) within 30 seconds and to its repair center(s) within 20 seconds."³⁸

24 To assess broadband service degradation Frontier monitors bandwidth utilization for all
25 network links from each Digital subscriber line access multiplexer (DSLAM) to its National
26 Data Backbone. More specifically, Frontier utilizes detailed reports on DSLAM performance in
27 order to characterize the link as critical, high, medium or low.³⁹ These characterizations are

³⁷ D.09-07-019, Conclusion of Law 5 at 89.

³⁸ Frontier's response to ORA's Data Request No.002. April 23, 2015. See Question 2.

³⁹ *Id.* at Question 29.

1 defined by the number and severity of capacity measurements in a 28 day period. Figure 3 below
2 depicts the criteria Frontier uses in assessing congestion on each DSLAM.

3 **Figure 3**

4 **Frontier - DSLAM Congestion Evaluation**

Status	Criteria
Critical	100 or more incidents above 90% capacity in 28 day period
High	200 or more incidents above 75% capacity in 28 day period
Medium	300 or more incidents above 60% capacity in 28 day period
Low	Anything not meeting the above criteria

5

6 Frontier provided the results of its May 2015 DSLAM Congestion Report.⁴⁰ That report
7 included the status of [redacted] DSLAMs in [redacted] different exchanges. Of those [redacted] DSLAMs, [redacted] did
8 not report utilization, [redacted] reported low congestion, [redacted] reported medium congestion and [redacted]
9 reported critical congestion.

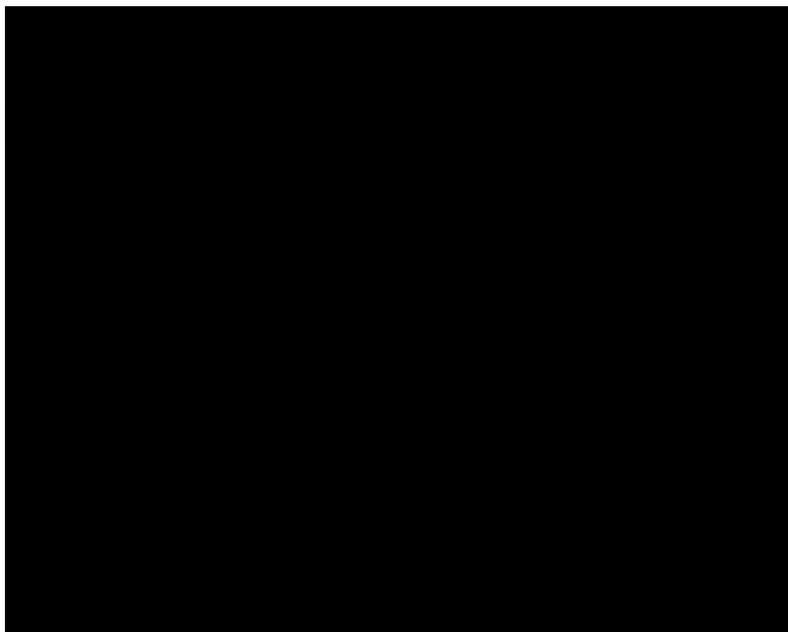
10 [redacted] congested DSLAMs affected a total of [redacted] customers during May 2015. All [redacted] of
11 those DSLAMs were fed with [redacted].⁴¹ Also, all [redacted] of those DSLAMs are located in
12 southern California along the Arizona border. [redacted] are located in [redacted] with
13 two in Frontier's [redacted] exchange and one in Frontier's [redacted] exchange. The other [redacted] are
14 located in [redacted] within Frontier's [redacted] exchange. Figure 4 below depicts the
15 location of these DSLAMs on a map.

⁴⁰ Frontier's Response to ORA's Meet and Confer Letter, Meet & Confer Q.2 (ORA 001); Meet & Confer Q.4, 5, 10 (ORA 002). June 11, 2015. See "ORA Confer ORA 2 #10 followup to #30 CAN 2015 MAY Monthly DSLAM Congestion Report confidential.xlsx"

⁴¹ T1 lines provide speeds of 1.5 Mbps.

1 **Figure 4**

2 **Frontier - DSLAM Congestion Locations (May 2015)**



5 Frontier claims to increase network capacity if a link is approaching its limits.⁴²
6 However, all [REDACTED] of the DSLAMs that reported critical congestion in May 2015 had reported
7 critical congestion every month since [REDACTED]. Another option to avoid potential service
8 degradation, according to Frontier, is to alter the network path provisioned to new customers.⁴³

9 In addition to monitoring and reacting to network capacity, Frontier currently employs
10 several other strategies to improve broadband service quality. First and foremost, the company's
11 primary strategy is to augment its network by repairing, upgrading and replacing equipment.⁴⁴
12 To that point, Frontier explains that it made capital investments to its infrastructure across the
13 country amounting to \$688 million in 2014, \$635 million in 2013 and \$803 million in 2012.⁴⁵

14 According to Frontier's testimony, Frontier's capital investments have enabled the
15 company to increase the quality of its broadband services by maintaining, repairing and

⁴² Frontier's response to ORA's Data Request No.002. April 23, 2015. *See* Question 29.

⁴³ *Id.*

⁴⁴ *Id.* at Question 31.

⁴⁵ Golob Testimony at 6-7. May 11, 2015.

1 upgrading its equipment and infrastructure. For example, in the past five years, Frontier built
2 over 1,200 miles of networks utilizing Dense Wave Division Multiplexing and Reconfigurable
3 Optical Add-Drop Multiplexer technologies across the company’s 28-state footprint.⁴⁶ In some
4 areas, Frontier has also upgraded its remote DSL Access Multiplexers or converted
5 Asynchronous Transfer Mode facilities to Internet protocol based facilities in order to increase
6 broadband capacity and speeds.⁴⁷

7 On a more granular level, Frontier uses various metrics to track and measure broadband
8 service quality in California.⁴⁸ Frontier evaluates its performance in provisioning broadband
9 service via an “installation met” metric. With this metric, Frontier measures the number of timely
10 broadband installations by comparing the appointment date to the date the service becomes
11 available for use by the customer. Frontier uses yet another metric, the “mean time to repair,” to
12 assess the time it takes the company to resolve instances of service degradation. Frontier also
13 uses a “repeat trouble tickets” metric to track instances in which a customer reports issues with
14 their broadband service within 30 days of a previous issue being resolved. Frontier produces
15 internal reports to disclose these metrics on a monthly basis.

16 Frontier disclosed its broadband service quality metrics from 2012, 2013 and 2014 in
17 response to ORA’s Data Requests.⁴⁹ These metrics are depicted below in Figure 5.

18

19

⁴⁶ Golob Testimony at 23. May 11, 2015.

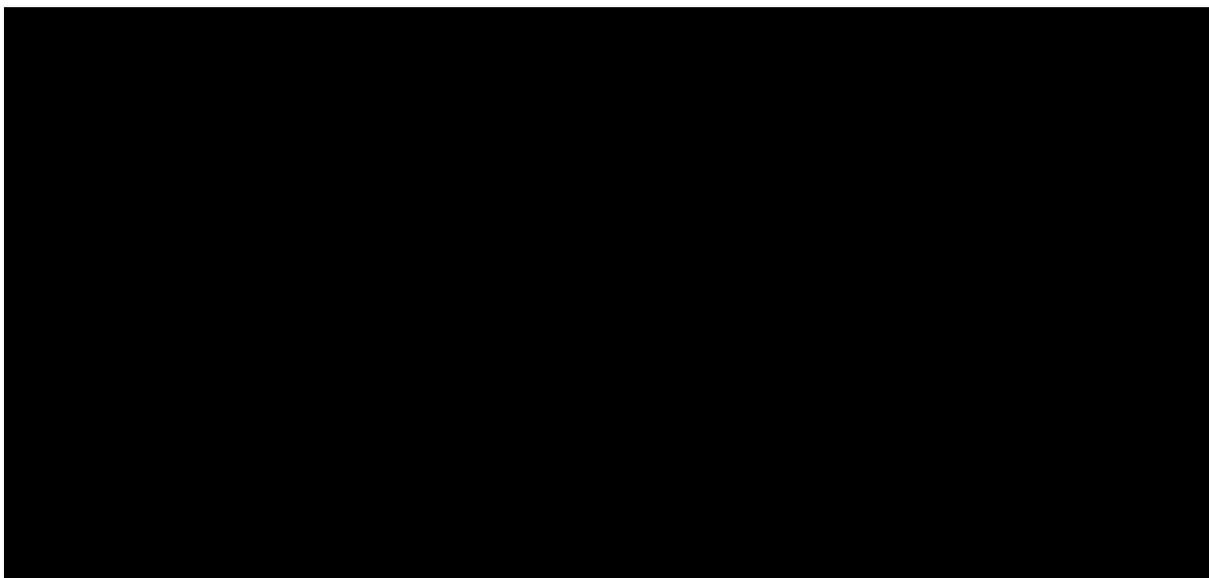
⁴⁷ *Id.* at 22.

⁴⁸ Frontier’s response to ORA’s Data Request No.002. April 23, 2015. *See* Question 3.

⁴⁹ Frontier’s response to ORA’s Data Request No.002. April 23, 2015. *See* “ORA Set 2 No 5 - BB metrics.”

1 **Figure 5**

2 **Frontier - Broadband Service Quality Metrics**



3

4 **2. Verizon**

5 According to the information Verizon provided, Verizon uses [REDACTED] different metrics to
6 track the quality of its FiOS services, and [REDACTED] different metrics to track the quality of its HSI
7 services.⁵⁰ These metrics cover various aspects of broadband service quality, including:

8 [REDACTED]
9 [REDACTED]

10 [REDACTED] Many of Verizon's metrics are average performance statistics measured against internal
11 company benchmarks or standards, such as the [REDACTED]

12 [REDACTED]

13 Verizon tracks [REDACTED]

14 [REDACTED]. Verizon evaluates the metrics for [REDACTED]

15 [REDACTED] Verizon also evaluates [REDACTED], and

16 assesses the metrics inclusive of [REDACTED] For a sample of

⁵⁰ Verizon's response to ORA's Data Request No.002. May 11, 2015. See "ORA_VZ2.3_Attachment 1_A1503005VZ20082_CONFIDENTIAL.xlsx"

1 Verizon’s internal evaluations, refer to Attachment B, which includes several charts depicting the
2 results of Verizon’s broadband service quality metrics.

3 In addition to tracking the above mentioned metrics, Verizon also employs several other
4 strategies to improve the quality of its broadband services. Verizon’s technicians, for example,
5 are required to call customers before and after service appointments.⁵¹ Verizon uses this protocol
6 to help ensure the customer receives a satisfactory level of service, and also to reduce instances
7 of “nonproductive dispatches” so that technicians remain available for “productive dispatches.”
8 Additionally, Verizon employs independent contractors to conduct random inspections and
9 assess technicians’ work performance.⁵²

10 Lastly, Verizon claims to focus on preventative maintenance of its communications
11 networks.

12 Verizon has had a consistent focus on its preventative maintenance
13 plan to improve the network and correct deteriorated cable in the
14 field, including the Proactive Preventative Maintenance Tool
15 (“PPMT”). The PPMT System creates test packages which identify
16 ‘high trouble’ cables for all wire centers. These packages are then
17 prioritized and dispatched to the field for test and isolation.⁵³

18 According to the data provided, both Verizon and Frontier employ a broad range of
19 business practices and network management procedures to monitor and track the quality of
20 broadband services. Each company claims to place a great deal of emphasis in providing high
21 quality broadband in California.⁵⁴ The sections below analyze the results of the Joint Applicants’
22 efforts, and take a closer look at their service quality metrics pitted against relevant benchmarks.

23 **B. PROVISIONING BROADBAND SERVICE**

24 Two key measurements of broadband service quality pertain to the initial provisioning of
25 service: installation interval and commitments met. An installation interval is the number of
26 business days it took the service provider to install the new broadband service, starting on the
27 date the service order was placed and ending on the date the service becomes operational.

⁵¹ Verizon’s response to ORA’s Data Request No.002. May 11, 2015. *See* Question 35.

⁵² *Id.* at Question 35.

⁵³ *Id.* at Question 35.

⁵⁴ *Id.* at Question 35.

1 Commitments met are the orders for new broadband service completed, as oppose to orders in
2 which the service provider failed to provision service to the customer.

3 In General Order 133-C, the Commission imposes standards for installation intervals and
4 commitments met for traditional voice telephone services. These telephony standards set a
5 maximum of five business days to complete an installation, and a minimum of 95% of
6 installation commitments fulfilled.⁵⁵ These standards provide a good benchmark to determine if
7 broadband service providers are fulfilling a satisfactory percentage of orders in a timely manner.

8 In 2014, Frontier received a total of [REDACTED] orders for broadband service, and fulfilled
9 [REDACTED] of those orders.⁵⁶ Frontier fulfilled only [REDACTED] of orders for broadband service, which fell
10 short of the 95% benchmark provided in General Order 133-C. Similarly, Verizon’s performance
11 is also worrisome, because the company “does not maintain in the ordinary course of business
12 information to exclude all the service orders not completed.”⁵⁷ By failing to track this basic
13 component of broadband service quality, Verizon is missing an opportunity to assess and
14 improve upon its past performance.

15 Verizon did, however, provide information summarizing the quantity of broadband orders
16 it received.⁵⁸ From March 2012 through December 2014, Verizon received an average of
17 [REDACTED] orders for new broadband services per year. In 2012, the orders were [REDACTED]
18 between DSL and FiOS services. Then, in 2013 and continuing through 2014, orders for FiOS
19 service began to [REDACTED] the orders for DSL service. At the same time, the total orders for
20 DSL service [REDACTED]. Figure 6 below depicts the distribution of orders for new
21 broadband services from Verizon.

⁵⁵ See General Order 133-C.

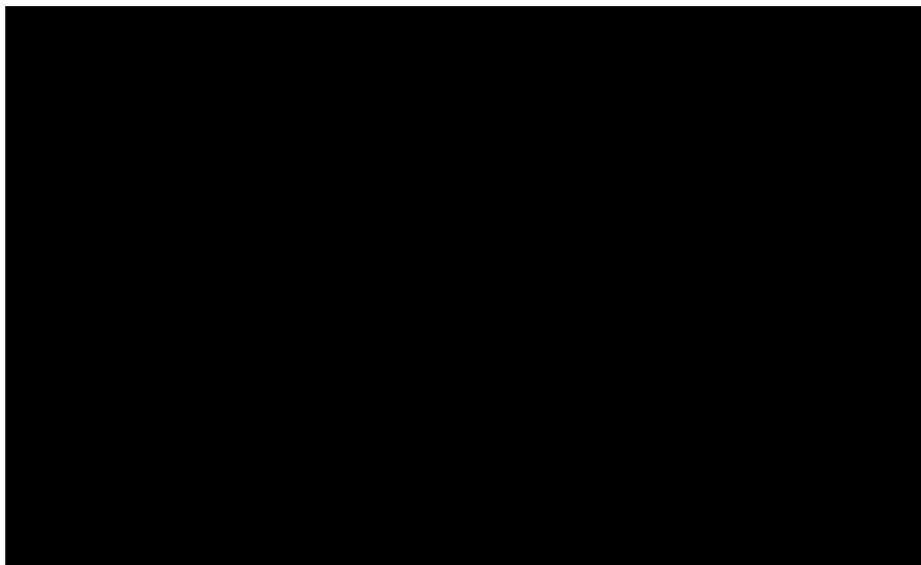
⁵⁶ Frontier’s response to ORA’s Data Request No.002. April 23, 2015. See Question 14.

⁵⁷ Verizon’s response to ORA’s Data Request No.002. May 11, 2015. See Question 21.

⁵⁸ Verizon’s response to ORA’s Data Request No.002. May 11, 2015. See “ORA_VZ2.19-20-21_Attachment 1_A1503005_VZ_20088_CONFIDENTIAL.xlsx”.

1 **Figure 6**

2 **Verizon - Broadband Service Orders**



3
4 The Commission's standard for installation intervals of traditional voice telephone
5 service is five business days.⁵⁹ Using this standard to assess the Joint Applicants' installation of
6 broadband services provides additional evidence of poor broadband service quality. Frontier
7 failed to meet the benchmark and completed orders for broadband services in approximately [REDACTED]
8 business days.⁶⁰ Likewise, Verizon completed new orders for FiOS broadband services in [REDACTED]
9 calendar days and new orders for DSL broadband services in [REDACTED] calendar days.⁶¹ Although
10 Verizon does not maintain installation intervals in business days,⁶² the company most likely
11 failed to meet the five day standard. Verizon took more than seven days to install [REDACTED] of new
12 orders for FiOS service, and [REDACTED] of new orders for DSL service.⁶³

13 Verizon and Frontier do not provide a satisfactory quality of service in regards to
14 fulfilling broadband service orders and doing so in a timely manner. Neither company met the

⁵⁹ See General Order 133-C.

⁶⁰ [REDACTED] is the average of Frontier's broadband installation intervals per month. See Frontier's response to ORA's Data Request No.002. April 23, 2015. See "ORA Set 2 No 10 – broadband order intervals".

⁶¹ Verizon's response to ORA's Data Request No.002. May 11, 2015. See Question 14.

⁶² *Id.* at Question 14.

⁶³ Verizon's response to ORA's Data Request No.002. May 11, 2015. See "ORA_VZ2.5_Attachment1_A1503005VZ20084_CONFIDENTIAL.xlsx".

1 service installation benchmarks of General Order 133-C.⁶⁴ Given the large number of customers
2 affected by the proposed Transaction, it is imperative that Frontier improve its performance in
3 provisioning service if it is to enhance the quality of broadband in California.

4 **C. BROADBAND NETWORK AVAILABILITY**

5 Network availability is an important metric used to evaluate the quality and reliability of
6 broadband networks. This metric measures the percentage of time a network is operable and not
7 in a state of failure or experiencing service outages. Network availability excludes scheduled
8 downtime for the purpose of performing maintenance or upgrading network systems. Unplanned
9 service outages and network failures will decrease a broadband provider’s network availability
10 score.

11 This section analyzes the Joint Applicants network availability on a per calendar year
12 basis. An annual network availability score of 99% indicates broadband service was not
13 functional during 1% of the year, which translates to 3 days 15 hours and 36 minutes of
14 cumulative downtime. To further illustrate, Figure 7 below depicts various network availability
15 scores and the associated cumulative duration of network failures (or service outages) per year.

16 **Figure 7**
17 **Network Availability Examples**

Network Availability	Downtime per Year
99.999%	5 minutes 15 seconds
99.990%	52 minutes 33 seconds
99.900%	8 hours 45 minutes 36 seconds
99.000%	3 days 15 hours 36 minutes
98.000%	7 days 7 hours 12 minutes
97.000%	10 days 22 hours 48 minutes
96.000%	14 days 14 hours 24 minutes
95.000%	18 days 6 hours

18
19 The Commission does not impose benchmarks specific to broadband network
20 availability. Still, broadband service providers should strive to maintain the highest network

⁶⁴ Verizon does not track installation commitments met for its broadband services.

1 availability score as possible. Telephone carriers, for example, traditionally aim to meet the
2 “Five Nine” standard, which is to achieve a telephony-network availability score of 99.999%.⁶⁵
3 Today, broadband is an essential service, and maintaining network availability is a core
4 component of delivering safe and reliable service to customers.

5 **1. Frontier**

6 Frontier provided data on broadband network availability for 2012, 2013 and 2014.⁶⁶
7 During those three years, [REDACTED] of Frontier’s [REDACTED] central offices experienced [REDACTED] network
8 availability. In 2012, [REDACTED] of Frontier’s central offices experienced some network failure or
9 service outages, but those [REDACTED] still scored a minimum of [REDACTED] network availability. In 2013,
10 performance declined and [REDACTED] central offices experienced network failure or service outages;
11 [REDACTED] maintained a minimum of [REDACTED] network availability, but [REDACTED] central office
12 located in rural [REDACTED] dipped to [REDACTED] network availability. Frontier’s network
13 availability continued to decline in 2014, when [REDACTED] central offices experienced network failure or
14 service outages. Still, those [REDACTED] central offices maintained a minimum network availability rate of
15 [REDACTED]

16 From 2012 through 2014, [REDACTED] of Frontier’s central offices scored less than [REDACTED]
17 network availability in at least two of the three years. [REDACTED] central office, located in the city of
18 [REDACTED] failed to meet [REDACTED] network availability in any of the three years from 2012 through
19 2014.

20 **2. Verizon**

21 Verizon also provided data on network availability.⁶⁷ Verizon provided the data at the
22 state level for 2010 through 2014, and claims, “...it does not maintain network availability on a

⁶⁵ Bauer, Clark, Heikkinen and Lehr. *Assessing Broadband Reliability: Measurement and Policy Challenges*. Massachusetts Institute of Technology. Cambridge, MA. 2011. Available at http://groups.csail.mit.edu/ana/Publications/Assessing%20Broadband_Reliability-Measurement_and_Policy_Challenges_tprc-2011-bm-3.pdf

⁶⁶ Frontier’s response to ORA’s Data Request No.002. April 23, 2015. See “ORA Set 2 No 1 - Network Availability.”

⁶⁷ Verizon’s response to ORA’s Data Request No.002. April 27, 2015. See “A15-03-005_Resp of Verizon to ORA 2nd Set 4-27-15.pdf”.

1 geographically disaggregated basis in the ordinary course of business.”⁶⁸ Figure 8 below depicts
2 the results of Verizon’s statewide network availability per year.

3 **Figure 8**

4 **Verizon - Network Availability**



5
6 The Joint Applicants’ network availability may be tolerable on an aggregated statewide
7 basis and in select distinct areas of their service territory. However, both broadband providers
8 experienced substandard network availability in particular locations throughout the State. To
9 further examine the instances of poor network availability, the next section contains data on
10 broadband outages that occurred on the Joint Applicants’ networks in recent years.

