

PHASE 2 REPORT:

**EXAMINATION OF THE LOCAL
TELECOMMUNICATIONS NETWORKS AND
RELATED POLICIES AND PRACTICES OF
AT&T CALIFORNIA AND FRONTIER
CALIFORNIA**

**Study conducted pursuant to the California PUC Service
Quality Rulemaking 11-12-001, Decision 13-02-023, and
Decision 15-08-041**

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ATTESTATIONS**

June 17, 2021



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PREFACE

In December 2011, the California Public Utilities Commission (CPUC) opened Rulemaking (R.) 11-12-001 to (a) review telecommunications carrier performance in meeting the GO 133 service quality standards and measures in 2010; (b) assess whether the existing GO 133 service quality standards and measures meet the goals of the Commission to adequately protect California customers and the public interest; (c) determine whether the existing GO 133 standards are relevant to the current regulatory environment and market; and (d) determine whether there is a need to establish a penalty mechanism for substandard service quality performance. The Commission's Communications Division was directed to oversee an examination of the network facilities of AT&T California and (then) Verizon California, the state's two principal local wireline telecommunications utilities, and to engage an independent consultant to perform this examination under a contract to be managed by Commission staff.

Economics and Technology, Inc. ("ETI") was selected to perform this study, and we completed our report in April 2019. In January 2020, CD issued a "Secondary RFP to obtain responses from firms qualified to conduct an examination of the telecommunications networks and related policies and practices of AT&T California and Frontier Communications California for the period from 2018 to 2019." ETI submitted a proposal in response to this Secondary RFP, and was selected by CD to undertake this additional "Phase 2" study. This report provides the results of this additional work. ETI did not, and was not required to, undertake to audit or otherwise verify the accuracy or completeness of the data that was provided to us. Various inconsistencies and gaps in the data were identified, and we used our best efforts to resolve them. Where such efforts were not successful, we noted the problems and utilized the data as best we could.

The project was conducted under the direction of Dr. Lee L. Selwyn, President of ETI, with a team consisting of ETI staff members Colin B. Weir, Vice President, and Andrew J. Kearns, Senior Economic Consultant. Our work has greatly benefitted from the extensive input and assistance that we received from the Communications Division Staff, including in particular Kim Hua, who served as Project Manager with respect to the Phase 2 project, and Louise E. Fischer, who had served as Project Manager for the Phase 1 study. We we gratefully appreciate and acknowledge the invaluable assistance they and other CD Staff provided to us. We also appreciate the cooperation that we received from both carriers in the course of this work.

Boston, Massachusetts
June 2021

NOTICE

Nearly all of the information contained in the various AT&T California and Frontier California (including former Verizon California) data files, responses to data requests, and other source material (“ILEC Data”) that has been provided to ETI in the course of this examination has been identified by the carriers and/or by the Commission as CONFIDENTIAL AND PROPRIETARY AND SUBJECT TO CPUC GENERAL ORDER 66, PUB. UTIL. CODE SECTION 583 AND D.16-08-024, REGARDLESS OF WHETHER OR NOT A DOCUMENT OR FILE HAS BEEN EXPRESSLY LABELED AS CONFIDENTIAL. Under the terms of our Agreement no. 19NS0853 including the incorporated Confidentiality of Data/Nondisclosure Agreement (Section 9. Exhibit E), all of the contents of this report are, by default, being treated as CONFIDENTIAL AND PROPRIETARY ILEC DATA whether or not expressly identified as such.

In Decision (D.) 20-12-021, the Commission determined that substantial portions of our Phase 1 Report that had tentatively been treated as confidential should be made available for public inspection. It is our understanding that the Communications Division anticipates that a public, redacted version of this report will be released in due course, once determinations have been made by CD Staff and counsel as to which portions of its contents may be made publicly available. However, for the present, THE ENTIRETY OF THIS REPORT IS TO BE TREATED AS CONFIDENTIAL AND PROPRIETARY AND SUBJECT TO CPUC GENERAL ORDER 66, PUB. UTIL. CODE SECTION 583 AND D.16-08-024.

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4F-1	Updated Individual wire center service quality data – Frontier California

1 | EXECUTIVE SUMMARY AND OVERVIEW OF THIS REPORT

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Introduction

In December 2011, the California Public Utilities Commission (“CPUC” or “Commission”) opened Rulemaking (R.)11-12-001 to (a) review telecommunications carrier performance in meeting the General Order (GO) 133-C service quality standards and measures in 2010; (b) assess whether the existing GO 133-C service quality standards and measures meet the goals of the Commission to adequately protect California customers and the public interest; (c) determine whether the existing GO133-C standards are relevant to the current regulatory environment and market; and (d) determine whether there is a need to establish a penalty mechanism for substandard service quality performance.

Economics and Technology, Inc. (“ETI”) was selected by the CPUC Communications Division (“CD”) to undertake an examination of the facilities of the two largest Incumbent Local Exchange Carriers (“ILECs”) in California – AT&T California (“AT&T”) and Frontier California (“Frontier”) – as directed by the Administrative Law Judge (“ALJ”). In responding to CD’s Request for Proposals from consultants to undertake this examination, ETI had outlined a data-driven approach that would rely upon the extensive amount of data regularly being submitted by the two carriers as well as on various other public sources, along with the results of CD Staff’s on-site inspections and carrier responses to data requests.

In April 2019, ETI completed this study and delivered a 584-page report to CD covering the 2010-2017 period. On January 24, 2020, CD issued a “Secondary RFP to obtain responses from firms qualified to conduct an examination of the telecommunications networks and related policies and practices of AT&T California and Frontier Communications California for the period from 2018 to 2019.” On March 5, 2020, ETI submitted a proposal in response to this Secondary RFP, and was selected by CD to undertake this additional study. Work on this Phase 2 study was commenced on April 27, 2020.

Scope of this Phase 2 Study

The scope of this Phase 2 study involved both extending the Phase 1 analysis to include 2018 and 2019 service quality and financial data, as well as to examine several issues that had received only limited attention in Phase 1. These additional areas of investigation included the following:

- Expansion of the scope of the service quality analysis to include Voice over Internet Protocol (“VoIP”) services in addition to the traditional legacy circuit-switched Plain Old Telephone Services (“POTS”).
- Expansion of the limited Phase 1 analysis of the relationship between adverse weather conditions and service outages, covering all regions of California.
- Correlation of Service Quality with high-risk wildfire areas.

- Correlation between household income and ILEC network investment.
- Correlation of service quality and network investment with network resiliency metrics in areas with differing racial demographics.
- If possible, determine whether areas receiving Connect America Fund II (“CAF II”) support for broadband expansion exhibit improved legacy POTS service quality.

Organization of this Phase 2 Report

Not all of the chapters in the Phase 1 Report have been updated, and several new chapters have been added. For consistency, updated chapters have retained the same chapter numbering as in the Phase 1 Report. The following table summarizes the content of this Phase 2 report.

Chapter	Phase 1 Report	Phase 2 Report
1	Executive Summary and Overview	Executive Summary and Overview
2	Introduction and Background for this Study	Not updated
3	California ILEC Network Overview	Not updated
4	ILEC Responses to Service Outages	Updated to include 2018-2019
4A	Service Quality ANALYSIS: AT&T California	Updated to include 2018-2019
4F	Service Quality ANALYSIS: Frontier California	Updated to include 2018-2019
5	Infrastructure Policies and Procedures: AT&T	Not updated
6	Infrastructure Policies and Procedures: Frontier	Not updated
7	AT&T Corporate and California ILEC Investment Policies	Updated to include 2018-2019
8	Frontier Corporate and California ILEC Investment Policies	Updated to include 2018-2019
9	Assessment of Safety, Redundancy and Resiliency of Network(s): AT&T	Not updated
10	Assessment of Safety, Redundancy and Resiliency of Network(s): Frontier	Not updated
11	Conclusion and Recommendations, including preliminary analysis of the relationship between an area's median household income and service quality	ILEC Service Quality and Community Demographics
12	Communications Division Staff Site Visits	Not updated
13		Physical and Environmental Factors Affecting ILEC Service Quality
14		ILEC Responses to Service Outages: VoIP Services
15		CPUC Consumer Affairs Branch Service Quality Complaints
16		Relationship of CAF II funding to POTS service quality
17		Conclusions and Recommendations

Organization of this Chapter

This chapter is organized into three sections that are intended to provide a concise summary of our extensive examination of the network infrastructures of California's two largest ILECs – AT&T California and Frontier California:

- (1) Key Conclusions and Recommendations resulting from this study
- (2) Executive Summary of each chapter
- (3) Principal observations and takeaways

Note that footnote citations have been omitted from this Executive Summary, They can be found in the individual chapters of this report.

Key Conclusions and Recommendations resulting from this study

Managing the transition from legacy to current technology services

As we noted in our Phase 1 report, a substantial source of the persistent service quality shortcomings that have plagued legacy POTS services over the past decade has resulted from a failure to develop and manage the migration from legacy circuit-switched wireline technology to state-of-the-art IP-based and wireless services. Numerous technology transitions have occurred in the telecommunications industry over the past century or more, but the current one is unique in a number of critically important respects.

Past transitions, such as from manual switchboards to dial, from step-by-step to crossbar central office switches, from electromechanical to electronic switches, from analog to digital switching, from baseband twisted-pair copper to frequency-division multiplexing to digital time-division multiplexing, from rotary dial to touch-tone, and from copper to fiber optics, have all occurred through a process that took place in the background, one that was largely invisible to the consumer and which, in most cases, involved little affirmative customer decisions or actions.

This process for technology transition was successful largely because the regulatory regime within which it occurred was technology-blind – i.e., the regulatory model remained the same under the previous and the new technology. But with the onset of competition and deregulation that began in the 1980s, this is no longer the case. When a customer migrates from a legacy circuit-switched service to an IP service such as VoIP or to wireless, the regulatory regime that had overseen the legacy service ceases to apply. The *deregulation* that applies to post-transition services presents the service provider with a radically changed set of financial incentives that essentially compel it, acting in the best interests of its shareholders as it has a fiduciary duty to do, to shift management and financial resources to these potentially far more profitable nonregulated services. Both AT&T and Frontier have been doing exactly that. They have

directed their capital investment away from legacy services and over to wireless, to broadband and, most recently, to *content*.

The scope of regulation should apply with respect to the set of *functionalities* that is deemed essential and in need of some level of regulatory protection, and *not* with respect to the particular technology that is involved. Thus, if basic voice and some minimal level of Internet access service is deemed essential, these services should be provided in the most efficient manner in each situation, whether by wireline or wireless, or by circuit- or packet-switching technology. If reliable access to emergency services (911) and connectivity that can remain active in the event of a local power interruption are considered essential minimum service requirements from a public policy standpoint, efficient solutions can be developed under any of the technology platforms or market models.

Fixing this problem is, at bottom, a political matter, and we do not pretend to offer a political solution. However, what is clear is that the existing arrangement is not producing anything close to an optimal result, and needs to be reexamined and revised at a fundamental level.

Conclusions

Following is a brief summary of the principal conclusions resulting from ETI's Phase 2 examination of the network infrastructures and quality of service of AT&T California and Frontier California for the 2018-2019 study period.

- *Ongoing deterioration of ILEC service quality.* The quality of AT&T and Frontier voice services, which had been steadily deteriorating throughout the 2010-2017 Phase 1 study period, has become decidedly worse over the 2018-2019 Phase 2 period; the frequency of service outages has been increasing, as has their average duration.
- *Persistent disinvestment.* The persistent disinvestment, payments of dividends in excess of earnings, and annual depreciation accruals that exceeded gross additions that had characterized the Phase 1 study period have persisted into Phase 2; moreover, the infrastructure investments that both ILECs did make appeared aimed primarily at nonregulated broadband service upgrades rather than at improving legacy service plant.
- *Further decline in the number of POTS customers.* By the end of 2019, 79.1% of the legacy service access lines that were being served by AT&T California at the beginning of 2010 had discontinued their service. Frontier had lost 52.3% of the legacy service customers it had on April 1, 2016, the date on which it took over the California ILEC from Verizon. Both companies have, for all practical purposes, stopped marketing legacy circuit-switched Plain Old Telephone Service ("POTS"), focusing instead on broadband service as their strategy for maintaining and growing their revenue stream while allowing POTS service quality to continue to degrade. This lack of interest in POTS, coupled with the inconsequential financial penalties imposed by GO 133-D for failure to meet minimal

service quality performance metrics, would seem to explain why both ILECs have allowed POTS service quality to erode further. The potential revenue from migrating customers to broadband voice/Internet and video bundles, together with the costs the ILECs avoid by ignoring needed legacy service improvements, easily outweighs whatever financial penalties the Commission may impose for violating minimum service quality standards.

- *A focus upon broadband, not POTS.* Investments that were made during 2018-2019 continue to be primarily directed toward supporting new broadband services that bundle high-speed Internet access, Voice over Internet Protocol (“VoIP”), and Video. These broadband-focused upgrades have nevertheless conferred some benefit in improving POTS service quality in locations where such investments have been made. POTS service quality is decidedly better in such locations, but even in these locations, POTS service quality performance under most General Order 133-D metrics deteriorated even faster after 2017.
- *By the end of 2019, AT&T California had become an even smaller part of the overall AT&T corporate organization that it had been two years earlier.* Over the 2010-2017 period, AT&T California’s parent AT&T Inc. had experienced significant growth in its overall gross revenues, rising 29.2% from \$124.3-billion in 2010 to \$181.2-billion in 2019. The primary sources of AT&T’s revenue growth have come from wireless services, where the number of AT&T Mobility connections nationwide grew by 73.9%, from 95.4-million in 2010 to 165.9-million in 2019, and from several key acquisitions, including DirecTV and Time Warner. AT&T California revenues have been moving in the opposite direction, falling from \$9.70-billion in 2010 to \$6.63-billion by the end of 2019. AT&T California’s share of total AT&T Inc. revenues has fallen by an even greater amount, from 7.80% in 2010 to 3.66% in 2019. The parent company’s willingness to allocate capital to the California ILEC has diminished accordingly.
- *Failure to adapt network infrastructure to withstand varying weather and environmental conditions.* The strong correlation between significant adverse weather conditions and the incidence of service outages that we had observed in the greater Los Angeles area in our Phase 1 study has now been confirmed to be occurring statewide. This pattern suggests that the networks of AT&T and Frontier are not as robust as they need to be to withstand weather and climate conditions in the state. The occurrence of extreme weather events in California certainly can be anticipated to a certain degree and should thus be incorporated into the companies’ engineering, design and construction, and maintenance practices. These networks must be able to withstand all types of inclement weather and provide safe and reliable service to customers.
- *Effect of wildfires upon service quality and infrastructure investment.* Unlike for weather, we found no identifiable correlation between wildfire events and elevated service outage rates. Service outages are heavily impacted by rainfall, which tends to occur in the late fall and winter, whereas wildfires are most frequent in the summer and early fall, when rainfall is minimal. Restoration of landline telephone service, or even reporting of service outages themselves, is not likely to be of high priority in the aftermath of a destructive wildfire, so

even if service has been interrupted, individual service outages may not be reported. We had also been asked to examine whether the ILECs had directed infrastructure investment to areas that had been heavily impacted by wildfires. However, no such investment pattern has been present for AT&T California, and only a minimal correlation could be identified for Frontier California.

- *Investment focus on higher income communities.* In our Phase 1 Report, we noted that both AT&T California and Frontier California appear to have prioritized their investments in fiber optic feeder and distribution facilities and in other broadband infrastructure to favor higher income communities. And since areas that have received such upgrades tend to perform better with respect to the various GO 133-D service quality metrics, the result is better service quality for these communities as well. This same pattern has persisted into the 2018-2019 study period for Phase 2.
- *Increased focus on areas most heavily impacted by competition.* Both carriers continued to experience a persistent and massive erosion in demand for POTS lines over the 2018-2019 study period. The greatest drop-offs – in some locations of as much as 90% or more – have occurred primarily in the more densely populated urban and suburban areas where customers have a wider choice of available providers and services. Notably, and as we had also observed for the 2010-2017 Phase 1 study period, it is the areas with the lowest POTS drop-off rates that have experienced the steepest deteriorations in service quality. AT&T and Frontier appear to have focused most of their attention in those communities where competition and the potential for loss of customers is greatest. Where POTS demand erosion has been greatest, the availability of broadband has offset some of the revenue losses.
- *Financial Capability.* AT&T Inc. has the financial resources to maintain and upgrade its wireline network in California, but has been pulling capital out of the state rather than putting new capital into its network here. Frontier has a strong interest in pursuing such upgrades, but lacks the financial capacity to make the necessary investments. Moreover, Frontier has suffered a financial meltdown since its 2016 purchase of the Verizon ILECs in California, Texas and Florida. Having grossly overpaid for these assets, the company has been unable to achieve an adequate and sustainable revenue stream, and was forced to seek Chapter 11 bankruptcy protection in April 2020. Even if it is successful in emerging from bankruptcy, the company will have little ongoing ability to raise capital needed to maintain and upgrade its network.
- *VoIP service quality.* VoIP is the principal alternative to legacy POTS for those who want to retain a wireline connection. AT&T VoIP service experiences a slightly higher rate of service outages than AT&T legacy services. Unlike circuit-switched services, VoIP is dependent upon locally-provided power, battery backup, and complex customer premises equipment that is not generally required for legacy circuit-switched services. The seemingly higher incidence of VoIP service outages *vis-à-vis* POTS could well be the result of customer premises conditions that are unique to VoIP. Finally, the so-called “digital divide”

– an issue whose importance has increased as a result of the COVID-19 crisis – raises the potential for the loss of high quality wireline voice services in rural and low-income populations that have not been targeted for broadband upgrades. With the sunset of §710 that went into effect as of the beginning of 2020, a comprehensive regulatory approach that embraces all providers of VoIP type services should clearly be a top priority.

- *CPUC Consumer Affairs Branch (CAB) complaints.* The number of consumer complaints received by the CAB amounts to a minuscule fraction of the total number of trouble reports received and processed by the two ILECs. Moreover, the majority of CAB complaints relate mainly to billing and other business relationship issues, not to service outages. CAB collects geo-coded customer location information, but this is not consistent with the customer of record/account data that is contained in the ILECs’ trouble report records, such as the customer’s account or billing telephone number, serving wire center, or other location-specific information. As a result, it is not possible to link these CAB complaints with corresponding ILEC trouble reports. That said, complaints relating to Frontier service that CAB received in 2018-2019 were substantially greater on a relative basis than those pertaining to AT&T, which is consistent with the rapidly deteriorating service quality that Frontier experienced during these two years.

Recommendations

The overarching result of this Phase 2 examination is that the service quality failures that we had identified and documented in Phase 1 have actually become even more serious. Accordingly, we have expanded, revised and reiterated the specific recommendations that we had offered in our Phas 1 report:

- **Recommendation 1:** Given the enormous rate at which customers have been discontinuing legacy circuit-switched POTS-type services over the past decade, the Commission should reevaluate the role that regulation is to play with respect to legacy as well as current technology services going forward. If assuring universal availability of high quality public switched network access is to remain a central focus of regulatory policy, then advanced services, including VoIP and broadband, should be included within the scope of this policy review. There seems little reason to single out legacy services as the sole focus of service quality regulation.
- **Recommendation 2:** With §710 no longer in effect, GO 133 should be extended to apply to all wireline voice services whether furnished by ILECs or other large service providers.
- **Recommendation 3:** Expand the financial penalties for carriers that fail to meet the minimum GO 133-D service quality standards both with respect to the types of shortcomings that will be assessed and the financial magnitude of the fines or other penalties that will be imposed. We have seen no specific evidence that investments made in lieu of fines as permitted in GO 133-D §7 (a) would not have been made anyway, and (b) have resulted in specific remedial measures ained at overcoming the service quality shortcomings. The

practical result of these alternative investments is simply to negate the effectiveness of the financial penalty itself, and as such the program should be discontinued.

- **Recommendation 4:** In an effectively competitive market, persistently poor service quality is expected to drive customers to take their business elsewhere. The continuing erosion of both ILECs' legacy customer base that persisted throughout Phase 1 and that has continued through Phase 2 indicates that competition for and alternatives to legacy POTS-type services has been growing and "cord-cutting" has become even more pervasive. Yet even when faced with growing competition, both ILECs' POTS service quality has been on the decline. Whether due to inertia, the non-availability of cost-effective alternatives, or a perceived need to retain a telephone service that does not require local power, customers who retain their legacy service appear to be more captive to the ILEC than those able to switch. Where competition is limited or not present, continued regulatory monitoring and enforcement of minimal service quality standards remains necessary, and financial penalties imposed due to an ILEC's failure to meet service quality standards should be sufficiently high so as to have the same financial consequences as would poor service quality under competitive market conditions.
- **Recommendation 5:** The GO 133-D maximum Customer Trouble Report Rates of 6%, 8% or 10% (depending upon wire center size) of switched access lines per month remain far too generous, and failure rates as high as these can hardly constitute acceptable service quality. The carriers have had little difficulty in meeting these standards, and they should be revised downward.
- **Recommendation 6:** Fines imposed by GO 133-D §9 are currently applied for aggregate service quality shortfalls calculated on a companywide basis. Instead, these fines and other financial penalties should be imposed with respect to individual wire center service quality performance, and should escalate based upon the extent to which the carrier falls short of meeting the service quality standards for each such wire center. Frontier's practice of administratively consolidating groups of individual wire centers may have the effect of masking those with particularly poor performance and in so doing potentially escaping the imposition of a penalty. Frontier should not be permitted to continue reporting its results for consolidated "reporting units" rather than separately for each individual wire center. AT&T has not engaged in a similar type of administrative consolidation.
- **Recommendation 7:** Unless carriers can offer technically valid explanations as to how and why smaller wire centers experience the poorest service quality, a uniform set of minimum GO 133-D standards should be applied to each individual wire center.
- **Recommendation 8:** The GO 133-D fines should vary based upon the extent of a carrier's failure to meet any service quality standard, rising in magnitude as the extent of the shortfall increases and/or persists for an extended period of time.

- **Recommendation 9:** The Commission should retain its requirement that URF carriers maintain their Part 32 Uniform System of Accounts ("USOA") regulatory accounting records and continue to submit annual ARMIS-type financial reports using the same accounts and account definitions that they have been required by the CPUC to maintain notwithstanding the FCC's decision to discontinue ARMIS reporting requirements after 2007. If an ILEC wants to substitute GAAP reporting for Part 32 USOA, it should be required, first, to submit a formal application for the right to make this substitution and, in that application, demonstrate that GAAP-type reporting will still meet the Commission's need for financial data sufficient to permit the type of year-over-year monitoring of investment, retirements, depreciation accruals, write-offs and write-downs, operating results, debt and debt service payments, and other financial data necessary for the Commission to carry out its regulatory mission. If the use of GAAP is authorized, the ILEC should be required to retroactively restate its USOA reports consistent with GAAP for a minimum of five (5) prior years. The financial reporting requirement should be extended to also include wire center level accounting data, similar to those that ETI had obtained through multiple data requests in the course of both Phase 1 and Phase 2 of this study. The ILECs should be required to submit these reports separately for each physically distinct wire center rather than for the groups of wire centers that Frontier had administratively consolidated for reporting purposes. The carriers should be required to submit these reports to the Communications Division on a semi-annual basis.
- **Recommendation 10:** The Commission should establish a process to proactively examine the alternatives that would be available to maintain adequate service to Frontier California customers in the event that the parent company no longer has the financial resources to provide safe and reliable services in California.

Chapter Summaries

4: ILEC RESPONSES TO SERVICE OUTAGES

Chapter 4 in this Phase 2 report provides an update to Chapter 4 in our Phase 1 Report to include trouble report and out-of-service activity for 2018 and 2019. The Chapter is organized into three sections. The first provides a general overview of the Commission's Customer Trouble Report and Out-of-Service reporting requirements, the types of data submitted by AT&T California and by Frontier California, as well as ETI's methodologies for analyzing the companies' submissions. The second and third sections provide updated analyses of AT&T and Frontier performance with respect to the GO 133-C/D Customer Trouble Report and Out-of-Service standards over the 2010-2019 study period for AT&T, and over the April 2016 through December 31, 2019 study period for Frontier.

On April 1, 2016, Verizon transferred ownership and control of its California ILEC operations, then known as Verizon California, to Frontier Communications Corporation. In

our Phase 1 Report, we covered the full 2010-2017 study period by merging the service quality data for both the pre- and post-transfer periods. In this Phase 2 Report, we are limiting our analysis of Frontier to the 45 months from April 2016 through and including December 2019 under Frontier ownership.

For Phase 2, we have appended the trouble report data submitted by the two ILECs pursuant to GO 133-D to the corresponding Phase 1 datasets. Using these expanded datasets, we then extended the long-term trend calculations to cover, in the case of AT&T California, the full 2010-2019 period and, for Frontier California, the 45-month period under Frontier ownership. We have also calculated trend lines for both companies covering the 2-year Phase 2 period from January 2018 through December 2019. The various graphs that are provided each present three separate trend lines:

- (1) the Phase 1 2010-2017 trend (for AT&T) and the 4/2016 through 12/2017 trend for Frontier;
- (2) the Phase 2 2018-2019 trend for both companies; and
- (3) the combined Phases $\frac{1}{2}$ trend, covering the full 2010-2019 period for AT&T, and the 45-month 4/2016 through 12/2019 period for Frontier.

An example of this graphic format is shown below for the Average Duration of AT&T service outages::

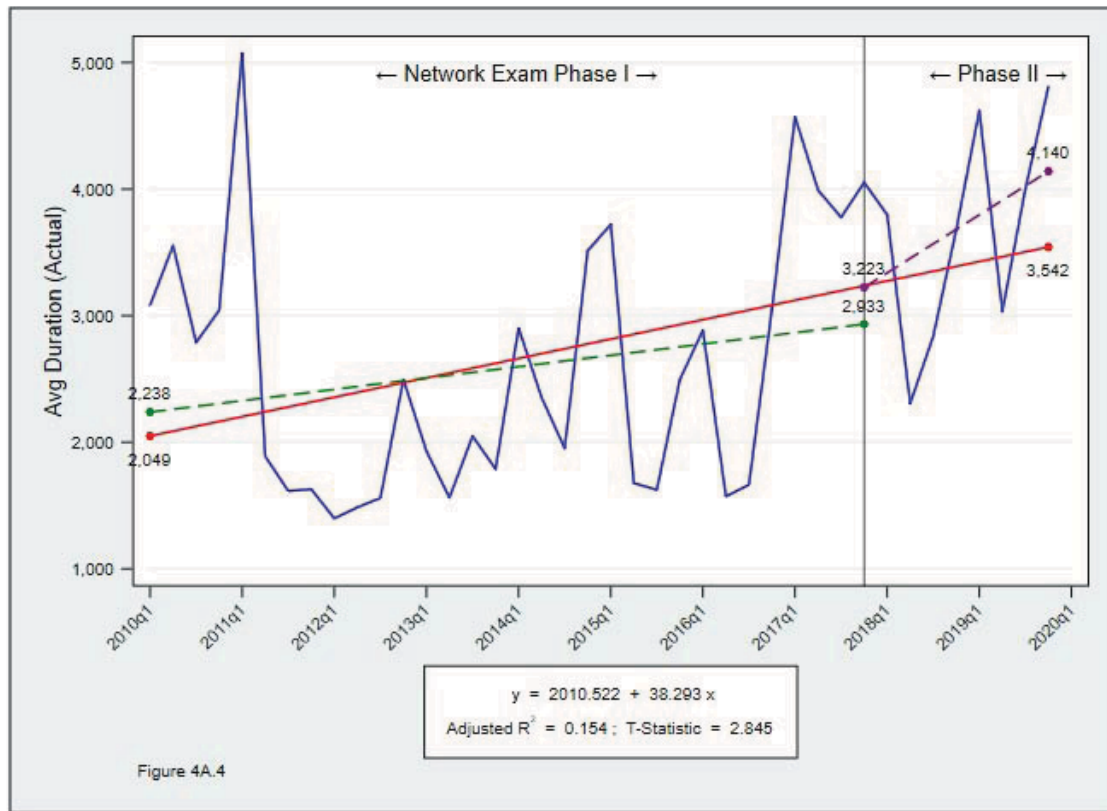


Figure 1.1. The average duration (shown here in days) of all AT&T California out-of-service incidents (actual) saw a significant jump during the 2018-2019 Phase 2 study period.

Overview of the results of the Phase 2 service quality analysis

Our analysis for 2018-2019 shows a fairly consistent and pervasive degradation in *both companies'* service quality performance across virtually every service quality metric that we have examined. The quantity of service outages per 100 access lines – the basic CPUC service quality metric embodied in GO 133-C/D – has been steadily increasing over the two-year Phase 2 study period, indicating a persistent, and disturbing, increase in the rate of service outages overall. The average durations of service outages has also been getting longer; both companies are taking more time, on average, to clear such outages, and the percentage of outages that are cleared within 24 hours – the target for which is specified in GO 133-C/D at 90% – has been dropping.

The massive POTS access line customer losses that both companies had been experiencing over the Phase 1 study period have persisted into Phase 2. Publicly available FCC Form 477 data show that total California ILEC legacy switched access lines in service have dropped by 72.6%, from 14.58 -million as of the beginning of 2010 to 3.99-million as of the

end of 2018, the most recent period for which such data has been made publicly available. The drop-off rate among residential customers is even greater at 81.66%, from 8.21 -million as of the beginning of 2010 to 1.51-million as of the end of 2018. Proprietary data provided by both ILECs, discussed in Chapters 4A and 4F below, show generally similar conditions. Switched access line customer defections are the result of many factors – most notably competition from other voice service providers, particularly from cable television MSOs, competition from mobile wireless carriers (which include affiliates of AT&T California and of pre-transfer Verizon California), as well as from “over-the-top” Internet applications (e.g., Skype, Vonage, Ooma and, more recently from video conferencing services like Zoom, Google Hangouts, Apple Facetime) that do not involve any type of voice service common carrier at all, other than the underlying provider of the customer’s broadband access.

There is, to be sure, something of a chicken-and-egg situation here: Are customers abandoning legacy circuit-switched services because of the service quality degradations, or are the service quality degradations the result of the revenue losses arising from customer defections? Probably both, which points to something of a “death spiral” that, if not addressed, will ultimately lead to the demise of these services within a relatively short period of time.

But the general decline in switched access line demand is not uniform across the state. For many lower-density areas, customer defection rates are considerably smaller than when viewed on a statewide basis. Notably, business customers have retained their legacy POTS services at a higher rate than residential – this despite rising prices and deteriorating service quality. Even with the large numbers of customers who have sought alternatives to legacy circuit-switched services, there are still many who continue to take this service. POTS-type services are the only category of telecommunications that retains at least some vestige of regulatory protections for consumers, generally assuring some level of service availability even in low-density and hard-to-serve areas. The principal competing voice services are being offered by providers operating in highly concentrated markets. Before allowing the death spiral to run its course, we believe it is essential that policy decisions be made as to the merit of retaining these legacy services and their underlying infrastructures as a baseline for those customers that do not perceive or that do not actually have alternatives. If these services are to be retained, the ILECs must be made to bring their level of service quality up to the full GO 133-C/D standards, because it is painfully apparent that the competitive market cannot be counted upon to produce this outcome.