11 **D. BROADBAND OUTAGES**

12 **1. Frontier**

13 In response to a request for data on broadband outages that occurred in California from
14 2010 through 2014,⁶⁹ Frontier provided data on outages that occurred between March 6, 2012
15 and December 31, 2014.⁷⁰ Frontier did not provide the data from 2010 to March 6, 2012. The
16 data included details of each outage, including: the number and type of customers affected, date
17 and time, duration, restoration time, location, equipment involved, and a brief description of the
18 cause.

19 Between March 6, 2012 and December 31, 2014, Frontier experienced [REDACTED] broadband
20 outages in [REDACTED] different locations throughout California. Figure 9 below depicts the number of
21 broadband outages that occurred each year, along with information on the duration and total
22 customers affected.

⁶⁸ Verizon’s response to ORA’s Data Request No.002. April 27, 2015. See “A15-03-005_Resp of Verizon to ORA 2nd Set 4-27-15.pdf”.

⁶⁹ See ORA Data Request No.002 at Question 22. April 2, 2015.

⁷⁰ Frontier’s response to ORA’s Data Request No.002. April 23, 2015. See “ORA Set 2 No 28 – BB outages.xls”.

1
2
3

Figure 9
Frontier - Broadband Outages
(March 6, 2012 to December 31, 2014)



4

5 In General Order 133-C, the Commission adopted a benchmark for service providers to
6 repair 90% of telephone services outages within 24 hours.⁷¹ Frontier's broadband services did
7 not meet that standard in 2012 or 2013. In 2012, [REDACTED] of the company's broadband outages lasted
8 for more than 24 hours, as did [REDACTED] in 2013. Frontier met the standard in 2014, when only [REDACTED] of
9 its broadband outages lasted for more than 24 hours.

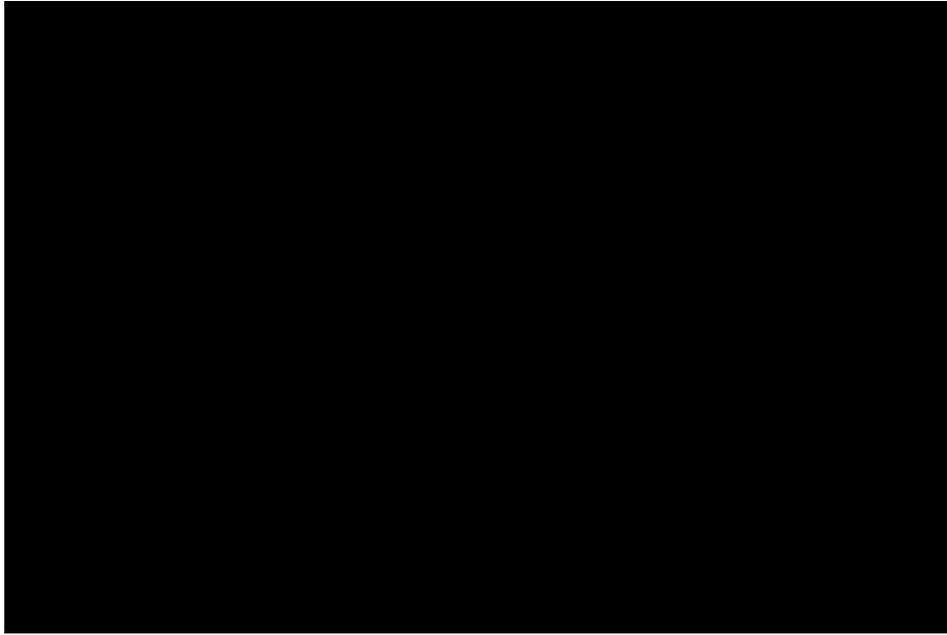
10 The severity of the outages varied tremendously. For example, the outages affected
11 anywhere from [REDACTED] to [REDACTED] customers, and lasted anywhere from [REDACTED] to over [REDACTED].
12 Figure 10 below is a scatter-chart depicting each of Frontier's [REDACTED] broadband outages according
13 to the duration and number of customers affected.

⁷¹ The duration to repair service outages excludes Sundays and federal holidays, catastrophic events and widespread outages.

1 **Figure 10**

2 **Frontier - Broadband Outages Scatter Chart**

3 (March 6, 2012 to December 31, 2014)



4
5 Refer to Attachment C for more details on Frontier’s broadband outages, including the
6 duration of outages and the number of customers affected.

7 Frontier’s broadband outages were associated with various equipment failures. In total,
8 across the [REDACTED] outages, Frontier listed over [REDACTED] pieces of equipment has having failed. However,
9 for [REDACTED] different outages, Frontier [REDACTED]
10 [REDACTED] [REDACTED] were the most common pieces of equipment to fail; at least [REDACTED] of outages
11 were associated with [REDACTED]. Other equipment that failed included: [REDACTED]

12 [REDACTED].
13 Frontier provided a brief description of the root cause for many of the broadband outages.
14 In total, across the [REDACTED] outages, Frontier listed [REDACTED] various root causes. However, Frontier did
15 [REDACTED] for [REDACTED] of the [REDACTED] outages. As evidenced by the
16 aforementioned equipment failures, [REDACTED] issues were the most common root cause of an
17 outage; at least [REDACTED] of outages involved [REDACTED] causes. Other common root causes
18 included: [REDACTED].

1 The most widespread outage, in terms of total customers affected, occurred in [REDACTED]
2 [REDACTED] and was located in [REDACTED] at [REDACTED]. That outage affected [REDACTED] customers for
3 [REDACTED] Frontier does [REDACTED] of this [REDACTED] outage, or
4 [REDACTED].

5 The longest lasting outage began in [REDACTED], and spanned more than [REDACTED]. This
6 outage was located within [REDACTED] at the town of [REDACTED] and affected [REDACTED] customers. This
7 [REDACTED] outage was caused by [REDACTED]

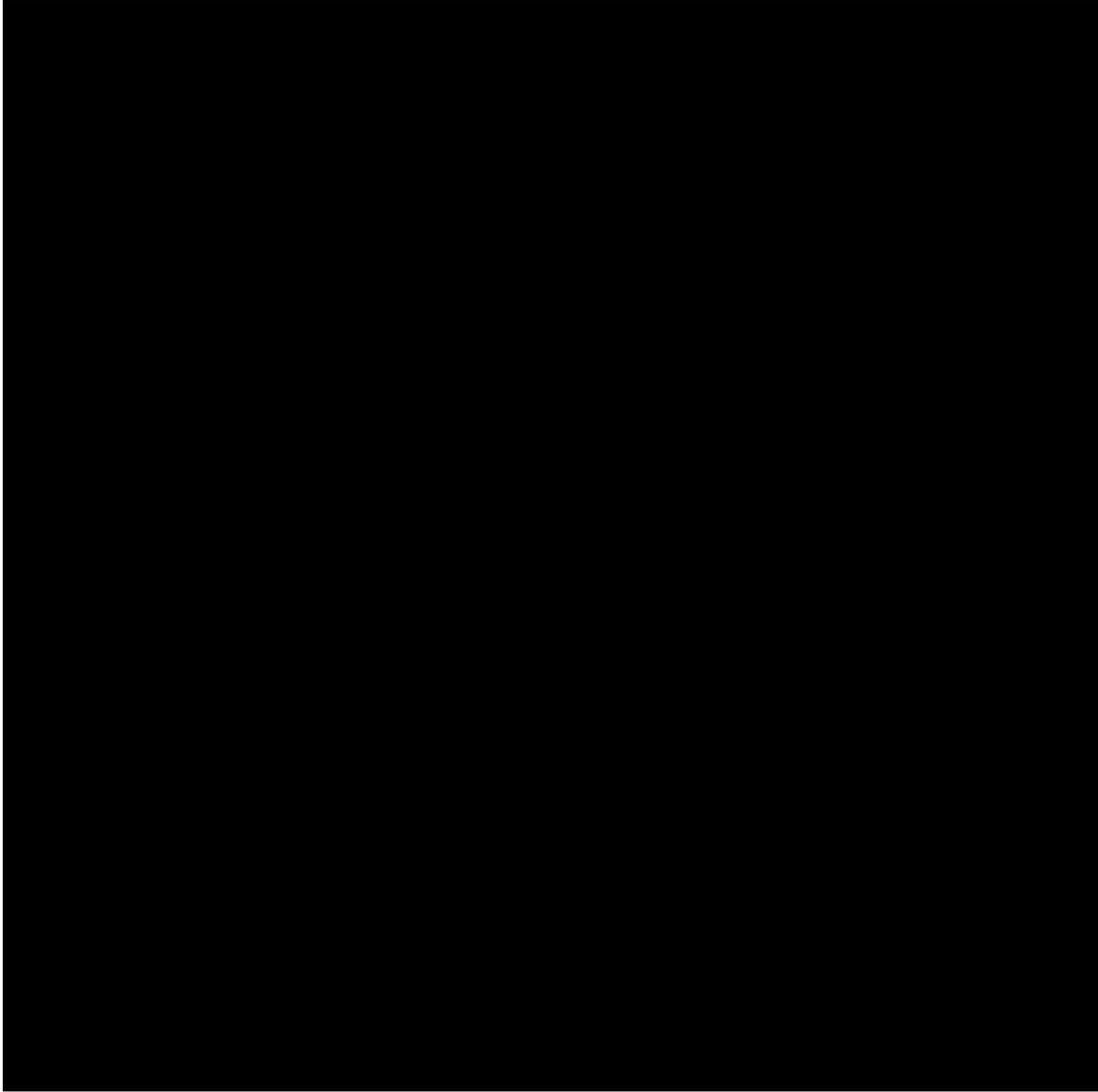
8 Outages occurred at [REDACTED] different locations. However, [REDACTED] of the outages occurred in
9 [REDACTED] different locations: [REDACTED]
10 [REDACTED]. Figure 11 below lists the total number of outages per county, along
11 with the total duration and number of customers affected.

1
2
3

Figure 11

Frontier - Broadband Outages by County

(March 6, 2012 to December 31, 2014)



4
5
6
7
8
9

Frontier’s broadband outages appear to occur [REDACTED]. Just over [REDACTED] of the Frontier’s outages occurred between [REDACTED]. The [REDACTED] hour experienced the most outages [REDACTED] and the [REDACTED] hour experienced the least [REDACTED]. Figure 12 below depicts the number of broadband outages that occurred during each hour of the day.

1
2
3

4
5
6
7
8
9
10
11

Figure 12

Frontier - Number of Broadband Outages per Hour
(March 6, 2012 to December 31, 2014)



Impact of Outages on Customer-Minutes

In order to better assess the overall impact of each outage, the duration (in minutes) was multiplied by the total number of customers affected to determine the *customer-minutes* of each outage. This customer-minutes metric is analogous to the user-minutes metric that the FCC uses to assess wireline telephone and interconnected VoIP service outages.⁷²

Figure 13 below includes key statistics regarding the customer-minutes of Frontier's  broadband outages.

⁷² The FCC requires communications providers to electronically report information about significant disruptions or outages to their communications systems that meet specified thresholds set forth in Part 4 of the FCC's rules (47 C.F.R. Part 4). One of those thresholds pertains to the *user-minutes* of either telephony or paging services. The FCC defines *user minutes* as the mathematical result of multiplying the duration of an outage, expressed in minutes, by the number of end users potentially affected by the outage.

The FCC requires all wireline communications providers to submit notification within 120-minutes of discovering that they have experienced an outage of 30-minutes duration that, amongst other criteria, potentially affects at least 900,000 *user-minutes* of either telephony or paging services.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Figure 13

Frontier - Broadband Outages Customer-Minutes
(March 6, 2012 to December 31, 2014)



Of the [redacted] broadband outages Frontier experienced, [redacted] affected less than [redacted] customer-minutes. Virtually all of those outages affected fewer than [redacted] customers and lasted for at least [redacted].

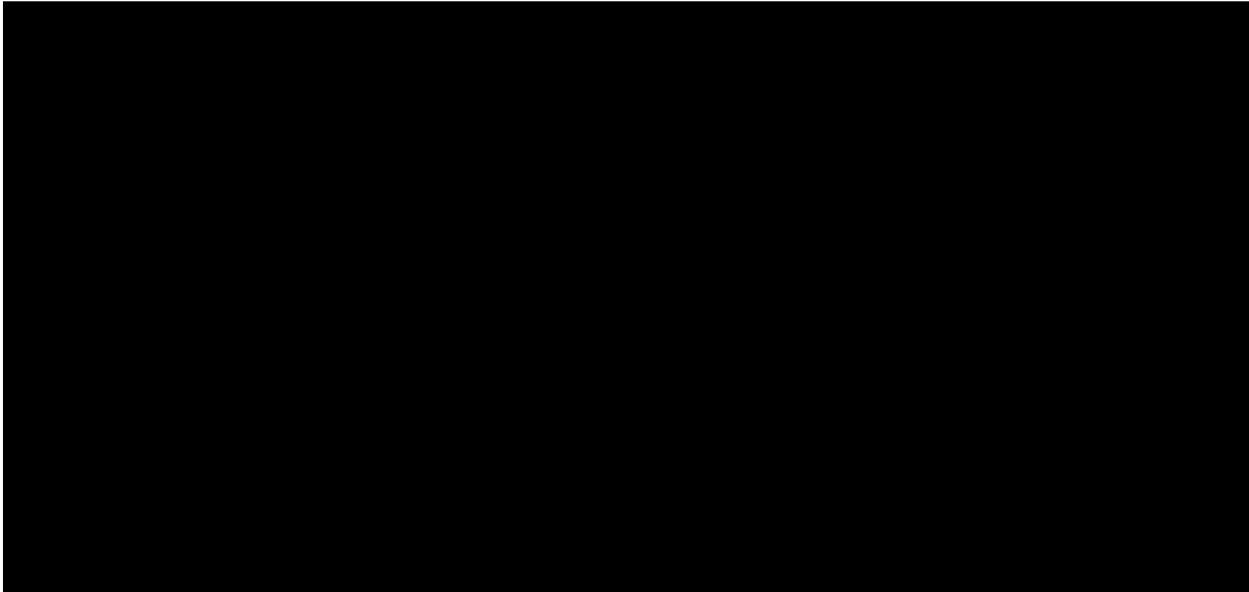
Frontier's broadband outages occurred in [redacted] different locations; however, [redacted] locations accounted for [redacted] of the total customer-minutes affected by outages. Those locations are: [redacted].

[redacted]

Figure 14 below depicts the total amount of customer-minutes affected by outages in these hardest hit areas.

Figure 14

Frontier - Top Broadband Outage Locations by Customer-Minutes
(March 6, 2012 to December 31, 2014)



1
2
3
4
5
6
7
8
9
10
11

Refer to Attachment D for additional details on each outage that occurred in [REDACTED]

[REDACTED] and [REDACTED]

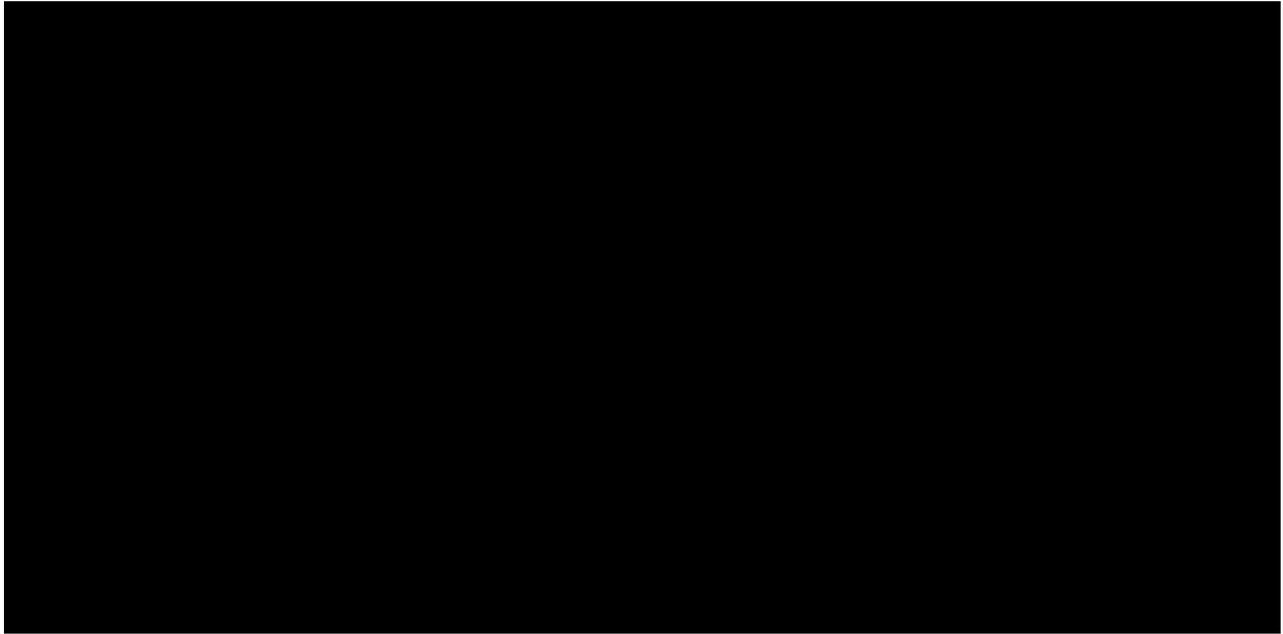
The FCC uses a threshold of 900,000 user-minutes when determining reportable and significant disruptions to wireline telephone service.⁷³ [REDACTED] of Frontier’s broadband outages affected more than 900,000 customer-minutes; [REDACTED]

[REDACTED]. Figure 15 below includes details of these [REDACTED] large broadband outages.

Figure 15

Frontier – Broadband Outages over 900,000 Customer-Minutes

(March 6, 2012 to December 31, 2014)



12
13
14
15
16

2. Verizon

In response to ORA’s request for data on broadband service outages that occurred in California from 2010 through 2014⁷⁴, Verizon provided data from 2013 and 2014.⁷⁵ Verizon did

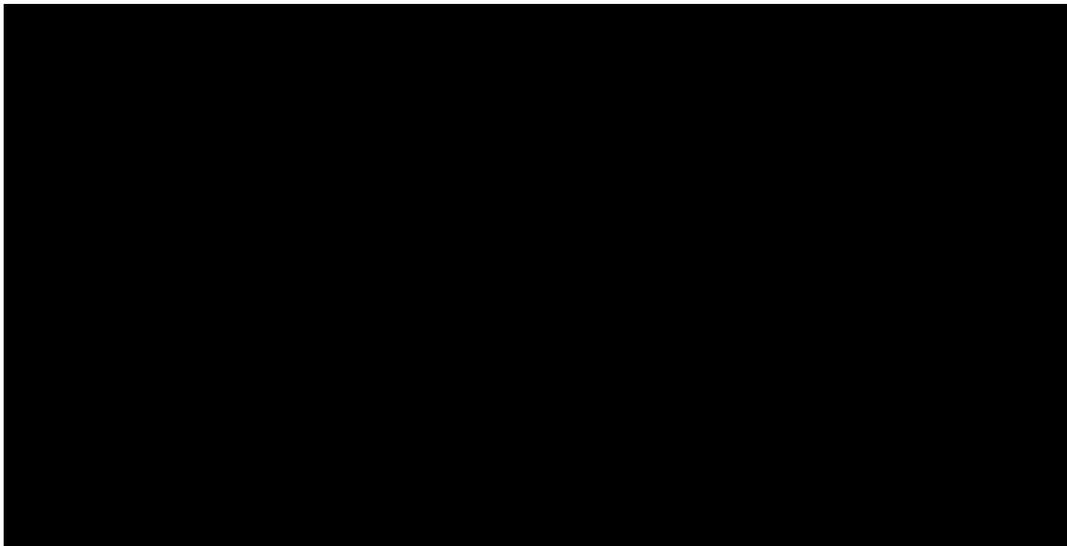
⁷³ See 47 C.F.R. Part 4.

⁷⁴ See ORA Data Request No.002 at Question 26. April 6, 2015.

1 not provide the requested data for 2010 to 2012. In 2013 and 2014, Verizon experienced [REDACTED]
2 broadband outages in over [REDACTED] different locations throughout California. Figure 16 below depicts
3 the number of broadband outages that occurred each year, along with information on the type of
4 service, duration and total customers affected.

5 **Figure 16**

6 **Verizon - Broadband Outages 2013 and 2014**



7
8 Customers of Verizon's DSL services [REDACTED]
9 than did customers of Verizon's FiOS services. In 2013 and 2014, Verizon's DSL network
10 [REDACTED] than the company's FiOS network. The average duration of
11 a DSL service outage was [REDACTED] than the average duration of a FiOS service
12 outage. Outages that affected Verizon's DSL services lasted [REDACTED], on average,
13 than outages that affected Verizon's FiOS services. These statistics are significant cause for
14 concern, especially considering the number of Verizon's DSL outages [REDACTED] from 2013
15 to 2014.

16 Verizon's performance with respect to the outage repair standard within General Order
17 133-C (which is to repair 90% of telephone services outages within 24 hours) produced mixed
18 results. During 2013 and 2014, Verizon restored every FiOS outage in [REDACTED] On the

⁷⁵ Verizon's response to ORA's Data Request No.002. May 11, 2015. See "ORA_VZ2.29_Attachment 1_A1503005VZ20089_CONFIDENTIAL.xlsx".

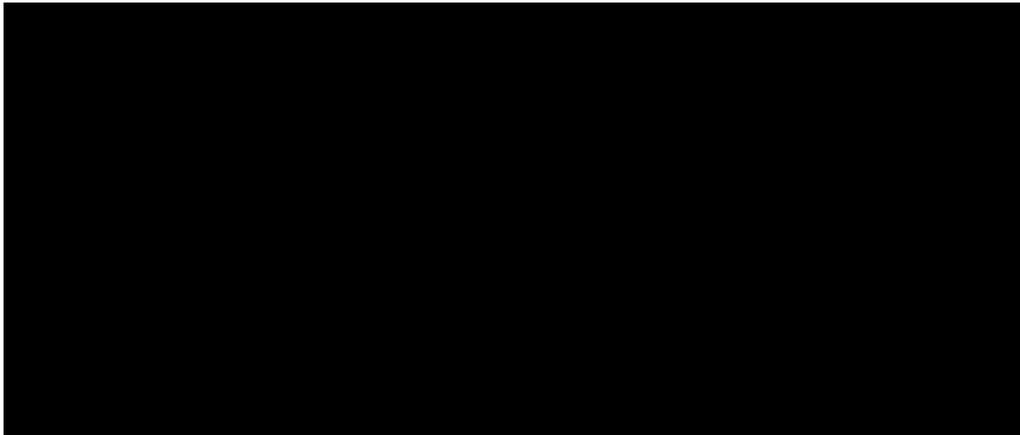
1 other hand, in 2013, Verizon restored [REDACTED] of DSL outages within [REDACTED].
2 Service quality dipped in 2014, when Verizon restored [REDACTED] of DSL outages within [REDACTED]
3 [REDACTED]. Although Verizon met the service outage repair standard for FiOS outages, the
4 company failed to meet the standard when restoring DSL outages in both 2013 and 2014.

5 Refer to Attachment E for more details on Verizon’s broadband outages, including the
6 duration of outages and the number of customers affected.

7 Issues with [REDACTED] were the most frequent cause of the [REDACTED] outages affecting
8 Verizon’s broadband services during 2013 and 2014. [REDACTED] issues caused of [REDACTED] of FiOS
9 outages and [REDACTED] of DSL outages. Unfortunately, Verizon did not provide additional details
10 regarding each outage incident and root cause, as requested by ORA.⁷⁶ Figure 17 below lists the
11 cause of each outage.

12 **Figure 17**

13 **Verizon – Cause of Broadband Outages (2013 & 2014)**



14
15 The most widespread outage, in terms of total customers affected, occurred in [REDACTED]
16 [REDACTED] and was located in the city of [REDACTED] within [REDACTED]. That outage affected
17 [REDACTED] customers for [REDACTED]. Verizon identified [REDACTED] as the cause
18 of this outage, but did not provide a description of the root cause, a description of the incident, or
19 what (if any) steps were taken to prevent the outage from re-occurring. To repair this outage,
20 Verizon [REDACTED].

⁷⁶ See ORA Data Request No.002 at Question 26. April 6, 2015.

1 The longest lasting outage began in [REDACTED], and lasted for [REDACTED]. This
2 extremely long lasting outage was located within the city of [REDACTED] in [REDACTED]
3 [REDACTED] and affected [REDACTED] for [REDACTED] residential customers. Verizon was [REDACTED]
4 [REDACTED] Verizon also failed to provide additional details regarding this
5 outage, as requested by ORA, including: which equipment failed, a description of the incident, a
6 description of the root cause, and what steps (if any) were taken to prevent the outage from re-
7 occurring.

8 During 2013 and 2014, [REDACTED] of Verizon's broadband outages within California
9 occurred in [REDACTED] counties: [REDACTED]
10 [REDACTED] Refer to Attachment F for the total number of broadband outages, per
11 county, that occurred during 2013 and 2014.

12 As was the case with Frontier's broadband outages, the majority of Verizon's outages
13 appear to [REDACTED]. Nearly [REDACTED] of Verizon's outages occurred during the
14 [REDACTED] The [REDACTED] hour experienced the most outages [REDACTED], and the
15 [REDACTED] hour experienced the least [REDACTED]. Figure 18 below depicts the number of broadband outages
16 that occurred during each hour of the day.

1
2

Figure 18

Verizon - Number of Outages per Hour (2013-2014)



3

4 Impact of Outages on Customer-Minutes

5 Once more, in order to assess the overall impact of each outage, the duration (in minutes)
6 was multiplied by the total number of customers affected to determine the customer-minutes of
7 each outage.⁷⁷ Figure 19 below includes key statistics regarding the customer-minutes of
8 Verizon's [redacted] broadband outages.

9

Figure 19

10

Verizon Broadband Outages Customer-Minutes (2013-2014)



11

12 In 2013 and 2014, Verizon's broadband outages disproportionately affected (in terms of
13 total customer-minutes) customers in [redacted] Nearly [redacted] of

⁷⁷ The customer-minutes metric is similar to the user-minutes metric used by the FCC to access telephone service outages. Refer to Footnote 72 for more information.

1 all customer-minutes affected by Verizon's outages occurred in these [REDACTED] Below,
2 Figure 20 and Figure 21 depict the five counties that experienced the most broadband outages
3 and associated customer-minutes for DSL and FiOS services, respectively.

4 **Figure 20**

5 **Verizon – DSL Outage Customer-minutes Top 5 Counties**

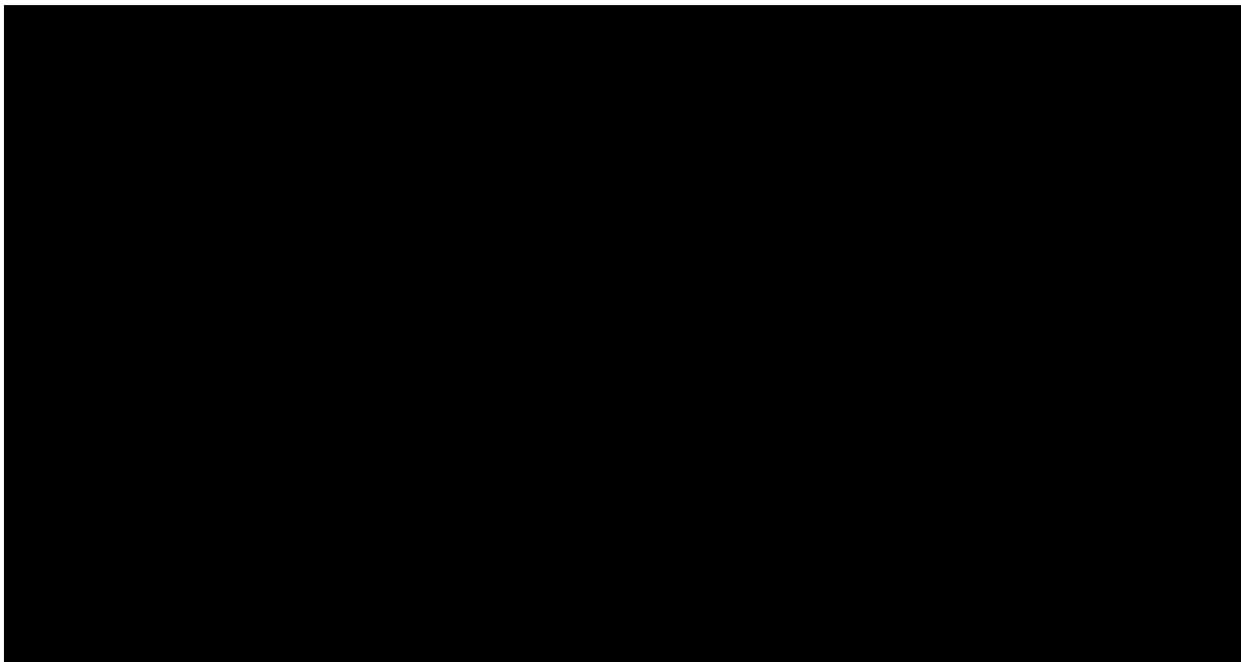


6

7

1 **Figure 21**

2 **Verizon – FiOS Outage Customer-minutes Top 5 Counties**

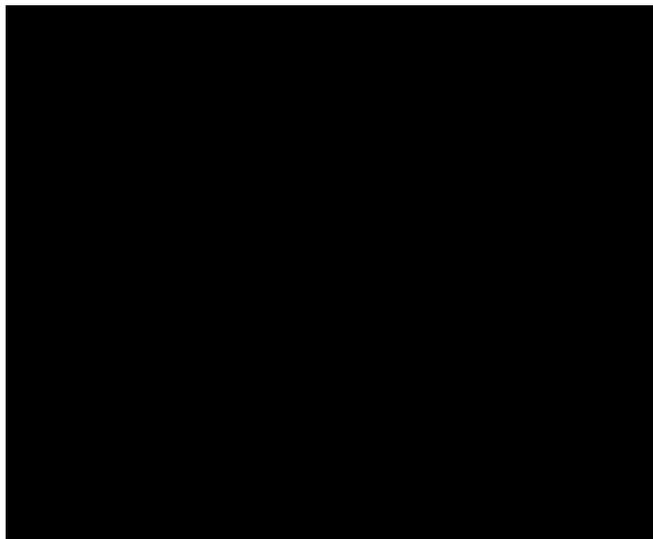


3
4 A total of [REDACTED] of Verizon’s broadband outages affected more than 900,000
5 customer-minutes, which is the FCC’s threshold for user-minutes when determining reportable
6 and significant disruptions to wireline telephone service.⁷⁸ [REDACTED] of Verizon’s [REDACTED] major
7 broadband outages occurred on Verizon’s FiOS network, while the other [REDACTED] occurred on
8 Verizon’s copper network. Figure 22 below shows the number of Verizon’s major broadband
9 outages per county.

⁷⁸ See §47 C.F.R. Part 4.

1 **Figure 22**

2 **Verizon - Broadband Outages over 900,000 Customer-Minutes (2013-2014)**



3
4 Refer to Attachment G for more details on Verizon's broadband outages, per county and
5 service type.

6 On a more granular level, Verizon reported broadband outages occurring at [redacted] different
7 locations. One location in particular, [redacted] accounted for [redacted] of Verizon's total
8 customer-minutes affected by broadband outages during 2013 and 2014. The [redacted]
9 location accounted for [redacted] customer-minutes. The [redacted] location also
10 experienced the most severe outage, in terms of total customer-minutes. (This previous section
11 discussed that outage, which began in [redacted] and affected [redacted] customers for nearly [redacted]
12 [redacted]

13 The top 10 locations, including [redacted], accounted for nearly [redacted] of all customer-
14 minutes affected by Verizon's broadband outages during 2013 and 2014. Figure 23 below lists
15 these locations according to total customer-minutes.

1
2
3

Figure 23

Verizon – Broadband Outages

Top 10 Locations by Customer-Minutes (2013 & 2014)



4

5 Refer to Attachment H for a chart depicting additional details of the top 10 locations (by
6 total customer-minutes) affected by Verizon’s broadband outages during 2013 and 2014.

7 **E. CUSTOMER SERVICE & CALL CENTERS**

8 **1. Frontier**

9 Frontier’s call centers are the work locations of employees that respond to customer
10 inquiries. Frontier’s call center employees support both telephone and broadband services.⁷⁹ All
11 of Frontier’s call centers are [REDACTED]. Apart from those call centers, Frontier
12 has customer service representatives that provide support from their home locations.⁸⁰ Frontier
13 notes that its customer service representatives are, “trained to handle calls from any state and this
14 allows flexibility in routing calls to the next available representatives, regardless of location.”⁸¹

⁷⁹ Frontier’s response to ORA Data Request No.2 at Question 18. April 23, 2015.

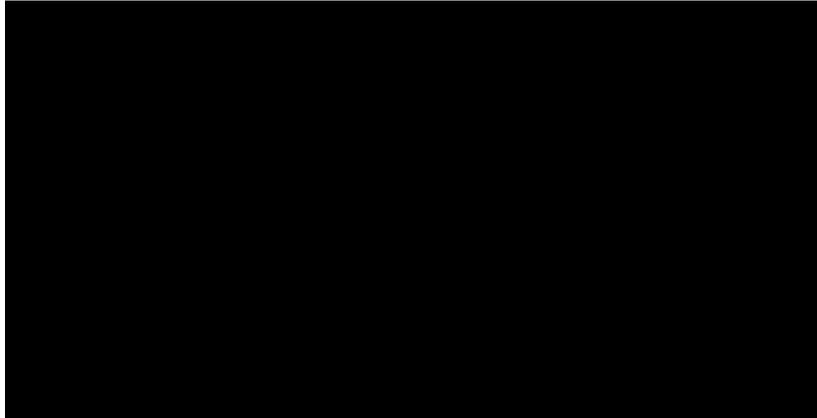
⁸⁰ Frontier’s response to ORA Data Request No.2 at Question 17. April 23, 2015.

⁸¹ Frontier’s response to ORA’s Data Request No.002. April 23, 2015. See Question 18.

1 Frontier employs [REDACTED] people in California that contribute to operational functions.⁸²
2 Figure 24 below classifies those employees per category of general responsibility.

3 **Figure 24**

4 **Frontier – California Employees as of December 31, 2014**



5
6 Frontier claims it has, “traditionally employed a larger number of personnel per customer
7 than does Verizon...”⁸³ In 2014, when Frontier employed the above noted [REDACTED] people in
8 California, it provided [REDACTED] broadband subscriptions, which equates to approximately [REDACTED]
9 broadband subscriptions to one employee.

10 If and when the proposed Transaction is approved and completed, Frontier states that it
11 plans to integrate Verizon’s current customer service centers into Frontier’s operations.⁸⁴
12 However, Frontier only identified [REDACTED] of Verizon’s [REDACTED] current customer service centers that it will
13 keep post-Transaction.⁸⁵

⁸² Frontier's Response to ORA's Meet and Confer Letter ORA 001, Meet and Confer Q. 2; ORA 002, Meet and Confer Q. 4, 5, and 10. June 11, 2015. See “ORA Confer ORA 2 #5 followup to #18 CA employees confidential.xlsx”

⁸³ White Testimony at 4. May 11, 2015.

⁸⁴ White Testimony at 27. May 11, 2015.

⁸⁵ White Testimony at 27. May 11, 2015.

1 **2. Verizon**

2 Verizon provided information on its service centers located in California, including the
3 quantity, function, and location, per year from 2010 through 2014.⁸⁶

4 Verizon operated [REDACTED] customer service centers in California during 2014. These service
5 centers perform various functions related to Verizon’s broadband and telecommunications
6 services, including: [REDACTED],
7 [REDACTED]. All of the [REDACTED] of Verizon’s service centers are
8 located in [REDACTED], within [REDACTED]
9 [REDACTED]

10 In recent years, Verizon [REDACTED] the total number of customer service centers in
11 California. In 2014, as compared to 2010, Verizon operated [REDACTED]
12 [REDACTED]. Conversely, in
13 2014, Verizon [REDACTED]
14 [REDACTED]

15 Verizon operates [REDACTED] service centers that have a primary function related to [REDACTED]
16 [REDACTED]. [REDACTED] centers are located in [REDACTED]
17 [REDACTED] while the other [REDACTED] are located in the neighboring [REDACTED]. Only [REDACTED] of
18 those [REDACTED] service centers is specifically designated as a [REDACTED]
19 [REDACTED]

20 Verizon also provided data on its employees in California, including the quantity per
21 position (or work title) and work location for 2010 through 2014, per year.⁸⁷ In 2014, Verizon
22 had [REDACTED] employees working at [REDACTED] different locations throughout California. Verizon’s
23 employees performed a wide variety of functions, and were not necessarily limited to broadband-
24 related responsibilities. Still, with [REDACTED] broadband lines in service throughout California
25 during 2014, Verizon operated at a ratio of [REDACTED] broadband lines per employee.

⁸⁶ Verizon’s response to ORA’s Data Request No.002. May 11, 2015. See “ORA_VZ2.17_Attachment 1_A1503005VZ20086_CONFIDENTIAL.xlsx”.

⁸⁷ *Id.* See attachment “ORA_VZ2.18_Attachment 1_A1503005VZ20087_CONFIDENTIAL.xlsx”

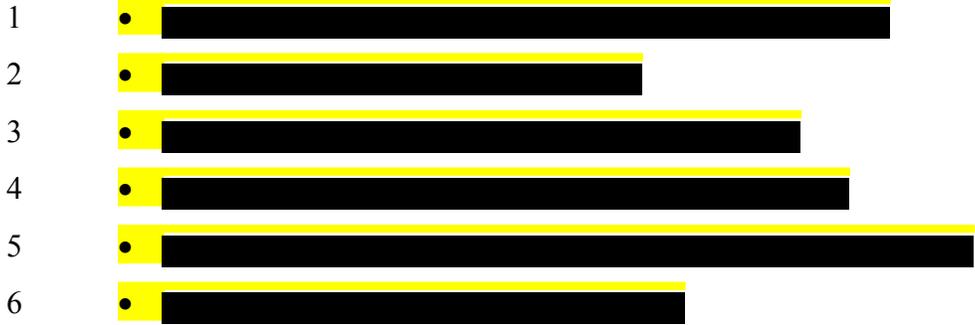
1 Verizon had [REDACTED] employees in one of [REDACTED] different *Associate* level positions, and [REDACTED]
2 employees in one of [REDACTED] different *Management* level positions.

3 In 2014, the most common Associate level positions were: [REDACTED]
4 [REDACTED]
5 [REDACTED]. Just over [REDACTED] of all Associate level employees held one of these [REDACTED]
6 positions, while the remaining [REDACTED] held one of [REDACTED] other Associate level positions.

7
8 Furthermore, in 2014, the most common Management positions were: [REDACTED]
9 [REDACTED]
10 [REDACTED]. Just over [REDACTED] of all
11 Management level employees held one of these [REDACTED] positions, while the remaining [REDACTED] held one
12 of [REDACTED] other Management level positions.
13

14 The quantity, location and composition of Verizon's California-based employees
15 drastically changed in recent years. Verizon [REDACTED] significantly during the past five years.
16 From 2010 through 2014, Verizon [REDACTED] the total number of its employee's work-locations
17 within California by [REDACTED] Verizon [REDACTED] the number of its locations in [REDACTED]
18 from [REDACTED] [REDACTED] from [REDACTED] and [REDACTED] from [REDACTED]
19 Verizon also made [REDACTED] to the number of work locations in [REDACTED] other counties. During
20 that same timeframe, Verizon [REDACTED] work locations in [REDACTED] [REDACTED], and
21 another in [REDACTED]

22 Moreover, in 2014 Verizon had [REDACTED] employees in California than it did in 2010.
23 In the four years following 2010, Verizon [REDACTED] the number of its Associate level employees
24 by [REDACTED] and [REDACTED] the number of its Management level employees by [REDACTED] Verizon's [REDACTED]
25 from 2010 through 2014 resulted in the following changes:



7 Figure 25 below depicts the total number of Verizon Managers, Associates and work-
 8 locations within California for 2010 through 2014.

9 **Figure 25**

10 **Verizon – California Employees and Work Locations**



11

12

13 **F. BROADBAND CUSTOMER COMPLAINTS**

14 Customers contact the Joint Applicants in order to file complaints on many aspects of
 15 their broadband service. Those complaints contain valuable insights as to the Joint Applicants’
 16 existing problems, year-over-year trends and potential future shortcomings. Ultimately, the data
 17 also speaks to the proposed Transaction’s possible effects on the overall quality of broadband
 18 services.

1 **1. Frontier**

2 Frontier provided information regarding its customer complaint procedures and protocols,
3 including the methods of communication available to customers, and internal company
4 policies.⁸⁸

5 According to the information Frontier submitted, the company provides customers with
6 multiple channels to submit complaints regarding broadband services. Frontier lists customer
7 service telephone numbers on customers’ bills, directories, and the company’s website. Frontier
8 also provides its customers with FCC contact information on bills and directories. Additionally,
9 Frontier’s customers can file complaints via multiple social media platforms, including Twitter,
10 Facebook, and Frontier’s online chat. Lastly, each of Frontier’s service areas has a “local general
11 manager” that Customers can contact directly to express concerns or file complaints.

12 Frontier states that it places an emphasis on its “First Call Resolution” policy in an effort
13 to prevent repeat calls regarding the same issue. According to Frontier, its procedures allow
14 customers to speak with a “customer care representative” who have various tools at their
15 disposal, such as troubleshooting processes, billing explanations and service credits. If necessary,
16 Frontier states that it will escalate calls to a supervisor. Frontier also notes that it has a
17 “Consumer Relations Team” that helps resolve escalated complaints and complaints received via
18 third-parties. The Consumer Relations Team has access to Frontier’s operations groups to
19 augment the resolution process.

20 Frontier indicated that it expects to implement its customer complaint processes in the
21 acquired Verizon service areas throughout California.⁸⁹

22 Frontier also provided data on the customer complaints it received each year from 2011
23 through 2014.⁹⁰ This information included the following details of each complaint: means of
24 communication, type of customer, type of complaint issue, date, frequency, response time, and
25 location.

⁸⁸ Frontier’s response to ORA’s Data Request No.002. April 23, 2015. *See* Question 6.

⁸⁹ *Id.* at Question 7.

⁹⁰ *Id.* *See* attachment “ORA Set 2 No 22 – BB Complaints.xls”.

1 Frontier reported receiving customer complaints from numerous sources, including:
2 government agencies, the Better Business Bureau, internal channels, and social media. Figure 26
3 below depicts the total number of broadband complaints Frontier received, by customer type, and
4 the number of complaints per 100 broadband lines, per year.

5 **Figure 26**

6 **Frontier – Broadband Complaints**



7
8 The total number of Frontier’s broadband complaints fluctuated significantly from year to
9 year. In 2011, Frontier received approximately [redacted] complaints per 100 broadband customers.
10 That number [redacted] in 2012, [redacted] in 2013, and then [redacted]
11 [redacted] in 2014.

12 From 2011 through 2014, residential customers accounted for approximately [redacted] of
13 Frontier’s broadband complaints, with business customers responsible for the remaining [redacted]
14 percent.