Data collection and reporting pursuant to General Order 133-C and subsequent 133-D

General Order (“GO”) 133-C required, in relevant part, that all “facilities-based URF [Uniform Regulatory Framework] Carriers with 5,000 or more customers” report various service quality performance metrics on a monthly basis to be submitted quarterly to the Commission. GO-133-C §§ 3.3(c) and 3.4(c) obligate both AT&T and Frontier to provide reports as well as the underlying (“raw”) trouble ticket data on all customer Trouble Reports and Out-of-Service records occurring on and after January 1, 2010. In August 2016, the

CPUC, by D.16-08-021 in R.11-12-001, adopted GO 133-D as a revision to the prior version of the same General Order. GO 133-D added a new §9 that imposes specific financial penalties (fines) upon the ILECs for persistent failure to achieve the required service quality performance levels.

A Trouble Report (sometimes referred to as a Trouble Ticket) is generally created when a customer contacts the telephone company to report a service problem. GO 133-C/D established minimum standards and reporting levels for service on the network side of the customer/network demarcation. Using these Trouble Report records, we are able to create a range of metrics regarding the duration of the out-of-service condition. For Phase 2 of this study, we have appended the two companies' Trouble Report records for 2018-2019 to the 2010-2017 Phase 1 data. However, as noted above, for Frontier, we have limited the Phase 2 analysis to the post-acquisition period, from April 2016 through December 2019. In all, we examined a total of 6.96-million AT&T Trouble Report records for the 2010-2019 period, and a total of just over 300,000 Frontier Trouble Report records for the 2016-2019 Frontier ownership period.

4A: SERVICE QUALITY ANALYSIS UPDATE: AT&T CALIFORNIA

This chapter updates Chapter 4A in our Phase 1 Report to include AT&T California trouble report records for 2018-2019 that have been submitted by the company as required pursuant to GO 133-D. Our analysis shows that the company's performance with respect to nearly every one of the service quality metrics that we had examined in Phase 1 has deviated further from the Commission's GO 133-D service quality objectives and standards. AT&T California continued to account for a successively smaller portion of its parent company's operations, a fact that appears to be fully reflected in the low priority that AT&T California has been receiving both with respect to capital investment and senior management attention over the past several years.

AT&T's legacy circuit-switched POTS access line demand drop-off rate is similar to the industry-wide results for California. This downward trend persisted into 2018 and 2019. In the two years from December 2017 to December 2019, the company lost 565,537 POTS access lines, going from 2,245,171 in December 2017 to 1,679,638 in December 2019. For the entire 10-year period from January 2010 through December 2019, total AT&T California POTS access lines in service plummeted by 79.1%, dropping from 8,035,134 in January 2010 to 1,679,638 in December 2019. Every AT&T California wire center continued to experience further erosion in POTS demand, but the drop-off rate for individual wire centers was highly variable, the highest at 96.56% in the Paradise Main wire center (which had 12,039 lines in service as of January 2010 but only 414 by the end of 2019). The greatest demand drop-offs generally occurred in the largest wire centers.

Viewed at the individual wire center level, the ratio of out-of-service conditions to total POTS lines has varied both from month-to-month and as a long-term trend over time. For

out-of-service conditions not cleared within 24 hours, some wire centers have experienced significant increases in the incidence of this condition, while others have seen improvements.

AT&T Service Quality Performance

In our Phase 1 Report, we described a series of detailed analyses of AT&T service quality and performance in resolving out-of-service conditions both statewide and, more importantly, on a wire center-by-wire center basis. Each of these analyses are updated here to include results for 2018 and 2019. Because GO 133-C/D does not hold ILECs responsible for the entire outage duration if a Sunday or federal holiday intervenes, outage durations are thus adjusted *for GO 133-C/D compliance purposes* by subtracting Sunday or federal holiday hours that fall within an outage situation. Certain additional situations have also been treated as “excluded” even though, from the customer’s perspective, the service is not functioning. ETI does not believe that it is appropriate to entirely exclude all instances where, upon encountering an out-of-service condition, the customer has requested an appointment date/time at the customer’s convenience *because the requirement to accommodate the customer’s personal needs in order to effect a restoration of service is a direct result of the service outage itself*. Instead, the delay in the ultimate restoration of service attributable to the additional time needed to satisfy the customer’s request for an appointment should be adjusted out of the total out-of-service duration. ETI was advised that such an adjustment is already reflected in the “CPUC Duration” calculation provided on the individual Trouble Report data records.

Inclusion of the additional 2018-2019 trouble tickets has enabled us to develop service quality trends over a 10-year period (2010-2019); but we also wanted to examine each of the two datasets separately in order to evaluate whether conditions in these last two years had improved or deteriorated relative to the Phase 1 study period. Accordingly each of the service quality charts presented in this chapter (Figures 4A.2 through 4A.33) provides three separate trend lines – the full 10-year trend (the solid red line); the 8-year Phase 1 trend (the dashed green line, which is approximately the same as the 8-year trend line presented in our Phase 1 Report); and the 2-year Phase 2 trend line for 2018-2019 (the dashed purple line). This format provides a convenient visual comparison of the Phase 1 and Phase 2 results for each of the individual service quality metrics we examined.

Service quality metrics for 2018-2019

- *Number of out-of-service trouble reports per 100 access lines* – a slight upward trend over the 10-year study period. The rate of increase has accelerated slightly relative to where it had been for 2010-2017.
- *Duration of out-of-service conditions* –we observe a particularly sharp increase in 2018-2019. The 2010-2017 trend in average OOS duration increased by 31.0% from 2010 through 2017, but in just the last two years, that metric jumped by another

28.4% (Figure 4A.4). For outages that remained uncleared after 24 hours, their trend line average durations was lengthened by 47% over the 2010-2017 period, but for 2018 and 2019, average duration rose further, although the trend held steady over those last two years (Figure 4A.5). The results were somewhat better for all OOS when Sunday/holiday hours and “excluded” situations were eliminated, but the trend was still in the upward direction, and increased for 2018-2019 (Figures 4A.6 and 4A.7).

- *Out-of-service conditions cleared within 24 hours* – GO 133-C/D §3.4(c) establishes a “Minimum Standard Reporting Level” requiring that “90% of all out of service trouble reports [be cleared] within 24 hours [as] the set minimum standard.” Only 50.4% of the roughly 5-million out-of-service conditions had been cleared within 24 hours (Figure 4A.9); even on an adjusted basis, where Sunday and federal holiday hours were subtracted out of the outage duration, only 63.3% of out-of-service conditions had been restored within 24 hours (Figure 4A.10). The shortfall relative to the GO 133-D 90% standard increased further in 2018-2019, where service had been restored to only 44.1% of the 573,581 out-of-service conditions (61.8% for “adjusted”) within 24 hours.
- *Days required to clear 90%* – another approach to examining this “90% cleared within 24 hours” requirement is to look at the length of time it takes AT&T to reach the 90% cleared threshold. On an adjusted basis, the number of days required for 90% OOS cleared ranges from a low of 1.67 days in the first quarter of 2012 to a high of 11.15 days in the first quarter of 2011. For the most recent year (2019), the adjusted number of days to achieve 90% OOS cleared falls in the 3.8 to 5.2 range (Figure 4A.12).

Effects of geographic and other wire center attributes upon performance results

While examinations of individual wire centers is essential to isolating specific problem areas and sources of concern, it is also instructive to create groups of individual wire centers having similar geographic or other attributes (see Tables 4A.11, 4A.12). ETI constructed five “attribute dimensions” – (1) the presence of fiber upgrades; (2) wire center size (number of access lines); (3) the percentage decrease (loss) in the number of access lines in service to competing providers and/or to competing services over the study period; (4) the AT&T Field Operations (AFO) organization to which the wire center has been assigned; and (5) the population density of the area served by the wire center (households per square mile). For each of these five attribute dimensions, ETI defined a set of categories whose potential effect upon service quality was then individually examined.

These have now been updated to include data for 2018-2019. As in Phase 1, we determined that pPerformance across most service quality metrics was better in wire centers that had been upgraded with fiber optic distribution facilities, in wire centers serving relatively high-density urban and suburban communities, in larger wire centers, and in wire centers that have experienced the largest losses of customers to competitors. However, in almost every instance and category of wire center serving area, performance across most

service quality metrics has significantly deteriorated over the 2018-2019 period relative to where it had been during the Phase 1 2010-2017 time frame.

Summary

Overall, ETI's analysis of the 5.6-million AT&T out-of-service Trouble Report records and other pertinent AT&T service quality data over the full 10-year 2010-2019 period indicates that the company's service quality and its response to protracted out-of-service conditions has declined, in some cases significantly, over this time frame. Of particular concern, the degradation in AT&T service quality overall appears to have accelerated in 2018-2019. There were few exceptions within the overall AT&T California network.

Wire Centers that have received broadband upgrades – and hence benefitted from an infusion of new investment – have fared a lot better than those locations where little or no such upgrades had taken place. Service quality and responses to outages in the very largest wire centers – particularly those in the Los Angeles area (the Los Angeles and San Gabriel AFO Districts) actually showed some improvements, whereas other AFO Districts exhibited deteriorating service quality conditions. In terms of absolute numbers, AT&T out-of-service incidents declined, but the decline was less than in proportion to the large decrease in the number of POTS lines in service that AT&T has experienced over the 10-year study period. The various inter-category relationships were largely maintained in the last two years, but most metrics saw significant losses in all categories in 2018-2019.

4F: SERVICE QUALITY ANALYSIS UPDATE: FRONTIER CALIFORNIA

As of the end of December 2019, the company will have been under Frontier management for 45 months. During this period, Frontier has put its own stamp on the company's operations and, accordingly, there seems little point in retaining the Verizon ownership period in our analysis. More importantly, the company's parent has been in the throws of a massive financial crisis that began shortly after its April 2016 takeover of the three former Verizon ILECs – in California, Texas and Florida (the "CTF acquisition") – that ultimately Frontier to seek Chapter 11 bankruptcy protection in April 2020.

A NOTE ABOUT FRONTIER WIRE CENTER DATA

In total, Frontier California, and Verizon California before it, operate approximately 270 wire centers. Under Verizon ownership, the company had been reporting trouble ticket and out-of-service data separately for each of these 270 wire centers. However, for some unexplained reason, following its takeover, Frontier has administratively – *but not physically* – implemented a succession of consolidations of a number of these individual wire centers *for reporting purposes*, ultimately into approximately 198 combined “reporting units.” ETI believes that Frontier’s unexplained restructuring of its wire center data undermines the Commission’s clear intent, in adopting the various GO 133 reporting requirements, to obtain *and track* service quality *at the individual wire center level*. By merging two or more separate wire centers into a single unit for reporting purposes, Frontier effectively conceals its service quality metrics for each of the individual wire centers within the consolidated group. As a consequence, the Commission can no longer track GO 133-C/D service quality performance at the wire center level for roughly half of all Frontier wire centers. Additionally, because some data continues to be reported at the individual wire center level and some wire center names and CLLI codes seem to have been changed or eliminated altogether, these consolidations have made it difficult to accurately integrate multiple datasets for analysis purposes. Henceforth in this Report, we shall refer to Frontier “reporting units” rather than as wire centers.

Frontier has been hemorrhaging customers almost from the date of the acquisition

Like ILECs nationwide, Verizon California had been losing customers for its legacy services long before it announced its deal in February 2015 to sell the three CTF companies to Frontier for \$10.54-billion. On the date of that announcement, Verizon California was still serving approximately 1.45-million POTS access lines; by the time the deal closed on April 1, 2016, that number had dwindled by 16.6%, to 1,201,218. As of the end of the Phase 1 study period (December 31, 2017), Frontier California was serving only 879,489 POTS access lines, representing a drop of 26.8%, relative to the April 1, 2016 acquisition date, and as of the closing date of the Phase 2 study period (December 31, 2019), only 572,975 legacy service access lines remained on the Frontier California network, a decrease of 52.3% relative to the April 1, 2016 closing date of the CTF acquisition. Moreover, these losses were hardly confined to POTS-type services. As of February 2015 when the deal was announced, *FiOS* – Verizon’s brand name for its Fiber-to-the-Premises (“FTTP”) broadband service – was available to approximately 2.65-million homes within the Verizon California operating area. Indeed, the broad availability of *FiOS* across all three of the CTF companies was seen as a major justification for Frontier’s acquisition. But by the closing date on April 1, 2016, only 388,881 Frontier California customers were still taking *FiOS* from the company, and as of the end of 2019, that number had dwindled to only 194,008.

Notably, the calculated long-term trend in total out-of-service incidents decreased from 17,824 in the second quarter of 2016 to 12,752 in the fourth quarter of 2019. Thus, while POTS lines in service saw a 52.3% decrease over the period, out-of-service incidents decreased by about 28.5%. Over the period of Frontier ownership, the relative drop-off in legacy POTS access lines greatly exceeded the relative decrease in total out-of-service

incidents. Out-of-service incidents per 100 access lines in service thus *increased* over the period under Frontier management. Moreover, a principal focus of the Commission’s concerns regarding ILEC service quality – the number of out-of-service incidents extending for more than 24 hours per 100 access lines – which had been falling over the first seven quarters of Frontier ownership, has reversed course and is rising over the 2018-2019 Phase 2 period. Gains that had been achieved by Frontier in reducing the actual durations of reported OOS conditions occurring in the immediate post-acquisition period were thus reversed, with outages becoming progressively longer in overall duration after 2017.

As with AT&T, ETI’s other approach to examining this “90% cleared within 24 hours” requirement is to calculate the average length of time it took for Frontier to reach the 90% cleared threshold. Following improvement over the April 2016 to December 2017 period, as with the other out-of-service metric we examined, these gains did not persist into 2018-2019.

FRONTIER CALIFORNIA				
PERCENTAGES OF ACTUAL AND ADJUSTED (“CPUC”) OUT-OF-SERVICE CONDITIONS CLEARED WITHIN 24 HOURS AND DAYS REQUIRED TO CLEAR 90%				
	Actual		Adjusted	
	Percent Cleared within 24 hours	Days Required to Clear 90%	Percent Cleared within 24 hours	Days Required to Clear 90%
2Q2016	22.0%	5.70	28.0%	4.72
3Q2016	38.8%	3.95	44.5%	3.01
4Q2016	53.7%	3.75	60.6%	2.77
1Q2017	31.1%	6.23	36.8%	5.08
2Q2017	63.1%	3.04	70.0%	2.14
3Q2017	63.6%	3.06	72.2%	2.15
4Q2017	69.0%	2.69	78.6%	1.77
1Q2018	56.3%	3.27	66.3%	2.30
2Q2018	65.6%	2.85	79.3%	1.78
3Q2018	66.8%	2.80	79.3%	1.74
4Q2018	52.4%	3.44	75.1%	2.06
1Q2019	16.1%	10.70	48.6%	8.17
2Q2019	29.8%	7.65	59.3%	5.39
3Q2019	28.4%	6.07	61.5%	4.68
4Q2019	35.3%	4.99	63.3%	3.11

Effects of geographic and other wire center attributes upon performance results

As with our analysis of AT&T California service quality, ETI has constructed and applied the same five “attribute dimensions” to our analysis of Frontier – (1) the presence of *FiOS* broadband availability; (2) wire center size (number of access lines); (3) the percentage decrease (loss) in the number of access lines in service to competing providers and/or to competing services over the study period; (4) the population density of the area served by the wire center (households per square mile); and (5) the Frontier Operating Area to which the wire center has been assigned. For each of these five attribute dimensions, ETI defined a set of categories whose potential effect upon service quality was then individually examined.

These have now been updated to include data for 2018-2019. As in Phase 1, we determined that performance across most service quality metrics was better in wire centers that had been upgraded with fiber-to-the-premises (FTTP) *FiOS*-capable distribution facilities, in wire centers serving relatively high-density urban and suburban communities, in larger wire centers, and in wire centers that have experienced the largest losses of customers to competitors. However, in almost every instance and category of wire center serving area, performance across most service quality metrics has significantly deteriorated over the 2018-2019 period relative to where it had been in the 21 months following Frontier’s acquisition of the company.

Summary

Overall, ETI’s analysis of the 306,151 Frontier Trouble Report records and other pertinent Frontier service quality data indicates that the company’s service quality and its response to protracted out-of-service conditions had improved following its April 1, 2016 takeover, but those gains were short-lived. Those Frontier wire centers that have received broadband upgrades in the form of *FiOS*-capable fiber-to-the-premises (“FTTP”) distribution facilities – and hence have benefitted from an infusion of new investment – fared a lot better than those locations where little or no such upgrades had taken place. Service quality and responses to outages in the very largest wire centers – particularly those in the Los Angeles area (the “Beach Cities Operating Areas) actually showed improvements both with respect to the frequency of out-of-service incidents as well as the duration of those outages that did occur, but even here the gains were reversed after 2017.

7: AT&T CORPORATE AND CALIFORNIA FINANCIALS AND ILEC INVESTMENT POLICIES: PHASE 2 UPDATE

This chapter provides updated financial data both for Pacific Bell d/b/a AT&T California and for its corporate parent, AT&T Inc. In Chapter 7 of our Phase 1 Report, we offered the following assessment of AT&T California’s financial condition and its investment policies:

- AT&T California’s potential revenue from raising prices and curtailing investments in its legacy POTS services far exceed any financial penalties imposed for its failure to meet the GO 133-C/D service quality standards.
- To support its “harvesting” strategy and maintain revenues despite a massive drop-off in demand, AT&T California has raised its rates for legacy flat-rate residential service by 152.6% since the service was de-tariffed by the CPUC in 2009.
- AT&T Inc. senior management’s interest in and attention to its legacy wireline ILEC operations has been largely supplanted by its wireless operations and the recent satellite TV and video content acquisitions.
- AT&T California financial statements show an incomplete assessment of the ILEC’s financial condition due to the large volume of inter-affiliate transactions made at transfer prices that are not set on the basis of arm’s length negotiations.
- Cumulatively, over the full 8-year Phase 1 study period, AT&T California had total net after-tax income of \$3.4-billion, but paid out \$7.6-billion to its parent company, AT&T Inc, thereby eroding the California company’s capital base by roughly \$4.2-billion and impairing its ability to maintain and upgrade its aging infrastructure. (See Phase I Report, p. 380, Table 7.5.)
- AT&T, Inc. has also been eroding its California ILEC’s capital base by investing less in its infrastructure than its annual depreciation accruals and retirements.
- AT&T’s “harvesting” philosophy explains why AT&T has failed to improve service quality for its POTS services at least to the point where the GO 133-C/D standards can be achieved, because the gains it can realize by raising prices and curtailing investment and maintenance far exceed any financial penalties it might suffer from persistently poor service quality.

Our examination of the two additional years of financial results indicates that, for the most part, the various conditions and practices that we had previously identified have persisted and, in some respects, have been further escalated.

The AT&T California component of parent AT&T Inc. revenues has been steadily diminishing, as has the share of the overall AT&T capital budget that is being allocated to the California ILEC. Over the 2010-2017 period, AT&T California’s parent AT&T Inc. had experienced significant growth in its overall gross revenues, rising 29.2% from \$124.3-billion in 2010 to \$160.5-billion in 2017. By 2019, AT&T gross revenues had reached \$181.2-billion. AT&T’s market capitalization as of December 31, 2019 was approximately \$283.5-billion, although as of December 15, 2020, it had declined to about \$217.5-billion as a result of the broader COVID-19 economic impacts. The primary sources of AT&T’s revenue growth have come from wireless services, where the number of AT&T Mobility

connections nationwide grew by 73.9%, from 95.4-million in 2010 to 165.9-million in 2019, and from several key acquisitions, including DirecTV and Time Warner.

AT&T California revenues, on the other hand, have been moving in the opposite direction. Its gross revenues in 2010 were \$9.70-billion, dropping to \$8.63-billion in 2017, and by another 23.15% as of the end of 2019, to \$6.63-billion. AT&T California's share of total AT&T Inc. revenues has fallen by an even greater amount, from 7.80% in 2010 to 3.66% in 2019. And in California, despite having experienced a cumulative loss of 76.4% in legacy switched access lines between 2010 and 2019, the company's gross revenues decreased by only 31.6% over the same period. Clearly, a significant portion of AT&T California operating revenues come from the ongoing succession of POTS rate increases and from services other than legacy POTS lines.

But AT&T California's response to the rapidly eroding demand for legacy POTS services has not been to cut prices to retard such "cord-cutting," but instead to implement large rate increases so as to "harvest" as much revenue from the remaining POTS customers as long as they continue to retain their service.

AT&T California has continued its practice of *disinvesting* in its California local network infrastructure.

Because AT&T California is a wholly-owned subsidiary of AT&T Inc., it is the parent AT&T Inc. that determines the amount of its ILECs' net income that will be paid over to the parent in the form of dividends and the amount of capital investment funds that will be made available for local infrastructure investment by its individual operating companies. Cumulatively, over the full 10-year period, AT&T California had total net after-tax income of \$6.1-billion, but paid out \$11.0-billion in dividends to its parent company, AT&T Inc, thereby eroding the California company's capital base by roughly \$4.4-billion and impairing its ability to maintain and upgrade its aging infrastructure. Thus, rather than reinvesting a portion of its net income back into its network, AT&T California has been consistently *disinvesting* in its network. Gross Telecommunications Plant in Service ("TPIS") carried on AT&T California's USOA books decreased by roughly \$3.9-billion from the beginning of 2016 through the end of 2019, but *net plant* – i.e., Gross TPIS less accumulated depreciation and amortization – over that same period appears to have *increased* by \$5.5-billion, from \$4.9-billion to \$10.4-billion. AT&T has ascribed this anomaly to a change in accounting method that it suggests had been authorized by the FCC. And these adjusted USOA-type Net TPIS values for 2018 and 2019 likely overstate the amounts that would exist under strict USOA accounting. AT&T California did make Gross Plant Additions for 2018 and 2019 totaling some \$2.13-billion net of adjustments, but only a small fraction of that spending appears to have been directed to legacy POTS services.

Inter-affiliate transactions at non-arm's length transfer prices also contribute to the parent company's pattern of disinvestment in AT&T California operations.

But even AT&T California's nominally reported revenues, expenses and net income cannot by themselves provide a complete or accurate picture of the ILEC entity's financial performance. This is because of the extensive nature and amount of inter-affiliate transactions that involve both *purchases* made by the ILEC from other AT&T affiliates as well as *sales* made by the ILEC to other AT&T affiliates on an ongoing basis. In 2018 and 2019 alone, total AT&T California operating expenses (excluding depreciation and amortization) were \$7.16-billion, 58% of which, some \$4.15-billion, were spent on services purchased from other AT&T affiliates. In those same two years, AT&T California's total operating revenues were \$12.43-billion, 16.17% of which, some \$2.01-billion were realized from sales to various other AT&T affiliates.

With the exception of tariffed switched and special access services that are being purchased from AT&T California by various other AT&T affiliates, the specific *transfer prices* at which these transactions are recorded can hardly be viewed as being set on the basis of arm's length negotiations. Since both the seller and buyer in each instance are wholly-owned by the same parent company, the nominal transfer price has little or no effect upon the parent company's bottom line. However, if it is the parent company's goal to extract cash from the ILEC entity, setting an inflated transfer price for services the ILEC purchases from other AT&T affiliates, or heavily discounting the prices that the ILEC charges for whatever (non-tariffed) services it sells to other AT&T affiliates, can accomplish this as effectively as making a dividend payment to the parent, but with far less exposure as to the precise purpose of the policy.

GO 133-D §9.7 Alternative Investments

In August 2016, the Commission issued a revised GO 133-D that imposes financial penalties upon ILECs that persistently fail to meet minimal POTS service quality standards. GO-133-D §§9.3, 9.4 and 9.5 provide for escalating daily fines where a carrier's failure to meet the required service standards persists for an extended period of time. A total of \$9.1-million in fines was assessed against AT&T California since this provision became effective. §9.7 allows offending carriers to submit an "Alternative Proposal for Mandatory Corrective Action" whereby carriers can avoid the fine by agreeing to invest an amount of at least double the fine if such an investment will be effective in remedying the service problem for which the fine had been imposed. AT&T California has sought approval of alternative proposals for mandatory corrective action under § 9.7 in lieu of paying the assessed fines in 2017, 2018 and 2019, and the Commission has approved all of these requests. CD has been tracking the effectiveness of such "alternative investments" in improving service quality, but most of these projects have been completed so recently (or are still ongoing) that no conclusion as to their effectiveness in improving service quality can be drawn at this time.

AT&T California’s total Gross Plant Additions for 2018-19 amounted to approximately \$2.3-billion. Over that same period, AT&T’s expenditures on GO 133-D §9.7 "Alternative Investments" in lieu of fines projects amounted to roughly \$2.7-million, representing a *de minimis* fraction – slightly over one-tenth of one percent – of the Company’s total gross infrastructure investments. Of perhaps greater importance, the minuscule extent of such “alternative” investment outlays when compared with even the identified plant rehabilitation costs begs the question as to whether these expenditures would have been made anyway, irrespective of the GO 133-D §9.7 opportunity to make investments in legacy service infrastructure *that would ostensibly not have been made in the absence of the GO 133-D §9.7 offer.*

Summary and conclusions

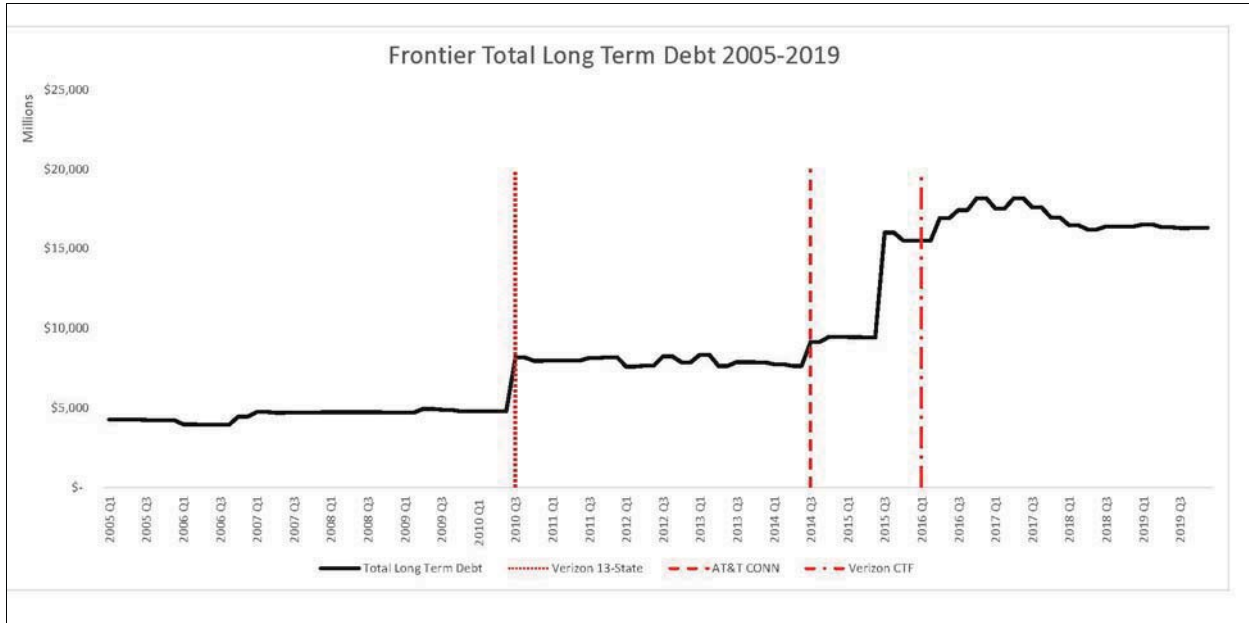
AT&T California has continued its policy of *disinvesting* in its California local network infrastructure, and where it is investing, a large portion of its Gross Plant Additions continue to be directed toward expanding its ability to offer services other than core legacy circuit-switched POTS services. Moreover, there appears to be wide variation across all of AT&T California’s 615 wire centers as to the amount of new investment that has been directed at each of them, and ETI has not observed any specific pattern to explain this prioritization. There is no indication, for example, that investment dollars are being directed toward those wire centers that have been underperforming with respect to service quality or in their ability to meet the Commission’s GO 133-C/D service quality standards.

8: FRONTIER CORPORATE AND CALIFORNIA FINANCIALS AND ILEC INVESTMENT POLICIES: PHASE 2 UPDATE

A lot has happened to Frontier since our Phase 1 Report

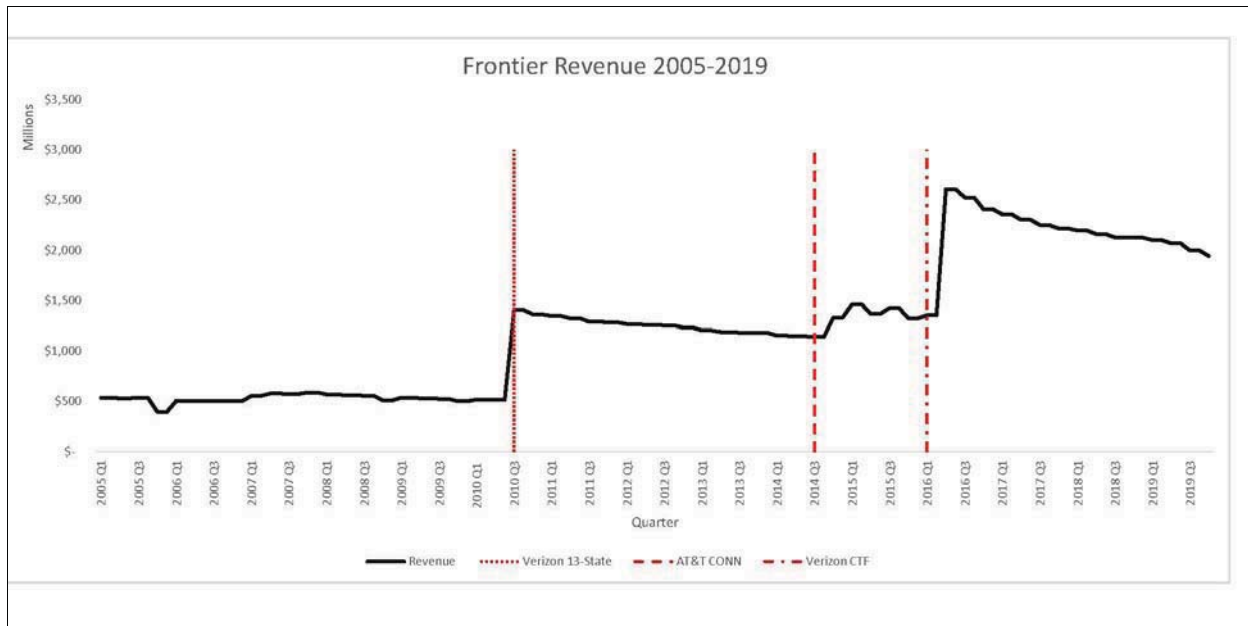
On April 1, 2016, Frontier Communications Corp. completed its acquisition of what is now Frontier California under a three-state ILEC purchase from Verizon that also included Verizon ILEC operations in Florida and Texas (the “CTF acquisition”). Frontier paid Verizon \$10.54-billion in cash for the three ILECs, and financed the purchase primarily through the issuance of new debt. Even before Frontier took over control of these three Verizon ILECs, its stock had fallen by around 33% from the (equivalent of) \$125.70, where it had been February 9, 2015, shortly after the deal with Verizon had been announced. On July 10, 2017, Frontier implemented a 1-for-15 share reverse split so as to avoid de-listing of its stock. On December 16, 2020, Frontier stock was trading at 10.8¢ per share, down 99.91% from its February 2015 high. In our April 2019 Report on Phase 1 of this Network Examination, we expressed serious concerns as to Frontier’s near-term and ongoing ability to maintain and modernize its California wireline ILEC network so as to provide reliable service to California consumers. We noted that Frontier has been hemorrhaging customers in all major service categories across all of its 29-state footprint since the CTF acquisition.