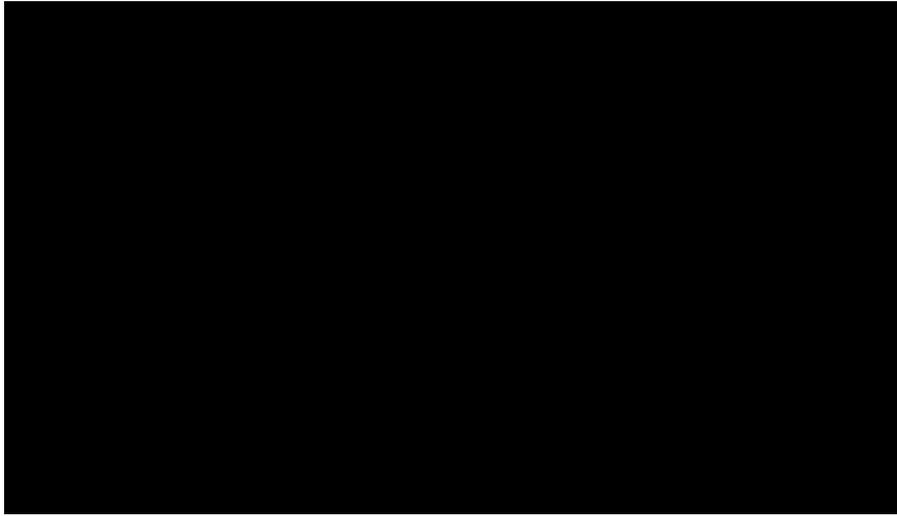
15 Frontier took about [redacted] days to close or resolve a complaint, but consistently [redacted]
16 [redacted]. Figure 27 below depicts the number of
17 days it took Frontier to resolve broadband complaints, per customer type, per year.

18

1
2

Figure 27

Frontier – Broadband Complaint Duration



3
4

5 Frontier’s broadband customers submitted complaints pertaining to [REDACTED]
6 [REDACTED] more frequently than any other category of inquiry. [REDACTED] of the complaints Frontier
7 received from 2011 through 2014 involved [REDACTED]. The second most common
8 complaint topic involved [REDACTED]. Figure 28 below depicts the most
9 common complaint topics per year.

1 **Figure 28**

2 **Frontier – Broadband Complaints by Category**



3

4 Starting in 2013, the percentage of Frontier’s broadband complaints that related to [REDACTED]

5 [REDACTED] declined relative to previous years. Also beginning in 2013, Frontier

6 categorized a higher percentage of its broadband complaints as relating to [REDACTED]

7 [REDACTED]. These two categories ([REDACTED]) are closely

8 related and both might describe a single complaint. Additionally, the [REDACTED] category

9 was most represented in 2014, which coincided with the lowest percentage of complaints relating

10 to [REDACTED]. Therefore, the year to year fluctuations noted above might stem

11 from a change in Frontier’s categorization policies, rather than an actual change in customer’s

12 complaint behavior.

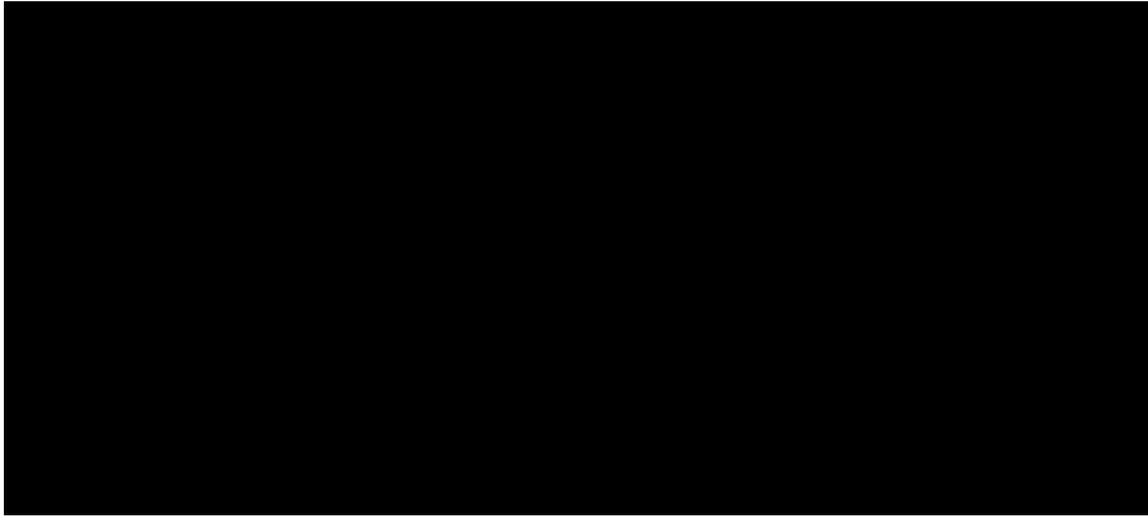
13 Frontier received broadband complaints from customers in approximately [REDACTED] cities

14 within [REDACTED] different counties throughout California. The city of [REDACTED] produced the most

1 complaints regarding Frontier’s broadband services. With an average of [REDACTED] broadband
2 complaints per year, customers in [REDACTED] submitted over [REDACTED] the number of complaints than
3 the next leading city. The cities of [REDACTED] rounded out the
4 top five cities with the most complaints. Refer to Attachment I for a list of the top 20 cities
5 according to the number of broadband complaints Frontier received from 2011 to 2014. Figure
6 29 below depicts the number of broadband complaints Frontier received per county.

7 **Figure 29**

8 **Frontier – Broadband Complaints Top 10 Counties**



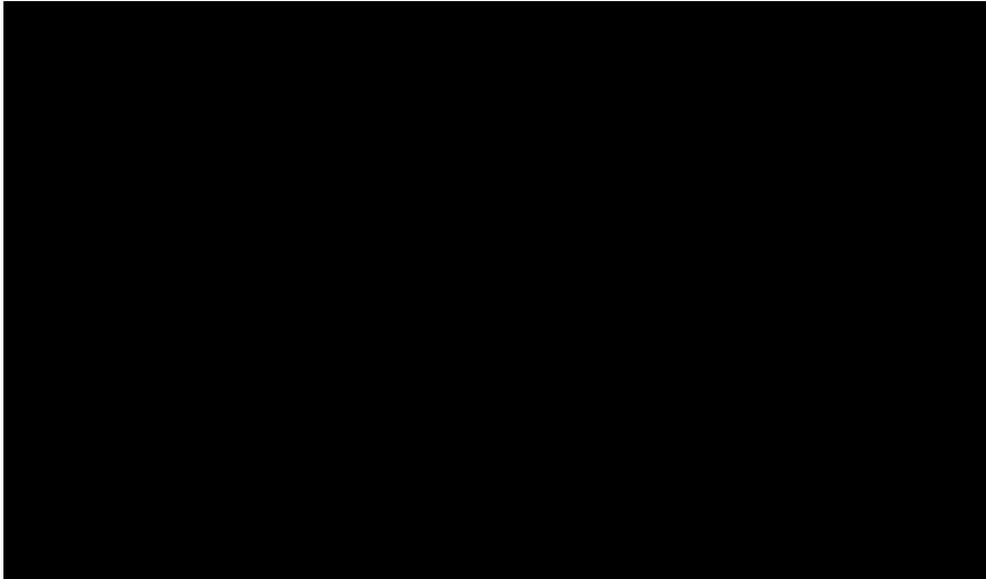
9

10 [REDACTED] contains approximately [REDACTED] of Frontier’s broadband lines.

11 Predictably, [REDACTED] also produces a [REDACTED] of Frontier’s total
12 broadband complaints. To normalize the complaint data, Figure 30 below presents the number of
13 broadband complaints Frontier received per 100 connections and in total, by county.

1 **Figure 30**

2 **Frontier – 2014 Broadband Complaints by County**



3
4 The data suggests Frontier’s customers in [REDACTED] receive a lower quality
5 broadband service compared to Frontier’s customers in other counties. In 2014, Frontier received
6 [REDACTED] broadband complaints per connection from customers in [REDACTED] which was
7 [REDACTED] the average of all other counties combined. Frontier categorized [REDACTED] of the broadband
8 complaints from [REDACTED] as [REDACTED]; the statewide average was
9 [REDACTED] Frontier categorized the other broadband complaints from [REDACTED] as
10 follows: [REDACTED]

11 [REDACTED]
12 **2. Verizon**

13 Verizon provided a detailed guide that its employees follow when processing a
14 complaint.⁹¹ According to the guide, Verizon receives and processes complaints via its Executive
15 Relations Office. Verizon’s customer service representatives use a database called Executive
16 Relations Team Database to track and resolve complaints. The Verizon representatives record
17 information such as the root cause of a complaint, the timeline of a complaint, and the steps

⁹¹ Verizon’s response to ORA’s Data Request No.002. May 11, 2015. See “ORA_VZ2.6_Attachment 1.pdf”

1 taken to remedy the issue. If necessary, in response to a complaint, Verizon will initiate an
2 investigation with the appropriate company department. According to Verizon, it prioritizes out
3 of service issues and complaints received via regulatory agencies.

4 Verizon provided data on customer-initiated complaints related to a wide variety of issues
5 and services in California for 2010 through 2014.⁹² This information included the following
6 details of each complaint: type of customer, type of complaint issue, date, frequency, response
7 time, and location.

8 During this timeframe, Verizon received an average of [REDACTED] complaints per year (across
9 all services). Many of those complaints pertain to services other than broadband and many others
10 relate to general categories (such as [REDACTED]). The following data pertains only to
11 those complaints that are explicitly related to broadband services. As such, the following analysis
12 does not include every complaint related to Verizon’s broadband services.

13 From 2010 through 2014, Verizon received at least [REDACTED] complaints related to
14 broadband services, at an average of [REDACTED] per year. Of those complaints, approximately [REDACTED]
15 were associated with residential accounts, with the remaining [REDACTED] associated with business
16 accounts. Figure 31 below depicts the total number of complaints Verizon received per year,
17 along with the number received per 100 broadband service lines.

⁹² Verizon’s response to ORA’s Data Request No.004. July 17, 2015. See “ORA_VZ4 10_Attachment
_M&C revision 7-9-15_A1503005VZ160000_CONFIDENTIAL-updatedcomplaints_07172015.xlsx”

1
2

Figure 31

Verizon – Broadband Complaints

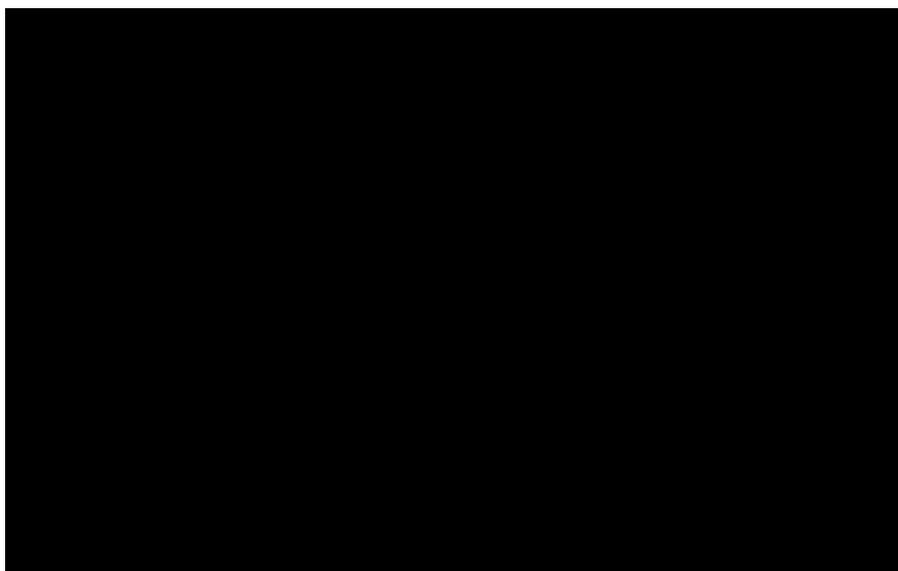


3
4
5
6
7
8
9
10
11

The number of complaints Verizon received per 100 broadband lines in service indicates [redacted] in the quality of service provisioned in the past five years. For example, Verizon received [redacted] complaints for every 100 residential broadband lines during 2014, which was [redacted] the 2010 figure of [redacted]. However, a closer look at the complaints categories reveals mixed results regarding changes to the quality of Verizon’s broadband services. Figure 32 below depicts the frequency of complaints per category from 2010 through 2014.

1 **Figure 32**

2 **Verizon – Broadband Complaints per 100 Connections**



3
4 The frequency of complaints related to [REDACTED] broadband services
5 remained fairly consistent across the years. Virtually all of the [REDACTED] Verizon
6 experienced was restricted to a subset of broadband complaints related to [REDACTED].
7 Unfortunately, Verizon’s billing practices will no longer be relevant if the proposed Transaction
8 is approved. Frontier’s customer support and billing systems are separate and different from
9 Verizon’s systems.⁹³ Frontier plans to transition all acquired customers from Verizon’s back
10 office systems onto Frontier’s systems, including ordering, billing and other customer support
11 functions.⁹⁴ Therefore, Verizon’s billing complaints are not as relevant as other categories of
12 complaints, such as repairs.

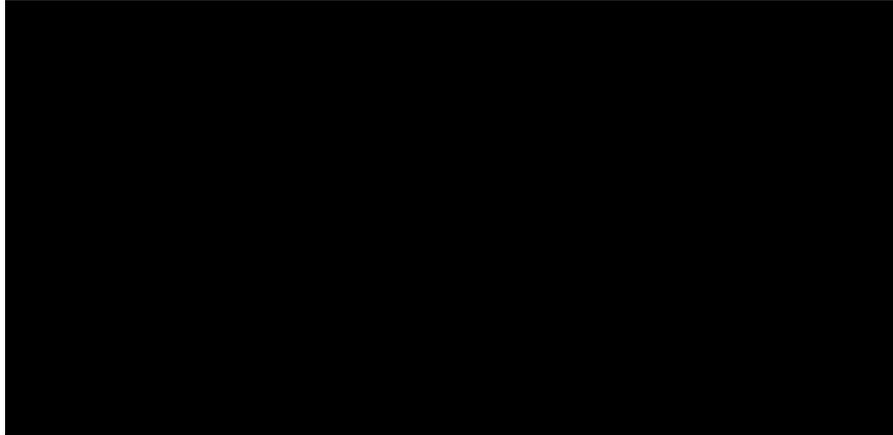
13 From 2010 through 2014, Verizon averaged [REDACTED] to resolve customer complaints from
14 residential accounts, and [REDACTED] to resolve complaints from business accounts. Figure 33 below
15 depicts the average duration of the broadband complaints Verizon received each year.

⁹³ Golob Testimony at 18. May 11, 2015.

⁹⁴ *Id.* at 18.

1 **Figure 33**

2 **Verizon – Broadband Complaint Duration**



3

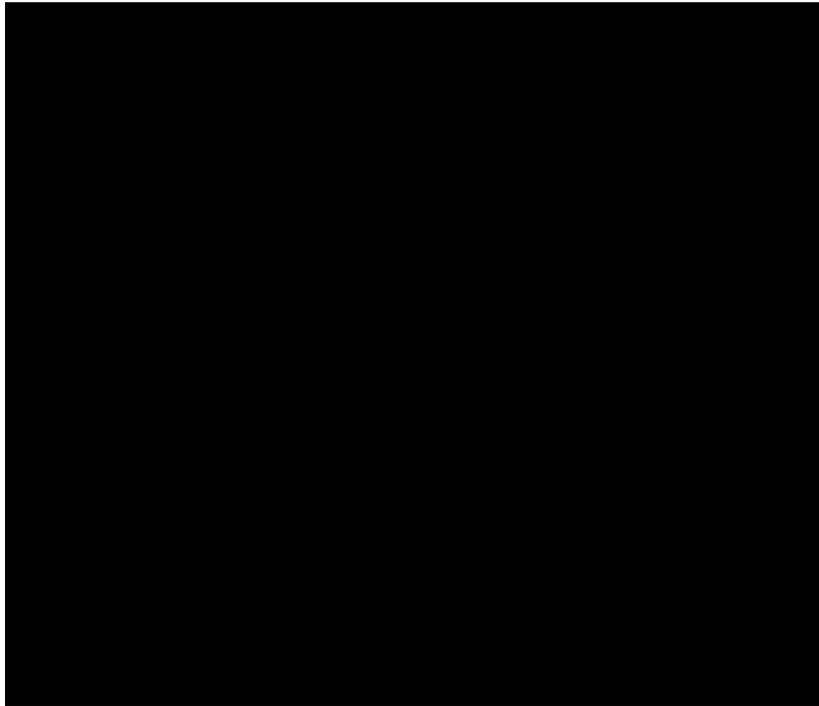
4

5 Verizon received broadband related complaints from people in over [redacted] cities across
6 California. [redacted] produced the most complaints, followed by [redacted], [redacted]
7 [redacted] and [redacted]. These [redacted] cities accounted for [redacted] complaints
8 Verizon received from 2010 through 2014. Refer to Attachment J for a list of the top 20 cities
9 according to the number of broadband complaints Verizon received from 2010 to 2014. Figure
10 34 below includes the total number of broadband complaints Verizon received during 2014 per
11 county.

1
2

Figure 34

Verizon – 2014 Broadband Complaints by County

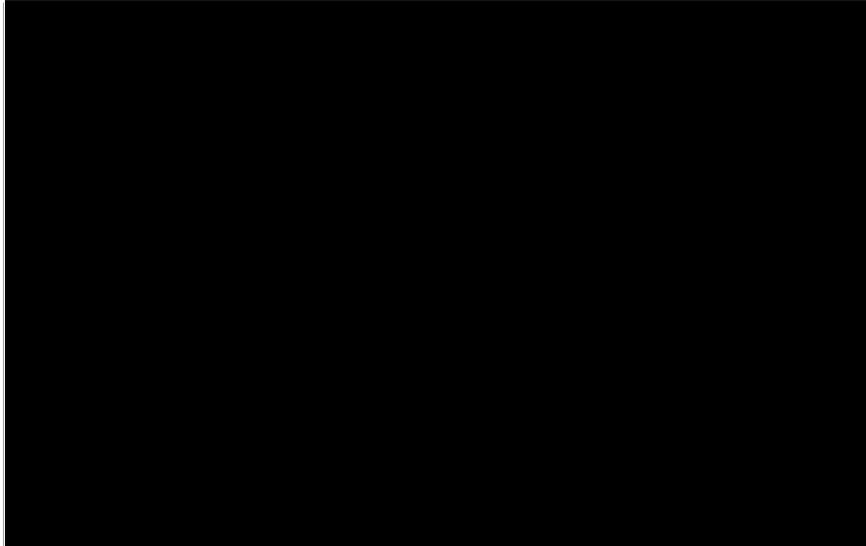


3
4
5
6
7
8

The top three counties, [REDACTED] contain approximately [REDACTED] of Verizon’s broadband lines. It follows that these counties also produce the most complaints. Those top three counties accounted for [REDACTED] of the broadband complaints Verizon received in 2014. To normalize the complaint data, Figure 35 below presents the number of complaints Verizon received per 100 connections, by county.

1 **Figure 35**

2 **Verizon – 2014 Broadband Complaints per 100 Lines by County**



3
4 In 2014, Verizon's broadband customers in [REDACTED] and [REDACTED] filed
5 complaints with greater regularity than customers in other counties. Verizon serves
6 approximately [REDACTED] customers in these counties, as opposed to [REDACTED]
7 [REDACTED]. This data suggests Verizon provides a lower
8 quality of broadband service in areas of the state with relatively fewer customers.

9 **G. BROADBAND CUSTOMER SATISFACTION**

10 **1. Frontier**

11 Frontier provided a customer satisfaction report compiled by the [REDACTED]
12 [REDACTED] for fourth quarter of 2014.⁹⁶ This report detailed a [REDACTED]
13 [REDACTED] A primary finding of the report
14 is, [REDACTED]”⁹⁷ The

⁹⁵ [REDACTED]
[REDACTED]

⁹⁶ Frontier's response to ORA's Data Request No.002. April 23, 2015. See "ORA Set 2 No 34 CEB customer satisfaction presentation-confidential.pdf"

⁹⁷ Frontier's response to ORA's Data Request No.002. April 23, 2015. See "ORA Set 2 No 34 CEB customer satisfaction presentation-confidential.pdf"

1 report noted that [REDACTED]
2 [REDACTED] Also, the report revealed that the most common reason for customers to contact
3 Frontier is [REDACTED] Finally, the report suggested that Frontier place
4 the highest priority on [REDACTED]
5 [REDACTED].

6 2. Verizon

7 Verizon also provided documents analyzing levels of customer satisfaction during 2013
8 and 2014 for both Verizon customers and customers of other broadband providers. Verizon
9 provided the company's internal research and data, along with reports from [REDACTED]⁹⁸

10 Verizon's research into California's retail broadband market includes [REDACTED]

11 [REDACTED]
12 [REDACTED]. The documents Verizon provided generally [REDACTED]
13 [REDACTED] in terms of customer satisfaction. For example, the result of one of
14 [REDACTED]
15 [REDACTED]
16 [REDACTED].⁹⁹ In that same study, and for the five
17 aforementioned categories, [REDACTED]
18 [REDACTED]
19 [REDACTED] respectively.

20 Another of Verizon's [REDACTED]
21 [REDACTED]¹⁰⁰ The ratings are broken into five categories relating to
22 broadband: [REDACTED]. The
23 report depicts a [REDACTED]. However,
24 the results are [REDACTED]
25 [REDACTED]

⁹⁸ Verizon's response to ORA's Data Request No.002. May 11, 2015. See Question 37.

⁹⁹ Verizon's response to ORA's Data Request No.002. May 11, 2015. See "ORA_VZ2.36_Attachment 1_CONFIDENTIAL.pdf".

¹⁰⁰ Verizon's response to ORA's Data Request No.002. May 11, 2015. See "ORA_VZ2.36_Attachment 2_CONFIDENTIAL.pdf".

1 In yet another study, Verizon finds [REDACTED]
2 [REDACTED] ¹⁰¹ The report identifies several [REDACTED]
3 [REDACTED]
4 [REDACTED]. When Verizon [REDACTED]
5 [REDACTED]
6 [REDACTED] ¹⁰² Ultimately, Verizon notes that [REDACTED]
7 [REDACTED]
8 [REDACTED] ¹⁰³
9

¹⁰¹ Verizon’s response to ORA’s Data Request No.002. May 11, 2015. See “ORA_VZ2.36_Attachment 3_CONFIDENTIAL.pdf”.

¹⁰² *Id.*, at 24.

¹⁰³ *Id.*, at 28.

1 **IV. HOW THE PROPOSED TRANSACTION MIGHT AFFECT**
2 **BROADBAND SERVICE QUALITY IN CALIFORNIA**

3 The proposed Transaction has the potential to significantly affect the quality, reliability
4 and availability of broadband services in California. In its review of the Application, the
5 Commission must carefully consider that potential, especially in light of the ever-increasing role
6 broadband plays in relation to public safety and the state’s economy. Whether the Transaction
7 results an overall benefit or harm to California’s broadband customers essentially depends on the
8 Commission’s directives and Frontier’s willingness and ability to take action.

9 Conversely, in the Application and subsequent Testimony, the Joint Applicants paint a
10 picture of an undisturbed, consistent and high-quality broadband marketplace.¹⁰⁴ The Joint
11 Applicants downplay, or simply do not address, the potential ill effects of the proposed
12 Transaction on the quality of broadband services in California. Furthermore, the Joint Applicants
13 argue that consumers will hardly even notice the Transaction, despite its massive reach and the
14 problems experienced in recent similar acquisitions.¹⁰⁵

15 Frontier contends, for example, that “...retail and wholesale customers of the
16 Transferring Companies will continue to receive substantially the same services under the same
17 terms and conditions found in their existing Verizon contracts and tariffs.”¹⁰⁶ Frontier plans to
18 offer the acquired Verizon customers the same services they receive today, including both DSL
19 and FTTH broadband services.¹⁰⁷ Be that as it may, simply offering “substantially the same
20 services” does not adequately address many of the well documented service quality deficiencies
21 that exist today; nor does it quell concerns that the Transaction might exacerbate or create new
22 deficiencies.

23 The Joint Applicants’ effort to address concerns regarding broadband service quality is
24 lackluster. Both Frontier and Verizon performed poorly in regards to certain aspects of
25 broadband service quality, reliability and availability. For example, Frontier does not fulfill more

¹⁰⁴ Golob Testimony at 14. May 11, 2015.

¹⁰⁵ Application at 3.

¹⁰⁶ Abernathy Testimony at 9-10. May 11, 2015.

¹⁰⁷ White Testimony at 10-22. May 11, 2015.

1 than [REDACTED] of order for broadband services, and Verizon does not track that metric.¹⁰⁸ Additionally,
2 neither company maintained an average installation interval of fewer than five business days.¹⁰⁹
3 Perhaps most concerning, both Frontier and Verizon experience many broadband outages that
4 affect [REDACTED] of customers throughout California for significant amounts of time.¹¹⁰ Also,
5 approximately [REDACTED] households in Verizon’s service territory do not have access to
6 broadband services.¹¹¹ If the Commission approves the merger, it should impose various
7 mitigating measures to ensure that the new Frontier improves these deficiencies.

8 Furthermore, Verizon consistently outperformed Frontier in several aspects of broadband
9 service quality, reliability and customer satisfaction. For example, Verizon tracks more service
10 quality metrics than Frontier.¹¹² Verizon also hires independent contractors to conduct random
11 inspections and assess technicians’ work performance, whereas Frontier does not.¹¹³ In addition,
12 Verizon’ receives fewer complaints per broadband line than Frontier.¹¹⁴ Unfortunately, if
13 Frontier replaces Verizon’s business practices with its own, Frontier may discontinue many of
14 the practices and procedures that presumably contributed to Verizon’s relative successes. Thus,
15 Verizon’s current customers might experience a decreased level of broadband service quality and
16 reliability if the proposed Transaction is approved without mitigating measures.

17 Finally, Frontier has not demonstrated an adequate level of familiarity with the current
18 condition of Verizon’s broadband networks in California. Frontier cannot accurately determine
19 the amount of capital needed to make necessary improvements, or gauge whether it can afford
20 those expenses, until after it carefully assesses the condition of Verizon network. Melinda White
21 (Frontier’s Area President of the West Region), stated, “[t]he post-closing review will include

¹⁰⁸Refer to Chapter III Section B for information on the Joint Applicant’s performance in provisioning broadband services.

¹⁰⁹*Id.*

¹¹⁰ Refer to Chapter III Section D for information on the Joint Applicant’s broadband outages.

¹¹¹ White Testimony. *See* Exhibit MW-2 at 3. May 11, 2015.

¹¹² Refer to Chapter III Section A for information on the Joint Applicant’s service quality procedures and practices.

¹¹³ Verizon’s response to ORA’s Data Request No.002. May 11, 2015. *See* Question 35.

¹¹⁴ Refer to Chapter III Section F for information on the Joint Applicant’s broadband customer complaints.

1 assessing the Verizon California network to determine appropriate new investment...¹¹⁵ The
2 more prudent approach is for Frontier to perform this review, and determine the necessary levels
3 of investment, *prior* to requesting the Commission’s approval of the Transaction.

4 Nonetheless, even if Frontier has acquired a detailed knowledge of Verizon’s network
5 and facilities in California, it has not presented the Commission with an adequate plan to address
6 the existing instances of poor quality and reliability of broadband services. As discussed below,
7 Frontier’s plan relies to a great extent upon state and federal support for expanding broadband
8 access, and does not sufficiently address existing issues in areas that do not qualify for those
9 funds.

10 A more holistic approach to assessing and planning for the Transaction’s likely effects on
11 the quality and reliability of broadband services in California should include a thorough
12 examination of Verizon’s network facilities and equipment, and a multifaceted, detailed plan to
13 address current service quality shortcomings. In addition to discussing Frontier’s post-
14 Transaction plans, the sections below also suggest specific conditions the Commission should
15 impose upon Frontier in order to ensure California has access to safe, reliable and high-quality
16 broadband services.

17 **A. THE JOINT APPLICANTS’ PLANS TO IMPROVE**
18 **BROADBAND QUALITY AND AVAILABILITY**

19 The Joint Applicants have not presented the Commission with specific, detailed plans to
20 improve broadband service quality and reliability in California post-Transaction. Frontier has
21 only expressed a general expectation to continue its current efforts to improve broadband service
22 quality, and shared a plan to utilize State and Federal support to deploy broadband in
23 underserved or unserved areas.¹¹⁶ Both of these approaches are commendable and appropriate,
24 but they are not wholly sufficient, especially considering the lack of details as currently
25 presented.

26 Frontier’s plan to improve broadband service quality and availability post-Transaction
27 primarily consists of opportunities presented via the Connect America Fund (CAF) and the

¹¹⁵ White Testimony at 10. May 11, 2015.

¹¹⁶ Frontier’s response to ORA’s Data Request No.002. April 23, 2015. *See* Question 32.

1 California Advanced Services Fund (CASF).¹¹⁷ Frontier identifies these programs as a means to
2 expand broadband offerings in certain areas of California.¹¹⁸ While expanding broadband
3 availability is crucial and necessary, there are significant limitations regarding the support
4 service providers receive from the CASF and CAF.

5 **1. Connect America Fund**

6 In 2011, the FCC created the CAF to provide universal service support to high-cost rural
7 areas lacking adequate broadband services.¹¹⁹ In the current CAF Phase II, the FCC allocated
8 \$1.7 billion annually for broadband in price cap carrier territories. Frontier contends that, “there
9 is an opportunity in CAF Phase II to receive supplemental federal funding to expand service to
10 high cost areas in California...”¹²⁰ Indeed, the FCC has offered price cap carriers annual
11 support.¹²¹ If the service provider accepts, it must commit to providing broadband services to a
12 predetermined number of locations within the eligible census blocks.¹²²

13 On April 29, 2015, the FCC offered Frontier and Verizon CAF Phase II support. The
14 FCC offered Frontier \$6,096,767 to bring broadband to 12,822 locations in California, and
15 offered Verizon \$31,978,057 to bring broadband to 77,402 locations in California.¹²³ However,
16 only specific areas are eligible for this funding.¹²⁴ Eligible census blocks must be unserved or
17 underserved, meaning they must not have broadband speeds greater than 4 Mbps download and 1
18 Mbps upload. Also, census blocks that are currently served by an unsubsidized competitor are
19 not eligible for funding, even if the area is high-cost. Finally, the Phase II funding excludes
20 certain extremely high cost areas.

¹¹⁷ *Id.* at Question 32.

¹¹⁸ Abernathy Testimony at 16-17. May 11, 2015.

¹¹⁹ *See* Connect America Fund *et al.*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663 (2011). (“USF/ICC Transformation Order”)

¹²⁰ Golob Testimony at 7. May 11, 2015.

¹²¹ *See* FCC Public Notice: Wirelines Competition Bureau Announces Connect America Phase II Support Amounts Offered to Price Cap Carriers to Expand Rural Broadband (April 29, 2015). WC Docket No. 10-90. DA 15-509. Available at https://apps.fcc.gov/edocs_public/attachmatch/DA-15-509A1.pdf

¹²² *See, e.g.*, Connect America Fund, Report and Order, 29 FCC Rcd 15644 ¶ 33-44 (2014).

¹²³ FCC. Connect America Fund. *Connect America Cost Model Final Results Report: Offer by Carrier and by State*. Washington, DC. April 29, 2015. Available at <https://www.fcc.gov/encyclopedia/connecting-america>

¹²⁴ *See, e.g.*, USF/ICC Transformation Order.

1 The CAF Phase II support is reserved for certain eligible census blocks and locations.
2 There are many areas within the Joint Applicant's service territories that currently receive poor
3 quality broadband services, but are not eligible for CAF Phase II support. The city of [REDACTED]
4 [REDACTED] for example, produces a large number of complaints¹²⁵ and experiences severe
5 broadband outages¹²⁶, but is predominantly ineligible for CAF Phase II support. Another
6 example is the city of [REDACTED] which also experiences severe broadband outages.¹²⁷ [REDACTED] is
7 similar to [REDACTED], in that only a very small number of census blocks (in and around the
8 city) are eligible for CAF Phase II support. There are many other areas within Verizon's (and
9 Frontier's) service territories that receive poor broadband service quality, but are not eligible for
10 CAF Phase II support. Refer to Attachment K for maps depicting the CAF Phase II eligibility of
11 several areas within the Joint Applicant's service territories. These maps clearly demonstrate the
12 geographical limitations of CAF Phase II support.

13 The existing deficiencies with broadband service quality and reliability within the Joint
14 Applicants' service areas are not limited to locations eligible for CAF Phase II support. As such,
15 Frontier should earmark funds specifically for capital investments to address the issues in areas
16 outside of CAF eligibility. Unfortunately, Frontier's financing for the acquisition does not
17 include any money specifically earmarked for the upgrades or fixes to solve existing problems
18 with the Verizon network. The CAF support is limited and should not be considered the only
19 solution for improving quality of service on broadband related issues in California.

20 Moreover, Frontier is aware that CAF support is only of limited duration, and therefore, it
21 cannot rely on CAF support to improve service quality in California on a long-term basis. The
22 timing of the proposed transaction also complicates matters.¹²⁸ If Verizon or Frontier do not
23 accept their CAF Phase II offers by August 27, 2015, there will be a multiple year delay before

¹²⁵ Refer to Attachment J.

¹²⁶ Refer to Chapter III Section D for information on the Joint Applicant's broadband outages. See Figure 23.

¹²⁷ See, e.g., Figure 23.

¹²⁸ Abernathy Testimony at 24. May 11, 2015.

1 the next round of CAF support is made available.¹²⁹ At this point in time, it is not clear if and
2 when Verizon will accept the CAF Phase II support offer.¹³⁰

3 **2. California Advanced Services Fund**

4 The Joint Applicants also point to support from the CASF as means of improving
5 broadband service quality and availability post-Transaction.¹³¹ There are two issues with the
6 Joint Applicants position. First, CASF support is similar to CAF Phase II support, in that it is
7 limited in scope. Any CASF support, for example, is limited to certain census block groups that
8 are unserved or underserved.¹³² Again, the aforementioned broadband service quality and
9 reliability issues that currently impact customers in California extend beyond these eligible areas.

10 Both Frontier and Verizon have previously applied for and used CASF funds for projects
11 to extend broadband services into unserved and underserved areas.¹³³ Frontier’s assertion, then,
12 is merely a continuation of the status quo, instead of any meaningful progress. Whether the
13 Commission approves the Transaction or not, the companies or company should and (most
14 likely) will continue to utilize these support mechanisms. As such, the Joint Applicants’
15 proposition fails to demonstrate *how the proposed Transaction* will improve broadband service
16 quality and reliability in California.

¹²⁹ Abernathy Testimony at 24-26. May 11, 2015.

¹³⁰ Verizon has made no commitment to accept the CAF II funding, as indicated by its statement at recent PPHs and Workshops. (See, e.g., Garberville Workshop, July 6, 2015, TR 21-23; Orleans PPH, RT at 228-230.) In order to clarify Verizon’s statements from the workshops and PPHs, on July 15, 2015, counsel for ORA wrote an email to Verizon’s counsel stating: “It is my understanding that there is no agreement between Verizon and Frontier that Verizon will accept CAF money by August 27, 2015, and that Verizon is under no obligation to accept such funding. Is this correct? I am trying to better understand where we are at; testimony is due in less than two weeks.” In response to ORA’s email, Verizon’s counsel wrote in an email dated July 20, 2015: “We are continuing to work cooperatively with the FCC and Frontier on the CAF II funding, and we fully expect to resolve the issue by the FCC’s August 27 deadline.”

¹³¹ Application at 18.

¹³² D.12-02-015. See, Appendix 1. *Broadband Infrastructure Grant Account – Revised to Application Requirements and Guidelines* at 2.

¹³³ See, e.g., CPUC Resolutions T-17238, T-17350, T-17341 and T-17224.

1 **3. Frontier’s Capital Investments**

2 Apart from State and Federal support, the Joint Applicants also offer vague promises of
3 continued investment in existing broadband infrastructure and services. These promises do not
4 include any meaningful level of detail. For instance, the Joint Applicants have not informed the
5 Commission of when or where these investments will occur, nor have they quantified necessary
6 levels of investments. To date, the Joint Applicants have only attempted to address the future by
7 looking backwards:

8 Frontier’s consistent growth in broadband customers, enhanced
9 speeds of available data services, and near ubiquitous broadband
10 coverage... are compelling indications that the Frontier does not
11 simply “maintain” but is ‘improving the quality of service to
12 ratepayers.’¹³⁴

13 The Joint Applicants have made a decent showing in communicating Frontier’s past
14 accomplishments, many of which are commendable.¹³⁵ However, the past is not the issue at
15 hand. If the Commission is to accept Frontier’s previous undertaking as evidence of what is to
16 come, it should also consider the multitude of well documented problems that customer’s faced
17 as a result of Frontier’s previous acquisitions in other states.¹³⁶ As such, the Commission should
18 impose various conditions to mitigate the Joint Applicants’ lack of concrete and detailed plans to
19 improve the existing broadband infrastructure and services in California.

20

¹³⁴ Abernathy Testimony at 40. May 11, 2015.

¹³⁵ Abernathy Testimony at 15. May 11, 2015.

¹³⁶Reiss, Max. *Frontier Executive Apologizes Over Messy Transition*. NBC Connecticut (NBCUniversal Media, LLC). West Hartford, CT. November 10, 2014. *See* <http://www.nbcconnecticut.com/news/local/Frontier-Executive-Apologizes-Over-Messy-Transition-282202491.html>

1 **V. CONCLUSION AND RECOMMENDATIONS**

2 The Joint Applicants currently offer retail broadband services that are lacking in regards
3 to availability and certain aspects of overall quality and reliability. Both Verizon and Frontier
4 need to improve their broadband services in California. Moreover, the proposed Transaction, as
5 currently structured, might actually degrade broadband service quality in California. The
6 proposed Transaction involves a large number of customers, communications networks and
7 broadband facilities. A transaction of this magnitude has the potential to negatively affect service
8 quality and customer satisfaction.¹³⁷

9 Therefore, the Commission should not approve the proposed Transaction unless it adopts
10 conditions requiring Frontier to meet specific targets for improving broadband service quality,
11 reliability and availability. Also, the Commission should not approve the transaction unless it
12 imposes measures that include independent and vigilant monitoring and measurement of
13 broadband deployment, service quality, reliability and customer satisfaction.

14 **A. STRATEGIC PLAN**

15 In the Applications, the Joint Applicants state,

16 “[a]lthough Frontier has not yet formulated a detailed plan for
17 broadband enhancements in the Verizon California service areas
18 after the Transaction is completed, Frontier expects to invest in
19 enhancing broadband speeds and service in the acquired
20 territories.”¹³⁸

21 Before the Commission approves the Transaction, it should require Frontier to submit a
22 multi-year Strategic Plan no later than October 31, 2015. The Strategic Plan should focus on
23 improving broadband service quality, reliability and availability throughout California. The
24 Strategic Plan should address broadband service outages and instances of service degradation. At
25 a minimum, Frontier should assess and report existing service issues throughout the state, and
26 propose strategies to rectify those issues.

¹³⁷ American Customer Satisfaction Index. ACSI Telecommunications and Information Report 2014. ACSI, LLC. May 20, 2014. See, *Key ACSI Findings* available at <http://www.theacsi.org/about-acsi/key-acsi-findings>

¹³⁸ Application at 17.

1 The Strategic Plan should include an assessment of network facilities, infrastructure and
2 plant within the following counties: Los Angeles County, San Bernardino County and Riverside
3 County. Within this assessment, Frontier should identify the total and remaining expected useful
4 life of every asset critical to providing safe and reliable broadband services. Additionally, the
5 Strategic Plan should also include, but not be limited to, the following components:

- 6 a) Goals: General goals articulating desired outcomes.
- 7 b) Objectives: For each goal, identify specific objectives that meet the S.M.A.R.T criteria
8 (Specific, Measurable, Achievable, Realistic and Time-bound).

9 Examples of goals and objectives can be found in Dr. Ayat Osman’s Testimony at the Executive
10 Summary, Subsection 3-1.

11 **B. REPORTING OF DATA AND METRICS**

12 If the Commission approves the Transaction, it should vigorously monitor California’s
13 access to high-quality, reliable broadband services by requiring Frontier to submit relevant data
14 and performance metrics on an annual basis to the CPUC and ORA. The Commission should
15 require Frontier to submit this data every year, for five years, on the anniversary of the close of
16 the Transaction. Specifically, the Commission should require Frontier to:

- 17 a) Provide data regarding customer-initiated complaints on Frontier’s broadband service in
18 California for the previous 365 days. This data should include:
 - 19 i. Type of complaint: billing (identify type of billing complaints, such as
20 unauthorized charges, disconnection, rate protest), delayed orders/missed
21 appointments, customer service, refusal to service, availability/service outages,
22 equipment, interference, privacy, speed.
 - 23 ii. Type of customer: residential, small or large sized business.
 - 24 iii. Date of complaint
 - 25 iv. Resolution time for a complaint
 - 26 v. Customer Location: County, City and Census Block
 - 27 vi. Frequency of complaint by the same customer
- 28 b) Provide data on broadband service outages that occurred in California during the previous
29 365 days. For each service outage, this data should include:

- 1 i. Number of customers affected
- 2 ii. Type of customers affected: residential, small business, or large business
- 3 iii. Incident Date
- 4 iv. Incident Time
- 5 v. Duration of outage in total minutes
- 6 vi. Outage restoration time
- 7 vii. Location of outage: County, City and Census Block(s)
- 8 viii. Equipment failed
- 9 ix. Network involved
- 10 x. Description of the Cause
- 11 xi. Description of the Root cause
- 12 xii. Description of the incident
- 13 xiii. Methods used to restore the outage
- 14 xiv. Steps taken to prevent the outage from re-occurring
- 15 c) Provide the service installation intervals (per month) for orders for new broadband
- 16 service installations received during the previous 12 months. This data should be
- 17 inclusive of all wireline, fiber-optic, and fixed wireless broadband services. Service
- 18 installation intervals should be expressed in business days, between the date the service
- 19 order was placed and the date the service becomes operational. This data should exclude
- 20 all orders having customer requested appointments later than the provider's commitment
- 21 dates.
- 22 d) Provide the total number of broadband service orders received and the number of those
- 23 orders completed, per month, during the previous 12 months. This data should be
- 24 inclusive of all wireline, fiber-optic, and fixed wireless broadband services.

25 **C. PRACTICES AND PROCEDURES**

26 If the Commission approves the Transaction, it should ensure California has access to

27 high-quality, reliable broadband services by requiring Frontier to adopted certain practices and

28 procedures. Specifically, the Commission should require Frontier to:

- 29 a) Augment the metrics it uses to assess and measure broadband service quality in
- 30 California. Frontier should, at a minimum, track the 25 different metrics that Verizon

1 currently uses to assess the quality of its broadband services. Frontier should track
2 these metrics for DSL services apart from FTTH services. See Attachment L for a list
3 and description of these metrics. The Commission should require Frontier to submit
4 these metrics (applicable to the previous 365 days) every year, for five years, on the
5 anniversary of the close of the Transaction. The Commission should require Frontier
6 to submit these metrics to both the Commission and ORA.

7 b) Continue to maintain a ratio of no less than one employee for every 255 broadband
8 lines in service.

9 c) Adopt Verizon's practice of hiring independent contractors to conduct random
10 inspections and assess technicians' work performance.