Following the 2016 CTF purchases, Frontier became the nation’s fourth largest ILEC with roughly 5.77-million residential and business customers (roughly corresponding to about 8.77-million switched access lines) across 28 states, but in making these various acquisitions, the company had assumed \$11.9-billion in new debt, bringing its total debt as of the end of 2017 to around \$17-billion. By the end of 2019, Frontier’s ILEC access lines had eroded by 28.6% to approximately 6.33-million. Its total long-term debt was only slightly lower than in 2017, at \$18.3-billion.



Frontier has financed its succession of ILEC acquisitions primarily through the issuance of debt. (Source: Frontier Communications Corp. Forms 10-K, 10-Q)

Frontier’s growth strategy has, in each case, involved the absorption of large, multi-state operations, some of which had been larger in size than the pre-acquisition Frontier. However, each of these acquisitions produced a large, one-time revenue spike followed in each instance by revenue erosion from the new immediate post-acquisition level – producing a sort of “sawtooth” effect. In the first quarter of 2016 – the last 3-month period immediately preceding the Verizon acquisition – Frontier companywide revenue was running at an annual rate of roughly \$5.4-billion. In the second quarter of 2016 – immediately following the Verizon acquisition – Frontier revenue had nearly doubled, jumping to an annual rate of around \$10.4-billion. But by the final quarter of 2019, Frontier’s total revenue was running at an annual rate of less than \$7.8-billion – in less than four years, Frontier had given up more than half of the \$5-billion revenue gain that had resulted from its 2016 CTF purchase. But the company had acquired that additional \$5-billion in operating revenues by incurring more than \$11-billion in new debt, and while its revenue gain had been cut in half, its total debt remained only slightly below its 2016 post-acquisition level.



Frontier Communications Corp. Revenues, 2005-2019.
(Source: Frontier Communications Corp. Forms 10-K, 10-Q).

Out of the \$10.54-billion that Frontier paid Verizon when the deal closed in April 2016, it allocated some \$2.5-billion to “Goodwill” and another \$2.16-billion to “Other Intangibles,” which it attributed primarily to the value of Verizon’s 3-state “Customer Base” that was included in the acquisition. In the case of the Frontier California ILEC entity, Frontier recorded \$517.1-million of Goodwill at the time of acquisition. In 2017, Frontier California Goodwill was increased by \$93.97-million to \$611.1-million. In 2019, the entire \$611.1-million in Goodwill was written-off Frontier California’s regulatory accounting books. Thus, only \$6.24-billion out of the total CTF purchase price was associated with “Property, Plant and Equipment.” At year-end 2016, some \$12-34-billion out of Frontier Communications Corp.’s \$29-billion of Total Assets was associated with Goodwill and Other Intangibles; at year-end 2019, all of Frontier’s Goodwill had been written off, and its “Other Intangibles” had eroded to just over \$1-billion.

These write-downs of intangibles resulted in a net 2019 Operating Loss of \$4.87-billion. However, since the write-downs do not affect cash, when the write-downs are ignored, Frontier’s 2019 Operating Income (before the intangible write-downs) was a *positive* \$852-million. But total 2019 debt service payments (principal repayments plus interest) were \$3.54-billion, well in excess of the company’s cash income for that year. Frontier filed for Chapter 11 bankruptcy protection in April 2020.

Verizon California had been consistently disinvesting in its California local network infrastructure, and Frontier has been pursuing a similar strategy.

As we noted in our Phase 1 Report, Verizon California would typically pay dividends to its parent company that exceeded its net operating income. We view such practices as constituting *disinvestment*, in that by paying dividends in excess of earnings, the subsidiary (Verizon California) is effectively transferring a portion of its capital base to its parent. Since taking over the company in April 2016, Frontier California has issued no dividends to its parent, Frontier Communications Corporation. However, Frontier’s total net income was actually a loss of \$476-million. Frontier California did have positive net income in 2017, but paid no dividend to its parent.

Disinvestment also arises when retirements and depreciation accruals exceed the gross plant additions in any given year or cumulatively over time. This has the effect of reducing Net Plant in Service, a condition that has prevailed under Frontier ownership of the company. Since taking over the company, Frontier has invested \$914.7-million (net of adjustments) in gross plant additions, but has recorded \$188.3-million in retirements and has taken \$1.74-billion in depreciation accruals – a net *disinvestment* of just over \$1-billion. Since acquiring the California ILEC from Verizon in 2016, Frontier continued to invest less in Gross Plant Additions than it took in retirements and depreciation accruals, resulting in a net disinvestment of 469.5-million.

GO 133-D §9.7 Alternative Investments

As we discussed in our Phase 1 Report, in August 2016, the Commission issued a revised GO 133-D that imposes financial penalties upon ILECs that persistently fail to meet minimal POTS service quality standards. GO-133-D §§9.3, 9.4 and 9.5 provide for escalating daily fines where a carrier’s failure to meet the required service standards persists for an extended period of time. A total of \$3.35-million in fines was assessed or is currently pending against Frontier California since this provision became effective. §9.7 allows offending carriers the opportunity to submit an “Alternative Proposal for Mandatory Corrective Action” whereby carriers can avoid the fine by agreeing to invest an amount of at least double the fine if such an investment will be effective in remedying the service problem for which the fine had been imposed. Frontier California has sought approval of alternative proposals for mandatory corrective action under § 9.7 in lieu of paying the assessed fines in 2017, 2018 and 2019. The company’s “alternative investment” proposals for 2017 and 2018 amounted to \$4.14-million, in lieu of paying \$2.07-million in fines for the two years. The Commission approved these requests for 2017 and 2018. For 2019, Frontier has calculated its fine at \$1.28-million and sought CPUC approval for its “alternative investment” proposal to invest \$2.56-million in its network. CD staff recommend against acceptance of Frontier’s “alternative investment” proposal, noting that Frontier’s “past corrective action plans have thus far not resulted in sustained improvement in its service quality performance, as demonstrated by Frontier CA’s need to file this advice letter, which is its third consecutive Section 9.7 corrective action plan. As a result, it is

unclear to Staff whether the project Frontier CA describes in its AL 12828 proposed corrective action plan would result in the necessary sustained performance results that are consistent with the Commission’s long-term goals for service quality.” On March 4, 2021, the Commission issued Resolution T-17731 accepting Staff’s recommendation and denying Frontier’s request.

In 2018-2019, Frontier California invested \$562.8-million in Gross Plant Additions, primarily in central office equipment (\$301.4-million) and outside plant (\$261.4-million). Had it simply paid the fine, Frontier would have been out \$2.07-million. That extra \$2.07-million that Frontier had offered to invest (over and above the \$2.07-million it would have paid anyway) amounts to less than 0.37% of Frontier’s total 2018-2019 plant additions – a truly *de minimis* sum, little more than a rounding error. There is no indication that, absent its acceptance of the §9.7 Alternative Investments option, the same total amount would not have been invested anyway. In our Phase 1 Report, we had concluded that the GO 133-D fines were insufficient to offer a financial inducement for ILEC compliance with the Commission’s service quality minimum performance standards because the cost of the fine represented a minuscule fraction of the cost that the ILEC would need to incur to improve its service quality. We reiterate that observation here, as well as our recommendation that the level of these fines be significantly increased. We certainly concur with the Staff’s recommendation and the subsequent Commission decision that Frontier’s alternative investments proposal for 2019 be denied.

Summary and conclusions

Frontier California represents a major component of its new parent, Frontier Communications Corp. But with the parent company’s financial condition at a crisis stage, Frontier California’s financial condition and investment policies will be dictated by conditions that are largely beyond the CPUC’s control. The California ILEC entity has virtually no ability to raise equity or debt capital on its own. If the parent company successfully emerges from bankruptcy, its ability to raise capital may improve, and at this point that is speculative at best. Frontier California has seen deterioration in almost all of the GO 133-D service quality metrics in most of the company’s wire centers over the 2018-2019 period. With Frontier having invested nearly a billion dollars in California since acquiring the company, this is not the outcome that one would expect to see.

11: ILEC SERVICE QUALITY AND COMMUNITY DEMOGRAPHICS

There is considerable variation in service quality performance across each ILEC’s wire centers. In our Phase 1 study, we undertook to preliminarily examine whether there was any observable relationship between a community’s median household income and the treatment that its ILEC was providing customers with respect to service quality. That examination was limited to AT&T California wire centers, and its results were discussed in Chapter 11 of our Phase 1 report, at pp. 518-522. For Phase 2, we have been tasked with extending this

examination to include Frontier California as well as AT&T California, and also to examine whether there was any evidence of service quality differences in communities with varying racial characteristics.

We have determined that the incidence of service outages for both AT&T and Frontier appears to be somewhat lower in higher income areas, although the companies' responses to those service outages that do occur do not appear to have a similar relationship with median household income levels. For AT&T, there is some indication that communities with proportionately higher black and Hispanic populations do experience higher incidences of service outages, but this pattern does not seem to be present for Frontier (see Figures 11.17 through 11.40). For both ILECs, there is no discernable pattern that responses to those service outages that do occur is linked to racial demographics.

Median household income, ILEC investment, and service quality

We categorized AT&T and Frontier wire centers into income quintiles based upon population and household count data from the 2010 Decennial Census as well as Median Household Income ("MHI") data from the 2018 US Census Bureau *American Community Survey* ("ACS") database. The 2010 Census reports demographic data at the Census Block level (15-digit geographic identifier), the most granular geographic area available, while the ACS reports MHI at the Census Tract level (11-digit geographic identifier). To best approximate the average MHI of households located within each AT&T or Frontier wire center footprint, we weight 2018 Census Tract level MHI by 2010 Census Block level household counts. There are roughly 500,000 Census Blocks in AT&T California's operating areas. Since all of the service quality metrics were developed at the individual *wire center* level, we needed to associate each Census Block with its serving wire center. This was accomplished for AT&T California utilizing a mapping analysis that was prepared for us by the Communications Division's GIS staff. Frontier provided us with a similar mapping, except that this was done at a Census Tract level. Census Tracts are larger, and include many individual Census Blocks.

Investment

We calculated the weighted (by POTS access lines in service as of December 31, 2018, the midpoint of the Phase 2 study period) average Median Household Income of the areas served by these wire centers in each of the specified quintiles, together with the average Gross Plant Addition investment per access line, average monthly out-of-service incidents per 100 access lines, and the percentage of wire centers equipped for broadband services, as summarized in the following Tables for AT&T and Frontier, respectively. As the data indicate, although average gross plant additions per access line are similar in all five quintiles, wire centers serving higher income areas tend to have fewer out-of-service incidents and greater broadband availability than their counterparts in lower income communities.

AT&T CALIFORNIA MEDIAN HOUSEHOLD INCOME AND 2018-19 GROSS PLANT ADDITIONS						
Quintile	Households	Median Household Income	Access Lines Jan 2019	2018-2019 Gross Plant Additions per Access Line	Out-of-Service per 100 ALs per month	Pct Wire Centers with Broadband
0%-20%	1,142,727	\$36,673	205,299	\$1,099	2.29	83.6%
20%-40%	1,654,443	\$48,591	305,857	\$1,131	1.77	84.3%
40%-60%	2,611,078	\$59,866	434,625	\$1,018	1.59	95.0%
60%-80%	2,610,669	\$75,927	485,362	\$900	1.36	97.5%
80%-100%	2,565,025	\$105,167	473,132	\$1,268	0.96	98.3%
Total AT&T-CA	10,583,942	\$70,540	1,904,275	\$1,077	1.59	91.7%

NOTE: Individual Census Blocks may include parts of more than one wire center and more than one ILEC serving area. The total number of households passed by AT&T shown here may well exceed those actually present in AT&T California's service area. However, for our purposes, the relevant calculation is the Median Household Income, which would apply for the entire Census Block irrespective of which ILEC serves a particular household.

FRONTIER CALIFORNIA MEDIAN HOUSEHOLD INCOME AND 2018-19 GROSS PLANT ADDITIONS						
Quintile	Households	Median Household Income	Access Lines Jan 2019	2018-2019 Gross Plant Additions per Access Line	Out-of-Service per 100 ALs per month	Pct Wire Centers with Broadband
0%-20%	294,942	40,438	71,907	\$ 1,249	1.85	51.2%
20%-40%	759,127	53,421	136,170	\$ 2,261	1.21	84.1%
40%-60%	734,943	65,579	109,751	\$ 694	1.24	88.1%
60%-80%	989,671	77,088	260,326	\$ 599	0.93	95.1%
80%-100%	1,284,373	97,266	319,981	\$ 1,170	0.61	100.0%
Total Frontier-CA	4,063,056	74,302	898,135	5,973	1.17	83.6%

NOTE: Individual Census Tracts may include parts of more than one wire center and more than one ILEC serving area. The total number of households passed by Frontier shown here may thus exceed those actually present in Frontier California's service area. However, for our purposes, the relevant calculation is the Median Household Income, which would apply for the entire Census Tract irrespective of which ILEC serves a particular household.

A substantial focus of AT&T and Frontier plant investment in recent years has been directed at upgrading its feeder and distribution outside plant to fiber optics aimed at upgrading the companies' ability to offer high-speed broadband Internet access and video services to customers. It appears that, to some extent, both companies have directed these upgrades toward higher income communities, as shown in Table 11.4.

AT&T CALIFORNIA AND FRONTIER CALIFORNIA WEIGHTED AVERAGE MEDIAN HOUSEHOLD INCOME IN WIRE CENTER SERVING AREAS WITH AND WITHOUT BROADBAND SERVICE UPGRADES BASED ON 2018 AMERICAN COMMUNITY SURVEY DATA				
Category	AT&T California		Frontier California	
	Wtd Avg MHI	No. of Wire Centers	Wtd Avg MHI	No. of Wire Centers
No broadband	\$ 50,322	50	51,385	35
FTTP / FiOS				66
Other broadband	\$ 70,616	555	75,252	178

NOTE: AT&T California has deployed FTTP in certain areas, but we do not have the breakdown of such deployment at the individual wire center level. Hence, for AT&T, "Other broadband" should be interpreted as "All broadband," including both FTTN and FTTP locations.

Racial characteristics of the population being served and service quality

ETI was also tasked with examining whether there is any discernable pattern or relationship between ILEC service quality and the racial characteristics of individual ILEC service areas. To undertake this analysis, we utilized data from the US Census Bureau’s 2010 *American Community Survey* (“ACS”), the most current source of this type of information. ACS compiles racial and nationality data at the individual Census Block level, which we aggregated to AT&T and Frontier wire center serving areas as described above. This was necessary because the most granular level of ILEC service quality data that is available is at the wire center level. While we have attempted to compile this information, we caution the Commission as to both its precision and usefulness. Individual wire centers typically serve populations ranging from a few thousand in rural areas to 100,000 or more in urban areas. These serving areas typically embrace a large variety of diverse populations, both residential and nonresidential. Our aggregations necessarily obscure the details of individual communities within a given wire center serving area. In addition, there is likely some correlation between racial and income attributes, which we have not expressly examined or controlled for. Thus, it is possible that the variation in service quality metrics that appear to be linked to race may well be attributable to income differentials.

For both ILECs, there is no indication that wire centers that serve relatively higher percentages of Black, Hispanic or Non-White populations exhibit more frequent incidents of service outages; moreover, as with our income analysis, there does not appear to be any observable pattern associated with any of the service restoration metrics for either company.

Conclusion

While there is some evidence that both AT&T California and Frontier California may be devoting more attention toward the condition of their central office and distribution plant in higher income and non-minority areas, there is no evidence of any inherent racial bias or redlining, nor is there any indication that higher income or non-minority communities are receiving more favorable treatment with respect to service restorations.

As we have noted, these results are at best an indication that more detailed examination of ILEC service quality performance below the individual wire center level may be warranted. A more granular analysis of this sort is well outside the scope of this Study. We do not consider the results presented here to be conclusive, but at best suggestive of a potential concern that could require more detailed investigation.

13: PHYSICAL AND ENVIRONMENTAL FACTORS AFFECTING ILEC SERVICE QUALITY

In Chapter 4, we observed that 16.8% of the roughly 5-million AT&T out-of-service conditions over the 2010-2017 Phase 1 study period had been attributed to "Heavy Rain," "Weather," "Moisture," or "Wet Plant." Over the Phase 2 2018-2019 period, that number almost doubled, to 29.6%. In our Phase 1 Report, we provided details of our preliminary examination of the potential interaction of adverse weather – principally precipitation – upon the incidence of Out of Service (OOS) Trouble Reports. That analysis was, however, limited, and covered only the greater Los Angeles area. We had observed a seemingly erratic pattern of out-of-service incidents that appeared to be highly variable from one period to the next. We hypothesized that one such exogenous source might well be weather or other environmental factors. To test this and focusing specifically on the greater Los Angeles area, ETI compared the incidence of out-of-service trouble reports with weather conditions extant at the time, specifically, with the amount of precipitation that occurred in the area being served by a given wire center. We identified a substantial correlation between precipitation and service outages.

For Phase 2, we have been asked to extend this analysis to cover the full 2010-2019 time frame, and to study a broader geographic area covering all of California. To accomplish this, we compiled precipitation statistics from the National Oceanic and Atmospheric Administration's ("NOAA") Global Summary of the Month ("GSOM") dataset for each of the ten "Census Regions" in the state. ETI identified NOAA weather station locations first by county, then aggregated these by averaging total monthly precipitation for all of the counties included within each of the ten Census regions. We then aggregated individual wire center Trouble Report statistics by county and then by Census Region. We calculated Coefficients of Determination (R^2) and t -statistics for each of the ten Census Regions and for each of AT&T California and Frontier California, respectively, as summarized on the following Tables for AT&T and Frontier, respectively:

AT&T CALIFORNIA RELATIONSHIP BETWEEN PRECIPITATION AND OUT-OF-SERVICE INCIDENTS 2010-2019			
Census Region	No. of Wire Centers	Coefficient of Determination R^2	t-statistic
1 Superior California	107	.676	15.696
2 North Coast	58	.490	10.655
3 San Francisco Bay Area	99	.756	19.138
4 Northern San Joaquin Valley	53	.564	12.365
5 Central Coast	54	.592	13.077
6 Southern San Joaquin Valley	65	.403	8.922
7 Inland Empire	13	.378	8.477
8 Los Angeles County	69	.520	11.308
9 Orange County	32	.507	11.008
10 San Diego – Imperial	60	.466	10.154

Source: NOAA GSOM dataset; ETI analysis of AT&T California Out-of-Service incidents 2010-2019

TFRONTIER CALIFORNIA RELATIONSHIP BETWEEN PRECIPITATION AND OUT-OF-SERVICE INCIDENTS 2016-2019			
Census Region	No. of Wire Centers	Coefficient of Determination R^2	t-statistic
1 Superior California	4	.471	3.187
2 North Coast	17	.500	6.553
3 San Francisco Bay Area	4	.652	8.969
4 Northern San Joaquin Valley	13	.206	3.343
5 Central Coast	20	.457	6.014
6 Southern San Joaquin Valley	38	.545	7.171
7 Inland Empire	53	.618	8.336
8 Los Angeles County	37	.746	11.238
9 Orange County	4	.587	7.812
10 San Diego – Imperial	2	.099	2.178

Source: NOAA GSOM dataset; ETI analysis of Frontier California Out-of-Service incidents 2016-2019

The results for both ILECs and across all ten Census Regions are both striking and consistent. For AT&T California, the Coefficients of Determination R^2 varied between a low of .378 for the Inland Empire Region to a high of .756 for the San Francisco Bay Area

Region. The high t -statistics for all ten Census Regions confirm that these correlations are statistically significant at the 99.9% confidence level. As noted, the Coefficient of Determination is interpreted as the percentage of variation in the Dependent Variable (OOS Incidents in this case) that is explained by variations in the Independent Variable (Inches of Precipitation). Thus, for the Bay Area, 75.6% of all AT&T California Out-of-Service incidents can be attributed to the effects of precipitation. Even in the largely desert Inland Empire Region, 37.8% of AT&T California OOS incidents are attributable to precipitation.

For Frontier California, the Coefficients of Determination R^2 varied between a low of .099 for the San Diego / Imperial Region to a high of .746 for the Los Angeles County Region. The high t -statistics for seven of the Census Regions are statistically significant at the 99.9% confidence level; two others are statistically significant at the 99% level, and one at the 97.5% level. Note, however, that four of the ten Frontier Census Regions each have 4 or fewer wire centers, thus reducing the statistical significance of the calculated results. The Region with the lowest R^2 – San Diego – has only two Frontier wire centers, such that no statistical significance can legitimately be ascribed to this result.

The strong relationship between rainfall and the rate of service outages provides compelling evidence that both ILECs' California distribution networks are not as robust as they need to be to account for local weather conditions over time. Weather or any other environmental factors that "caused" a particular out-of-service incident may (arguably) make that event "beyond management's *immediate* control," but the design and construction of the distribution network should certainly account for these types of weather conditions. And that is certainly well within the scope of "management's control" and responsibilities.

Effects of major wildfires on out-of-service incidents

The massive wildfires that have plagued California in recent years have prompted the Communications Division to include, within the scope of Phase 2 of the Network Examination, the following areas of additional inquiry:

- (a) Was service quality worse overall in areas that are prone to wildfires and in areas that had major wildfires during the time period of 2010- 2019?
- (b) Has service quality improved or deteriorated in areas that suffered severe wildfire damage?
- (c) Analysis of Investment and infrastructure technology in high risk fire areas (both rebuild and existing).

We collected and analyzed wildfire statistics maintained by the California Department of Forestry and Fire Protection (CALFIRE). The CALFIRE data includes dates and locations of major wildfire incidents from 2013 to 2020, as well as the number of acres burned in each incident. Initially, we directed our examination to the same ten Census Regions that we had

utilized in examining the effects of precipitation on service outages. To calculate the monthly number of wildfire incidents by Census Region, we identified the county (or counties) in which each major fire occurred, then aggregated the number of incidents in each county within each of the ten California Census Regions. We performed a similar aggregation for the monthly number of acres burned for each Census Region. However, unlike the strong relationship identified in our precipitation analysis, the correlation between wildfire incidents or wildfire acres burned and OOS per 100 Access Lines proved to be extremely weak.

Wildfires occur mainly during hot summer and fall months when rainfall is minimal, whereas OOS incidents arise during the periods of heaviest precipitation, which occurs during late fall and winter months. On the possibility that the geographic extent of entire Census Regions might overshadow the more localized impact of individual wildfire incidents, we prepared a similar set of regression analyses at the individual county level. We did this for each of the 51 counties in which AT&T California provides service, and for each of the 26 counties where Frontier California operates. We surmised that, by studying the interactions between wildfires and service outages across smaller geographic units, it might be possible to identify correlations that would be masked at the full Census Region level. However, we did not observe any greater correlation at the individual county level than at the full Census Region level.

Investment and infrastructure in high risk fire areas

We examined relationships between total acres burned over the 2013-2020 period and infrastructure investments made by each of the two ILECs. By hypothesis, if ILECs were responding to areas of high wildfire risk with large scale infrastructure investment, we would expect to see some relationship between the extent of wildfire activity and the level of investment being made in a given area. Using county-level wildfire and Gross Plant Additions investment data, we compared Total Acres Burned with two ILEC investment indicia – Total Gross Plant additions and Gross Plant Additions per Access Line. Because infrastructure reliability and investment would be expected to lag behind the actual wildfire damage, we utilized 2018-2019 Gross Plant Additions data for this analysis.

Because we utilized county-level data for this analysis, we would not expect a perfect match between the wildfire and investment data for each ILEC because, with very few exceptions, wildfires do not affect an entire county and ILECs do not generally serve an entire county. Additionally, because California counties vary in population by a factor of around 1000-to-1 and population has, if anything, an inverse relationship with the total number of acres burned, we utilized two alternate indicia of investment activity:

- Total 2018-2019 Gross Plant Additions for each county
- County-level Gross Plant Additions per Switched Access Line (as of January 2019) for each county

All else equal, ILEC investment in any given area is driven largely by the number of customers in that area, so we would expect larger investments to be made in the more populous counties. To control for this, we also examined *unit gross plant investment* per access line in service, using the January 2019 midpoint of the 2018-2019 Phase 2 study period. We also calculated the percentage of total wildfire acres burned for each of the counties served by each ILEC, as well as the percentage of that ILEC’s total Gross Plant Additions for each of the counties it serves. We observed very little correlation between Total Acres Burned and either Total Gross Plant Additions or Gross Plant Additions per Access Line.

In order to examine the extent of any such correlation quantitatively, we calculated a statistic known as the Spearman Rank Correlation both as between Total Acres Burned and Total Gross Plant Additions, as well as between Total Acres Burned and Gross Plant Additions per Access Line. Both Acres and Burned and Gross Plant Additions vary by orders-of-magnitude on a county-by county basis, diminishing the usefulness of traditional linear correlation analysis. Rank correlation avoids this problem. Out Rank Correlation calculations for each of the two ILECs are summarized here:

RANK CORRELATIONS BETWEEN TOTAL WILDFIRE ACRES BURNED (2013-2020) AND ILEC GROSS PLANT INVESTMENTS (2018-2019)		
Rank Correlation between	AT&T California	Frontier California
Total Acres Burned and Gross Plant Additions	-0.113846154	0.551724138
Total Acres Burned and Gross Plant Additions per Access Line	0.045248869	0.241926656

Notably, the results of these calculations are decidedly different for AT&T and Frontier. In the case of AT&T, the Rank Correlation between Total Acres Burned and Total Gross Plant Additions is *negative* 0.1138, suggesting an inverse relationship between these two variables. When we look at investment on a per-access line basis, the correlation is slightly positive, but quite low at only 0.0452. The clear conclusion here is that, for AT&T, there is no obvious relationship between its investment priorities and areas of high fire risk.

For Frontier, the rank correlation between Total Acres Burned and Total Gross Plant Additions is a *positive* 0.5517, suggesting a relatively strong positive correlation. Even when viewed on a per access line basis, we still see a rank correlation of 0.2419. Of course, these calculations do not reveal any *causal* link between Frontier’s investment activities and the incidence of wildfires, although the particularly high rank correlation between Acres Burned and Total Gross Plant Additions, which does *not* control for the volume of customers, could be interpreted as inferring at least some causal link in this case.

Conclusion

Our analysis of the effect of exogenous environmental conditions upon service quality of legacy circuit-switched telephone service has identified a strong correlation between precipitation and out-of-service incidents, but no discernable relationship between wildfires and service quality. The massive wildfires that have become all too common in California certainly destroy infrastructure as well as homes and other buildings on a grand scale, and undoubtedly have an impact upon the ability of the ILEC to furnish service in the affected area. However, if a home is destroyed along with the owner's telephone service, dealing with that type of service outage is likely a fairly low priority for the property owner, and as such does not result in a simply out-of-service trouble ticket on an individual customer basis. Frontier's plant investments, which in recent years have focused heavily upon outside plant, do appear to have some positive relationship with the extent of wildfires in a given county, but our analysis does not firmly establish a direct causal link between fires and investment overall.

14: ILEC RESPONSES TO SERVICE OUTAGES: VoIP SERVICES

For more than a decade, traditional circuit-switched voice telephone services have been in the process of being replaced by Voice over Internet Protocol ("VoIP") technology. VoIP requires the deployment of digital services to the customer's premises with sufficient bandwidth to accommodate both voice telephony as well as the various other digital (typically Internet-based) services that are used by the customer. Twisted-pair copper "loops" that have traditionally been provided to almost all residential premises and to most business locations can support digital end-to-end services, but generally cannot support the bandwidth requirements of typical residential and business customers for the full suite of voice and broadband Internet applications, particularly streaming video.

When an ILEC legacy circuit-switched POTS customer orders some form of broadband access from the ILEC, the carrier will generally migrate the customer's voice telephone service to a VoIP offering that is delivered, together with the customer's broadband Internet access, via the digital service. AT&T California *does not* offer VoIP services to customers who do not also take broadband Internet access and/or video from the ILEC; Frontier had a similar policy until July 2019, when it began offering VoIP service on a stand-alone basis.

Regulatory status of VoIP in California

In 2012, the California legislature adopted a new §710 of the California Public Utilities Code whose effect was to remove most aspects of any VoIP service from the CPUC's regulatory jurisdiction. §710 had included a "sunset" provision that became operative as of January 1, 2020; CD has advised us that §710 is no longer in effect and that the CPUC currently has resumed its jurisdiction over VoIP services. That notwithstanding, the ILECs continue to maintain that VoIP remains deregulated and that the Commission does not have

jurisdiction with respect to this service. Whether or not the sunset of §710 has the effect of reinstating the CPUC’s ratemaking authority with respect to VoIP services, as a practical matter the Commission no longer regulates most basic service rates in any event.

VoIP service quality metrics: AT&T California

AT&T California began offering VoIP services in 2012. Demand for AT&T VoIP service peaked in 2015 and has been on the decline since then. AT&T has provided us with approximately 3.3-million VoIP-related Trouble Report records for the 2012-2019 period. The following table compares the total number of annual Trouble Reports with the “average” number of VoIP subscriptions during each year.

AT&T CALIFORNIA VoIP SUBSCRIPTIONS AND TROUBLE REPORTS 2012-2019							
Year	EOY Subs	Average Subs for Year	Total Trouble Reports	Monthly TRs as Pct of Subs	Out-of-Service Trouble Reports	Monthly OOS TRs as Pct of Subs	OOS TRs as Pct of all TRs
2011							
2012			170,387	5.58%	109,189	3.57%	64.08%
2013			423,661	5.85%	282,685	3.90%	66.72%
2014			561,227	5.58%	346,958	3.45%	61.82%
2015			586,742	4.68%	316,543	2.52%	53.95%
2016			516,908	3.88%	310,023	2.33%	59.98%
2017			451,563	3.40%	296,370	2.23%	65.63%
2018			323,580	2.57%	215,073	1.71%	66.47%
2019			270,798	2.45%	185,504	1.68%	65.80%

Source: AT&T FCC Form 477 filings, AT&T California Response to CD Data Request 11-A-01.

Expressed in relative terms, there appears to have been a steady improvement in the percentage of VoIP subscriptions that experience trouble conditions in any given month, both in total as well as in the incidence of out-of-service conditions. However, the relative incidence of out-of-service reports as a percentage of all trouble reports has remained within the same 50%-69% range over the full 8-year Phase 1 study period.