11 **D. CUSTOMER SURVEY**

12 If the Commission approves the Transaction, it should monitor California's access to
13 high-quality, reliable broadband services by requiring Frontier to pay for a multilingual survey of
14 its broadband customers in order to assess levels of customer satisfaction. The survey should
15 cover a 36 month period immediately following the close of the transaction. Frontier should hire
16 an independent third-party company (consultant) to conduct the survey. The independent survey
17 consultant should be directed and managed by ORA.

18 The survey should include, but not be limited to, issues pertaining to broadband service
19 orders, repairs and billing. The survey should assess customer satisfaction by regional area
20 across Frontier's service territory, and by customer demographics (i.e. non-English speakers,
21 income levels, etc.). The independent survey consultant (with ORA) should issue quarterly
22 reports (for the duration of the 36 month survey) to Frontier and the Commission summarizing
23 the results of the survey. These reports should contain a sample and analysis of customer
24 complaints. These reports can provide Frontier and the Commission with the ability to detect
25 trends and identify and address problems. These reports should be made available to consumer
26 advocacy groups that agree to a non-disclosure agreement.

1 **E. BROADBAND DEPOYMENT AND NETWORK**
2 **UPGRADES**

3 The Commission should require Frontier to make broadband services available at speeds
4 of no less than the FCC’s definition of minimum broadband speeds (which is currently 25 Mbps
5 download and 3 Mbps upload) to 98% of households in its new service territory by no later than
6 December 31, 2020. For additional details on this recommendation, please refer to Dr. Lee
7 Selwyn’s Testimony at Chapter VIII, condition number six.

8

ATTACHMENTS

ATTACHMENT A

Statement of Qualifications and Experience

My name is Adam Clark. I am currently employed by the CPUC as a Public Utility Regulatory Analyst V assigned to the Communications and Water Policy Branch of the ORA. I received a Bachelor of Arts Degree in Economics and Sociology from the University of California at Santa Barbara in 2006.

I joined the CPUC in June of 2007 as a Regulatory Analyst in the Communications Division, where I worked on various issues, including inter-carrier compensation, public purpose programs, and broadband deployment. I have performed extensive research on California's telecommunications and broadband markets. I have also aided the CPUC in review of previously proposed mergers and acquisitions. I joined ORA in October of 2014.

ATTACHMENT B

Figure 36

Verizon Provisioning Appointment Window Met

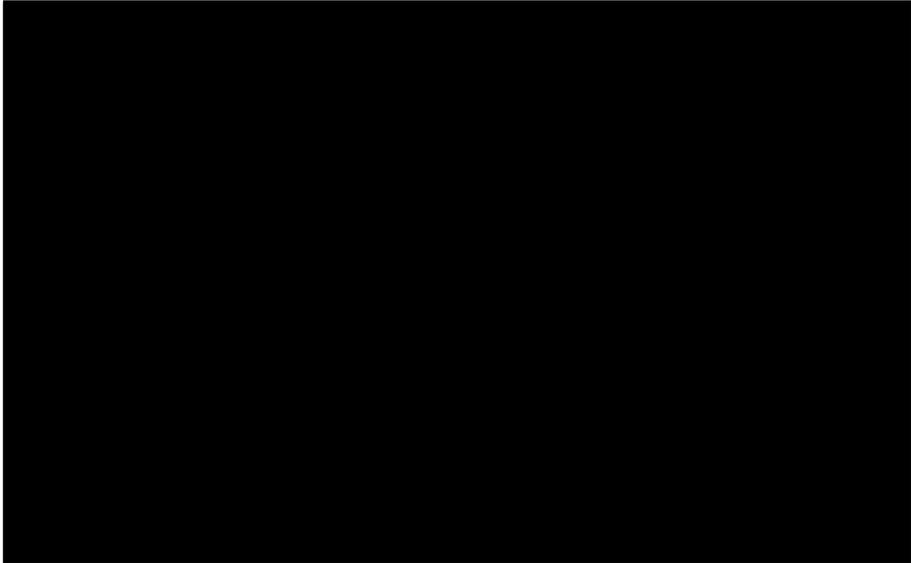


Figure 37

Verizon Repair Appointment Window Met

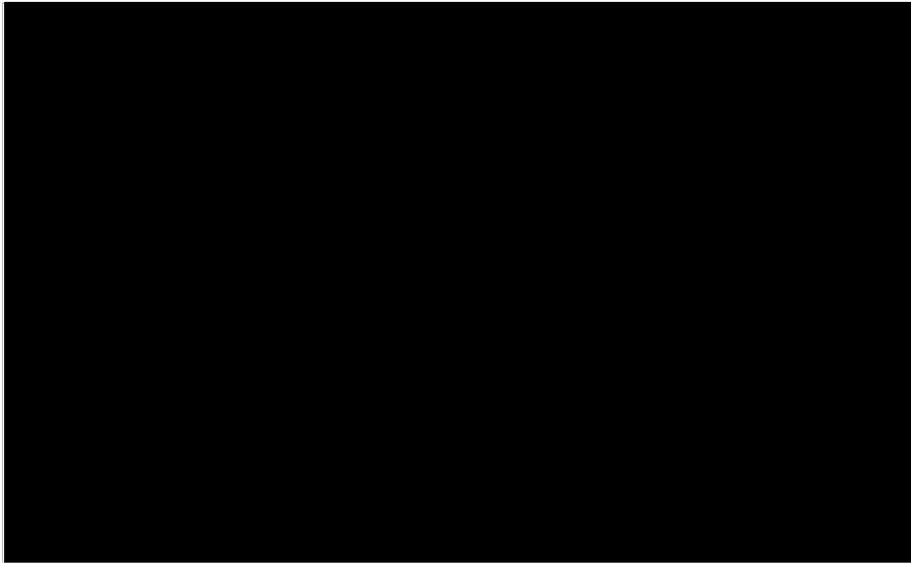


Figure 38

Verizon – Provision Date Met



Figure 39

Verizon – Average Repair Duration (Dispatched Technician)

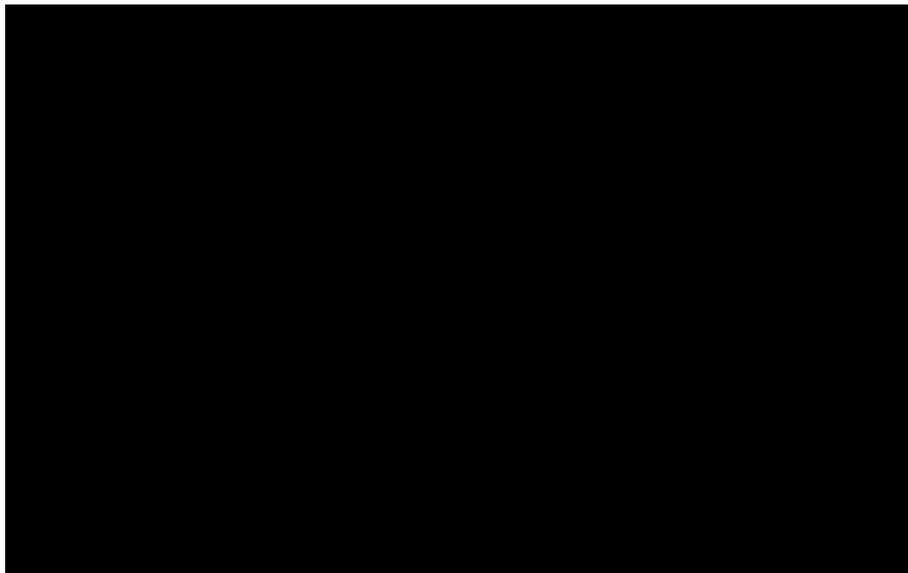


Figure 40

Verizon – Repair Duration (Dispatched Technician)

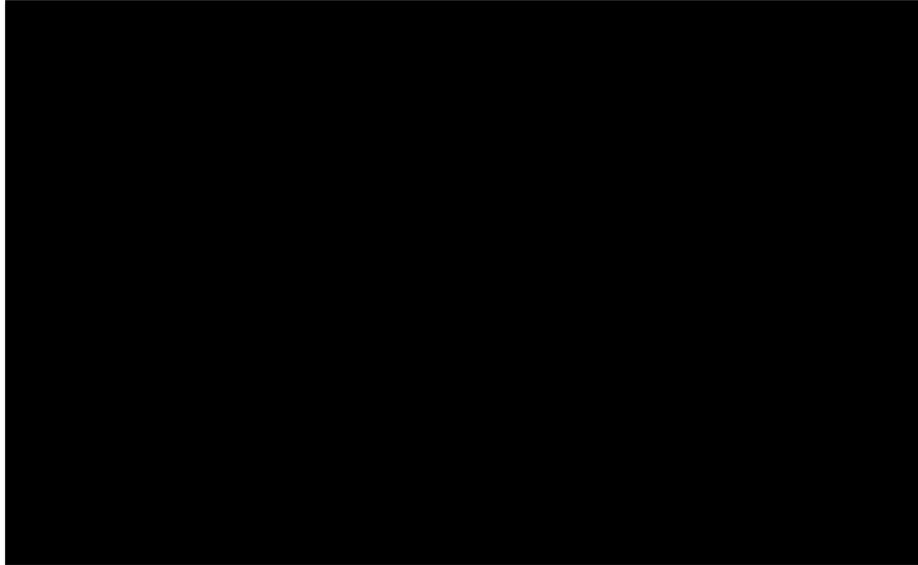
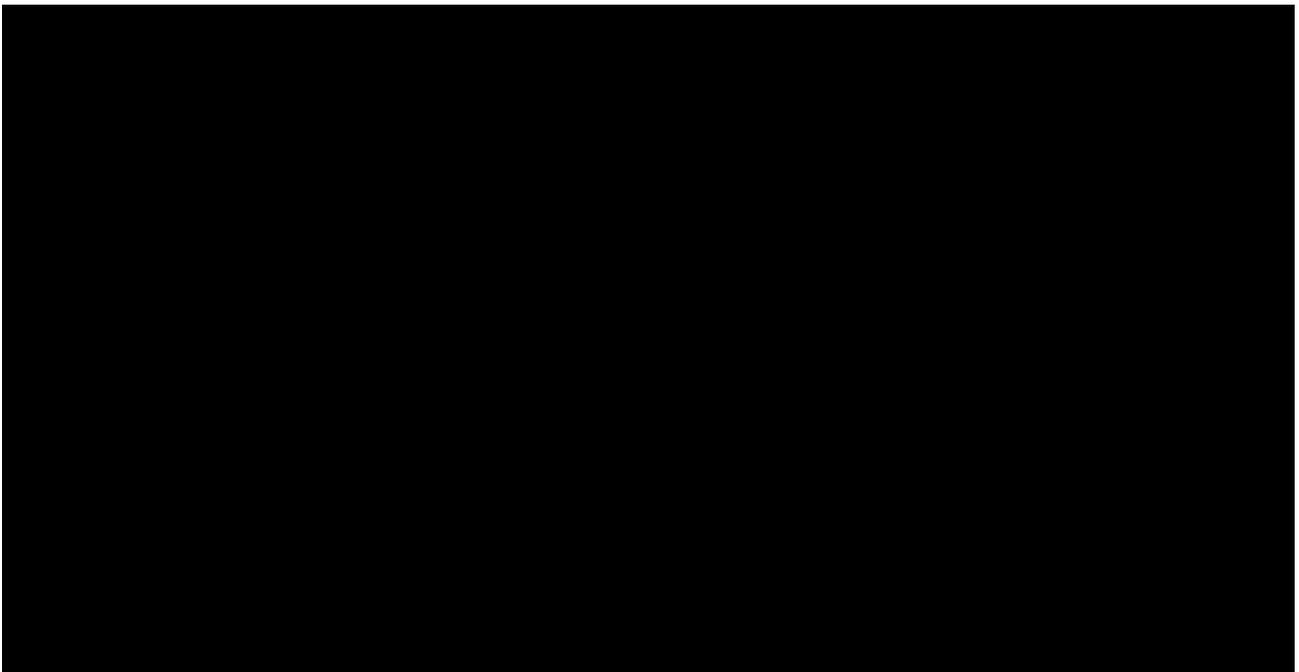


Figure 41

Verizon – Repeat Trouble Tickets



ATTACHMENT C

Figure 42

Frontier – Broadband Outages Customers Affected

(March 6, 2012 to December 31, 2014)

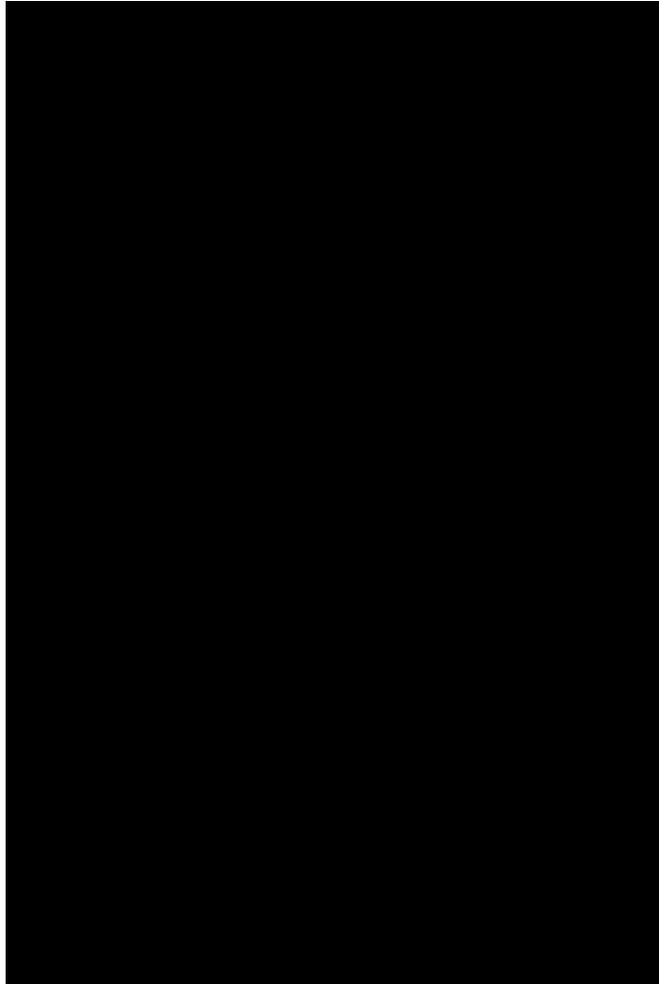


Figure 43

Frontier – Broadband Outages Duration

(March 6, 2012 to December 31, 2014)



ATTACHMENT D

Below are the details of broadband service outages that occurred on Frontier's network between March 6, 2012 and December 31, 2014 in the three locations ([REDACTED] [REDACTED]) with the highest total of affected customer-minutes.

Figure 44

Frontier – Broadband Outages in [REDACTED]

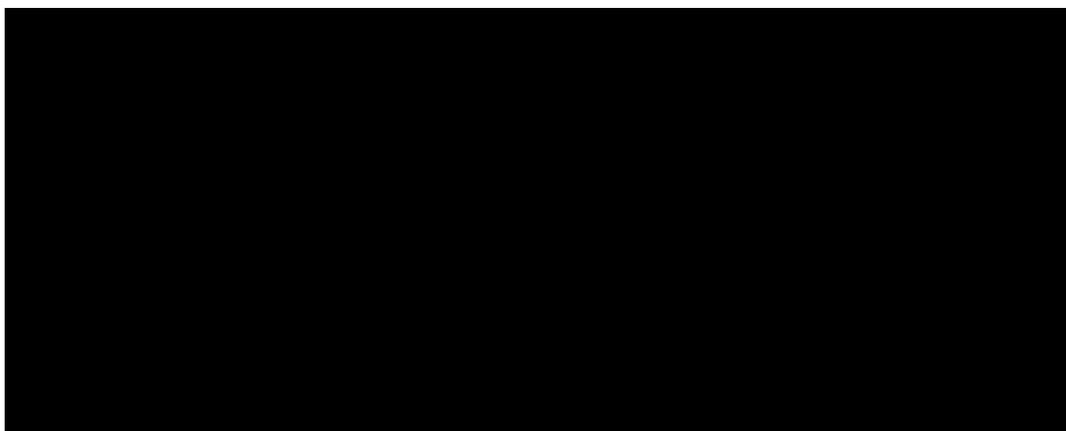


Figure 45

Frontier – Broadband Outages in [REDACTED]

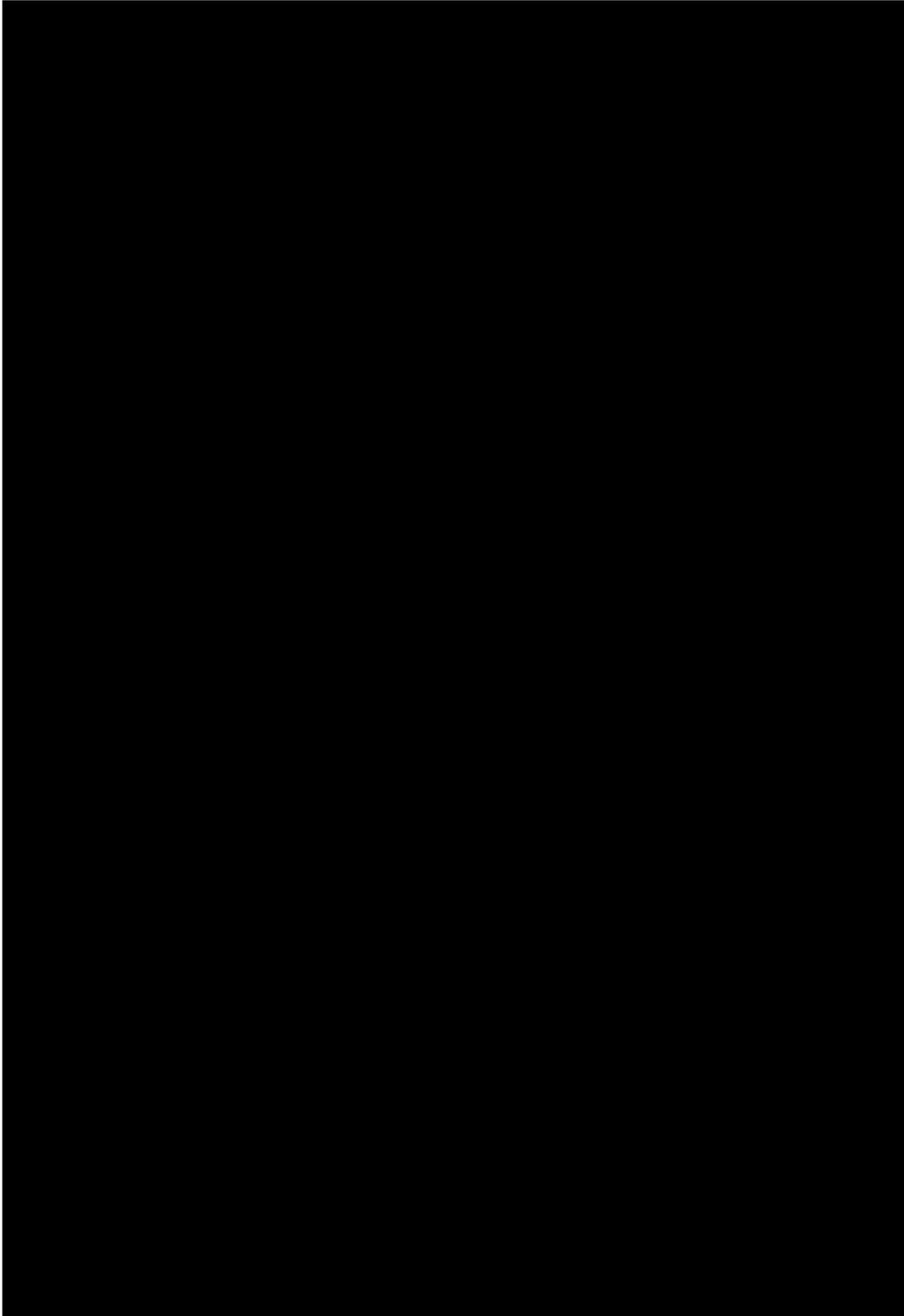


Figure 46

Frontier – Broadband Outages in [REDACTED]



ATTACHMENT E

Figure 47

Verizon – Broadband Outages Customers Affected (2013 and 2014)



Figure 48

Verizon – Broadband Outages Duration (2013 and 2014)



ATTACHMENT F

Figure 49

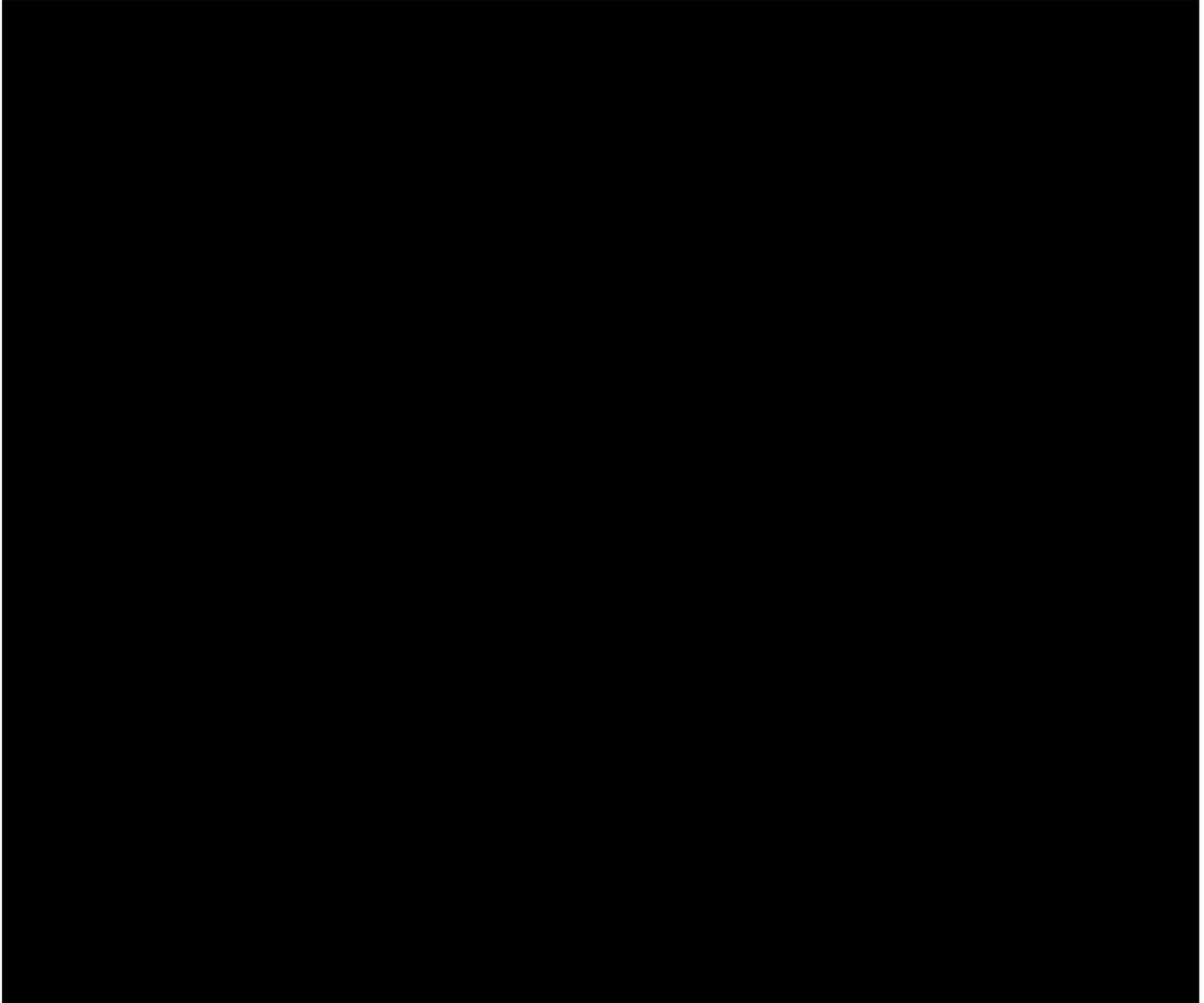
Verizon – Broadband Outages by County (2013 and 2014)



ATTACHMENT G

Figure 50

Verizon – Broadband Outage Customer-Minutes by County (2013 and 2014)

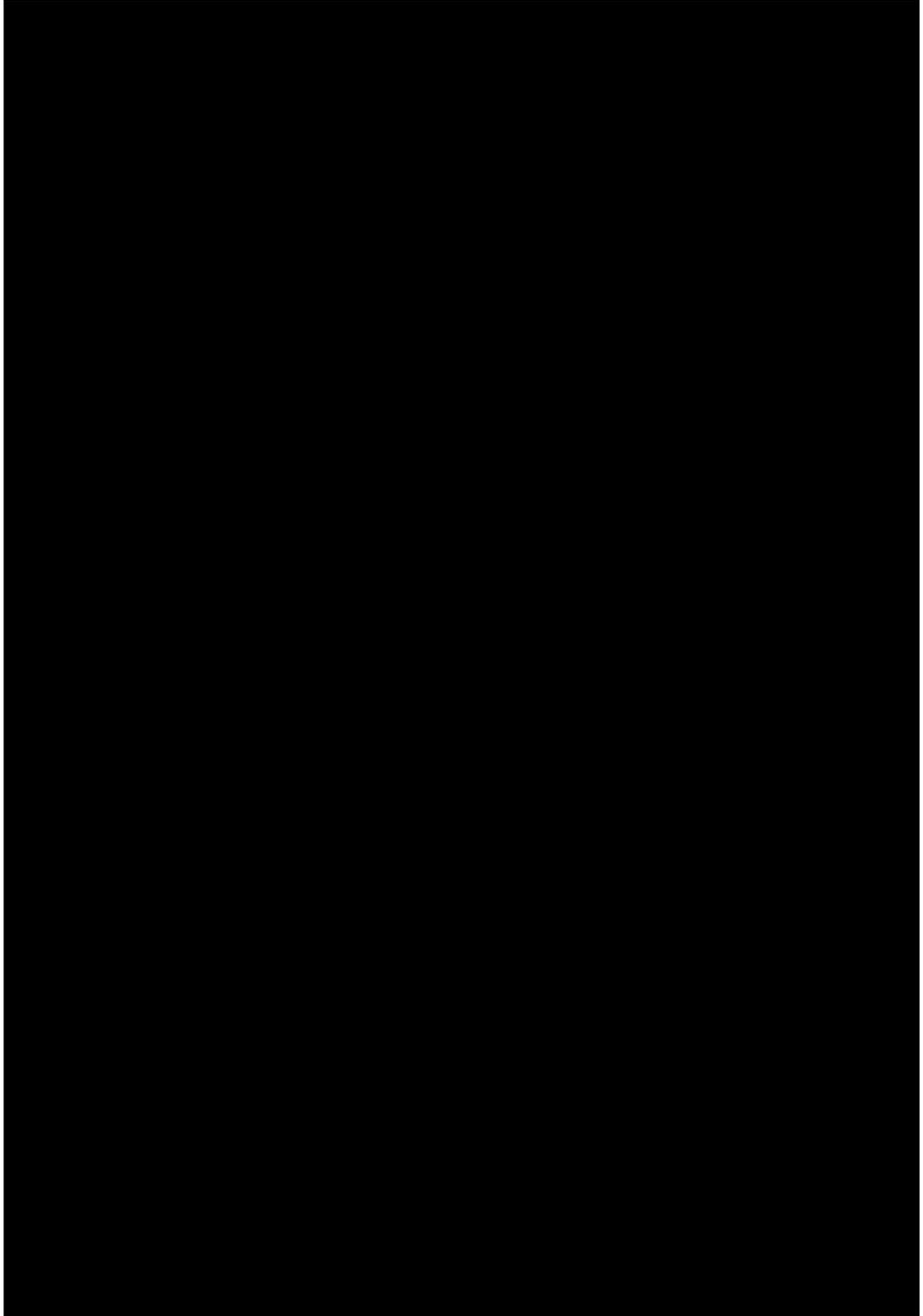


ATTACHMENT H

Figure 51

Verizon – Broadband Outages

Top 10 Locations by Customer-Minutes (2013 and 2014)



ATTACHMENT I

Figure 52

Frontier – Broadband Complaints Top 20 Cities



ATTACHMENT J

Figure 53

Verizon – Broadband Complaints Top 20 Cities

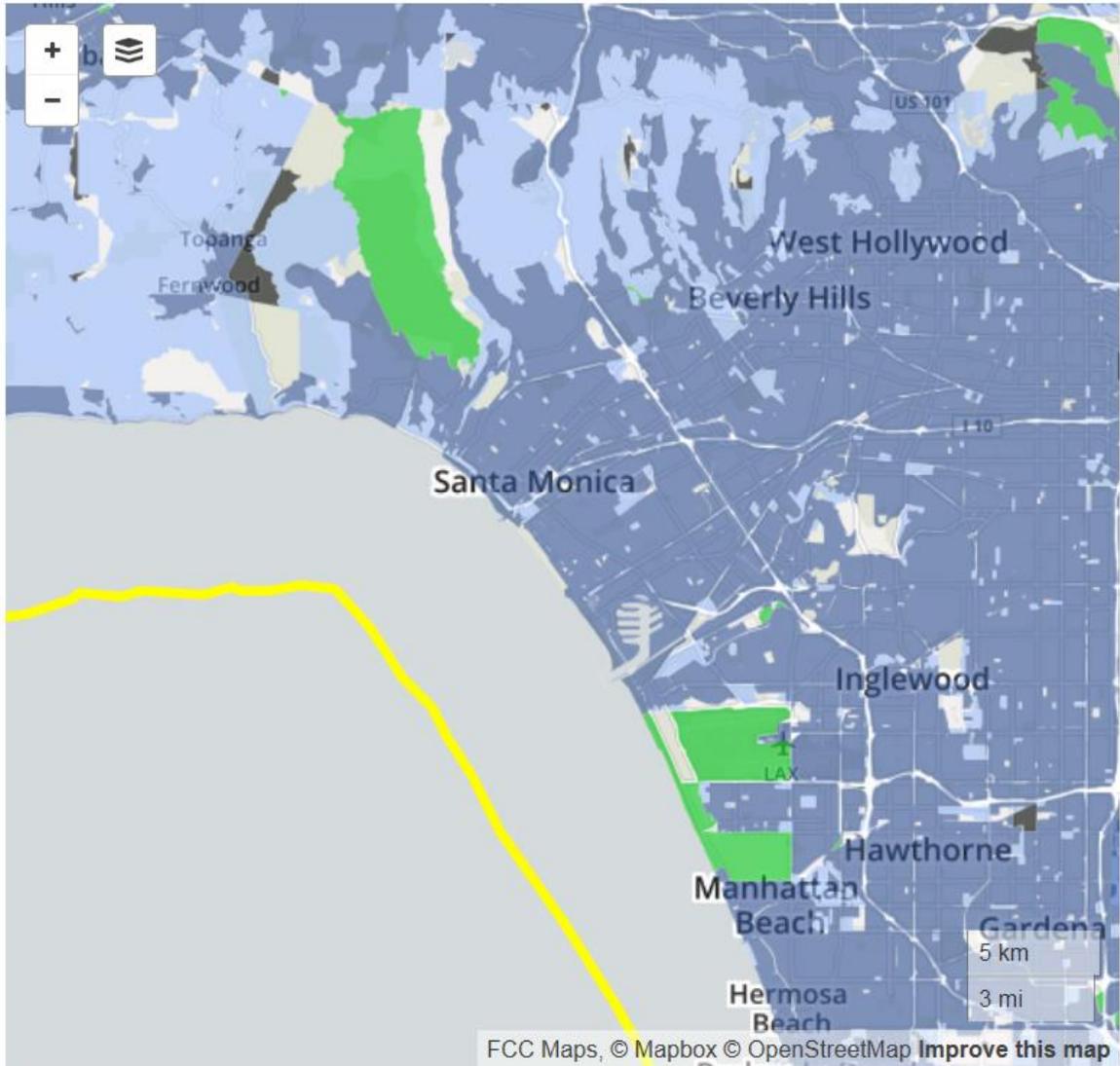


ATTACHMENT K

Attachment K contains maps depicting the CAF Phase II eligibility of several areas within the Joint Applicant's service territories. These maps illustrate the geographical limitations of CAF Phase II support.

The following maps are available at <https://www.fcc.gov/maps/fcc-connect-america-fund-phase-ii-initial-eligible-areas-map>.

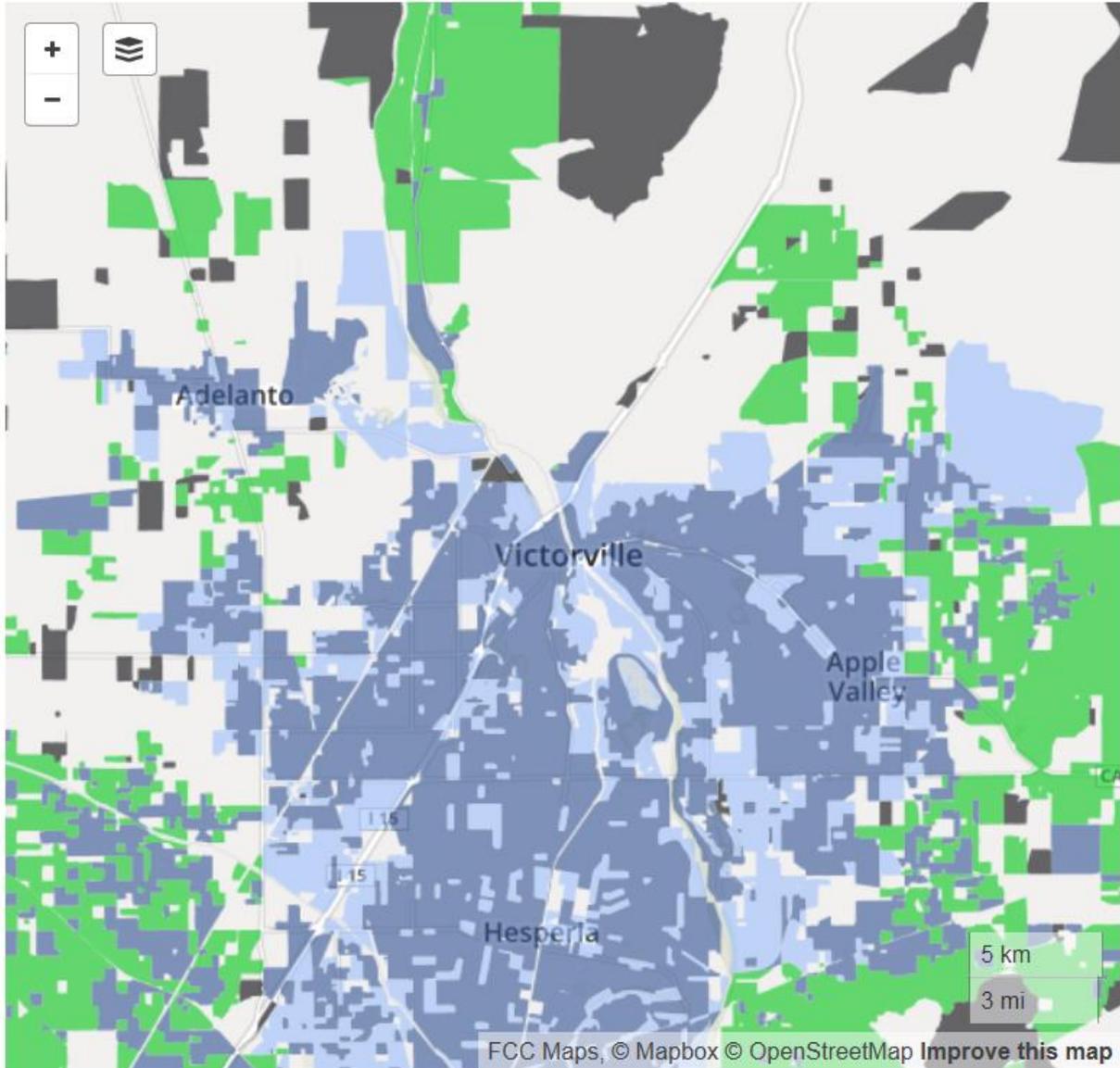
Figure 54
Santa Monica
CAF Phase II – Census Block Eligibility



Map Legend

- Eligible
- Ineligible - Exceeds Threshold
- Ineligible - Below Benchmark
- Ineligible - Other
- Elected Frozen

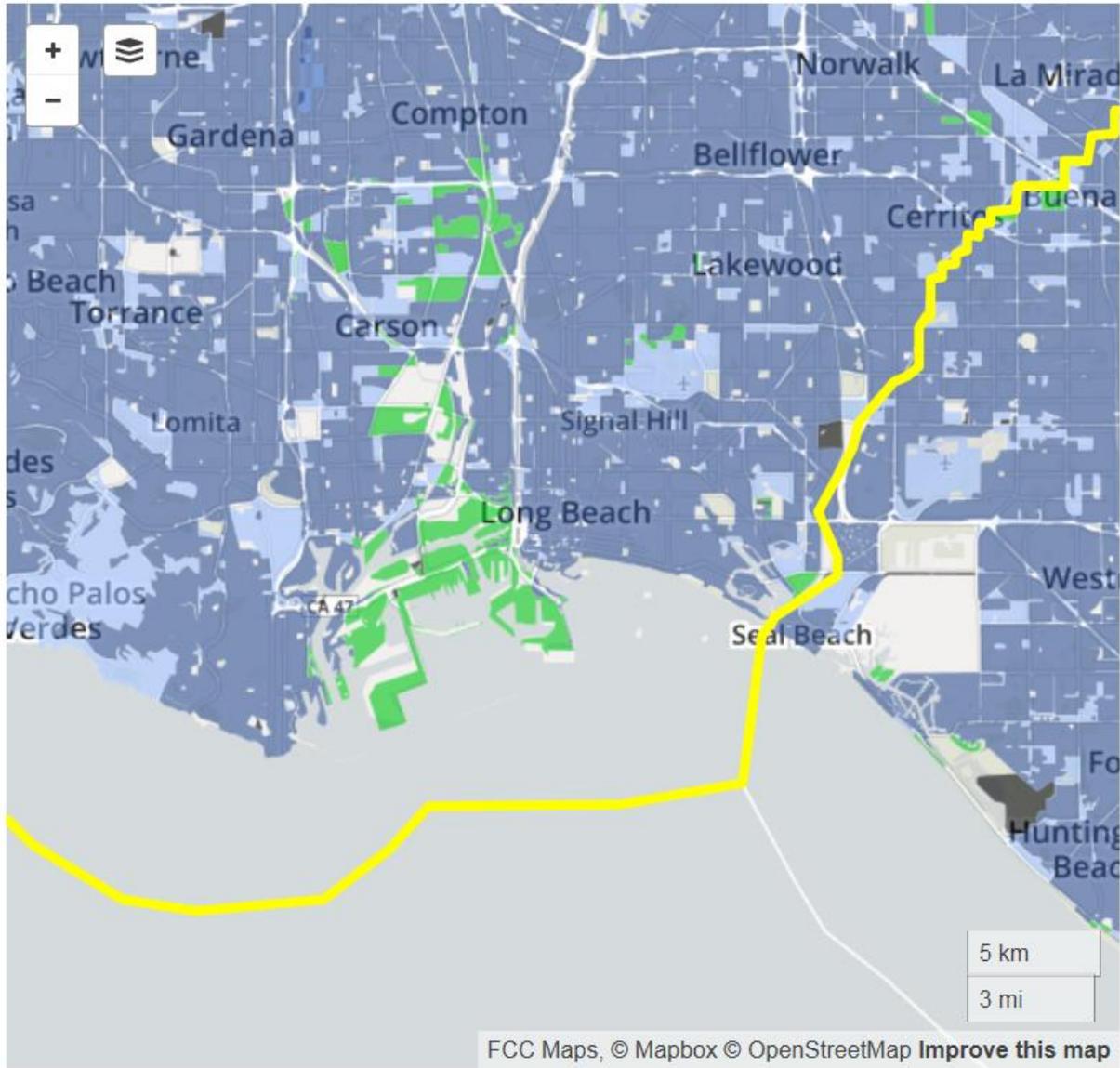
Figure 55
Victorville
CAF Phase II – Census Block Eligibility



☰ Map Legend

- Eligible
- Ineligible - Exceeds Threshold
- Ineligible - Below Benchmark
- Ineligible - Other
- Elected Frozen

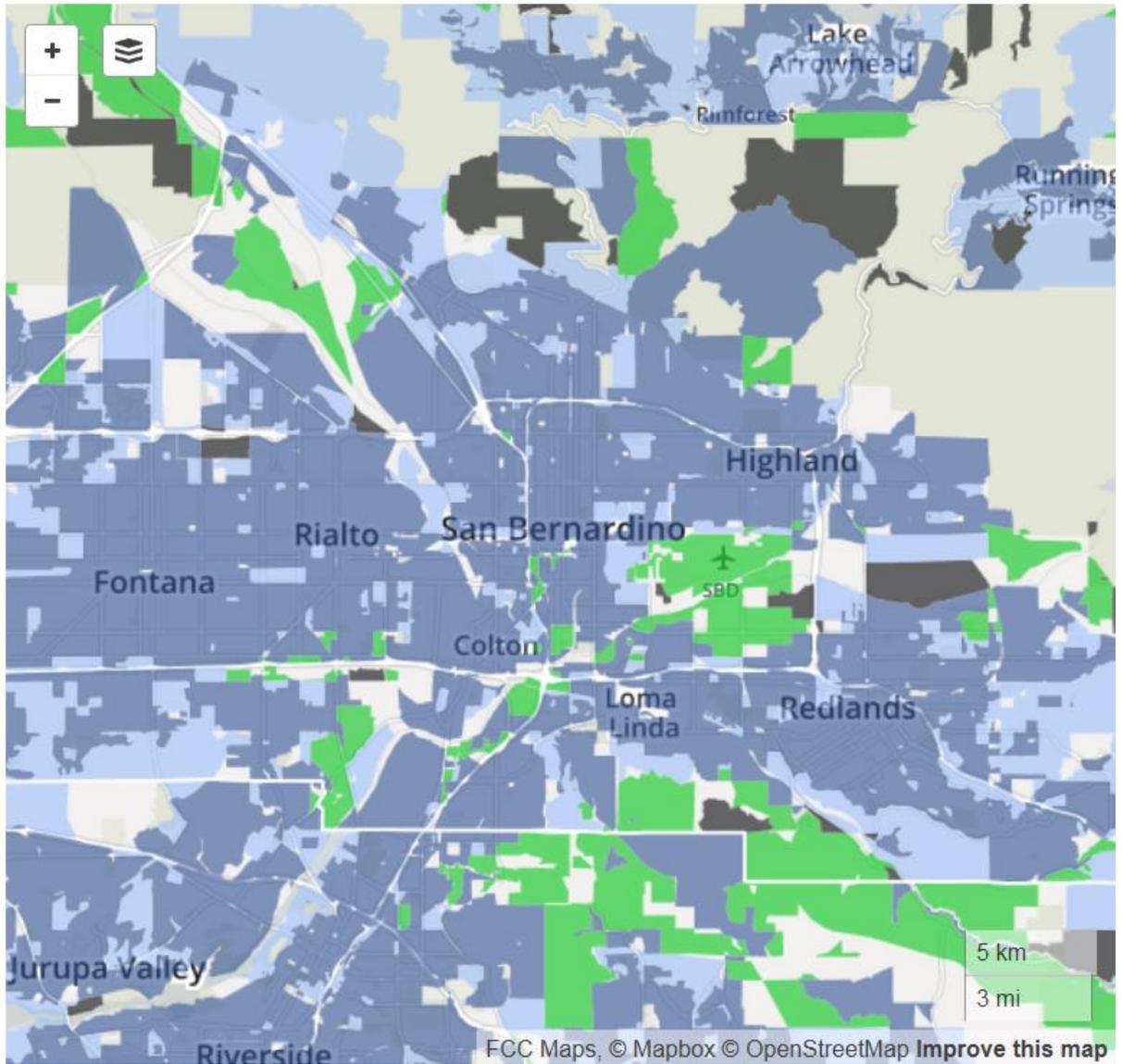
Figure 56
Long Beach
CAF Phase II – Census Block Eligibility