Unlike legacy POTS services where customer premises equipment (“CPE”) consists mainly of technologically simple analog telephone handsets, VoIP services require, among other things, a local source of electrical power including some form of battery back-up, either a VoIP (digital) handset or an “analog telephone adapter” (“ATA”) to enable conventional telephone handsets to be used with VoIP services. 58.4% of all VoIP trouble reports were associated with distribution plant issues. 22% of all VoIP trouble reports were

associated with some other network facility issue. Less than one percent were caused by weather, with another 2.5% the result of various environmental conditions, including fires, animals and floods.

The following table compares service outage rates for legacy circuit-switched and VoIP services, and provides several important findings. In the direct comparison of the 503 wire centers where both VoIP and POTS are offered and where trouble report data is available for both types of service (calculations (4) and (5) in the table), VoIP out-of-service Trouble Reports per Hundred access lines (TRPH) is actually 38.7% *greater* than for POTS. And when we compare calculations (2) and (3), we find that the incidence of POTS out-of-service conditions is 63.5% greater in the 76 wire centers where VoIP is *not* offered than in the 530 wire centers where it is. This result is, of course, consistent with our finding that most POTS service quality metrics are better in wire centers that have been equipped for broadband services than in those where no broadband upgrade investments have been made.

AT&T CALIFORNIA COMPARISON OF AVERAGE MONTHLY OUT-OF-SERVICE TROUBLE REPORTS PER HUNDRED ACCESS LINES (TRPH) LEGACY POTS vs. VoIP SERVICES 2018-2019			
Calculation method		Number of Wire Centers	Out-of-Service Reports per Hundred Access Lines
1	Legacy POTS access lines – all wire centers for which data is available	606	1.2366
2	Legacy POTS access lines – wire centers where VoIP is offered	530	1.2213
3	Legacy POTS access lines – wire centers where VoIP is NOT offered	76	1.9964
4	Legacy POTS access lines – wire centers where VoIP Trouble Report data is available	503	1.2138
5	VoIP access lines	503	1.6842

Individual wire center VoIP service quality performance

AT&T VoIP TRPH metrics appear to fall well short of the GO 133-C/D threshold. Certain wire centers appear to exhibit particularly high TRPH numbers, but these seem to be due primarily to the nature of the underlying data upon which this analysis was based rather than to systemic issues in those locations. That said, the spike in overall trouble reports and in service outages that appears to have occurred starting in 2017 does raise some concerns, and it may be worthwhile for the Commission to pursue this further as the importance of VoIP as the preferred method of providing basic service grows in future years.

VoIP service quality metrics: Frontier California

On the day it took over control of the California ILEC from Verizon, Frontier California had [REDACTED] VoIP lines in service. By the end of December 2019, that number had decreased to [REDACTED], a roughly 50% erosion in the number of VoIP subscribers between the April 1, 2016 acquisition date and December 31, 2019. Frontier has not provided a technology breakdown with respect to its VoIP services, but we know that not all of Frontier's VoIP customers were being served out of *FiOS*-equipped locations. Frontier's VoIP services were being targeted primarily at residential subscribers; as of the end of December 2019, only about [REDACTED] business customers were taking VoIP services from Frontier. Notably, Frontier experienced a far greater drop-off in legacy circuit-switched access lines over that same period. By the end of 2019, Frontier California's average monthly VoIP lines in service had decreased by 59.26%. Total trouble reports experienced a much greater decrease, to 40.69% of the August 2016 number, indicating improvement overall. However, as far as out-of-service trouble conditions, those actually *increased* by 54.79% despite a 41.74% *decrease* in the number of VoIP lines in service.

Conclusion

VoIP service is dependent upon locally-provided power, battery backup, and complex customer premises equipment that is not generally required for legacy circuit-switched services. The seemingly higher incidence of VoIP service outages *vis-à-vis* POTS could well be the result of customer premises conditions that are unique to VoIP. These conditions arise both for ILEC- and cable-provided VoIP services. Finally, the so-called “digital divide” – an issue whose importance has increased as a result of the COVID-19 crisis – raises the potential for the loss of high quality wireline voice services in rural and low-income populations. Although the Commission has created LifeLine programs that involve some (but not all) wireless providers, for wireline services the focus has traditionally been on ILEC circuit-switched offerings. As these services are phased out, new LifeLine initiatives that include all major VoIP providers (ILECs and cable MSOs) will need to be formulated. With the sunset of §710 that went into effect as of the beginning of 2020, a comprehensive regulatory approach that embraces all providers of VoIP type services should clearly be a top priority.

15: CPUC CONSUMER AFFAIRS BRANCH COMPLAINTS

The mission of the CPUC's Consumer Affairs Branch (“CAB”) is to assist consumers of public utility services address problems that may arise from time to time in connection with their service, billing issues, and/or other relationships with the utility. The CAB describes its role as follows:

The California Public Utilities Commission (CPUC) regulates privately owned California utilities that provide energy, water, and telecommunications services. If you have a question or complaint concerning one of these utility providers, help is available through the Consumer Affairs Branch (CAB).

CAB's team of representatives is ready to assist consumers with billing and service matters with regulated utilities. Through dedicated specialists, CAB assists consumers in resolving application denials (appeals) for the California LifeLine program participation. ...

For Phase 2, ETI has been tasked with examining two issues related to the CAB's activities: (1) whether wire centers with a high number of consumer complaints have worse service quality metrics than the statewide average; and (2) the breakdown of complaints of VoIP versus traditional telephone service.

CAB handles both informal complaints as well as formal complaints that are ultimately adjudicated by the CPUC. Our examination was, however, limited to informal complaints. CAB collects geo-coded customer location information, but this is not consistent with the customer of record/account data that is contained in the ILECs' trouble report records, such as the customer's account or billing telephone number, serving wire center, or other location-specific information. Because CAB complaint records do not typically include the complainant's billing telephone number (BTN), it is usually not possible to link individual consumer complaints as submitted to CAB with Trouble Ticket records maintained by the carriers and furnished to us for purposes of this Study. As a result, we are able to address only limited aspects of issue (1). However, we have reviewed records of all complaints received by CAB pertaining to AT&T California (U-1001) and Frontier California (U-1002) over the 24 month period from January 2018 through December 2019, and are able to provide an overall assessment of the relationship between service outages as reported to the carriers vs. service-related complaints submitted to CAB.

Types and quantities of consumer complaints received by CAB

Over the Phase 2 2018-2019 study period, CAB received a total of 5,729 Complaints pertaining to AT&T California and 2,925 Complaints pertaining to Frontier California. In its complaint data records, CAB identifies approximately 75 principal types of complaints by their subject. To support our analysis, we have associated each of the CAB complaint types with one of six (6) principal complaint categories, as follows:

Service Quality issue
 Billing / Commercial Dispute
 Customer service issue
 VoIP
 Service quality issues
 Other issues (e.g., billing, customer service)
 Non-phone issue (Cable, Internet)
 Unknown

The “Service Quality issue” category, which relates most directly with Trouble Reports submitted to the carriers for service outages and other service-related problems, represents less than a quarter of the total complaints received by CAB. For AT&T California, only 1,213, or 21.17%, of the 5,729 complaints received by CAB pertained to service outages and other telephone service related service quality issues. By comparison, over the 2018-2019 period, AT&T California customers reported some 573,585 service outages to the carrier. For Frontier California, only 718, or 24.55%, of the 2,925 complaints received by CAB during 2018-2019 pertained to telephone service related service quality issues, whereas Frontier California customers reported some 81,021 service outages to the carrier during 2018 and 2019.

CPUC CONSUMER AFFAIRS BRANCH PRINCIPAL CATEGORIES OF CONSUMER COMPLAINTS 2018-2019				
Complaint category	CAB Complaint Counts			
	AT&T	Pct of Total	Frontier	Pct of Total
Service Quality issue	1,213	21.17%	718	24.55%
Billing / Commercial Dispute	2,655	46.34%	1,266	43.28%
Customer service issue	755	13.18%	346	11.83%
VoIP Service issue	106	1.85%	245	8.38%
VoIP Billing issue	213	3.72%	37	1.26%
Non-phone issue (Cable, Internet)	755	13.18%	208	7.11%
Unknown	32	0.56%	20	0.68%
TOTALS	5,729	100.00%	2,925	100.00%

Nearly half of the complaints submitted to CAB were associated with billing or other commercial interactions between the customer and the carrier. Customer Service complaints represented 13.18% and 11.83% of all complaints received relating to AT&T California and Frontier California, respectively. Thus, more than half of all complaints received by CAB have no direct counterpart with respect to service outages or other trouble tickets as reported to the carriers. CAB also received many complaints that addressed services over which the CPUC has limited or no direct regulatory authority, such as cable TV, Internet access, and even inside wire issues.

VoIP Services

Also included in the CAB records were complaints dealing with VoIP services; however, the vast majority of these dealt with issues other than service-related problems, such as billing and related commercial matters, delayed service installations, and other customer service issues. Nevertheless, it may still be instructive to compare VoIP service quality-related complaints with those addressing service quality issues associated with legacy services, and to present these in the context of Trouble Reports both for VoIP and for legacy services as well as the number of lines in service for each of the two carriers. Table 15.4 below compares CAB VoIP Complaints, VoIP Trouble Tickets, and VoIP subscriptions for each of the two carriers over the Phase 2 2018-2019 study period, and provides similar data for legacy services as well. Subscription counts are averaged over the two years so as to correspond with the Complaint and Trouble Ticket totals over that same period.

VOiP AND LEGACY SERVICE COMPLAINTS, TROUBLE REPORTS AND SUBSCRIPTION COUNTS 2018-2018				
Complaint category	VoIP		Legacy telephone service	
	AT&T	Frontier	AT&T	Frontier
Service-related Complaints received by CAB	106	37	1,213	718
Service outage Trouble Reports received by carriers	400,577	63,726	573,585	81,021
Average subscriber counts 2018-2019				
Service-related CAB Complaints per 100 lines in service (2018-19 average)	0.0115	0.0165	0.0628	0.1054
Total Out-of-Service Reports per 100 VoIP lines in service, 2018-2019	43.53	28.45	29.68	11.89
Average Out-of-Service Reports per month, per 100 lines in service	1.8138	1.1854	1.2367	0.4954

Both carriers appear to be experiencing higher rates of service-related trouble conditions (i.e., out-of-service reports per month per 100 lines in service) for VoIP services than for their legacy telephone services. Notably, the CAB service-related complaints per 100 lines in service are actually *lower* for VoIP services than for legacy services. However, these numbers are so small, and represent little more than a minuscule fraction of all trouble reports for both categories of service, that no meaningful conclusions as to the reasons for this seemingly inverse relationship are possible.

CAB complaints vs. carrier trouble reports for legacy services

In that regard, while the total quantity of service-related complaints submitted to CAB is an extremely small fraction of the total number of trouble reports received by both carriers, the relative number of CAB complaints has been consistently and significantly greater for Frontier California than for AT&T California. Over the 2018-2019 period, CAB received 1,213 service-related complaints from AT&T customers, representing 0.2115% of the 573,585 service outage trouble tickets processed by AT&T over that same period. For Frontier, CAB received 718 service-related complaints, representing 0.862% of the 81,021 service outage trouble tickets processed by Frontier. While the absolute number of complaints received by CAB are still extremely small relative to the number of service problems being reported directly to the carriers, the stark difference in the instance of such complaints as between customers of the two carriers is striking.

CAB complaint data would be enormously more useful, going forward, if customer-specific service details, such as serving wire center, service and billing telephone number(s), and street address could be routinely and consistently recorded along with the description of the problem being experienced by the customer. While these details may be of lesser importance for complaints that do not directly involve service outages and other service-related issues, at the very least this additional account-specific data should be collected where the complaint does involve service quality problems.

16: RELATIONSHIP OF CAF II FUNDING TO POTS SERVICE QUALITY

The Connect America Fund was created by the FCC “to be spent annually to make broadband-capable infrastructure available to as many unserved locations as possible within these areas served by price cap carriers, while sustaining voice and broadband-capable infrastructure in high-cost areas that would not be served absent support.” As noted, the focus of the Connect America Fund was to assure increased availability of *broadband* services to otherwise unserved areas. However, the focus of this study has been and remains service quality of *legacy circuit-switched basic voice telephone service*, which we have been referring to as “Plain Old Telephone Service” (“POTS”).

For Phase 2, we have been asked to examine whether it is possible to determine if areas that have been recipients of Connect America Fund II (“CAF II”) funding exhibit identifiably better service quality for *legacy* circuit-switched basic voice telephone services than is evident for otherwise similar areas that have not benefitted from CAF II-funded broadband infrastructure upgrades. We have determined that the data that would be necessary to support such an analysis is not available and, as such, we are unable to offer an assessment as to whether areas receiving CAF II support exhibit improved POTS service quality.

Limitations of POTS service quality data

The trouble report and other service quality data that has been provided by the two ILECs pursuant to GO 133-C/D and made available to ETI in both Phases 1 and 2 of this study is in all instances organized *at the wire center level*; indeed, GO 133-C/D reporting requirements and service quality metrics are also stated at the individual wire center level. Eligibility for CAF II funding is based upon certain attributes that are determined at the individual *Census Block* level. As such, customer-specific location data sufficient to identify individual customers within a wire center serving area and, in particular, to identify those customers that are served by broadband infrastructure that has been constructed with CAF II funding, is not available.

There are 710,145 census blocks in California, 500,454 of which are in the areas served by AT&T California. Only 9,210 of these fall within the CAF II eligibility standards. And those 9,210 Census Blocks contain a total of 33,761 individual housing units, or 0.31% of the 11,018,714 total housing units within AT&T California operating areas (see Table 16.2). Frontier has provided data on its operating areas at the Census Tract level. Frontier provides service in 1,991 Census Tracts containing a total of 3,414,452 housing units. However, it is likely that some of these Census Tracts extend into areas not served by Frontier, so the total number of housing units where Frontier service is available is likely somewhat lower. There are 3,928 Census Blocks falling with Frontier operating areas containing a total of 12,812 housing units (see Table 16.3). And it is still not possible to associated any individual customer record with the corresponding Census Tract.

We have also been advised by Communications Division staff that, unlike Frontier California, which has used CAF II funding to support construction of *wireline* broadband infrastructure, AT&T California's approach to broadband deployment in CAF II-funded locations has been almost exclusively through the use of fixed wireless technology. Accordingly, since AT&T California has apparently not been using CAF II support for any *wireline* broadband upgrades, there is no *a priori* basis to expect any residual result of *wireless* upgrades to be an improvement in *wireline* service quality.

Conclusion

For the reasons discussed above, we are not able to provide an assessment as to the impact of CAF II funding for wireline or fixed wireless broadband deployment occurring in only a small portion of individual wire centers upon overall legacy circuit-switched voice telephone service quality as measured at the full wire center level.

Principal Phase 2 Observations and Takeaways

4: ILEC RESPONSES TO SERVICE OUTAGES: PHASE 2 UPDATE

- ETI's analysis of the condition of AT&T and Frontier's networks in California is, among other things, based upon the approximately 7.3-million Customer Trouble Report records submitted by the two companies over the 2010-2019 Study Period.
- Our Phase 2 analysis shows a fairly consistent and pervasive degradation in both companies' service quality performance across virtually every service quality metric that we have examined.
- 16.8% of the roughly 5-million AT&T out-of-service conditions over the Phase 1 study period had been attributed to "Heavy Rain," "Weather," "Moisture," or "Wet Plant." Over the Phase 2 2018-2019 period, that number almost doubled, to 29.6%.
- The source of most service outages continues to be largely confined to weather-driven and other failures in outside plant, rather than to the ILECs' aging central office switches or associated equipment.
- Substitution of wireless for wireline services continues. FCC data indicate that, for California, total wireline voice service access lines in service (ILEC and non-ILEC, circuit-switched and VoIP) decreased by 6.23-million, down 32.72%, from 19.65-million as of the beginning of 2010 to 13.42-million as of the end of 2018. During the same period, the number of wireless subscriptions in California increased by 10.4-million, from 32.94-million connections in 2010 to 43.34-million in 2018. Overall, there were 3.9 million more wireless connections than the total population in California, which was 39.4 million people at the end of 2018.

4A: SERVICE QUALITY ANALYSIS UPDATE: AT&T CALIFORNIA

- AT&T California's performance in 2018-2019 has deteriorated relative to where it had been in the 2010-2017 Phase 1 study period, and its performance with respect to nearly every one of the service quality metrics that we had examined in Phase 1 has deviated further from the Commission's GO 133-D service quality objectives and standards.
- The greatest demand drop-offs for legacy POTS services continues to be experienced in the largest wire centers.
- The trend in average duration of all out-of-service conditions over one hour had been steadily increasing over the Phase 1 study period, and spiked further in 2018-2019. By the end of 2019, it took AT&T 67% longer to restore service than it took in 2010.
- Over the 2010-2019 study period, AT&T's average duration for service outages exceeding 24 hours has increased by roughly 67%.

- During 2018-2019, 55.9% of the 573,591 out-of-service conditions (38.2% on an "adjusted" basis) remained uncleared after 24 hours, up from the corresponding 49.6% / 36.7% levels during the 2010-2017 period. To satisfy the GO 133-C/D §3.4(c) requirement, these percentages would need to drop to less than 10%.
- On an adjusted basis, the number of days required for AT&T to clear 90% of all out-of-service conditions was increasing at a faster rate over the 2018-2019 period than over the longer Phase 1 period. Over the eight years from 2010Q1 through 2017Q4, the number of days required for AT&T to clear 90% of service outages increased at an annual rate of 3.37%, from 4.10 days to 5.30 days. Over the next 24 months, from 2017Q4 to 2019Q4, the days to clear 90% jumped at an annual rate of 13.77%, from 5.30 to 6.86.
- There continues to be little effective competition for POTS services. If the market were sufficiently competitive, the greatest loss of demand would occur in wire centers exhibiting the poorest service quality. In fact, the greatest drop-off in demand has occurred in wire centers with the best service quality records.
- Performance across most service quality metrics is better in wire centers that have been upgraded with fiber optic distribution facilities, in those serving higher-density urban and suburban communities, in larger wire centers, and in those with the largest losses of customers to competitors. But in almost every category, performance has significantly deteriorated over the 2018-2019 period.
- Wire centers upgraded with fiber to support broadband services achieve better service quality performance scores in every category – but in 2018-2019, service quality in both types of wire centers was decidedly inferior to what had been achieved during the Phase 1 2010-2017 period. Based upon Phase 2 trend lines, AT&T needed only 1.15 days to clear 90% of service outages in wire centers with fiber optic facilities as of the end of 2019; for non-upgraded wire centers, it took 2.43 days to clear 90%. The corresponding figures as of the end of Phase 1 (4Q2017) were 1.10 and 1.86.
- The strong relationship between the number of POTS lines in a wire center and the quality of service provided has persisted into the 2018-2019 period, with the number and the rate of increase in OOS per 100 POTS lines continuing to be lowest in the very largest (over 20,000 lines) wire centers. However, service quality has deteriorated in all line-size categories since 2017.
- Wire centers that had experienced the lowest rate of POTS line losses – less than 50% over the study period – saw the largest increase in service outages; for those with successively larger line loss percentages, the incidence of service outages increased more slowly or remained almost constant over the study period. But performance in nearly all of the service quality metrics we studied deteriorated after 2017.
- Except in areas with the highest population density, AT&T's response to out-of-service conditions has generally deteriorated over the study period. That deterioration appears to have accelerated for all population density categories in the 2018-2019 period.

- Of the five AT&T maintenance (AFO) districts, LA/Bakersfield and San Gabriel had shown significant improvements in most OOS metrics during the Phase 1 study period. However, even those improvements appear to have largely reversed in 2018-2019.
- Since the bulk of AT&T's investments in its ILEC network have been aimed at upgrades that support broadband services, the AFO Districts with the smallest percentage of such upgrades have continued to experience substantial degradations in service quality into the 2018-2019 period. This result further underscores the pressing need for infrastructure investment irrespective of AT&T's pursuit of the broadband market.

4F: SERVICE QUALITY ANALYSIS UPDATE: FRONTIER CALIFORNIA

- The greatest demand drop-offs for legacy POTS services generally occurred in the largest of Frontier's reporting units.
- Over the 2016-2019 Frontier ownership period, POTS access lines in service experienced a 52.3% decrease, dropping from 1,201,218 to 572,975. Thus, in less than four years after taking over the ILEC, more than half of Frontier California's POTS customers had discontinued their service.
- Over the period of Frontier ownership, the relative drop-off in legacy POTS access lines greatly exceeded the relative decrease in total out-of-service incidents; thus, under Frontier ownership, out-of-service incidents per 100 access lines in service increased.
- Improvements in service quality that were accomplished during the first seven quarters following Frontier's takeover were reversed in 2018-2019, which saw increases in the numbers of service outages lasting more than 24 hours and in the average duration of all service outages.
- 57.85% of the roughly 112,022 out-of-service conditions (34.84% on an "adjusted" basis) remained uncleared after 24 hours by Frontier during the 2018-2019 Phase 2 period. For the 118,402 out-of-service conditions during the 4/2016-12/2017 Phase 1 period, 53.83% (47.01% on an adjusted basis) remained uncleared after 24 hours. To satisfy the GO 133-C/D §3.4(c) requirement, these percentages would need to drop to less than 10%.
- Wire centers upgraded with Fiber-to-the-Premises ("FTTP") capable of providing FiOS broadband services achieve better service quality performance scores in virtually every category than those without such upgrades. But Frontier lost ground in all of these metrics both in upgraded and non-upgraded wire centers over the 2018-2019 period.
- The strong relationship between the number of POTS lines in a wire center and the quality of service provided that we had identified in Phase 1 has generally persisted into Phase 2.
- The largest increases in service outages occurred in wire centers with the lowest POTS drop-off rates; the incidence of service outages increased more slowly or remained almost constant in wire centers with successively larger drop-off rates.

- Frontier service quality metrics continue to show the best results in higher-density serving areas.
- Except in those areas with the lowest population density, Frontier's response to out-of-service conditions had generally improved over the period immediately following its takeover. However, by 2018, these gains had started to reverse.
- Service quality metrics in all six Frontier Operating Areas generally improved from the April 2016 acquisition date through the end of 2017, but this pattern reversed course starting in 2018.
- The Operating Areas with the largest presence of fiber upgrades continue to exhibit the lowest number of OOS incidents and the shortest outage durations for those that do occur over the full 2016-2019 period.
- The trend in average duration of all out-of-service conditions, excluding those cleared within one hour, has been steadily increasing over the 2016-2019 Frontier ownership period.
- The largest increases in service outages continued to occur in wire centers with the lowest POTS drop-off rates.
- The Operating Areas within which most of the Verizon and Frontier FTTP upgrades have occurred have experienced the lowest number of OOS incidents and the shortest outage durations for those that do occur.

7: AT&T CORPORATE AND CALIFORNIA FINANCIALS AND ILEC INVESTMENT POLICIES: PHASE 2 UPDATE

- AT&T senior management's interest in and attention to its legacy wireline ILEC operations continues to be subordinated to its wireless operations and the more recent satellite TV and video content acquisitions.
- Despite experiencing a 76.4% drop in legacy switched access lines from 2010 through 2019, AT&T California's gross revenues decreased by only 31.64% over the same period.
- Even when confined to only those revenue sources directly attributable to legacy switched access line services, AT&T California legacy access line-related revenues decreased by only about 53.4%, significantly below the 76.4% drop in switched access line demand, because AT&T California has raised its rates for legacy flat-rate residential service by 152.6% since the service was de-tariffed by the CPUC in 2009..
- This succession of rate increases is consistent with and in support of a "harvesting" strategy aimed at maximizing revenues from existing customers until they ultimately discontinue their service, thus allowing A&T to maintain revenues despite a massive drop-off in demand.

- AT&T California's response to the erosion of the market for legacy POTS services has been to raise prices, cut back on investment and maintenance, and instead "harvest" those customers that remain on its network for as long as they continue to take their service.
- The fact that AT&T has been able to profitably implement a succession of large annual legacy services rate increases for more than a decade since the implementation of URF raises serious questions as to the Commission's conclusion in URF that competition had developed to a point where continued regulatory protection of basic residential telephone service prices is no longer required or appropriate.
- Over the past two years (2018-19), AT&T California continued to disinvest from its network. The Company had total net after-tax income of \$3.21-billion, but paid out \$3.42-billion in dividends to its parent company, AT&T Inc -- i.e. it paid AT&T dividends that were some \$219.5-million more than the California company had earned from its ongoing operations.
- Between 2010 and 2019, AT&T California paid dividends to AT&T Inc. that exceeded its total net income over the period by roughly \$4.43-billion.
- A change in the accounting procedures that AT&T California has utilized for its ARMIS-type reports after 2017 has resulted in a roughly \$5-billion overstatement of its net Telecommunications Plant in Service for 2018 and 2019.
- Those capital investments that AT&T has been making in its California ILEC have, for the most part, not been directed at legacy basic voice services.
- AT&T's "harvesting" philosophy explains why AT&T has failed to improve service quality for its POTS services at least to the point where the GO 133-C/D standards can be achieved, because the gains it can realize by raising prices and curtailing investment and maintenance far exceed any financial penalties it might suffer from persistently poor service quality.

8: FRONTIER CORPORATE AND CALIFORNIA FINANCIALS AND ILEC INVESTMENT POLICIES: PHASE 2 UPDATE

- Having grossly overpaid Verizon for the 2016 California-Texas-Florida ("CTF") acquisition, Frontier assumed a massive debt burden that cannot be sustained.
- Most of that overpayment had been carried as "Goodwill" or "Other Intangibles" on Frontier's corporate balance sheet; by the end of 2019, all of that Goodwill and most of the Other Intangibles have been written off.
- By the end of 2019, Frontier's total debt was more than \$18.3-billion, and the Company's total debt service (interest and amortization) payments in 2019 were more than \$3.5-billion.

- Frontier's California customer base continued to dwindle, to the point where it has lost roughly 50% of the POTS access line customers it had acquired in the 2016 purchase.
- Frontier's net income declined following each successive acquisition, to the point where it has now been negative for seven consecutive quarters.
- Frontier's melt-down and ultimate Chapter 11 bankruptcy filing confirms the inescapable fact that Frontier had grossly overpaid Verizon for the CTF assets.
- Unlike AT&T, which had raised its legacy flat-rate residential POTS rates by 152% since the onset of URF, Verizon's rates for this service had risen by only 31% as of the date of the sale to Frontier, and Frontier had not effected any rate increase since the acquisition through the end of 2019.
- Since acquiring the California ILEC from Verizon in 2016, Frontier continued to invest less in Gross Plant Additions than it took in retirements and depreciation accruals, resulting in a net disinvestment of \$469.5-million.

11: ILEC SERVICE QUALITY AND COMMUNITY DEMOGRAPHICS

- While we have attempted to compile the requested data on the relationships between ILEC service quality and communities' income level and racial makeup, we caution the Commission as to both the precision and usefulness of these results, and recommend that their use at this time be limited solely to considering the need for a more detailed and more granular investigation.
- The incidence of service outages for both AT&T and Frontier appears to be somewhat lower in higher income areas, although the companies' responses to those service outages that do occur exhibit no similar income-related pattern.
- Average gross plant additions investment per access line are similar in all five quintiles for both AT&T and Frontier, but wire centers serving higher income areas tend to have a lower rate of out-of-service incidents and greater broadband availability than their counterparts in lower income communities.
- For both AT&T and Frontier, there is no indication that wire centers that serve relatively higher percentages of Black, Hispanic or Non-White populations exhibit more frequent incidents of service outages; moreover, as with our income analysis, there does not appear to be any observable pattern for either company associated with any of the service restoration metrics.

13: PHYSICAL AND ENVIRONMENTAL FACTORS AFFECTING ILEC SERVICE QUALITY

- Telephone service outages appear to be highly dependent upon weather conditions, specifically, the amount of precipitation in the area served.
- The strong relationship between rainfall and the rate of service outages provides a strong indication that the ILEC distribution networks are not as robust as they need to be, and clearly lack the resiliency to withstand significant weather events.
- Overall, we observed little correlation between the incidence of major wild fires and ILEC service quality. Wildfires occur mainly during hot summer and fall months when rainfall is minimal, whereas OOS incidents arise during the periods of heaviest precipitation, which occurs during late fall and winter months.

14: ILEC RESPONSES TO SERVICE OUTAGES: VoIP SERVICES

- When an ILEC legacy circuit-switched POTS customer orders some form of broadband access from the ILEC, the carrier will generally migrate the customer's voice telephone service to a VoIP offering that is delivered, together with the customer's broadband Internet access, via the digital service.
- ILEC VoIP services are provided out of the same serving wire center that had been used for legacy circuit-switched services, but the VoIP switch itself can be located anywhere on the Internet. A service interruption or outage can arise in the local distribution infrastructure or anywhere beyond that point on the ILEC's IP network.
- Most AT&T California VoIP services are provided using DSL technology over a hybrid Fiber-to-the-Node ("FTTN") / copper distribution architecture. However, AT&T's deployment of Fiber-to-the-Premises ("FTTP") has been increasing; by the end of 2019, some 20.7% of all AT&T California VoIP customers were being served via FTTP.
- From 2012 through 2016, the percentage of AT&T California VoIP access lines that had experienced out-of-service conditions in any given month was decreasing steadily, but those gains were reversed after 2016.
- The average duration of all trouble and out-of-service conditions was also shrinking up until 2016, but both metrics saw large upward spikes, with outage durations increase from less than 30 hours prior to 2017 to around 50 hours from 2017 onward.
- Some 58.4% of the 3.3-million AT&T California VoIP trouble reports created during the 2012-2019 period involved distribution plant issues.
- In wire centers where both VoIP and POTS are offered and where trouble report data is available for both services, the relative incidence of VoIP service outages was 38.7% greater than it was for POTS over the full Phase 1/2 study periods.

- Frontier suffered large losses both of POTS and VoIP access lines since assuming control of the company on April 1, 2016 with POTS losses slightly higher, suggesting that the availability of FTTP-based FiOS has done little to help Frontier maintain its customer base overall.
- As of the end of December 2019, Frontier was serving only ████████ residential VoIP subscribers, just under 50% of the VoIP lines in service as of the takeover date. In comparison, Frontier had experienced a far greater drop-off in legacy circuit-switched access lines over that same period.
- Out of the 44,095 out-of-service reports provided for the period from April 2016 through December 2019, only 25,089, or about 56.9%, appear to be the result of Frontier plant or equipment issues or employee actions.

15: CPUC CONSUMER AFFAIRS BRANCH COMPLAINTS

- CAB collects geo-coded customer location information, but this is not consistent with the customer of record/account data that is contained in the ILECs' trouble report records, such as the customer's account or billing telephone number, serving wire center, or other location-specific information. Consequently, CAB complaint records cannot be directly linked to or correlated with carrier trouble tickets because CAB does not collect detailed customer account or location data.
- Less than a quarter of the total complaints received by CAB involved service outages and other service-related problems.
- The vast majority VoIP-related complaints received by CAB address issues other than VoIP service quality, such as billing disputes and other customer service issues.
- Although the absolute number of service-related complaints received by CAB is extremely small when compared with the number of complaints made directly with carriers, on a relative scale more than four times as many complaints involve legacy services provided by Frontier than those furnished by AT&T.
- CAB should undertake to collect customer account and location data as part of all service-related complaints.

16: RELATIONSHIP OF CAF II FUNDING TO POTS SERVICE QUALITY

- The data that would be necessary to support an analysis of the effects of CAF II funding on legacy circuit-switched voice telephone service is not available and, as such, we are unable to offer an assessment as to whether areas receiving CAF II support exhibit improved POTS service quality.
- Housing Units passed by the two ILECs in areas eligible for CAF II support represent a minuscule fraction of all Housing Units within each company's California operating territories.

- GO 133-C/D service quality standards and metrics are compiled at the individual wire center level, whereas eligibility for CAF II funding is determined at the individual Census Block level. Since only a small fraction of all customers served by any given wire center are located in areas receiving CAF II funding support, there is no practical means for associating CAF II support (which is focused on broadband infrastructure) and service quality for legacy circuit-switched voice services.

4 | ILEC RESPONSES TO SERVICE OUTAGES: PHASE 2 UPDATE

Key findings addressed in this Chapter

- ETI's analysis of the condition of AT&T and Frontier's networks in California is, among other things, based upon the approximately 7.3-million Customer Trouble Report records submitted by the two companies over the 2010-2019 Study Period.
- Our Phase 2 analysis shows a fairly consistent and pervasive degradation in both companies' service quality performance across virtually every service quality metric that we have examined.
- 16.8% of the roughly 5-million AT&T out-of-service conditions over the Phase 1 study period had been attributed to "Heavy Rain," "Weather," "Moisture," or "Wet Plant." Over the Phase 2 2018-2019 period, that number almost doubled, to 29.6%.
- The source of most service outages continues to be largely confined to weather-driven and other failures in outside plant, rather than to the ILECs' aging central office switches or associated equipment.
- Substitution of wireless for wireline services continues. FCC data indicate that, for California, total wireline voice service access lines in service (ILEC and non-ILEC, circuit-switched and VoIP) decreased by 6.23-million, down 32.72%, from 19.65-million as of the beginning of 2010 to 13.42-million as of the end of 2018. During the same period, the number of wireless subscriptions in California increased by 10.4-million, from 32.94-million connections in 2010 to 43.34-million in 2018. Overall, there were 3.9 million more wireless connections than the total population in California, which was 39.4 million people at the end of 2018.

ILEC RESPONSES TO SERVICE OUTAGES: PHASE 2 UPDATE

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Introduction: Organization of this Chapter

This chapter provides an update to Chapter 4 in our Phase 1 Report to include trouble report and out-of-service activity for 2018 and 2019. On April 1, 2016, Verizon transferred ownership and control of its California ILEC operations, then known as Verizon California, to Frontier Communications Corporation. In our Phase 1 Report, we covered the full 2010-2017 study period by merging the service quality data for both the pre- and post-transfer periods. In this Phase 2 Report, we are limiting our analysis of Frontier to the 45 months from April 2016 through and including December 2019 under Frontier ownership. Our analysis of Frontier service quality is contained in Chapter 4F. Chapter 4A updates our analysis of AT&T California's service quality performance over the full ten-year 2010-2019 period.

In our Phase 1 Report, we utilized regression analysis to develop long-term trends covering a variety of service quality metrics over the full 8-year Phase 1 study period. For Phase 2, we have appended the trouble report data submitted by the two ILECs pursuant to GO 133-D to the corresponding Phase 1 datasets. Using these expanded datasets, we then extended the long-term trend calculations to cover, in the case of AT&T California, the full 2010-2019 period and, for Frontier California, the 45-month period under Frontier ownership. We have also calculated trend lines for both companies covering the 2-year Phase 2 period from January 2018 through December 2019. The various graphs that are provided each present three separate trend lines:

- (1) the Phase 1 2010-2017 trend (for AT&T) and the 4/2016 through 12/2017 trend for Frontier;
- (2) the Phase 2 2018-2019 trend for both companies; and
- (3) the combined Phases $\frac{1}{2}$ trend, covering the full 2010-2019 period for AT&T, and the 45-month 4/2016 through 12/2019 period for Frontier.

Overview of the results of the Phase 2 service quality analysis

Our Phase 1 analysis identified a mixed bag of service quality improvements as well as degradations over the 8-year Phase 1 study period, depending upon the service quality metric being examined and the category of wire centers under examination. The overall finding in Phase 2 is a fairly consistent and pervasive degradation in *both companies'* service quality performance across virtually every service quality metric that we have examined. The quantity of service outages per 100 access lines – the basic CPUC service quality metric embodied in GO 133-C/D – has been steadily increasing over the two-year Phase 2 study period, indicating a persistent, and disturbing, increase in the rate of service outages overall. The average durations of service outages has also been getting longer; both companies are taking more time, on average, to clear such outages, and the percentage of outages that are cleared within 24 hours – the target for which is specified in GO 133-C/D at 90% – has been dropping.



Our Phase 2 analysis shows a fairly consistent and pervasive degradation in both companies' service quality performance across virtually every service quality metric that we have examined.

The massive POTS access line customer losses that both companies had been experiencing over the Phase 1 study period have persisted into Phase 2. Publicly available FCC Form 477 data show that, for all California ILECs, legacy switched access lines in service have dropped by 72.6%, from 14.58 -million as of the beginning of 2010 to 3.99-million as of the end of 2018, the most recent period for which such data has been made publicly available.¹ The drop-off rate among residential customers is even greater at 81.66%, from 8.21 -million as of the beginning of 2010 to 1.51-million as of the end of 2018.² Proprietary data provided by AT&T and Frontier, discussed in Chapters 4A and 4F below, show generally similar conditions. Switched access line customer defections are the result of many factors – most notably competition from other voice service providers, particularly from cable television MSOs, competition from mobile wireless carriers (which include affiliates of AT&T California and of pre-transfer Verizon California), as well as from “over-the-top” Internet applications (e.g., Skype, Vonage, Ooma and, more recently from video conferencing services like Zoom, Google Hangouts, Apple Facetime) that do not involve any type of voice service common carrier at all, other than the underlying provider of the customer’s broadband access.

This massive erosion of both ILECs’ legacy customer base has, of course, led to large reductions in the amount of revenue available to support – and, of particular importance to the matter of service quality – to maintain their legacy networks. However, there is considerable evidence that the ILECs themselves are largely responsible for much of this massive loss of customers. They have maintained the same anachronistic pricing structure for these services that has persisted for more than a century – geographically narrow local calling areas and high prices for calling beyond the local zone, high surcharges for many service features like call waiting and caller ID – and, at least in the case of AT&T California, have actually been steadily increasing rates for these legacy services in furtherance of a “harvesting” strategy aimed at inducing customers to migrate to higher-priced bundles of voice, broadband, video and, in some cases, mobile services. Many of the competing services to which former ILEC legacy service customers have switched have eliminated most of these layered charges. Mobile wireless services eliminated “long distance” toll-type charges decades ago, and regularly include in the base price a full suite of calling features without any additional surcharges. Indeed, the persistent degradation in POTS service quality that has become painfully evident underscores the utter lack of interest that ILEC management exhibits with respect to this entire line of business. This is not to suggest that the ILECs are themselves responsible for the full magnitude of customer defections, but they are certainly responsible for much of this pattern.

1. “State Level Subscriptions,” vts_state_table_1-1.xlsx, available at <https://www.fcc.gov/voice-telephone-services-report> (accessed 08.20.20)

2. *Id.*

There is, to be sure, something of a chicken-and-egg situation here: Are customers abandoning legacy circuit-switched services because of the service quality degradations, or are the service quality degradations the result of the revenue losses arising from customer defections? Probably both, which points to something of a “death spiral” that, if not addressed, will ultimately lead to the demise of these services within a relatively short period of time.

One might ask, “why is this a problem?” Here’s why: First, the general decline in switched access line demand is not uniform across the state. For many lower-density areas, customer defection rates are considerably smaller than when viewed on a statewide basis. Notably, business customers have retained their legacy POTS services at a higher rate than residential – this despite rising prices and deteriorating service quality. Even with the large numbers of customers who have sought alternatives to legacy circuit-switched services, there are still many who continue to take this service. Second, POTS-type services are the only category of telecommunications that retains at least some vestige of regulatory protections for consumers, generally assuring some level of service availability even in low-density and hard-to-serve areas. Yet the principal competing voice services are being offered by providers operating in highly concentrated markets. There were six national wireless carriers a decade ago; that number has now dwindled to three. Most areas of California are served by only one broadband provider -- typically a cable television MSO such as Comcast and Charter. Verizon’s *FiOS* offering had been the principal competitor to the cable broadband services, but since the transfer of Verizon’s California ILEC operations to Frontier, the future of *FiOS* in this state is at best uncertain as the future financial viability of Frontier itself is highly uncertain (see Chapter 8 below). Before allowing the death spiral to run its course, we believe it is essential that policy decisions be made as to the merit of retaining these legacy services and their underlying infrastructures as a baseline for those customers that do not perceive or that do not actually have alternatives. If these services are to be retained, the ILECs must be made to bring their level of service quality up to the full GO 133-C/D standards, because it is painfully apparent that the competitive market cannot be counted upon to produce this outcome.

Data collection and reporting pursuant to General Order 133-C and subsequent 133-D

General Order (“GO”) 133-C was adopted by Decision (D.) 09-07-019 effective as of July 9, 2009, in Rulemaking (R.) 02-12-004, to become effective for purposes of service quality reporting as of January 1, 2010.³ GO 133-C, in relevant part, requires that all “facilities-based URF [Uniform Regulatory Framework⁴] Carriers with 5,000 or more customers” report various service quality performance metrics on a monthly basis to be submitted quarterly to the Commission. Both Pacific Bell (d/b/a AT&T California, hereinafter “AT&T”) and Frontier California

3. *Order Instituting Rulemaking into the Service Quality Standards for All Telecommunications Carriers and Revisions to General Order 133-B*, R. 02-12-004, D. 09-07-019 issued and effective as of July 9, 2009.

4. *Order Instituting Rulemaking on the Commission’s Own Motion to Assess and Revise the Regulation of Telecommunications Utilities*, R.05-04-005, *Opinion*, D.06-08-030, August 24, 2006.

(formerly Verizon California, hereinafter “Frontier”), are “facilities-based URF Carriers with 5,000 or more customers” and are thus subject to this requirement. Under the provisions of GO-133-C §§ 3.3(c) and 3.4(c), both AT&T and Frontier (Verizon) have been obligated to provide reports as well as the underlying (“raw”) trouble ticket data on all customer Trouble Reports and Out-of-Service records occurring on and after January 1, 2010.⁵ In August 2016, the CPUC, by D.16-08-021 in R.11-12-001, adopted GO 133-D as a revision to the prior version of the same General Order.⁶

GO 133-D §3.3. Customer Trouble Reports – Applies to ... facilities-based URF Carriers with 5,000 or more customers ... Trouble reports apply to residential and small business customers (those that purchase five or fewer lines).

- a. Description. Service affecting, and out of service trouble reports, from customers and users of telephone service relating to dissatisfaction with telephone company services. Reports received will be counted and related to the total working lines within the reporting unit in terms of reports per 100 lines.
- b. Measurement. Customer trouble reports received by the utility will be counted monthly and related to the total working lines within a reporting unit.
- c. Minimum Standard Reporting Level. Report number of trouble reports per 100 working lines (excluding terminal equipment reports). ... Six trouble reports per 100 working lines for reporting units with 3,000 or more working lines, eight reports per 100 working lines for reporting units with 1,001-2,999 working lines, and 10 reports per 100 working lines for reporting units with 1,000 or fewer working lines.
- d. Reporting Unit. Exchange or wire center, whichever is smaller. A wire center with fewer than 100 lines should be combined with other central offices within the same location. A remote switching unit with fewer than 100 lines should also be added to its host switch. URF CLECs that do not have exchanges or wire centers shall report at the smallest reporting unit. All reporting carriers shall submit the raw data included in the report.
- e. Reporting Frequency. Compiled monthly, reported quarterly.

GO 133-D §3.4. Out of Service Repair Intervals – Applies to ... facilities-based URF Carriers with 5,000 or more customers

- a. Description. A measure of the average interval, in hours and minutes from the time of the reporting carrier's receipt of the out of service trouble report to the time service is restored for residential and small business customers.

5. G.O. 133-C, §§ 2, 3.

6. *Order Instituting Rulemaking to Evaluate Telecommunications Corporations Service Quality Performance and Consider Modification to Service Quality Rules*, R. 11-12-001, *Decision Adopting General Order 133-D*, D.16-08-021 August 18, 2016.

- b. Measurement. Commitment is measured by taking the total number of the repair tickets restored within less than 24 hours divided by the total outage report tickets. In addition, the system average outage duration is measured by summing each repair interval, expressed in clock hours and minutes, between the time the customer called to report loss of service and when the customer regains dial tone, divided by the total outage report tickets. These measurements include only residential and small business customer tickets.

Carriers shall submit both the adjusted and unadjusted out of service data.

The adjusted measurements exclude Sundays, federal holidays and repair tickets when maintenance is delayed due to circumstances beyond the carrier's control. Typical reasons for delay include, but are not limited to: outage caused by cable theft, third-party cable cut, lack of premise access when a problem is isolated to that location, absence of customer support to test facilities, or customer's requested appointment. Deferred maintenance or lack of available spares are not circumstances beyond a carrier's control. Changed appointments shall be reported separately by identifying the number of such appointments and the time, in hours and minutes, associated with these appointments.

A catastrophic event, an event where there is a declaration of a state of emergency by a federal or state authority, and a widespread service outage (an outage affecting at least 3% of the carrier's customers in the state) are circumstances beyond the carrier's control. A catastrophic event ends when the trouble ticket level returns to the average level three months prior to the catastrophic event. The average level is calculated by summing the actual number of out-of-service tickets for residential and small business (5 lines or less) customers for the three consecutive calendar months that did not have catastrophic events prior to the declared State of Emergency divided by three.

When quarterly reporting includes a delay for one or more months or if a catastrophic event or widespread outages affects a carrier's adjusted reporting, the carrier shall provide supporting information as to why the month should be excluded and work papers which explain the event, the date(s), the areas affected, the total number of residential and small business lines affected, and how the adjusted figure was calculated.

- c. Minimum Standard Reporting Level. 90% of all out of service trouble reports within 24 hours is the set minimum standard. Both the percentage of outages meeting the 24-hour standard and the actual system-wide average outage duration should be reported.
- d. Reporting Unit. Reporting is at the state-wide level. However, carriers shall submit with the report the underlying data at the exchange or wire center level, whichever is smaller, that supports the information being reported. A wire center with fewer than 100 lines should be combined with other central offices within the same location. A remote switching unit with fewer than 100 lines should also be added to its host switch. URF CLECs that do not have exchanges or wire centers shall report at the smallest reporting unit. All reporting carriers shall submit the raw data included in the report.
- e. Reporting Frequency. Compiled monthly and reported quarterly for those reporting units.

As it pertains to the subject matter of this Network Examination, GO 133-D §3.4(b), Measurement, was revised to include an expanded enumeration of causes resulting in Out-of-Service conditions that are beyond management's control. A new §9 has been added setting forth fines to be imposed upon carriers under certain protracted or excessive Out-of-Service conditions other than those caused by factors beyond management's control. GO-133-D became effective as of August 18, 2016, except for §9 (fines), which became effective as of January 1, 2017. Since at

least 6 years and 7 months out of the total of the 10 years under examination here were subject to GO-133-C, the analysis provided here is based upon the reporting requirements of that earlier version of the General Order. The nearly 7.3-million individual Trouble Report data records submitted by AT&T and by post-acquisition Frontier over the period have provided a solid basis for ETI's comprehensive assessment of the condition of the ILECs' California networks and their performance in maintaining service quality and in responding to service problems.



ETI's analysis of the condition of AT&T and Frontier's networks in California is, among other things, based upon the approximately 7.3-million Customer Trouble Report records submitted by the two companies over the 2010-2019 Study Period.

Trouble Reports, in general

A Trouble Report (sometimes referred to as a Trouble Ticket) is generally created when a customer contacts the telephone company to report a service problem. Service problems arise from any number of conditions, many of which fall outside of the responsibility of the ILEC or can be easily resolved by means of a help desk or technical support function. For example, a customer might be encountering difficulty using a custom calling feature such as three-way calling, voice mail, or caller id (where the calling number is displayed on a device owned by the customer and connected to the ILEC network). Although a Trouble Ticket may be created in such situations, many may be resolved quickly by providing assistance to the customer as to how the feature operates and how to use it.

GO 133-C/D established minimum standards and reporting levels for service on the network side of the demarcation. Not all network problems reported by a customer constitute out-of-service conditions. For example, the customer may report noise on the line, but is still able to originate and receive calls. For those that do involve an out-of-service condition, the Trouble Report record includes an "out-of-service indicator" as well as the date/time when the outage is reported and the date/time when it is ultimately cleared. From these date/time stamps, we are able to create a range of metrics regarding the duration of the out-of-service condition. In Phase 1 of this study, we examined all AT&T California and all Verizon/Frontier California Trouble Report records over the 2010-2017 study period. For Phase 2, we have undertaken a similar examination of these records for the Phase 2 2018-2019 period. However, as noted above, for Frontier, we have limited the Phase 2 analysis to the post-acquisition period, from April 2016 through December 2019. Table 4.1 below summarizes the quantities of trouble report records of various types that were included in our Phase 1 and Phase 2 analyses:

Table 4.1						
QUANTITIES OF TROUBLE REPORTS AND ACTUAL OUT-OF-SERVICE CONDITIONS AT&T – JANUARY 2010 THROUGH DECEMBER 2019 FRONTIER – APRIL 2016 THROUGH DECEMBER 2019						
Condition	AT&T			Frontier		
	2010-2017	2018-2019	2010-2019	2016-2017	2018-2019	2016-2019
Trouble Reports – all types	6,219,742	741,581	6,961,323	160,590	145,561	306,151
Out-of-Service–all types	5,001,270	573,581	5,574,851	118,402	112,030	230,432
Out-of-Service–less than one (1) hour	328,357	26,544	354,901	978	507	1,485
Out-of-Service–more than one (1) hour	4,672,913	547,037	5,219,950	117,424	111,523	228,947
Out-of-Service–morethan6hours	3,814,579	437,937	4,252,516	101,110	98,152	199,262
Out-of-Service–morethan12hours	3,541,959	410,553	3,952,512	92,927	91,130	184,057
Out-of-Service–morethan24hours	2,480,593	320,567	2,801,160	63,737	64,811	128,548
Out-of-Service–morethan1week	272,465	62,412	334,877	7,330	12,694	20,024
NOTES: (1) AT&T did not provide records of non-OOS Trouble Reports in 2010 (2) Some post-acquisition Frontier data may not include non-OOS Trouble Reports						

Table 4.1 provides counts for all types of Trouble Reports and Out-of-Service conditions. However, GO-133-C/D allows for certain adjustments and exclusions where the OOS condition, or some portion of it, is considered to be beyond management’s control.

One such situation arises where the outage commences, ends, or includes a Sunday or a legal holiday. For example, if an outage is reported at 10:00 am on a Friday and is cleared at 3:00 pm the following Monday, the total duration of the outage (77 hours) is adjusted to exclude the 24 Sunday hours, putting the “official” outage duration for this example at 53 hours (i.e., 77–24). From the customer’s perspective, however, the duration was 77 hours, not 53. ETI has analyzed and organized the OOS metrics using both the “actual” and “CPUC” or “adjusted” durations. Table 4.2 provides OOS counts based upon the adjusted “CPUC” durations. Notably, and as detailed in Chapters 4A and 4F below, even after removing these “excluded” Sunday/Holiday hours, both ILECs still fell far short of meeting the GO 133-C/D requirement that 90% of outages be cleared within 24 hours. Quarterly summaries are provided in Tables 4A.9 (for AT&T) and 4F.7 (for Frontier). Wire center-level details are provided in Tables 4A.2 to 4A.6 (for AT&T) and 4F.2 to 4F.6 (for Frontier).

Table 4.2

**QUANTITIES OF TROUBLE REPORTS AND
OUT-OF-SERVICE CONDITIONS ADJUSTED TO EXCLUDE
SUNDAYS AND HOLIDAYS PER GO 133-C/D
AT&T – JANUARY 2010 THROUGH DECEMBER 2019
FRONTIER – APRIL 2016 THROUGH DECEMBER 2019**

Condition	AT&T		Frontier			
	2010-2017	2018-2019	2010-2019	2016-2017	2018-2019	2016-2019
Trouble Reports – all types	6,219,742	741,581	6,961,323	124,185	181,966	306,151
Out-of-Service–all types	5,001,270	573,581	5,574,851	91,626	138,806	230,432
Excluded due to cause beyond management’s control	830,780	157,676	988,456	3,247	24,979	28,226
Out-of-service conditions within management’s control	4,170,490	415,905	4,586,395	88,379	113,827	202,206
Out-of-Service–less than one (1) hour	31,805	334,437	366,242	706	852	1,558
Out-of-Service–more than one (1) hour	3,852,439	386,546	4,238,985	90,920	111,532	202,452
Out-of-Service–more than six (6) hours	3,101,288	304,883	3,406,171	78,349	94,440	172,789
Out-of-Service–more than twelve (12) hours	2,873,377	210,920	3,084,297	71,936	83,587	155,523
Out-of-Service–more than twenty-four (24) hours	1,954,453	101,966	2,056,419	49,155	47,521	96,676
Out-of-Service–more than one (1) week	194,104	-23,529	170,575	3,480	6,578	10,058
NOTES: (1) AT&T did not provide records of non-OOS Trouble Reports in 2010 (2) Some post-acquisition Frontier data may not include non-OOS Trouble Reports						

In addition to the Sunday/Holiday adjustments, certain out-of-service conditions “when maintenance is delayed due to circumstances beyond the carrier’s control,” such as “outage caused by cable theft, third-party cable cut, lack of premise access when a problem is isolated to that location, absence of customer support to test facilities, or customer’s requested appointment” have also been treated as “excluded” even though, from the customer’s perspective, the service is nevertheless not functioning.⁷ ETI does not believe that it is appropriate to entirely exclude all instances where the customer has requested an appointment date/time at the customer’s convenience. Instead, the delay in the ultimate restoration of service attributable to the additional time needed to satisfy the customer’s request for an appointment should be adjusted out of the total out-of-service duration; ETI has been advised that such an adjustment is already reflected in the “CPUC Duration” calculation provided on the raw Trouble Report data.

Each Trouble Report record also includes a “Cause Code.” Notably, 16.8% of the roughly 5-million AT&T out-of-service conditions over the Phase 1 study period had been attributed to “Heavy Rain,” “Weather,” “Moisture,” or “Wet Plant.” Over the Phase 2 2018-2019 period, that number almost doubled, to 29.6%. The Phase 1 data indicated that more than 40% of all out-of-

7. GO 133-C/D, at §3.4.

service conditions had been attributed to problems with “ILEC Plant or Equipment,” although there is no detail as to exactly what type(s) of ILEC Plant and Equipment are at fault. The corresponding figure for 2018-2019 is only 7.62%, suggesting a possible refinement in the fault reporting process.



16.8% of the roughly 5-million AT&T out-of-service conditions over the Phase 1 study period had been attributed to "Heavy Rain," "Weather," "Moisture," or "Wet Plant." Over the Phase 2 2018-2019 period, that number almost doubled, to 29.6%.

The AT&T Cause Codes that arise most frequently are summarized in Table 4.3. In determining whether an individual record should be “excluded,” ETI has relied upon the “Excluded” flag rather than the Cause Code.

Table 4.3**MOST COMMON AT&T CAUSE CODES
AND THE NUMBER OF OCCURRENCES 2010-2019**

Cause code and description		Occurrences		
		2010-2017	2018-2019	2010-2019
300	ILEC Plant or Equipment	2,089,225	43,679	2,132,904
600	Unknown – Trouble condition cannot be determined	1,367,019	114,419	1,481,438
421	Heavy rain	474,887	54,070	528,957
310	Overload – excessive demand	303,759	3,362	307,121
304	Plant Conditioning	95,253	97,013	192,266
400	Weather	128,518	52,266	180,784
319	Wet plant not storm-related	124,815	31,878	156,693
420	Moisture	112,706	31,345	144,051
322	Out of Adjustment	109,881	29,185	139,066
100	Caused or overlooked by AT&T Employee	113,706	14,766	128,472
541	Out of Adjustment	95,929	14,696	110,625
204	Customer request to move or remove equipment	77,694	18,525	96,219
120	Outage caused by ILEC employee during outside plant construction	65,759	18,409	84,168
550	Damage to plant caused by animals or insects	56,697	8,879	65,576
302	AT&T Plant or Equipment Missing/Removed	29,006	94,109	123,115

NOTE: AT&T did not provide records of non-OOS Trouble Reports in 2010

It appears that all of these most common Cause Codes refer to failure in outside plant and/or circuit equipment, not to central office switches. In Chapter 3 of our Phase 1 Report, we noted that both carriers' central office switch inventories are quite ancient, some in the 20-30 year old range. Despite their age and reliance upon generations-old computer technology, these ancient switches do not appear to be the source of many, if any, recorded service outages.

Following the exclusions of trouble conditions deemed beyond the utility's control, the AT&T 2010-2019 dataset consisted of 4,586,395 remaining out-of-service records and 202,206 for post-acquisition (2016-2019) Frontier.



The source of most service outages continues to be largely confined to weather-driven and other failures in outside plant, rather than to the ILECs' aging central office switches or associated equipment.

The “raw” Trouble Report data

As noted, GO 133-C/D requires the URF ILECs to provide the underlying (“raw”) Trouble Report data for every service-related contact initiated by a customer. This “raw data” is used by the ILEC to prepare the quarterly Trouble and Out-of-Service reports that are required by GO 133-C/D. Over the period January 2010 through and including December 31, 2019, AT&T provided the Commission with approximately 6.96-million individual Trouble Report records, roughly 5.57-million of which were associated with Out-of-Service (“OOS”) conditions of varying lengths. In the 45-month period since the transfer of Verizon California to Frontier on April 1, 2016, Frontier California provided the Commission with 306,151 out-of-service records covering the period April 2016 through December 2019.

The continuing collapse of the California ILEC market environment

Both AT&T and Frontier provide basic local telephone service across extensive geographic footprints throughout California. AT&T operates 615 wire centers, and provides service in 51 of the State's 58 counties. Frontier operates some 270 wire centers, and provides service in 26 counties. Both companies have experienced a massive erosion of the legacy circuit-switched local “Plain Old Telephone Service” (“POTS”) customer base over the ten year period covered by this Study. This erosion has been driven by a number of factors, including actions of the two companies and their affiliates themselves.



Substitution of wireless for wireline services continues. FCC data indicate that, for California, total wireline voice service access lines in service (ILEC and non-ILEC, circuit-switched and VoIP) decreased by 6.23-million, down 32.72%, from 19.65-million as of the beginning of 2010 to 13.42-million as of the end of 2018, while the number of wireless subscriptions increased by 10.4-million, from 32.94-million connections in 2010 to 43.34-million in 2018. Overall, there were 3.9 million more wireless connections than the 39.4 million California population, which was as of the end of 2018.

Figures 4.1 through 4.6 illustrate these demand shifts and erosions for California statewide over the period 2008-2018, based upon published FCC data,⁸ which covers all California service providers. AT&T and Verizon/Frontier combined constitute the overwhelming share of ILEC-provided switched access service in California. Figure 4.1 shows the change in total ILEC circuit-switched (POTS) voice lines together with the growth of interconnected VoIP subscriptions (ILEC and non-ILEC) over the period. Although the 72.61% drop in ILEC POTS lines between 2010 and 2018 has been slightly offset by the increase in ILEC-provided VoIP services, overall ILEC circuit-switched plus VoIP lines decreased by 62.43% over the 2008-2018 time frame. Figures 4.2 and 4.3 show ILEC legacy service losses to non-ILEC competitor-provided services, separately for residential and business customers, respectively. Residential ILEC POTS lines decreased by 81.66%; whereas business POTS lines dropped by only 60.93%. Figure 4.4 plots California ILEC and CLEC switched access line losses over the 2008-2018 period. While both types of carriers have seen an erosion of demand for circuit-switched services, ILEC losses have been far greater.⁹ Figure 4.5 compares the growth in VoIP services for California ILECs (1.57-million lines) and CLECs (4.14-million lines).. As the graph demonstrates, the vast majority (more than 75%) of the growth in VoIP services has come from the non-ILEC sector.

Figure 4.6 illustrates how the demand for voice services has shifted away from wireline to wireless. Wireless lines in California increased by 10.40-million, up 31.57%, from 32.94-million connections in 2010 to 43.34-million in 2018. The State's total population at the end of 2018 was 39.4-million – i.e., 3.94-million more wireless phones than people (including infants and newborns). Over the same time period, total *wireline* voice service demand saw a 6.23-million decrease, down 32.72%, from 19.65-million in 2010 to 13.42-million in 2018.

8. FCC Industry Analysis Division Office of Economics and Analytics, *Voice Telephone Services: Status as of December 31, 2018*, re. March 2020, Supplemental Table 1. Voice Subscriptions (in Thousands) - California, available at <https://www.fcc.gov/voice-telephone-services-report> (accessed 6/9/21).

9. The average number of working lines reportable under GO 133-C/D (which includes all ILEC and CLEC voice access lines) decreased from 11.48-million in 2010 to 6.15-million in 2017. CPUC staff compilation of carrier-reported data.

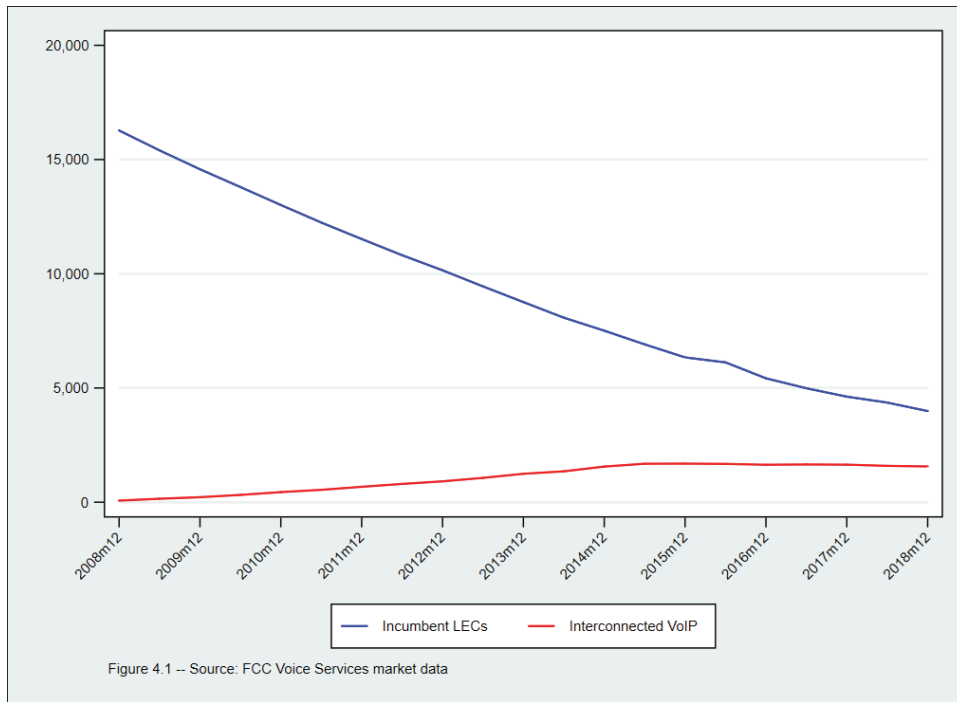


Figure 4.1. California ILECs saw a precipitous drop in demand for circuit-switched legacy voice access lines over the 2010-2019 period, only a portion of which were replaced by ILEC-provided VoIP services.