Map Legend

- Eligible
- Ineligible - Exceeds Threshold
- Ineligible - Below Benchmark
- Ineligible - Other
- Elected Frozen

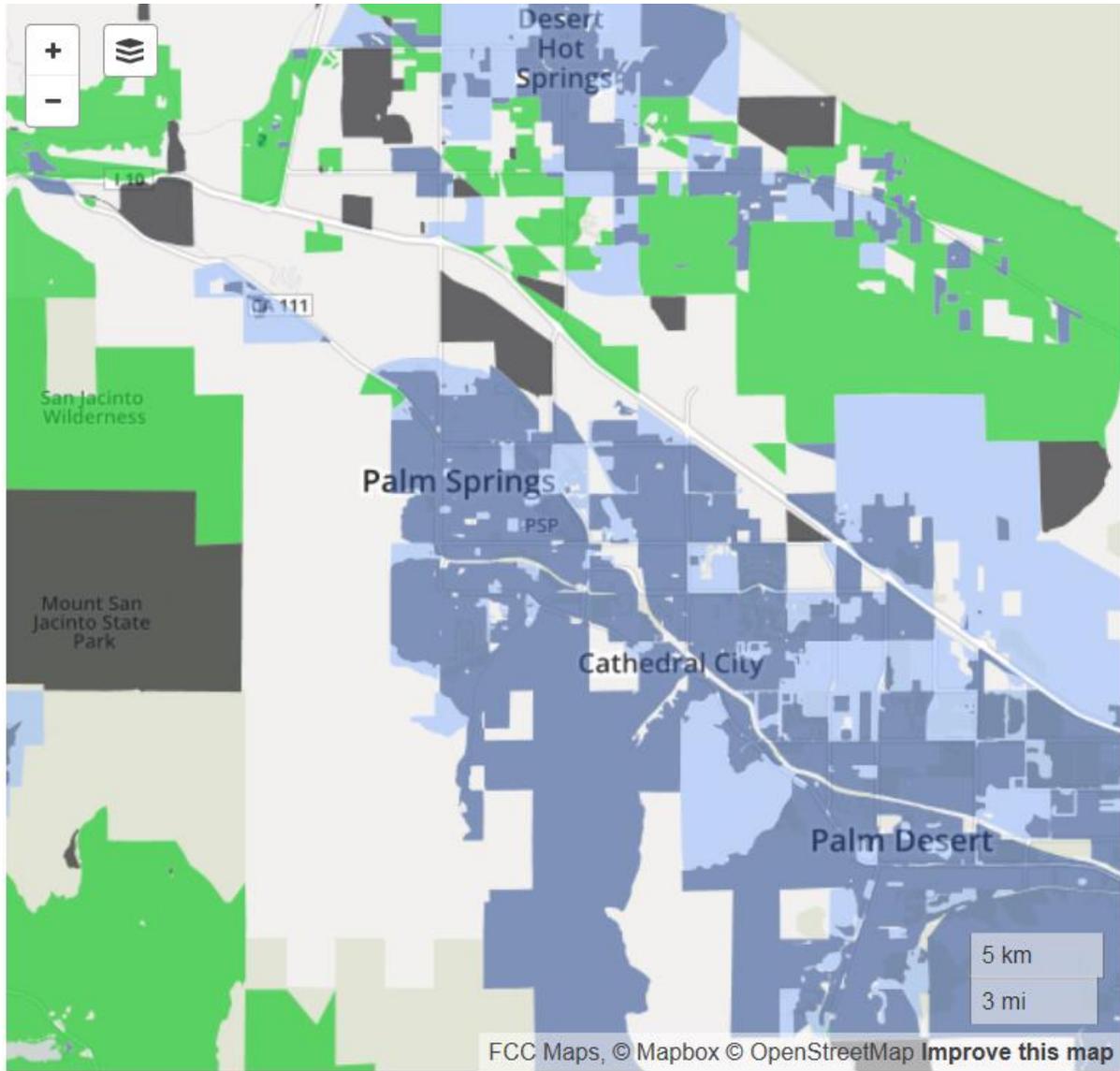
Figure 57
San Bernardino
CAF Phase II – Census Block Eligibility



☰ Map Legend

- Eligible
- Ineligible - Exceeds Threshold
- Ineligible - Below Benchmark
- Ineligible - Other
- Elected Frozen

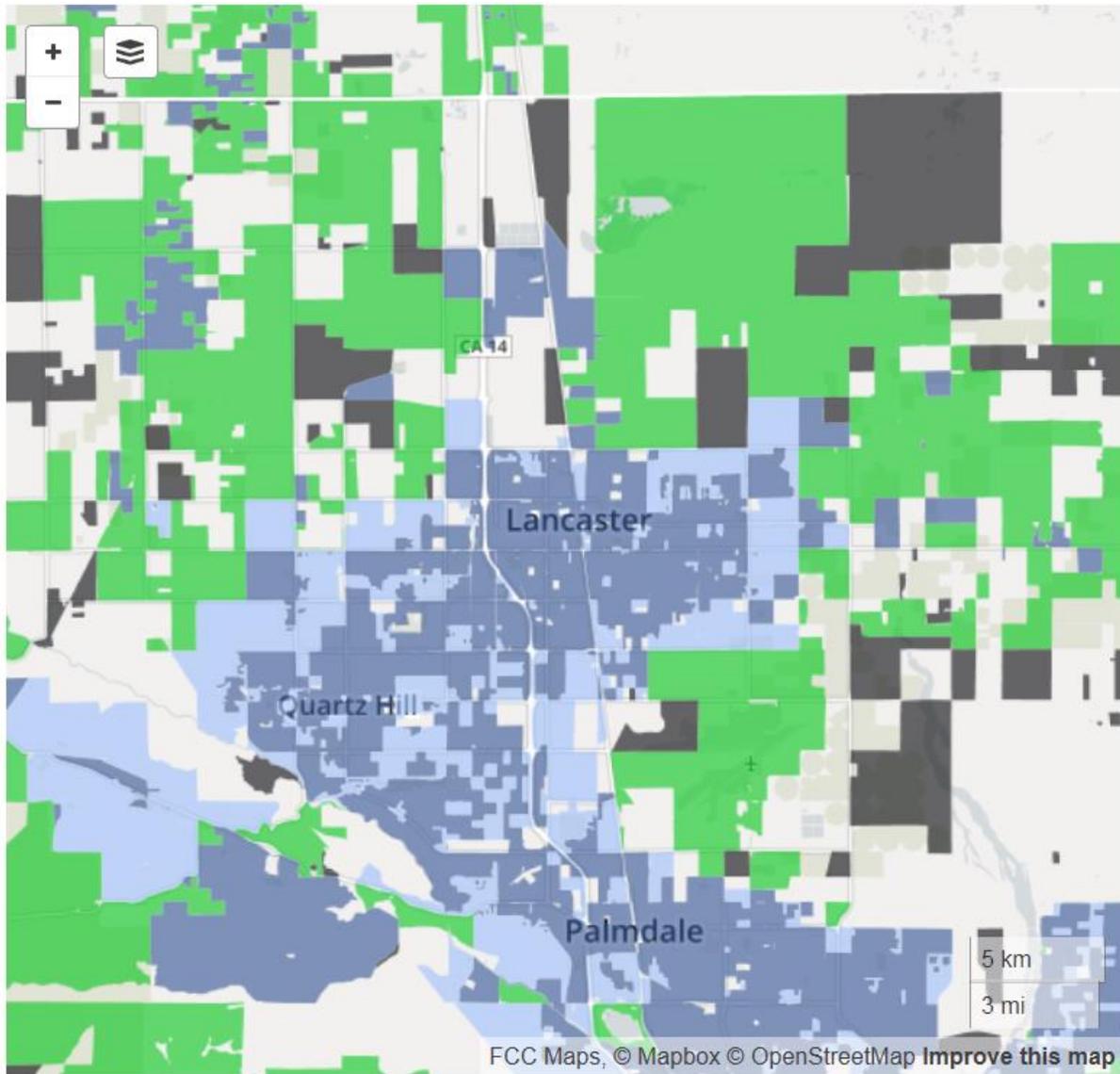
Figure 58
Palm Springs
CAF Phase II – Census Block Eligibility



☰ Map Legend

- Eligible
- Ineligible - Exceeds Threshold
- Ineligible - Below Benchmark
- Ineligible - Other
- Elected Frozen

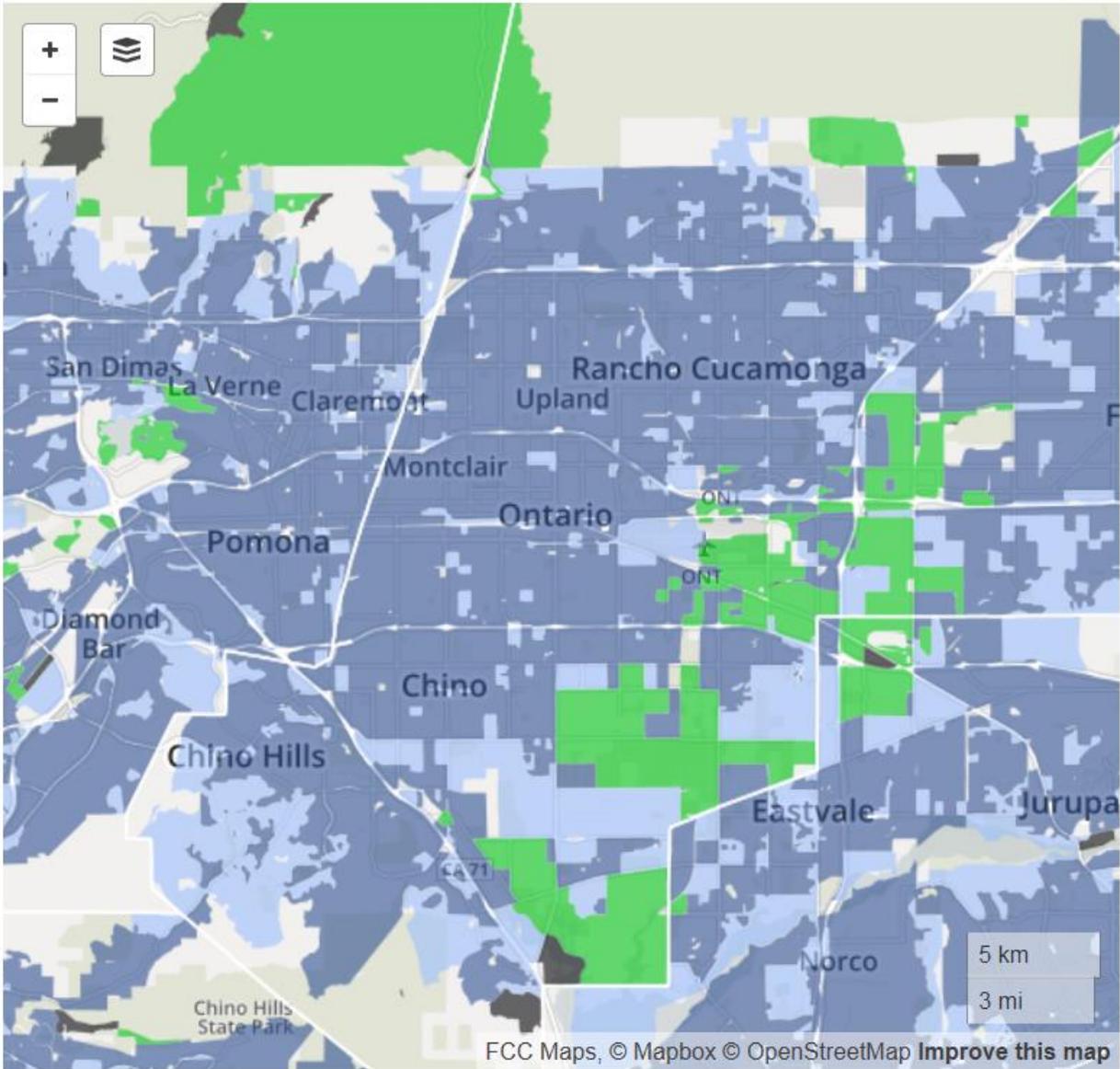
Figure 59
Lancaster
CAF Phase II – Census Block Eligibility



☰ Map Legend

- Eligible
- Ineligible - Exceeds Threshold
- Ineligible - Below Benchmark
- Ineligible - Other
- Elected Frozen

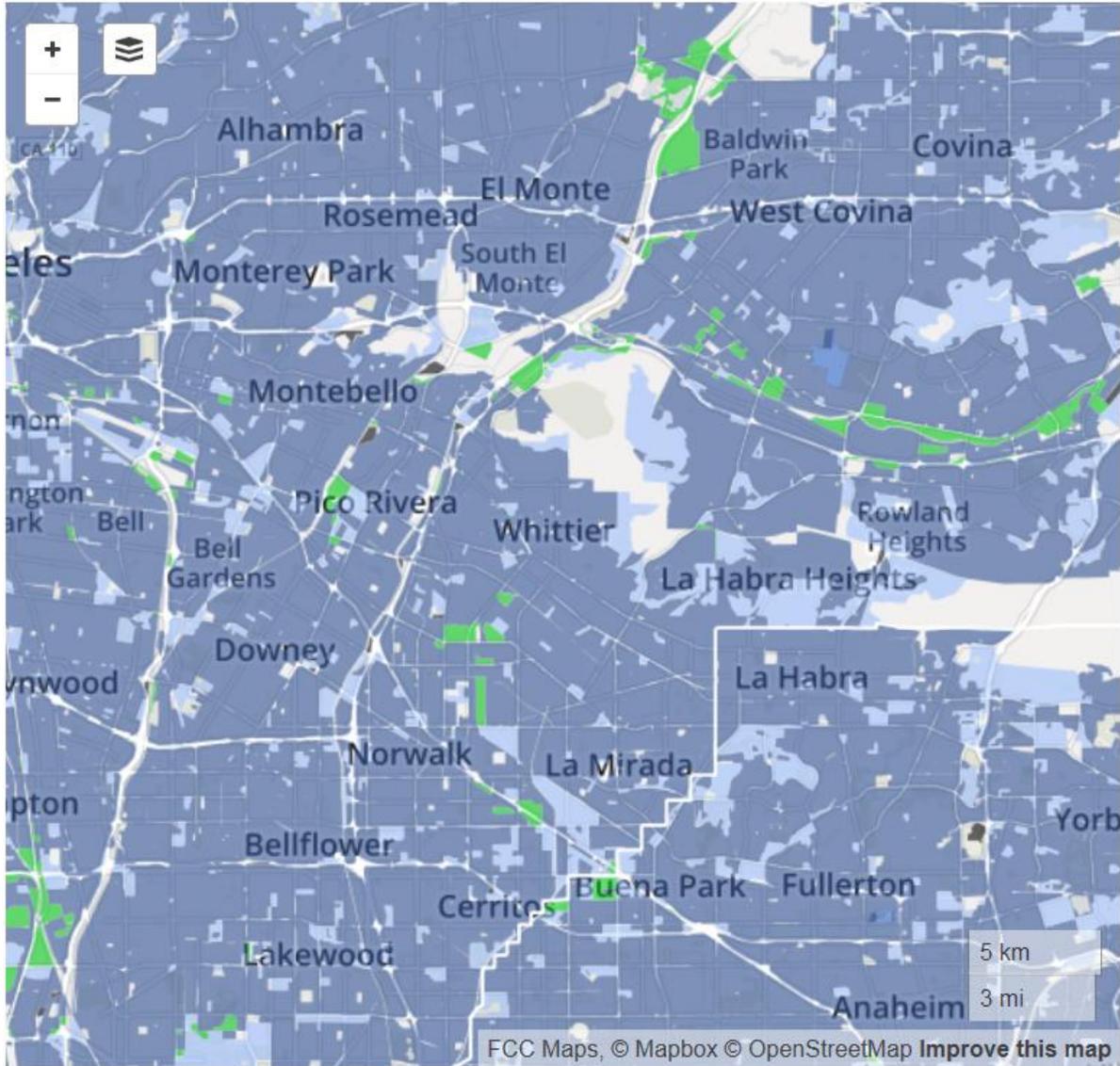
Figure 60
Ontario
CAF Phase II – Census Block Eligibility



☰ Map Legend

- Eligible
- Ineligible - Exceeds Threshold
- Ineligible - Below Benchmark
- Ineligible - Other
- Elected Frozen

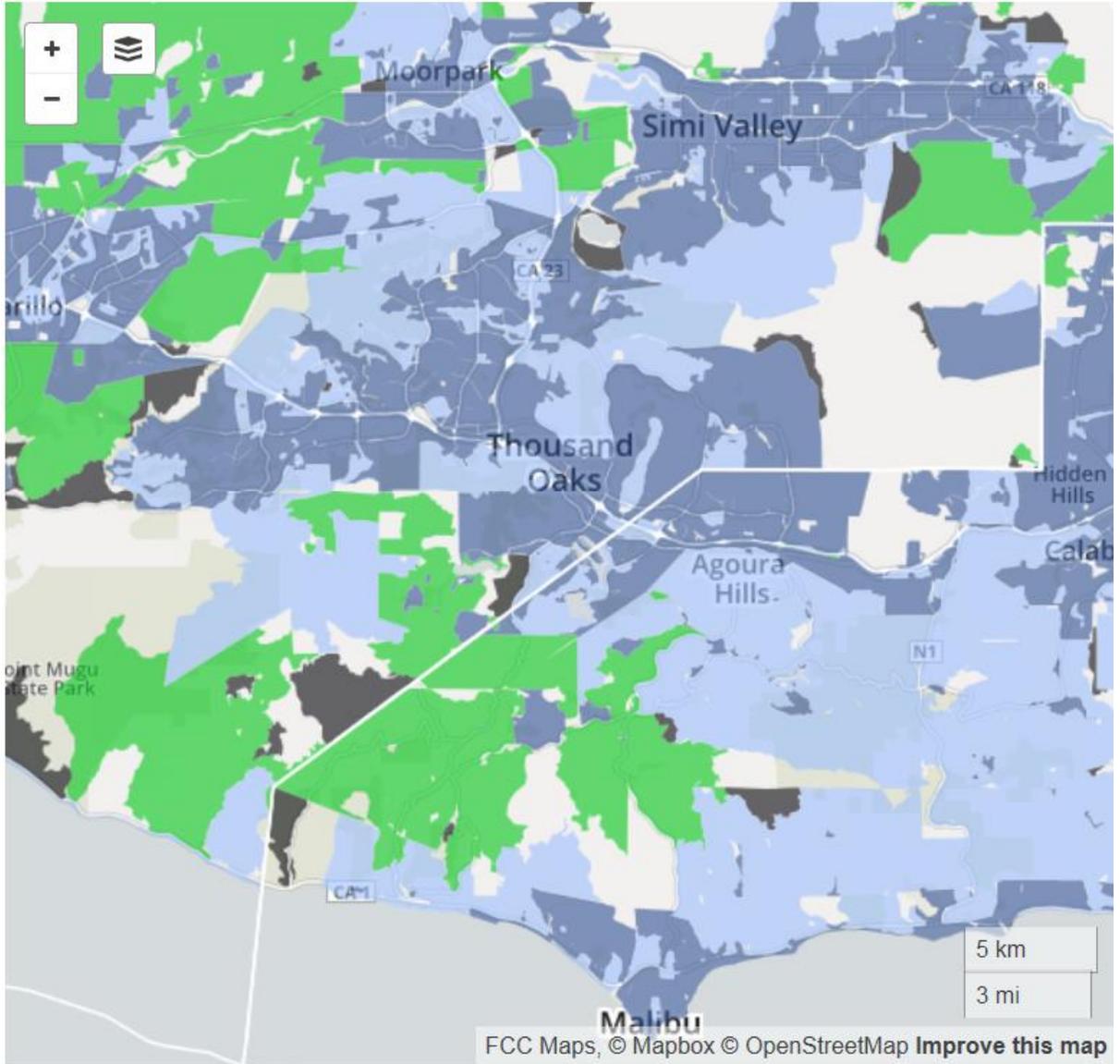
Figure 61
Whittier
CAF Phase II – Census Block Eligibility



☰ Map Legend

- Eligible
- Ineligible - Exceeds Threshold
- Ineligible - Below Benchmark
- Ineligible - Other
- Elected Frozen

Figure 62
Thousand Oaks
CAF Phase II – Census Block Eligibility



☰ Map Legend

- Eligible
- Ineligible - Exceeds Threshold
- Ineligible - Below Benchmark
- Ineligible - Other
- Elected Frozen

ATTACHMENT L

Figure 63

Verizon's Broadband Service Quality Metrics

Metric Name	Definition
[REDACTED]	[REDACTED]

[REDACTED]	[REDACTED] [REDACTED] [REDACTED]
[REDACTED]	[REDACTED] [REDACTED] [REDACTED]
[REDACTED]	[REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED]	[REDACTED] [REDACTED]
[REDACTED]	[REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED]	[REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED]	[REDACTED] [REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED]	[REDACTED] [REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED]	[REDACTED] [REDACTED] [REDACTED] [REDACTED]
[REDACTED]	[REDACTED] [REDACTED]
[REDACTED]	[REDACTED] [REDACTED] [REDACTED]

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]