Figure 4.2. A substantial share of California ILEC residential line losses was the result of customer migrations to cable MSOs and other ILEC competitors.

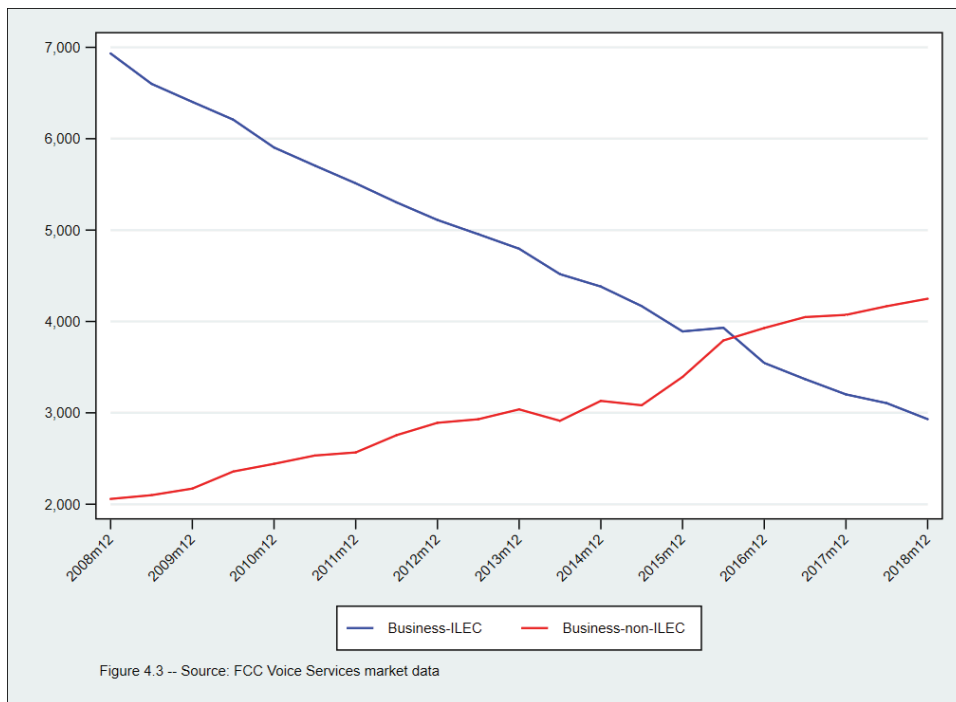


Figure 4.3. ILEC business customers also migrated to competing service providers that offer SIP trunking, virtual PBX, and other VoIP services.

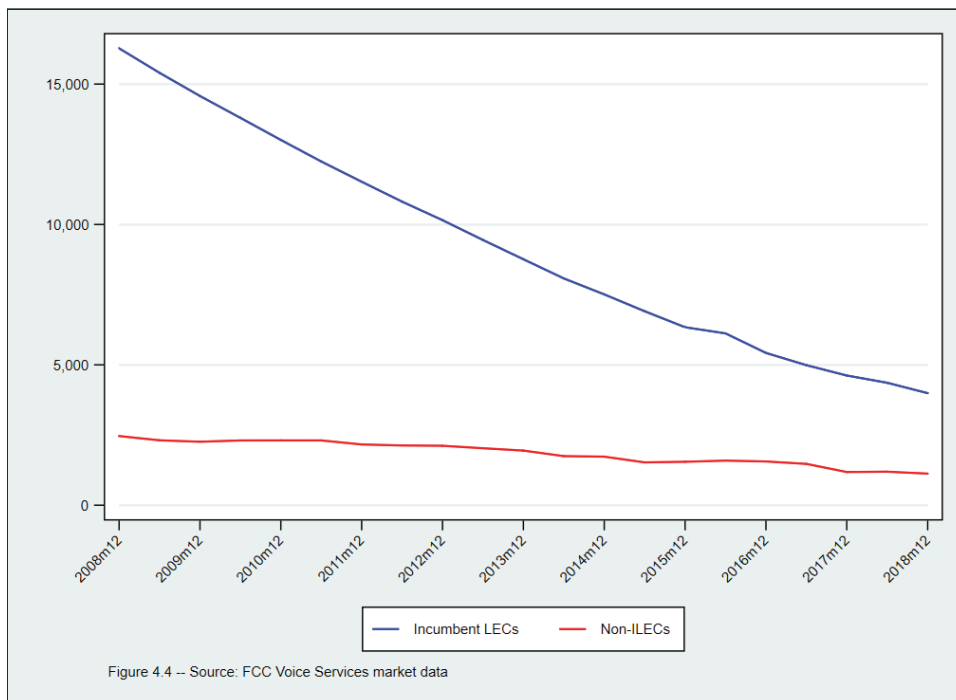


Figure 4.4. ILECs and CLECs have experienced switched access line losses over the 2008-2018 period, but ILEC losses have been far greater.

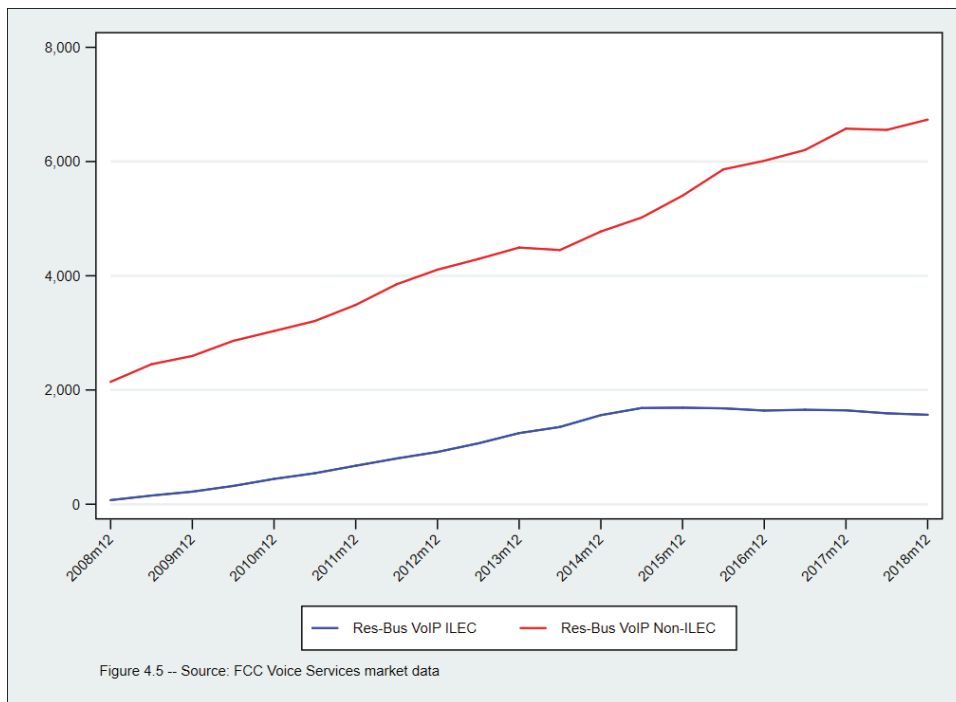


Figure 4.5. The vast majority of the growth in VoIP services from 2008 to 2018 has been in the non-ILEC sector.

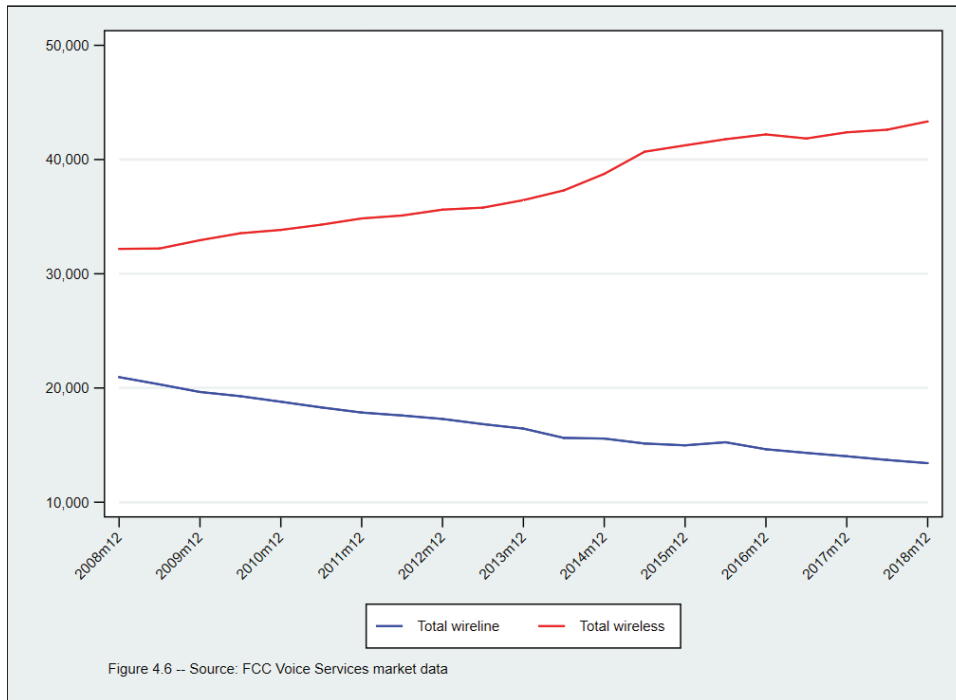


Figure 4.6. Perhaps the largest source of the shift in demand away from ILEC and other wireline voice services in California has been the mushrooming growth in demand for wireless.

Identifying long-term trends from actual month-to-month experience

As noted, there is considerable month-to-month variation across all of AT&T's 615 California wire centers, and for AT&T California overall, in the number of trouble reports received and out-of-service situations reported. As an example, Figure 4.7 below is a reproduction of Figure 4A.4 which appears in Chapter 4A below. It plots the average duration of AT&T service outages on a quarterly basis from the first quarter of 2010 through the fourth quarter of 2019. As is evident, there is considerable variation in this metric from one period to the next. For this reason, inspection of individual quarterly data over an extended period of time is not a useful means for identifying the long-term trend in this or other service quality metrics.

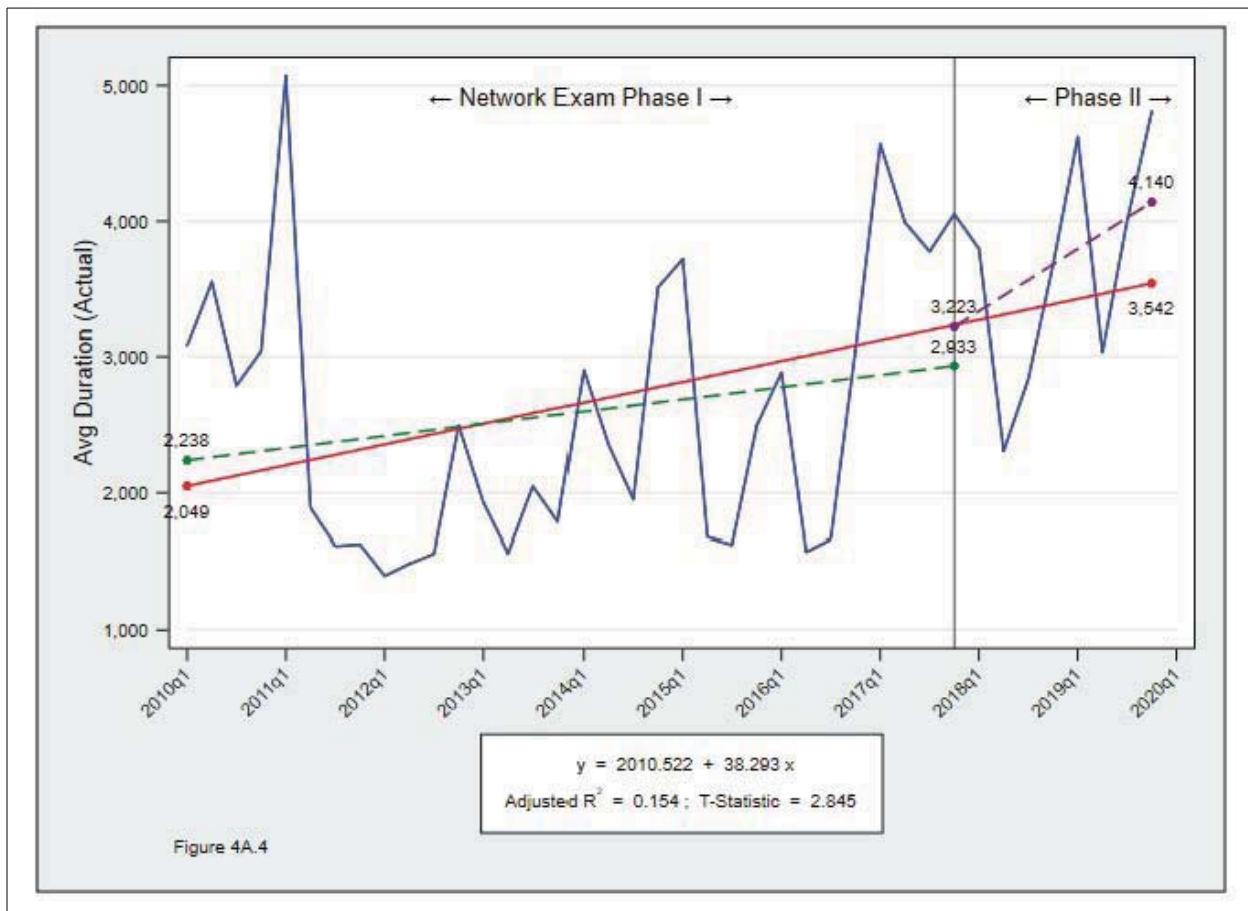


Figure 4.7. Sample chart (Average duration of AT&T California service outages, 2010-2019) providing individual trend lines calculated for 2010-2017 (Phase 1), 2018-2019 (Phase 2) and for the full 2010-2019 period.

In this example, the period with the highest average duration occurred in the first quarter of 2011, yet the long-term trend in duration is in the upward direction. A simple comparison of individual quarters in the series without considering any of the intervening values could lead to

an erroneous conclusion that the incidence of OOS had actually improved over the full study period. It is possible, however, to extract a long-term trend from data that exhibits considerable variation from period to period, as is the case here. This is accomplished by using statistical techniques known as linear regression analysis that can calculate a long-term trend by mathematically “fitting a line or curve” to the individual data points in the series, in effect, smoothing out the period-to-period variation so as to permit the observation of a long-term trend over the entire period. For the charts provided in this Phase 2 Report, we have calculated three separate trend lines: (1) the solid red line is calculated over the entire 10-year 2010-2019 combined Phase 1/Phase 2 study period; (2) the dashed green line is calculated over the original 2010-2017 Phase 1 study period, and is identical to the trend lines provided in our Phase 1 Report; and (3) the dashed purple line is calculated over the 2018-2019 Phase 2 study period.

In this example, there is a significant change in the slope of the trend line as between the Phase 1 and Phase 2 study periods. While the average duration of AT&T service outages had been trending upward over the 2010-2017 period, the *rate of increase* after 2017, as captured graphically in the steeper upward slope of the 2018-2019 trend line, has clearly been accelerating. The discontinuity between the Phase 1 and Phase 2 trend lines arises because each is calculated separately based upon data for the two separate (Phase 1 and Phase 2) periods.

We have adopted this graphic format in all of the updated charts in Chapters 4, 4A and 4F so as to provide a clear visual indication as to whether each of the studied service quality metrics is showing improvement or degradation over the past two years.

4A

SERVICE QUALITY ANALYSIS UPDATE: AT&T CALIFORNIA

Principal observations and takeaways

- AT&T California's performance in 2018-2019 has deteriorated relative to where it had been in the 2010-2017 Phase 1 study period, and its performance with respect to nearly every one of the service quality metrics that we had examined in Phase 1 has deviated further from the Commission's GO 133-D service quality objectives and standards.
- The greatest demand drop-offs for legacy POTS services continues to be experienced in the largest wire centers.
- The trend in average duration of all out-of-service conditions over one hour had been steadily increasing over the Phase 1 study period, and spiked further in 2018-2019. By the end of 2019, it took AT&T 67% longer to restore service than it took in 2010.
- Over the 2010-2019 study period, AT&T's average duration for service outages exceeding 24 hours has increased by roughly 67%.
- During 2018-2019, 55.9% of the 573,591 out-of-service conditions (38.2% on an "adjusted" basis) remained uncleared after 24 hours, up from the corresponding 49.6% / 36.7% levels during the 2010-2017 period. To satisfy the GO 133-C/D §3.4(c) requirement, these percentages would need to drop to less than 10%.
- On an adjusted basis, the number of days required for AT&T to clear 90% of all out-of-service conditions was increasing at a faster rate over the 2018-2019 period than over the longer Phase 1 period. Over the eight years from 2010Q1 through 2017Q4, the number of days required for AT&T to clear 90% of service outages increased at an annual rate of 3.37%, from 4.10 days to 5.30 days. Over the next 24 months, from 2017Q4 to 2019Q4, the days to clear 90% jumped at an annual rate of 13.77%, from 5.30 to 6.86.
- There continues to be little effective competition for POTS services. If the market were sufficiently competitive, the greatest loss of demand would occur in wire centers exhibiting the poorest service quality. In fact, the greatest drop-off in demand has occurred in wire centers with the best service quality records.

- Performance across most service quality metrics is better in wire centers that have been upgraded with fiber optic distribution facilities, in those serving higher-density urban and suburban communities, in larger wire centers, and in those with the largest losses of customers to competitors. But in almost every category, performance has significantly deteriorated over the 2018-2019 period.
- Wire centers upgraded with fiber to support broadband services achieve better service quality performance scores in every category – but in 2018-2019, service quality in both types of wire centers was decidedly inferior to what had been achieved during the Phase 1 2010-2017 period. Based upon Phase 2 trend lines, AT&T needed only 1.15 days to clear 90% of service outages in wire centers with fiber optic facilities as of the end of 2019; for non-upgraded wire centers, it took 2.43 days to clear 90%. The corresponding figures as of the end of Phase 1 (4Q2017) were 1.10 and 1.86.
- The strong relationship between the number of POTS lines in a wire center and the quality of service provided has persisted into the 2018-2019 period, with the number and the rate of increase in OOS per 100 POTS lines continuing to be lowest in the very largest (over 20,000 lines) wire centers. However, service quality has deteriorated in all line-size categories since 2017.
- Wire centers that had experienced the lowest rate of POTS line losses – less than 50% over the study period – saw the largest increase in service outages; for those with successively larger line loss percentages, the incidence of service outages increased more slowly or remained almost constant over the study period. But performance in nearly all of the service quality metrics we studied deteriorated after 2017.
- Except in areas with the highest population density, AT&T's response to out-of-service conditions has generally deteriorated over the study period. That deterioration appears to have accelerated for all population density categories in the 2018-2019 period.
- Of the five AT&T maintenance (AFO) districts, LA/Bakersfield and San Gabriel had shown significant improvements in most OOS metrics during the Phase 1 study period. However, even those improvements appear to have largely reversed in 2018-2019.
- Since the bulk of AT&T's investments in its ILEC network have been aimed at upgrades that support broadband services, the AFO Districts with the smallest percentage of such upgrades have continued to experience substantial degradations in service quality into the 2018-2019 period. This result further underscores the pressing need for infrastructure investment irrespective of AT&T's pursuit of the broadband market.

SERVICE QUALITY ANALYSIS UPDATE:
AT&T CALIFORNIA

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Phase 2 2018-2019 update to the AT&T California Service Quality analysis

This chapter updates Chapter 4A in our Phase 1 Report to include AT&T California trouble report records for 2018-2019 that have been submitted by the company as required pursuant to GO 133-D. As we discuss in detail below, this updated analysis indicates that, in general, AT&T California's performance in 2018-2019 has deteriorated relative to where it had been in the 2010-2017 Phase 1 study period. The company's performance with respect to nearly every one of the service quality metrics that we had examined in Phase 1 has deviated further from the Commission's GO 133-D service quality objectives and standards. AT&T California continued to account for a successively smaller portion of its parent company's operations, a fact that appears to be fully reflected in the low priority that AT&T California has been receiving both with respect to capital investment and senior management attention over the past several years.



AT&T California's performance in 2018-2019 has deteriorated relative to where it had been in the 2010-2017 Phase 1 study period, and its performance with respect to nearly every one of the service quality metrics that we had examined in Phase 1 has deviated further from the Commission's GO 133-D service quality objectives and standards.

Access line demand continues to plummet

In the first part of this Chapter 4, we updated the California statewide ILEC demand over the 2008-2018 period based upon published and publicly available FCC data. The GO 133-C/D data routinely submitted by AT&T California to the CPUC indicates that AT&T's legacy circuit-switched POTS access line demand drop-off rate is similar to the industry-wide results for California being compiled by the FCC. This downward trend persisted into 2018 and 2019. In the two years from December 2017 to December 2019, the company lost 565,537 POTS access lines, going from 2,245,171 in December 2017 to 1,679,638 in December 2019. For the entire 10-year period from January 2010 through December 2019, total AT&T California POTS access lines in service experienced a 79.1% decrease, dropping from 8,035,134 in January 2010 to 1,679,638 in December 2019. The calculated long-term trend in total out-of-service incidents dropped from 322,075 in the first quarter of 2010 to 68,409 in the fourth quarter of 2019, a similar decrease of 78.76%. Figure 4A.1 plots AT&T California access lines in service and out-of-service incidents over the full 2010-19 period. Every AT&T California wire center continued to experience further erosion in POTS demand, but the drop-off rate for individual wire centers was highly variable. The largest drop was 96.56% in the Paradise Main wire center, which had 12,039 lines in service as of January 2010 but only 414 by the end of 2019. As shown in Table 4A.1, the greatest demand drop-offs generally occurred in the largest wire centers.

Table 4A.1

**AT&T CALIFORNIA
DROP-OFF IN POTS DEMAND AT WIRE CENTERS OF VARYING SIZES
JANUARY 2010 – DECEMBER 2019**

Wire Center Size	No. of Wire Centers	Total lines Jan 2010	Total lines Dec 2017	Total lines Dec 2019	% change 2010-2019
Small (<1000 lines)	90	43,326	19,710	16,396	- 62.16%
Medium (1000-3000)	109	202,041	70,494	54,785	- 72.88%
Large (>3000-10000)	140	802,097	237,004	180,073	- 77.55%
Large Urban (10000-20000)	205	1,532,574	429,100	320,440	- 79.09%
Large Metro (>20000)	168	5,445,451	1,488,863	1,107,849	- 79.66%
TOTAL	612	8,035,134	2,245,171	1,679,543	- 79.10%

NOTE. Size categorization per GO 133-C/D size ranges are based on POTS lines in service as of January 1, 2010.

Figure 4A.1 below compares the decrease in AT&T California's POTS lines in service with the fitted trend of total OOS incidents over the 2010-2019 period. As shown, the relative decreases have in aggregate been similar, although there has been a small increase in the relative incidence of OOS conditions.



The greatest demand drop-offs for legacy POTS services continues to be experienced in the largest wire centers.



From January 2010 through December 2019, total AT&T California POTS access lines in service experienced a 79.1% decrease, dropping from 8,035,134 in January 2010 to 1,679,543 in December 2019.



The continuing erosion in POTS demand occurred in every AT&T California wire center over the 2018-2019 Phase 2 study period.



Viewed over the full 10-year Phase 1 and Phase 2 periods, the relative decrease in AT&T POTS lines in service has exceeded the relative downward trend of total out-of-service incidents.

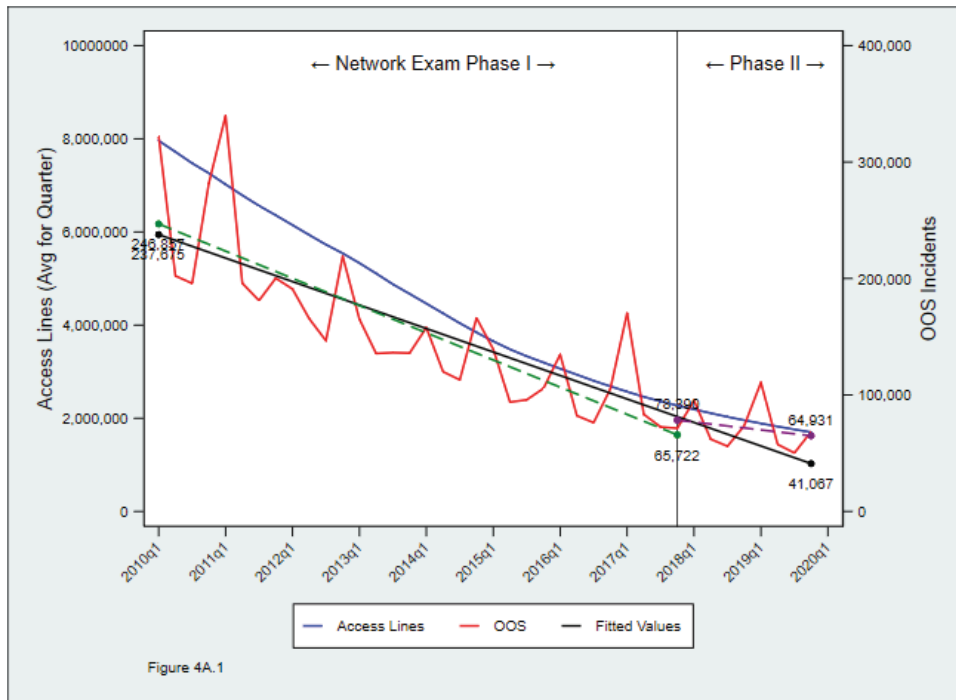


Figure 4A.1. The decrease in the number of AT&T California out-of-service Incidents has roughly corresponded with the drop-off in access lines in service over the 2010-2019 period.

Trouble Reports and POTS Lines in Service – a more granular perspective

Viewed at the individual wire center level, the ratio of out-of-service conditions to total POTS lines has varied both from month-to-month and as a long-term trend over time. Focusing specifically upon out-of-service conditions not cleared within 24 hours, some wire centers have experienced significant increases in the incidence of this condition, while others have seen improvements. The following tables summarize the most recent two years' (2018-19) experience with respect to four service quality metrics. Each table provides the 20 wire centers with the worst and the 10 wire centers with the best performance with respect to each of these four metrics. Table 4A.2 presents the percentages of out-of-service conditions not cleared within 24 hours (expressed on a per 100 POTS lines per month basis). Table 4A.3 provides the average out-of-service durations. Table 4A.4 provides the percentages of out-of-service incidents cleared within 24 hours. Table 4A.5 provides the number of days to clear 90% of out-of-service conditions. Finally, Table 4A.6 provides these data elements for all AT&T wire centers sorted alphabetically.

Table 4A.2

AT&T CALIFORNIA

2018-2019

OUT-OF-SERVICE OVER 24 HOURS' DURATION PER 100 POTS LINES IN SERVICE

20 POOREST PERFORMING AND 10 BEST PERFORMING WIRE CENTERS

Wire Center Name	Wire Center	CLLI	Access Lines (avg for Qtr)	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Avg OOS Duratin (mins)	Avg OOS Duratin (mins)	OOS Total	OOS > 1 hour	OOS > 24 Hours	OOS > 1 week	CPUC hour	CPUC OOS > 24 hours	CPUC OOS > 1 Week
20 POOREST PERFORMING WIRE CENTERS																		
FRENCH GULCH	530455	FRGLCA11	85	4.74	4.06	14.4%	13.4%	77.9	63.2	26999	25667	97	94	83	47	63	57	30
SHASTA LAKE	530503	SHLKCA01	342	5.53	3.74	32.4%	41.5%	11.0	6.8	6034	3590	454	444	307	90	207	128	31
SHOSHONE	760796	SHSHCA11	132	4.14	3.70	10.7%	11.6%	18.7	15.8	16171	15977	131	130	117	61	77	69	35
COULTERVILLE	209161	CTVLCA11	660	4.88	3.63	25.7%	37.4%	13.1	10.0	6862	4780	774	756	575	169	386	255	64
ALLEGHANEY	530425	ALGHCA11	48	4.34	3.56	18.0%	18.4%	7.3	9.1	5138	4952	50	47	41	9	29	26	4
BURRELL	559242	BURLCA11	89	4.73	3.51	25.7%	26.2%	5.2	4.7	3624	3141	101	100	75	7	75	56	4
OROVILLE EAST	530485	ORVLCA12	1526	4.61	3.47	24.7%	32.4%	7.4	5.8	5200	4179	1690	1653	1272	300	849	589	91
LATON	559186	LATNCA11	186	4.69	3.41	27.3%	26.3%	6.5	5.6	3601	3281	209	208	152	20	158	118	12
TERRA BELLA	559226	TRBLCA11	413	4.61	3.22	30.2%	31.5%	5.7	4.8	3930	3486	457	434	319	42	359	261	22
THREE RIVERS	559228	THRRCA11	595	4.80	3.13	34.7%	38.7%	4.5	4.3	3252	3397	685	665	447	30	251	164	13
BIG SUR	831101	BGSRCA11	392	3.74	3.11	16.8%	17.7%	5.8	4.2	4449	3511	352	343	293	36	248	211	19
BRIDGEVILLE	707281	BGVLCA11	173	4.37	2.94	32.6%	42.4%	4.6	3.3	3078	2722	181	178	122	10	66	38	7
WALKER BASIN	661401	WLBSCA11	457	3.85	2.94	23.7%	28.7%	5.4	4.8	3815	3059	422	410	322	31	217	164	7
BANGOR	530430	BNGRCA11	336	3.78	2.90	23.3%	28.3%	11.3	9.7	5919	5399	305	297	234	65	128	98	23
COTTONWOOD	530441	CTWDCA11	2148	4.17	2.90	30.4%	32.1%	10.8	9.2	6043	5037	2149	2091	1495	541	1350	948	276
ELK CREEK	530448	EKCKCA11	100	3.66	2.87	21.6%	21.7%	8.1	6.1	5305	4081	88	85	69	21	45	36	6
POTTER VALLEY	707316	PTVYCA11	532	3.68	2.87	22.1%	24.8%	13.3	11.0	7839	6198	470	461	366	148	356	275	88
TIPTON	559229	TPTNCA11	201	3.93	2.79	28.9%	28.4%	6.8	5.8	4380	3958	190	190	135	31	162	116	17
WOODLAKE	559239	WDLKCA11	543	4.10	2.75	33.1%	35.5%	5.1	4.2	3480	3055	535	524	358	37	392	261	15
NIAGARA	530490	PLVLCA12	2250	3.60	2.73	24.2%	29.0%	14.3	11.2	8389	6661	1942	1901	1472	656	1169	854	282
10 BEST PERFORMING WIRE CENTERS																		
FOLSOM NIMBUS	916453	FLSMCA12	1876	0.47	0.19	59.4%	61.9%	4.8	4.0	2560	2215	212	202	86	16	172	69	10
SPECTRUM-IRVINE	949810	IRVNCAL12	1731	0.34	0.16	52.9%	51.9%	6.1	5.0	2867	2519	140	133	66	16	120	61	5
EDWARDS	661369	EDWRCA01	137	0.36	0.15	58.3%	58.3%	1.0	1.0	1037	1114	12	12	5	0	10	5	0
FOLSOM	415068	SNFCCA21	7728	0.35	0.15	57.5%	60.9%	4.5	3.6	2338	1917	667	595	279	34	473	207	17
BURBANK PALM AVE	818606	BRBNCA11	758	0.30	0.14	51.9%	56.4%	3.9	2.9	2102	1629	54	50	26	2	42	20	1
BISHOP RANCH	925082	BSRNCA70	1442	0.25	0.13	48.3%	52.6%	4.3	3.4	2165	1792	87	80	45	2	68	35	0
HACIENDA	925083	PLTNCA13	1625	0.31	0.12	61.2%	62.0%	3.4	2.5	1699	1484	121	114	47	1	102	41	1
BEALE CAPEHART-BEALE AFB	530431	BEALCA11	79	0.11	0.11	0.0%	0.0%	5.2	4.1	7471	5861	2	2	2	0	1	1	0
NORTH STAR	530516	TRUCCA12	606	0.14	0.09	35.0%	41.0%	10.0	6.9	5935	4122	20	19	13	5	12	8	2
LEMORE WYMAN	559189	LEMRCAL12	90	0.19	0.05	75.0%	100.0%	1.0	0.1	817	177	4	2	1	0	1	0	0

Table 4A.3
AT&T CALIFORNIA
AVERAGE OUT-OF-SERVICE DURATION
20 POOREST PERFORMING AND 10 BEST PERFORMING WIRE CENTERS
2018-2019

Wire Center Name	Wire Center	CLLI	Access Lines (avg for Qtr)	OOS per 100 ALs per month	OOS-24 w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (unadj)	Pct clear 90% OOS (unadj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Avg OOS Duratin (mins)	OOS Total	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	OOS > 24 Hours	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 Week	
20 POOREST PERFORMING WIRE CENTERS																			
FRENCH GULCH	530455	FRGLCA11	85	4.74	4.06	14.4%	13.4%	77.9	63.2	26999	97	94	83	47	83	63	57	30	
FURNACE CREEK	760738	FRCKCA11	133	1.28	1.25	2.4%	4.9%	43.3	57.5	21026	41	41	40	25	40	21	20	8	
AVALON	310603	AVLNCA11	1126	0.64	0.45	30.5%	38.8%	28.4	24.0	17249	174	164	121	84	121	108	73	48	
SHOSHONE	760796	SHSHCA11	132	4.14	3.70	10.7%	11.6%	18.7	15.8	16171	131	130	117	61	117	77	69	35	
BEAR VALLEY	209155	BVLYCA11	445	1.51	1.23	18.6%	22.7%	34.8	8.8	14786	161	152	131	57	131	88	74	22	
GEYSERVILLE	707294	GYVLC A11	297	2.20	1.60	27.4%	31.5%	15.9	12.5	12237	157	157	114	53	114	118	87	37	
SONOMA	707323	SONMCA12	4019	1.29	0.72	44.5%	54.3%	32.8	5.6	12032	4613	1249	693	254	693	750	372	68	
OJAJ	805382	OJAICA11	1662	2.01	1.47	26.7%	36.7%	21.0	5.0	11969	499	802	588	137	588	467	316	41	
ANNAPOLIS	707322	ANNPCA11	70	2.79	2.49	10.6%	10.4%	18.8	18.7	11056	9276	47	42	21	42	36	34	15	
MURPHYS	209203	MRPHCA11	846	2.74	2.02	26.3%	34.6%	16.4	9.4	10834	556	539	410	181	410	288	199	61	
STONYFORD	530513	STFRCA11	136	2.30	1.97	14.7%	18.7%	13.0	10.2	10459	6464	75	64	34	64	46	39	16	
EL PORTAL	209241	YSMTCA12	302	2.17	1.86	14.0%	15.8%	14.3	10.9	9764	7836	157	135	80	135	112	95	47	
LOS ALAMOS	707319	SNRSCA11	2554	1.35	0.87	35.3%	43.0%	15.9	8.5	9754	4940	825	534	216	534	538	334	110	
OAKVIEW	805381	OKVWCA11	619	2.40	1.70	29.2%	33.9%	17.0	14.6	9619	8037	356	252	79	252	234	164	47	
KYBURZ	530465	KYBRCA11	61	2.26	1.92	15.2%	18.2%	10.7	8.0	8990	6732	33	28	16	28	18	14	5	
UPPER LAKE VALLEY RD	707329	UPLKCA11	401	3.11	2.01	35.5%	42.6%	18.6	9.7	8751	5235	289	193	97	193	177	110	36	
HOPLAND	707298	HPLDCA12	199	2.22	1.51	32.1%	34.5%	17.3	14.6	8691	7368	106	101	72	101	82	56	22	
BLUE LAKE	707278	BLKCA11	236	2.80	2.33	17.0%	14.5%	8.8	17.9	8663	10706	159	132	20	132	83	71	10	
MONTE RIO	707309	MNRCA11	515	2.51	1.85	26.5%	35.1%	12.5	11.2	8492	6184	310	301	124	228	177	120	49	
VENTURA/FIR	805400	VNTRCA02	2398	0.96	0.59	38.0%	47.3%	19.3	4.8	8466	4000	550	341	86	341	372	216	24	
10 BEST PERFORMING WIRE CENTERS																			
PEDLEY	951765	PDLYCA11	2502	1.19	0.46	61.3%	66.3%	3.2	2.6	1861	1629	688	276	27	276	499	175	11	
MOJAVE	661376	MOJVCA01	590	1.83	0.85	53.3%	56.8%	3.0	2.3	1845	1582	247	121	3	121	188	86	1	
MENDOTA	559195	MNDTCA11	445	1.24	0.46	62.9%	65.5%	3.5	2.7	1831	1468	132	49	3	49	115	41	2	
BENICIA	707277	BNICCA11	1978	1.01	0.34	66.7%	69.6%	3.0	2.4	1828	1567	481	160	8	160	402	130	4	
HUNTINGTON PARK	323671	HNPKA01	6843	1.43	0.56	61.1%	67.1%	3.0	2.2	1822	1407	2345	913	52	913	1774	635	21	
LOS ANGELES MADISON/MO	213624	LSANCA02	8070	0.67	0.24	63.6%	67.8%	3.3	2.7	1788	1410	1302	474	46	474	1013	364	24	
AROMAS	831144	ARMSCA11	447	1.74	0.75	56.7%	64.3%	3.0	2.5	1711	1472	187	81	0	81	138	51	0	
HACIENDA	925083	PLTNCA13	1625	0.31	0.12	61.2%	62.0%	3.4	2.5	1699	1484	121	47	1	47	102	41	1	
EDWARDS	661369	EDWRCA01	137	0.36	0.15	58.3%	58.3%	1.0	1.0	1037	1114	12	5	0	5	10	5	0	
LEMORE WYMAN	559189	LEMRC A12	90	0.19	0.05	75.0%	100.0%	1.0	0.1	817	177	4	1	0	1	1	0	0	

Table 4A.4
AT&T CALIFORNIA
PERCENT OUT-OF-SERVICE CLEARED WITHIN 24 HOURS
20 POOREST PERFORMING AND 10 BEST PERFORMING WIRE CENTERS
2018-2019

Wire Center Name	Wire Center	CLLI	Access Lines (avg for Qtr)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Avg OOS Duration (mins)	Avg OOS Duration (mins)	OOS Total	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 week
20 POOREST PERFORMING WIRE CENTERS																		
BEALE CAPEHART-BEALE AFB	530431	BEALCA11	79	0.11	0.11	0.0%	0.0%	5.2	4.1	7471	5861	2	2	2	0	1	1	0
MOUNTAIN PASS	760753	MTPSCA11	20	1.71	1.71	0.0%	0.0%	7.2	6.2	7123	6953	8	8	8	4	4	4	1
WEOTT	707333	WEOTCA11	59	0.84	0.84	0.0%	0.0%	6.7	5.2	4612	3948	12	12	12	2	8	8	0
FURNACE CREEK	760738	FRCKCA11	133	1.28	1.25	2.4%	4.9%	43.3	57.5	21026	21106	41	41	40	25	21	20	8
BAKER	760705	BAKRC11	120	2.08	1.98	5.0%	2.4%	7.1	6.9	7325	7112	60	59	57	13	38	38	5
ANNAPOLIS	707322	ANNPCA11	70	2.79	2.49	10.6%	10.4%	18.8	18.7	11056	9276	47	45	42	21	36	34	15
SHOSHONE	760796	SHSHCA11	132	4.14	3.70	10.7%	11.6%	18.7	15.8	16171	15977	131	130	117	61	77	69	35
GAZELLE	530456	GZLLCA11	44	1.60	1.41	11.8%	23.5%	4.8	4.1	4693	3865	17	17	15	1	8	7	0
YOSEMITE MAIN	209240	YSMTCA11	529	0.98	0.85	12.9%	14.5%	11.1	9.4	7411	6297	124	121	108	42	107	94	28
EL PORTAL	209241	YSMTCA12	302	2.17	1.86	14.0%	15.8%	14.3	10.9	9764	7836	157	156	135	80	112	95	47
WAWONA	209238	WANACA11	268	1.20	1.03	14.3%	15.8%	9.7	8.2	8295	7078	77	77	66	26	55	47	14
FRENCH GULCH	530455	FRGLCA11	85	4.74	4.06	14.4%	13.4%	77.9	63.2	26989	25667	97	94	83	47	63	57	30
STONYFORD	530513	STFRCA11	136	2.30	1.97	14.7%	18.7%	13.0	10.2	10459	6464	75	73	64	34	46	39	16
KYBURZ	530465	KYBRCA11	61	2.26	1.92	15.2%	18.2%	10.7	8.0	8990	6732	33	33	28	16	18	14	5
BIG SUR	831101	BGSRCA11	392	3.74	3.11	16.8%	17.7%	5.8	4.2	4449	3511	352	343	293	36	248	211	19
POINT ARENA	707315	PNARCA11	600	1.98	1.65	16.8%	22.0%	12.4	10.7	7611	6158	285	282	237	84	208	166	44
BLUE LAKE	707278	BLKCA11	236	2.80	2.33	17.0%	14.5%	8.8	17.9	8663	10706	159	159	132	20	83	71	10
SPRINGVILLE	559219	SPVLCA11	750	2.85	2.36	17.2%	20.4%	10.2	7.7	6456	5021	513	508	425	123	363	293	58
SEQUOIA PARK ASH MTN	559152	ASMTCA11	85	2.79	2.30	17.5%	16.2%	4.8	6.0	5577	6864	57	57	47	4	26	22	2
ALLEGHANEY	530425	ALGHCA11	48	4.34	3.56	18.0%	18.4%	7.3	9.1	5138	4952	50	47	41	9	29	26	4
10 BEST PERFORMING WIRE CENTERS																		
FREMONT ADAMS	510015	FRMTCA12	6954	1.01	0.38	62.2%	68.3%	2.9	2.0	2367	1751	1683	1611	636	54	1359	460	30
COLIMA	650010	COLACA01	5946	1.00	0.37	62.7%	68.3%	2.9	2.1	1989	1590	1423	1317	531	43	849	300	19
VALLEJO	707331	VLLJCA01	6232	1.29	0.48	62.7%	66.7%	2.9	2.4	2205	1900	1935	1833	721	53	1598	572	31
MENDOTA	559195	MNDTCA11	445	1.24	0.46	62.9%	65.5%	3.5	2.7	1831	1468	132	128	49	3	115	41	2
LOS ANGELES MADISON/MO	213624	LSANCA02	8070	0.67	0.24	63.6%	67.8%	3.3	2.7	1788	1410	1302	1186	474	46	1013	364	24
CAMPTONVILLE	530436	CMPVCA11	220	6.07	2.18	64.1%	68.3%	3.8	2.7	2227	1610	320	307	115	18	178	63	7
SAN JOSE CHYNOWETH AV	408131	SNJSCA13	7641	1.71	0.61	64.4%	70.3%	3.1	2.3	2007	1610	3100	3012	1114	109	2406	752	57
BENICIA	707277	BNICCA11	1978	1.01	0.34	66.7%	69.6%	3.0	2.4	1828	1567	481	457	160	8	402	130	4
BORREGO SPRINGS	760707	BRSPCA11	703	4.48	1.38	69.2%	64.4%	4.0	3.7	2147	2777	756	717	233	33	257	93	16
LEMORE WYMAN	559189	LEMRC12	90	0.19	0.05	75.0%	100.0%	1.0	0.1	817	177	4	2	1	0	1	0	0

Table 4A.5
AT&T CALIFORNIA
DAYS REQUIRED TO CLEAR 90% OF OUT-OF-SERVICE CONDITIONS
20 POOREST PERFORMING AND 10 BEST PERFORMING WIRE CENTERS
2018-2019

Wire Center Name	Wire Center	CLLI	Access Lines (avg for Qtr)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Avg OOS Duratin (mins)	Avg OOS Duratin (mins)	OOS Total	OOS > 1 hour	OOS > 24 Hours	OOS > 1 week	CPUC hour	CPUC OOS > 24 hours	CPUC OOS > 1 Week	
20 POOREST PERFORMING WIRE CENTERS																			
FRENCH GULCH	530455	FRGLCA11	85	4.74	4.06	14.4%	13.4%	77.9	63.2	26999	25667	97	94	83	47	63	57	30	
FURNACE CREEK	760738	FRCKCA11	133	1.28	1.25	2.4%	4.9%	43.3	57.5	21026	21106	41	41	40	25	21	20	8	
BEAR VALLEY	209155	BVLYCA11	445	1.51	1.23	18.6%	22.7%	34.8	8.8	14786	8598	161	152	131	57	88	74	22	
SONOMA	707323	SONMCA12	4019	1.29	0.72	44.5%	54.3%	32.8	5.6	12032	4613	1249	1199	693	254	750	372	68	
AVALON	310603	AVLNCA11	1126	0.64	0.45	30.5%	38.8%	28.4	24.0	17249	11748	174	164	121	84	108	73	48	
OJAI	805382	OJAICA11	1662	2.01	1.47	26.7%	36.7%	21.0	5.0	11969	4499	802	772	588	137	467	316	41	
VENTURAFIR	805400	VNTRCA02	2398	0.96	0.59	38.0%	47.3%	19.3	4.8	8466	4000	550	513	341	86	372	216	24	
ANNAPOLIS	707322	ANNPCA11	70	2.79	2.49	10.6%	10.4%	18.8	18.7	11056	9276	47	45	42	21	36	34	15	
SHOSHONE	760796	SHSHCA11	132	4.14	3.70	10.7%	11.6%	18.7	15.8	16171	15977	131	130	117	61	77	69	35	
UPPER LAKE VALLEY RD	707329	UPLKCA11	401	3.11	2.01	35.5%	42.6%	18.6	9.7	8751	5235	299	287	193	97	177	110	36	
HOPLAND	707298	HPLDCA12	199	2.22	1.51	32.1%	34.5%	17.3	14.6	8691	7388	106	101	72	34	82	56	22	
OAKVIEW	805381	OKVWCA11	619	2.40	1.70	29.2%	33.9%	17.0	14.6	9619	8037	356	341	252	79	234	164	47	
MURPHYS	209203	MRPHCA11	846	2.74	2.02	26.3%	34.6%	16.4	9.4	10834	5453	556	539	410	181	288	199	61	
LOS ALAMOS	707319	SNRSCA11	2554	1.35	0.87	35.3%	43.0%	15.9	8.5	9754	4940	825	785	534	216	538	334	110	
LAKEPORT	707302	LKPTCA02	2063	1.58	0.98	38.0%	44.3%	15.9	9.1	7025	4378	784	755	486	193	560	332	107	
GEYSERVILLE	707294	GYVLCA11	297	2.20	1.60	27.4%	31.5%	15.9	12.5	12237	6772	157	150	114	53	118	87	37	
NIAGARA	530490	PLVLCA12	2250	3.60	2.73	24.2%	29.0%	14.3	11.2	8389	6661	1942	1901	1472	656	1169	854	282	
EL PORTAL	209241	YSMTCA12	302	2.17	1.86	14.0%	15.8%	14.3	10.9	9764	7836	157	156	135	80	112	95	47	
DUNNIGAN	530445	DNGNCA12	113	2.40	1.59	33.8%	39.5%	13.7	7.7	8283	6714	65	62	43	16	51	33	11	
POTTER VALLEY	707316	PTVYCA11	532	3.68	2.87	22.1%	24.8%	13.3	11.0	7839	6198	470	461	366	148	356	275	88	
10 BEST PERFORMING WIRE CENTERS																			
BELL	323604	BELLCA11	2533	1.23	0.50	59.3%	64.9%	3.0	2.7	2146	1834	749	701	305	18	583	220	12	
AROMAS	831144	ARMSCA11	447	1.74	0.75	56.7%	64.3%	3.0	2.5	1711	1472	187	180	81	0	138	51	0	
FORTUNA	707293	FTUNCA11	1103	0.76	0.36	52.5%	57.9%	3.0	2.4	2991	2756	202	188	96	3	133	60	3	
FREMONT ADAMS	510015	FRMTCA12	6954	1.01	0.38	62.2%	68.3%	2.9	2.0	2367	1751	1683	1611	636	54	1359	460	30	
VALLEJO	6232	VLLJCA01	6232	1.29	0.48	62.7%	66.7%	2.9	2.4	2205	1900	1935	1833	721	53	1598	572	31	
COLMA	650010	COLACA01	5946	1.00	0.37	62.7%	68.3%	2.9	2.1	1989	1590	1423	1317	531	43	849	300	19	
RANCHO MURIETTA	916533	RNMRCOA11	534	0.90	0.38	57.4%	62.9%	2.8	2.5	3156	2319	115	109	49	6	87	35	3	
BETHEL ISLAND	925008	BTISCA11	266	3.08	1.64	46.7%	56.1%	2.3	2.6	1877	1674	197	192	105	4	153	69	2	
EDWARDS	661369	EDWRCA01	137	0.36	0.15	58.3%	58.3%	1.0	1.0	1037	1114	12	12	5	0	10	5	0	
LEMORE WYMAN	559189	LEMRCOA12	90	0.19	0.05	75.0%	100.0%	1.0	0.1	817	177	4	2	1	0	1	0	0	

Table 4A.6
AT&T CALIFORNIA
TROUBLE REPORT AND OUT-OF-SERVICE DATA FOR 2018-2019

Wire Center Name	Wire Center	CLLI	Access Lines (avg for Qty)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Avg OOS Duratin (mins)	Avg OOS Duratin (mins)	OOS > 1 hour	OOS > 24 Hours	OOS > 1 week	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 Week
37TH STREET	707283		9109	0.82	0.47	43.3%	45.7%	6.9	5.7	3720	3167	1798	1723	1020	1350	773	141
ACTON	619781	SNDCGA06	3968	1.20	0.83	31.4%	33.8%	7.4	6.3	4219	3574	1146	1109	786	895	617	99
ADAMS	661410	ACTNCA11	744	1.51	0.78	48.1%	53.5%	4.5	3.7	3012	2418	270	260	140	17	182	8
AGOURA	323635	LSANCA14	3871	1.91	1.02	46.5%	54.8%	5.5	3.5	3568	2155	1777	1698	951	180	1093	44
AGUA DULCE	818600	AGORCA11	4975	1.07	0.41	61.9%	68.9%	4.4	2.7	5841	3692	1282	1230	488	83	947	33
AIRPORT	661351	AGDLCA11	463	2.04	1.22	40.1%	40.8%	4.9	4.2	3410	3009	227	222	136	20	148	8
ALAMEDA	310628	LSANCA07	7253	0.68	0.40	41.2%	45.7%	6.0	4.6	3547	2737	1190	1121	700	119	760	53
ALBANY	510002	ALMDCA11	6417	0.81	0.42	48.9%	55.2%	5.1	4.1	2815	2210	1254	1217	641	87	1016	50
ALHAMBRA	510001	ALBYCA11	6359	1.20	0.71	40.6%	46.4%	6.6	5.6	3776	3099	1824	1693	1083	1371	805	118
ALLEGHANEY	626601	ALBHCA01	8989	1.02	0.65	35.9%	41.2%	7.4	5.2	4521	3194	2198	2110	1409	327	1459	133
ALMADEN	530425	ALGHCA11	48	4.34	3.56	18.0%	18.0%	7.3	9.1	5138	4952	50	47	41	9	29	4
ALPINE	408134	SNJSCA18	2899	1.84	0.82	55.5%	62.4%	4.5	3.5	2593	2167	1280	1242	570	60	968	39
ALTA/DUTCH FLATS	619700	ALPICA12	1634	2.65	1.78	32.9%	38.4%	8.9	6.0	4594	3378	1040	1012	698	185	645	66
ANAHEIM COLUMBUS DR	530447	DTFLCA11	546	4.11	2.50	39.2%	36.8%	8.2	7.5	4723	4392	538	531	327	98	297	47
ANDERSON	714811	ANHMCA17	853	0.82	0.42	49.4%	58.3%	4.2	3.1	2626	1826	168	157	85	11	130	3
ANGELES	530427	ARSNCA11	1770	3.09	2.18	29.5%	32.9%	11.1	8.7	6322	5015	1314	1267	927	332	878	161
ANGELS CAMP	925003	LSANCA34	9709	1.17	0.71	39.2%	43.8%	7.6	5.9	4338	3411	2737	2623	1663	376	2100	206
ANNAPOLIS	209150	ANCMCA01	841	2.25	1.50	33.5%	43.0%	10.0	8.0	5486	4279	454	440	302	110	245	48
ANTIPOCH	707275	ANGWCA11	597	2.83	1.67	40.9%	42.0%	6.4	5.7	3580	3152	406	397	240	49	296	176
APTOS	707322	ANNPCA11	70	2.79	2.49	10.6%	10.4%	18.8	18.7	11056	9276	47	45	42	21	36	34
ARCADIA	831100	ANTCCA11	5087	1.13	0.46	59.5%	63.7%	3.6	3.3	2436	2098	1377	1290	558	69	1103	45
ARCATA	626602	APTSCA12	2886	1.15	0.62	46.0%	49.0%	7.2	6.0	3855	3260	794	764	429	108	559	301
ARLINGTON	951704	ARCTCA11	4879	1.25	0.78	37.7%	45.4%	8.0	4.6	4360	2912	1458	1408	908	211	922	67
ARNOLD	209151	ARNDCA11	1833	1.06	0.62	41.3%	49.5%	5.6	4.5	3480	2819	1557	1508	826	139	1230	64
AROMAS	831144	ARNLCA11	1979	2.38	1.65	30.7%	37.6%	12.3	9.7	6291	4907	1131	1102	784	304	587	120
ARROYO GRANDE	805352	ARMSCA11	447	1.74	0.75	56.7%	64.3%	3.0	2.5	1711	1472	187	180	81	0	138	51
ARVIN	661353	ARVNCA11	750	1.90	1.03	45.9%	49.6%	3.1	2.6	2104	1763	342	335	185	3	267	138
ASHLEY	209222	SKTNCA12	1207	3.10	1.83	41.2%	44.9%	7.1	5.7	3876	3182	899	883	529	126	652	59
ATASCADERO	805354	ATSCCA11	2341	1.04	0.62	40.4%	46.0%	4.4	3.6	2703	2186	582	560	347	13	410	33
ATWATER	209153	ATWRCA12	1862	1.76	0.94	48.8%	51.4%	5.8	4.6	3204	2620	788	769	419	62	664	330
AUBURN	530428	AUBNCA01	5835	1.62	0.98	39.2%	44.2%	7.4	6.0	4019	3245	2263	2178	1376	322	1391	145
AVALON	310603	AVLNCA11	1126	0.64	0.45	30.5%	38.8%	28.4	24.0	17249	11748	174	164	121	84	108	73
AVENAL	559154	AVNLCA12	448	2.50	1.88	24.9%	30.0%	7.0	5.7	4344	3493	269	263	202	37	188	17
AVILA BEACH	805355	AVBHCA11	337	1.16	0.74	36.2%	37.4%	5.3	3.4	2454	2164	94	92	60	2	64	42
AXMINSTER	323636	LSANCA15	8109	1.85	1.00	46.0%	53.8%	3.5	3.6	3003	2073	3603	3396	1947	325	2254	1121
BAILEY	408142	SNUSCA22	150	1.67	0.72	56.7%	59.2%	4.5	3.6	1896	1746	60	57	26	2	45	19
BAKER	760705	BAKRCA11	120	2.08	1.98	5.0%	2.4%	7.1	6.9	7325	7112	60	59	57	13	38	38
BAKERSFIELD WEEDPATCH HWY	661356	BKFDCA11	1160	1.80	0.86	52.1%	56.8%	3.4	2.6	2781	2378	501	484	240	13	369	170
BALBOA	949706	BALBCA01	2727	0.92	0.53	42.3%	48.7%	6.8	4.2	3335	2155	600	582	346	80	434	232
BALDWIN	559169	FRSNCA11	5489	1.59	0.80	49.6%	54.4%	5.1	3.9	2712	2193	2099	1982	1058	148	1597	784
BANGOR	530430	BNGRCA11	336	3.78	2.90	23.3%	28.3%	11.3	9.7	5919	5399	305	297	234	65	128	98
	805362	BYPKCA11	942	1.05	0.59	43.9%	53.6%	4.1	3.2	2584	1927	237	229	133	5	123	61

Table 4A.6 (page 2 of 13)

Wire Center	Wire Center Name	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Pct Cleared w/in 24 (unadj)	Pct Cleared w/in 24 hours	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Average Duration (mins)	Average OOS Duration (mins)	OOS Total	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC hours	CPUC OOS > 24 hours	CPUC OOS > 1 week
530431	BEALCA11	79	0.11	0.11	0.0%	0.0%	5.2	4.1	7471	5861	2	2	2	0	1	1	0
209155	BVLYCA11	445	1.51	1.23	18.6%	22.7%	34.8	8.8	14786	8598	161	152	131	57	88	74	22
661403	BVSPCA11	343	2.93	2.00	31.5%	40.8%	8.3	6.0	4940	3487	241	241	165	47	147	91	18
323604	BELCA11	2533	1.23	0.89	59.3%	64.9%	3.0	2.7	2146	1834	749	701	305	18	583	220	12
831103	BNLMCA11	588	1.56	0.89	42.7%	49.0%	8.7	8.5	4231	3709	220	204	126	37	113	66	22
707277	BNMCA11	1978	1.01	0.34	66.7%	69.6%	3.0	2.4	1828	1567	481	457	160	8	402	130	4
510004	BKLYCA01	8658	0.91	0.54	40.9%	46.9%	5.5	4.0	3336	2606	1890	1755	1117	158	1374	796	99
925008	BTHLCA01	266	3.08	1.64	46.7%	56.1%	2.3	2.6	1877	1674	197	192	105	4	153	69	2
310607	BVHLCOA1	16462	1.28	0.72	43.7%	50.4%	5.5	4.0	3176	2342	5076	4705	2860	450	3266	1796	150
831101	BGSRCA11	392	3.74	3.11	16.8%	17.7%	5.8	4.2	4449	3511	352	343	293	36	248	211	19
530432	BGGSCA11	254	2.20	1.54	29.9%	34.1%	7.0	6.5	4949	3894	134	130	94	23	51	36	4
925082	BSRNCA70	1442	0.25	0.13	48.3%	52.6%	4.3	3.4	2165	1792	87	80	45	2	68	35	0
530433	BLRSCA12	911	0.99	0.53	47.0%	47.4%	4.0	3.1	2452	2166	217	211	115	7	159	86	5
707278	BLKCA11	236	2.80	2.33	17.0%	14.5%	8.8	17.9	8663	10706	159	159	132	20	83	71	10
707279	BDBACA11	348	1.89	1.19	37.3%	44.3%	9.6	7.1	5987	4555	158	149	99	31	95	57	17
760856	NILDCA11	97	2.63	2.03	23.0%	28.5%	6.0	4.0	3662	2821	61	60	47	7	44	32	2
707280	BNVCA11	649	3.16	2.40	24.1%	29.3%	11.6	9.2	6784	5248	493	480	374	137	334	243	71
760707	BRSPCA11	703	4.48	1.38	69.2%	64.4%	4.0	3.7	2147	2777	756	717	233	33	257	93	16
831102	BLKCA11	1064	2.19	1.33	39.2%	42.3%	7.0	5.9	4119	3723	559	549	340	71	299	179	30
805363	BRDLCA90	495	1.01	0.72	28.3%	32.4%	5.0	4.1	3096	2731	120	114	86	5	305	27	1
760708	BRWLCA11	1763	1.14	0.73	36.3%	42.1%	6.2	4.1	3487	2651	482	469	307	52	305	182	15
714709	BREACA12	3018	1.02	0.51	50.3%	56.0%	4.8	3.7	2895	2256	742	715	369	54	541	252	23
925007	BRWDCA12	3731	1.03	0.50	51.8%	57.0%	3.2	2.5	2254	1883	925	896	446	23	773	345	16
707281	BGVCA11	173	4.37	2.94	32.6%	42.7%	4.6	3.3	3078	2722	181	178	122	10	66	38	1
714789	SNANCA11	9805	0.96	0.47	51.1%	53.6%	5.3	4.3	2948	2472	2256	2139	1104	183	1758	864	100
530434	BCWYCA11	931	0.47	0.20	57.7%	68.6%	6.3	5.2	2732	1893	104	98	44	9	72	25	4
714710	BNPKCA11	4445	1.21	0.69	42.7%	48.0%	5.6	4.5	3311	2762	1294	1230	741	101	992	548	57
818606	BRBNCA11	9929	0.93	0.42	54.7%	60.4%	4.1	3.0	2323	1817	2218	2092	1004	90	1512	650	28
818606	BRBNCA11	758	0.30	0.14	51.9%	56.4%	3.9	2.9	2102	1629	54	50	26	2	42	20	1
650006	BRLNCA01	8034	0.81	0.39	51.1%	58.5%	4.4	3.0	2530	1810	1553	1446	759	74	948	434	22
559242	BURLCA11	89	4.73	3.51	25.7%	26.2%	5.2	4.7	3624	3141	101	100	75	7	75	56	4
714788	SNANCA01	8378	1.12	0.65	41.8%	45.0%	5.1	4.1	3191	2576	2260	2153	1316	178	1817	1049	85
415058	SNFCCA01	14979	0.51	0.32	37.5%	42.8%	6.3	5.0	3665	2927	1830	1756	1144	194	1304	788	94
530435	BTCYCA11	109	2.44	1.49	39.1%	52.4%	5.3	2.9	3160	1883	64	63	39	5	41	20	1
619777	SNDGCA01	5706	0.62	0.40	36.0%	38.4%	7.2	6.3	4353	3694	853	809	546	113	689	452	76
818665	CLBSCA50	1062	0.83	0.31	62.1%	69.8%	5.2	3.7	3035	2428	211	197	80	13	158	52	9
760712	CLXCCA12	1906	0.89	0.50	43.5%	45.6%	4.9	3.7	3220	2676	405	385	229	34	306	175	13
760713	CLPTCA11	261	1.23	0.83	32.5%	36.9%	5.7	4.7	3543	2751	77	74	52	10	59	39	4
707282	CLSTCA11	1107	1.98	1.15	41.9%	49.0%	6.2	4.1	4438	3682	527	502	306	56	334	180	23
805364	CMBACA11	1449	1.17	0.76	35.1%	35.1%	3.9	3.0	2673	1865	407	405	264	10	164	87	1
559156	CMNLCA11	681	2.50	2.01	19.4%	25.6%	9.0	7.0	6936	4965	408	383	329	77	247	200	31
760714	CMPDCA01	108	0.73	0.50	31.6%	42.1%	4.6	3.4	2926	1955	19	18	13	0	13	8	0
619715	CAMPCA11	472	2.10	1.52	27.7%	33.0%	7.1	6.7	4106	3573	238	224	172	172	115	19	19
530436	CMPVCA11	220	6.07	2.18	64.1%	68.3%	3.8	2.7	2227	1610	320	307	115	18	178	63	7
818610	CNPKCA01	13474	1.30	0.65	49.8%	56.1%	4.0	3.1	2417	1944	4197	3997	2107	138	2979	1384	45
707327	IVNHCA11	1006	2.50	1.49	40.6%	45.6%	12.1	9.7	6147	5160	604	579	359	137	392	227	78
323638	LSANCA23	7122	1.48	0.93	37.4%	44.3%	7.4	5.0	4186	3212	2536	2441	1588	347	1780	1038	148

Table 4A.6 (page 3 of 13)

Wire Center	Wire Center Name	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Average OOS Duration (mins)	Average OOS Duration (mins)	OOS Total	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 week
760717	CARLSBAD CAMINO VIDA	3702	0.50	0.29	42.6%	46.5%	6.5	5.4	3719	3062	446	423	256	53	371	212	32
831105	CARMEL JUNIPERO	4639	1.34	0.78	41.8%	46.2%	5.4	4.5	3293	2624	1493	1406	869	135	1000	584	39
831106	CARROLL VALLEY	1046	2.31	1.39	39.6%	45.9%	5.3	4.0	3258	2595	579	568	350	35	418	231	14
408138	CARROLL STREET	7847	0.90	0.54	40.2%	46.4%	7.0	5.6	3934	3074	1695	1612	1013	240	1108	637	94
559157	CARUTHERS	383	3.62	2.16	40.2%	41.1%	5.9	4.5	3415	2859	373	373	199	33	246	150	16
661408	CASTAIC	3472	0.81	0.38	53.4%	55.7%	3.6	2.9	2459	1831	678	651	343	21	443	204	7
831107	CASTROVILLE	1033	1.63	0.81	50.4%	54.7%	4.0	2.7	2276	1778	405	386	201	14	296	142	3
805366	CAYUCOS	527	1.38	0.89	35.6%	37.3%	4.2	3.6	2746	2271	174	169	112	3	78	51	0
530528	CENTRAL VALLEY	1544	3.06	2.19	28.5%	32.9%	11.2	8.8	6630	4926	1135	1106	811	284	733	503	129
310663	CENTURY CITY	5826	1.13	0.63	44.7%	50.9%	5.0	3.8	2886	2232	1582	1484	875	119	1105	592	42
530437	CHALLENGE	1151	2.73	1.86	31.9%	34.6%	8.1	26.0	6477	7640	755	742	514	113	339	229	36
714759	CHAPMAN	6991	0.96	0.51	46.6%	50.9%	5.5	4.5	2956	2366	1610	1534	859	141	1155	601	65
530438	CHICO MAIN	10392	1.39	0.87	36.9%	41.1%	6.7	5.6	4497	3439	3456	3337	2180	528	2280	1406	223
559158	CHOWCHILLA	978	2.35	1.29	44.9%	47.0%	5.3	4.8	2966	2621	552	533	304	46	455	250	28
831104	CHUALAR	143	1.25	0.81	34.9%	39.4%	6.6	5.3	3993	3200	43	42	28	6	37	23	2
619719	CHULA VISTA-EAST	2276	0.57	0.36	36.9%	40.0%	7.3	6.0	4589	3945	314	306	198	41	264	163	26
925081	CLAYTON	1514	1.14	0.56	50.5%	54.9%	6.7	5.8	4607	4042	414	395	205	40	312	150	28
707304	CLEAR LAKE OAKS PALMER AVE	1985	2.38	1.40	41.1%	43.3%	12.3	10.5	5874	5008	1136	1084	669	257	873	528	186
323644	CLINTON	6586	1.26	0.70	44.2%	51.4%	6.3	3.9	3477	2323	1993	1881	1113	207	1403	728	67
707284	CLOVERDALE	853	2.94	2.02	31.2%	38.8%	11.3	9.5	5981	4773	602	580	414	140	444	286	90
559159	CLOVIS	8462	1.56	0.73	53.4%	58.7%	3.9	3.2	2445	1976	3173	3063	1478	42	251	172	18
559160	COALINGA	821	2.04	1.37	32.7%	34.3%	6.0	5.0	3759	3380	401	387	270	42	251	172	18
707285	COBB MOUNTAIN	320	1.54	0.83	45.8%	44.1%	11.5	10.7	5425	4924	118	112	64	25	88	52	19
619782	COLLEGE	2575	1.21	0.74	38.7%	40.4%	8.1	9.1	5992	5227	746	725	457	133	547	341	84
650010	COLMA	5946	1.00	0.37	62.7%	68.3%	2.9	2.1	1989	1590	1423	1317	531	43	849	300	19
909720	COLTON	3214	2.32	1.52	34.6%	39.9%	6.8	5.5	4114	3300	1792	1734	1172	210	1193	748	88
661358	COLUMBUS	2385	1.41	0.73	48.7%	52.2%	3.6	2.7	2411	2061	809	769	415	21	608	311	13
310609	COMPTON	10034	1.78	0.83	53.0%	58.1%	4.2	3.0	3058	2313	4280	4109	2010	289	3369	1480	140
925009	CONCORD	9067	1.00	0.39	60.8%	64.9%	3.5	2.6	2137	1698	2166	2031	849	78	1647	625	38
707286	CORDELIA	1363	0.83	0.44	46.3%	48.3%	6.9	6.1	3883	3438	270	257	145	34	209	115	21
530440	CORNING	1203	2.21	1.25	43.3%	48.5%	5.7	4.7	3394	2685	639	617	362	67	384	207	28
951721	CORONA	10864	0.97	0.53	48.0%	51.4%	4.4	3.3	2806	2249	2540	2438	1371	125	1955	1003	56
949722	CORONA DEL MAR	6414	0.92	0.56	39.2%	43.3%	4.9	3.9	3216	2665	1416	1358	861	100	1125	667	58
619723	CORONADO	1746	0.63	0.42	34.3%	37.6%	8.9	7.4	4732	3878	265	248	174	49	205	139	32
949725	COSTA MESA	5801	0.98	0.46	53.5%	58.1%	4.8	3.7	2592	2093	1370	1286	637	85	1050	472	37
707287	COTATI	1998	0.93	0.62	34.2%	36.9%	10.8	8.9	6074	5037	448	431	295	122	346	228	71
530441	COTTONWOOD	2148	4.17	2.90	30.4%	32.1%	10.8	9.2	6043	5037	2149	2091	1495	541	1350	948	276
209161	COULTERVILLE	660	4.88	3.63	25.7%	37.4%	13.1	10.0	6862	4780	774	756	575	169	386	255	64
760726	COYOTE WELLS	49	2.05	1.20	41.7%	50.9%	4.9	6.8	2980	2745	24	22	14	2	15	8	1
510011	CROCKETT	293	1.15	0.77	33.3%	33.8%	11.2	9.7	5473	4536	81	77	54	9	61	43	10
209162	CROWS LANDING	93	2.77	1.97	29.0%	22.1%	5.8	5.2	4029	3604	62	61	44	9	36	29	3
310608	CULVER CITY	8068	1.17	0.64	45.1%	54.0%	5.4	3.2	2942	2046	2263	2145	1242	193	1382	679	61
714702	CYPRESS	7789	1.26	0.68	46.4%	50.4%	4.6	3.7	2802	2268	2364	2248	1266	147	1827	959	70
925012	DANVILLE	5160	0.78	0.43	45.4%	49.4%	4.5	3.7	2581	2133	969	916	529	49	761	415	17
530442	DAVIS	4228	0.78	0.46	40.6%	44.2%	8.1	6.6	5100	4334	790	754	469	144	621	366	96
858727	DEL MAR	5547	0.65	0.42	35.2%	38.2%	7.9	6.6	4858	4065	864	816	560	160	639	425	94
559163	DEL REY	140	3.51	2.17	38.1%	45.4%	5.5	4.1	3295	2666	118	115	73	10	94	53	3

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Wire Center Name	Wire Center	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Average OOS Duration (mins)	Average OOS Duration (mins)	OOS Total	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC hour	CPUC OOS > 24 hours	CPUC OOS > 1 week
DELANO	661367	DELNCA11	1983	1.47	0.82	44.3%	47.7%	3.7	2.8	2513	2167	698	389	18	565	304	9
DINUBA	559164	DINBCA01	1354	2.21	1.12	49.4%	52.3%	4.3	3.6	2851	2252	718	691	44	610	305	27
DIXON	707443	DIXNCA11	1370	1.65	1.04	36.6%	40.3%	10.3	8.2	7298	5686	541	519	343	443	277	85
DOUGLAS	310613	ELSGCA12	4050	0.64	0.34	48.8%	52.9%	6.0	4.7	3272	2418	619	570	329	60	430	32
DOWNEVILLE PEARL	530444	DWNVCA11	499	2.67	1.96	26.9%	30.2%	4.8	3.3	3324	1650	98	96	41	6	53	18
DULZURA	619728	DLZRCA11	499	2.67	1.96	26.9%	30.2%	4.8	3.3	3324	1650	320	315	234	71	183	37
DUNNIGAN	530445	DNGNCA12	113	2.40	1.59	33.8%	39.5%	13.7	7.7	8283	6714	65	62	43	16	51	11
DUNSMUIR	530446	DNSMCA11	417	0.99	0.69	30.3%	35.5%	4.9	4.1	4553	3734	99	97	69	7	70	47
EARLIMART	661368	ERLMCA11	335	2.22	1.27	43.0%	48.3%	4.4	3.5	2962	2490	179	176	102	7	145	77
EDGEWOOD/JN HIGHL	916478	NHLDCA11	4097	1.42	0.67	52.5%	57.6%	5.1	4.3	3054	2625	1394	1328	662	99	1049	54
EDWARDS	661369	EDWRCA01	137	0.36	0.15	58.3%	58.3%	1.0	1.0	1037	1114	12	12	5	0	5	0
EL CAJON	619729	ELCJCA11	4036	1.30	0.81	37.7%	42.9%	6.5	5.4	3873	3201	1262	1210	786	160	914	77
EL CENTRO	760730	ELCNCA01	3908	1.03	0.60	41.4%	45.1%	6.0	4.4	3269	2674	964	929	565	97	751	46
EL DORADO HILLS	916454	FLSMCA12	2851	0.99	0.50	50.0%	52.0%	4.5	4.2	3113	2862	630	604	315	38	472	29
EL PORTAL	209241	YSMTCA12	302	2.17	1.86	14.0%	15.8%	14.3	10.9	9764	7836	157	156	135	80	112	95
EL SOBRANTE	510013	ELSBCA11	3235	1.73	1.10	36.3%	41.1%	7.4	6.0	4484	3751	1342	1293	855	185	1082	107
EL TORO	949731	ELTRCA11	11101	0.99	0.53	46.7%	51.1%	4.8	4.0	2940	2403	2646	2530	1411	187	2109	89
ELK	707288	ELKCA11	211	2.92	2.39	18.2%	20.8%	11.6	10.7	6991	5951	148	142	121	41	100	21
ELK CREEK	530448	EKCKCA11	100	3.66	2.87	21.6%	21.7%	8.1	6.1	5305	4061	88	85	69	21	45	6
ELMONTE	628611	ELMNCA01	9366	1.35	0.84	37.6%	42.2%	7.8	4.8	4360	3232	3025	2901	1888	418	1996	163
EMPIRE	916501	SCRMCA12	4284	1.16	0.56	52.0%	56.5%	6.0	4.5	3264	2632	1194	1144	573	108	874	48
ENCINITAS	760732	ENCTCA12	4597	0.78	0.50	36.0%	39.1%	5.7	4.7	3752	3103	862	823	552	84	717	48
ESCALON	209192	ESCLCA11	940	2.11	1.23	41.5%	44.4%	8.9	7.0	4435	3699	475	460	278	86	323	48
ESCONDIDO	760733	ESCNCA01	7584	1.16	0.68	41.7%	44.1%	6.5	5.5	3611	3087	2115	2035	1233	238	1725	139
ESPARTO	530450	ESPRCA11	264	2.70	1.85	31.6%	35.3%	9.2	7.5	7855	6349	171	161	117	38	127	88
EUREKA	714739	GRGVCA01	6816	0.98	0.58	40.7%	43.9%	5.6	4.7	3346	2751	1600	1522	949	150	1129	79
EXPORT/OILDALE	661383	EURKCA01	4834	0.82	0.39	52.0%	58.2%	4.0	3.0	2572	2101	954	913	458	44	651	17
FAIR OAKS	916451	FROKCA11	7528	1.06	0.51	52.1%	56.5%	5.2	4.4	2829	2257	1910	1830	915	25	847	11
FAIRFIELD	707290	FRFDCA01	5145	1.08	0.53	50.6%	56.2%	6.7	5.3	4089	3178	1329	1278	657	135	1002	68
FAIRVIEW	661357	BKFDCA12	6252	1.20	0.60	49.9%	54.7%	3.2	2.7	2581	2185	1802	1731	2581	66	1399	79
FALLBROOK	760735	FLBKCA12	3510	2.55	1.91	24.9%	27.6%	10.2	8.4	6823	5601	2149	2103	1613	539	1831	344
FARMERSVILLE	559165	FRVLCA11	408	2.30	1.28	44.4%	48.3%	4.0	3.7	2911	2278	225	214	125	10	176	8
FELTON	831108	FETNCA11	999	1.58	0.88	44.7%	52.0%	7.7	5.7	3574	2749	380	372	210	50	209	21
FILLMORE	805370	FLMRCA11	799	1.02	0.59	41.5%	47.3%	4.1	3.1	3150	2588	195	182	114	12	144	8
FIREBAUGH P ST	559166	FRBHCA11	609	1.48	0.63	57.4%	60.0%	4.8	3.2	2708	2167	216	209	92	13	180	75
FIVE POINTS	415068	FNFNCA11	152	2.72	1.73	36.4%	32.2%	6.8	5.6	3848	3528	99	99	63	12	74	9
FOLSOM	916536	SNFNCA11	7728	0.35	0.15	57.5%	60.9%	4.5	3.5	2286	1886	228	213	88	14	176	63
FOLSOM MONTROSE WAY	916536	FLSMCA14	1810	0.52	0.20	61.4%	66.5%	4.5	3.5	2286	1886	228	213	88	14	176	63
FOLSOM NIMBUS	916453	FLSMCA12	1876	0.47	0.19	59.4%	61.9%	4.8	4.0	2560	2215	212	202	86	16	172	10
FONTANA	909736	FNTACA11	5889	2.11	1.19	43.6%	46.1%	6.4	5.2	3754	3189	2983	2841	1682	356	2262	158
FORESTVILLE	707291	FSVLA11	740	2.68	1.73	35.4%	40.5%	11.3	9.7	5930	5026	475	459	307	124	307	69
FORT BRAGG	707292	FTBRGA02	3219	1.68	1.10	34.4%	38.3%	10.6	8.4	5569	4404	1300	1267	853	302	980	172
FORTUNA	707293	FTUNCA11	1103	0.76	0.36	52.5%	57.9%	3.0	2.4	2991	2756	200	188	96	3	133	3
FOXWORTHY	408132	SNUSCA14	9496	1.06	0.63	41.1%	46.0%	6.9	5.5	4123	3363	2422	2322	1427	326	1643	140
FRANKLIN	510036	OKLDCA03	13042	0.63	0.36	43.3%	48.8%	5.0	3.7	3175	2493	1969	1832	1117	144	1422	76
FRAZER PARK	661404	LEBCCA12	704	1.53	1.05	31.7%	40.6%	6.6	5.4	4213	3382	259	248	177	36	168	104

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Wire Center	Wire Center Name	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Average OOS Duration (mins)	Average OOS Duration (mins)	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 week
661371	FZPKCA11	765	2.16	1.26	41.6%	46.5%	6.1	5.1	3593	3122	397	380	232	301	170	24
510015	FRMTCA12	6954	1.01	0.38	62.2%	68.3%	2.9	2.0	2367	1751	1683	1611	636	1359	460	30
510014	FRMTCA11	8074	0.92	0.39	57.6%	63.0%	3.4	2.5	2209	1792	1785	1697	756	1437	569	46
530455	FRGLCA11	85	4.74	4.06	14.4%	13.4%	77.9	63.2	26999	25667	97	94	83	63	57	30
559172	FRSNCA12	4176	1.90	1.01	46.5%	50.6%	5.6	3.9	3490	2716	1900	1820	1016	1489	778	56
559168	FRSNCA01	7765	2.08	1.13	46.0%	49.1%	4.7	3.9	2711	2295	3885	3757	2099	3157	1678	111
559245	FRSNCA14	3323	1.70	0.87	49.1%	52.6%	5.2	4.2	2764	2249	1356	1299	690	1124	560	58
559170	FRSNCA13	6480	1.25	0.64	48.7%	52.4%	4.5	3.5	2760	2208	1944	1836	997	108	1575	58
559247	FRSNCA15	1081	0.86	0.41	52.5%	58.2%	4.5	3.1	2539	1999	223	204	106	13	174	7
916519	WSCRCA11	3678	1.05	0.49	53.5%	59.8%	5.0	4.1	2706	2076	930	879	432	69	631	22
916502	SCRMCA13	2993	1.27	0.63	50.7%	54.1%	5.6	4.6	3405	3023	911	876	449	72	654	36
510037	OKLDCA04	5130	1.27	0.57	55.1%	58.8%	4.2	3.7	2943	2363	1558	1455	700	96	1213	61
714737	FUTNCA01	8086	1.15	0.67	41.7%	46.8%	5.6	4.6	3377	2637	2229	2143	1300	197	1685	97
760738	FRCKCA11	133	1.28	1.25	2.4%	4.9%	43.3	57.5	21026	21106	41	41	40	25	20	8
209171	GALTCOA11	1470	1.35	0.66	51.2%	58.0%	5.5	3.5	2827	1975	475	457	232	48	282	15
916499	SCRMCA03	8760	1.45	0.76	47.7%	53.4%	5.7	4.7	3387	2718	3055	2927	1599	287	2057	115
310615	GRDNCA01	12091	1.56	0.75	52.0%	57.7%	5.3	3.5	3370	2238	4527	4275	2174	453	3349	138
858762	PCBHCA01	4202	1.25	0.80	36.1%	39.0%	8.4	7.1	4755	3990	1263	1211	807	249	978	145
530456	GZLLCA11	44	1.60	1.41	11.8%	23.5%	4.8	4.1	4693	3865	17	17	15	1	7	0
530457	GRTWCA11	1319	3.63	2.70	25.8%	32.5%	10.8	7.6	6103	4603	1150	1119	853	262	650	105
530458	GRBRCA11	186	2.51	1.54	38.4%	41.4%	4.9	4.0	3605	2966	112	108	69	10	64	5
707294	GYVLCOA11	297	2.20	1.60	27.4%	31.5%	15.9	12.5	12337	6772	157	150	114	53	118	37
916500	SCRMCA11	6198	1.05	0.57	45.4%	51.3%	6.6	5.1	3309	2587	1560	1487	851	185	1015	70
818614	GLDLCA11	14776	0.83	0.35	57.5%	62.9%	4.0	3.0	2113	1686	2927	2769	1245	97	2091	30
831121	SLNSCA12	562	0.88	0.37	58.0%	68.9%	4.4	2.9	2355	1528	119	108	50	4	79	0
831110	GNZLCA11	559	1.26	0.69	45.0%	47.1%	4.4	3.7	2548	2286	169	164	93	6	152	5
559246	GSHNCA11	723	2.03	1.12	44.8%	46.0%	4.5	4.0	2675	2384	353	337	195	21	292	10
209221	SKTNCA11	7693	1.27	0.67	47.3%	52.0%	6.0	4.7	3468	2724	2336	2209	1231	250	1733	107
530459	GRVYCA01	9763	2.15	1.40	35.1%	39.1%	9.4	7.7	5271	4265	5042	4842	3272	1065	3293	535
628650	PSDNCA11	12324	0.69	0.34	51.5%	56.6%	5.2	3.6	3042	2304	2055	1906	997	173	1432	71
831109	GNFDCA11	941	1.43	0.88	38.2%	41.7%	4.9	4.2	2959	2476	322	308	199	16	254	7
530460	GRNDCA13	82	1.52	0.91	40.0%	44.4%	4.5	3.9	2607	2317	30	28	18	0	17	0
530461	GRDLCA11	804	2.19	1.15	47.5%	52.1%	5.8	4.8	3233	2766	423	411	222	39	315	20
209173	GVLDCA11	1877	2.39	1.67	30.1%	36.0%	11.5	7.9	6323	4267	1079	1041	754	230	659	74
707295	GULLCA11	1073	2.49	2.00	19.8%	22.6%	11.0	8.9	6949	5669	641	628	514	173	486	99
707296	GUVLCA11	693	2.05	1.33	35.2%	39.3%	13.1	12.5	6745	5886	341	334	221	84	225	50
209174	GUSTCA11	608	2.58	1.69	34.5%	37.6%	6.9	6.0	4455	3983	377	366	247	51	300	31
714809	YRLNCA12	579	0.39	0.21	46.3%	49.7%	5.2	4.7	3048	2554	54	52	29	6	36	2
925083	PLTNCA13	1625	0.31	0.12	61.2%	62.0%	3.4	2.5	1699	1484	121	114	47	1	102	1
650016	HMBACA12	2366	1.02	0.64	36.7%	39.7%	8.4	7.1	4429	3871	577	558	365	96	391	59
530462	HMCYCA11	150	1.67	0.97	41.7%	47.2%	5.5	5.5	3171	2389	60	58	35	4	39	3
559175	HNFRCOA11	3794	1.75	0.98	44.2%	47.4%	5.5	4.2	3266	2753	1594	1520	889	134	1170	72
760716	CRLSCA11	2238	0.89	0.55	37.5%	40.0%	6.9	6.4	4450	3428	477	446	298	80	381	44
310618	HWTHCA01	5105	1.40	0.83	40.5%	45.2%	7.9	4.9	3868	2994	1713	1642	1019	206	1204	106
510018	HYWRCA11	5338	0.82	0.38	53.3%	56.7%	5.3	4.4	2810	2400	1047	989	489	81	827	40
510017	HYWRCA01	7954	0.92	0.45	51.1%	56.4%	5.6	4.8	3165	2621	1756	1652	859	154	1313	85
707297	HLBGCA11	2882	2.15	1.49	30.7%	34.3%	12.0	10.4	6738	5799	1381	1324	957	397	960	672

Table 4A.6 (page 6 of 13)

Wire Center Name	Wire Center	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Average OOS Duration (mins)	Average OOS Duration (mins)	Total OOS	OOS > 1 hour	OOS > 24 Hours	OOS > 1 week	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 Week
HERALD	209176	HERLCA11	276	3.11	1.86	40.3%	49.1%	7.7	5.7	3829	2790	206	123	33	110	58	11
HERCULES	510080	HRCLCA11	2653	1.44	0.89	38.4%	43.1%	7.6	6.5	4276	3304	917	565	129	660	395	67
HICKORY/SALINAS	831120	SLNSCA11	2221	1.01	0.47	55.0%	55.0%	4.2	3.1	2269	1913	540	250	25	414	197	11
HIGHLAND	909741	HGLDCA11	2204	1.91	1.17	38.8%	42.3%	7.0	5.5	4366	3396	1008	967	138	729	440	63
HOLLISTER	831111	HLSTCA11	2936	1.16	0.57	51.0%	53.3%	4.1	3.7	2562	2179	816	477	41	645	318	29
HOLLY STREET	510039	OKLDCA12	7898	1.23	0.52	58.2%	63.3%	4.6	3.6	2855	2064	2337	900	166	1784	746	116
HOLLYWOOD	323616	HLWDCA01	9679	0.92	0.42	54.4%	60.5%	4.1	3.0	2445	1713	2136	974	101	1506	657	32
HOLTVILLE	760742	HLVLCA11	460	1.52	0.92	39.3%	43.7%	6.4	5.0	3387	2741	168	102	19	120	69	9
HOMEWOOD	530463	HMWDCA11	1137	0.71	0.43	39.4%	41.4%	6.5	5.4	3502	2935	193	184	22	122	76	10
HOPLAND	707298	HPLDCA12	199	2.22	1.51	32.1%	34.5%	17.3	14.6	8691	7388	106	101	34	82	56	22
HORNBLEND	858763	PCBHCA11	564	1.34	0.90	33.0%	38.1%	7.9	6.3	4843	3777	182	173	4	138	91	17
HORN BROOK	530464	HRBKCA11	263	3.14	2.08	33.8%	38.9%	6.2	4.1	4213	3143	198	192	23	123	79	5
HUGHSON	209177	HGSNCA11	546	2.00	1.22	38.9%	46.4%	8.5	5.5	4949	4051	262	259	40	192	105	18
HUNTER	831122	SLNSCA13	687	2.12	0.93	55.9%	60.1%	3.9	3.4	2065	1740	349	328	11	232	102	6
HUNTINGTON PARK	323617	HNPKCA01	6843	1.43	0.56	61.1%	67.1%	3.0	2.2	1822	1407	2345	2174	52	1774	635	21
HURON	559178	HURNCA11	298	1.70	1.09	36.1%	37.0%	6.5	4.3	3574	2784	122	120	14	95	61	5
HYDESVILLE	707299	HVYLCA11	267	2.23	1.16	48.3%	51.7%	3.6	3.5	2319	2245	143	137	4	55	29	2
IGNACIO	415019	IGNCCA12	1553	0.64	0.38	40.8%	45.5%	7.3	6.5	3686	3218	240	225	142	192	111	23
IMPERIAL	760743	IMPRCA11	563	0.93	0.47	49.2%	52.2%	4.7	3.6	3109	2464	126	121	64	101	51	5
IMPERIAL BEACH	619744	IMBHCA11	2062	1.20	0.81	32.9%	38.4%	8.7	7.6	4835	4096	596	575	96	470	303	69
INGLEWOOD	310619	IGWDCA01	5115	1.36	0.79	42.0%	46.0%	6.8	4.6	3778	2938	1670	1591	196	1131	655	98
INVERNESS	415020	INVRCA11	450	2.76	1.10	60.1%	62.6%	3.5	3.0	2229	1795	298	291	16	332	88	11
IONE	209179	IONECA11	872	2.42	1.40	42.3%	46.4%	7.8	5.5	4126	3344	506	494	74	334	187	32
IRVINE	949745	IRVNCA01	4744	0.89	0.51	42.8%	46.4%	5.7	4.7	3370	2878	1018	981	582	101	805	50
IVANHOE	519648	SCRMCA02	7455	1.28	0.65	49.2%	53.7%	6.0	5.1	3922	2561	2299	2188	208	1586	784	105
IVANHOE ELM ST	559180	IVNHCA11	448	3.12	1.90	38.1%	40.2%	5.0	4.1	2982	2516	335	326	20	282	182	10
JACKSON	209181	JCSNCA01	1462	1.35	0.78	41.9%	46.3%	8.1	7.0	3978	3185	473	452	275	307	180	43
JACUMBA	619746	JACMBCA11	369	2.69	1.83	31.9%	38.2%	6.4	5.3	4017	3188	238	233	25	168	108	13
JAMESTOWN	209182	JMTWCA11	813	2.37	1.39	41.3%	45.6%	8.0	6.7	4374	3706	462	450	83	355	198	47
JAMUL	619851	JAMLCA60	317	1.64	1.25	24.0%	28.6%	7.7	5.9	5368	4198	125	122	95	81	60	9
JULIAN	760748	JULNCA12	885	2.36	1.71	27.5%	32.0%	7.5	6.1	4652	3841	501	489	363	354	249	39
JUNCTION AVE.	408145	SNUSCA21	6163	0.42	0.21	49.9%	53.2%	3.6	3.1	2305	1932	615	589	25	499	245	10
JUNIPER	415061	GRMLCA11	11492	1.11	0.58	47.8%	54.1%	4.7	3.6	2775	2097	3050	2876	190	2223	1097	75
KELSEYVILLE	707300	KLVLCA12	1099	2.49	1.43	42.9%	49.7%	11.8	9.7	5239	4297	658	642	129	481	249	83
KING CITY	831112	KGCYCA11	1338	1.59	0.97	39.2%	42.1%	5.6	4.7	3242	2811	510	499	310	41	256	25
KINGSBURG	559183	KGBGCA11	1050	2.49	1.30	47.8%	53.3%	5.0	3.3	2719	2189	628	605	328	46	498	23
KINGHTS FERRY	209184	KNFYCA11	137	1.31	0.88	32.6%	46.0%	11.3	6.2	5356	4059	43	41	29	10	30	6
KYBURZ	530465	KYBRCA11	61	2.26	1.92	15.2%	18.2%	10.7	8.0	8990	6732	33	33	28	16	18	5
LA CRESCENTA	818621	LACRCA11	6308	1.15	0.56	51.5%	59.4%	4.0	3.0	2263	1749	1735	1647	842	56	1103	24
LA HONDA	650021	LAHNCA11	390	1.15	0.55	29.9%	30.1%	7.3	6.3	4518	3684	154	149	108	31	73	53
LA JOLLA	858750	LAJLCA11	3691	0.85	0.55	34.7%	37.8%	8.3	7.1	4915	4304	750	721	490	126	591	89
LA MESA	619752	LAMSCA01	5855	1.12	0.70	37.7%	40.8%	6.8	5.8	4025	3420	1571	1497	979	222	1159	122
LA PALMA	714703	LAFLCA11	1801	0.87	0.41	56.6%	62.6%	3.4	2.6	2031	1611	534	501	232	13	353	144
LAFAYETTE	925022	LAFYCA11	2291	0.97	0.42	56.6%	62.6%	3.4	2.6	2031	1611	534	501	232	13	353	144
LAGRANGE/D PEDRO	209185	LGRNCA12	857	2.99	2.43	18.7%	26.2%	10.0	7.2	5892	4306	615	599	500	139	309	238
LAGUNA NIGUEL	949749	LGNCA12	3449	0.62	0.32	49.1%	53.9%	5.0	4.0	3139	2490	513	482	46	393	196	20
LAKE BERRYESSA	707301	LKBRCA11	193	3.24	2.57	20.7%	23.3%	9.9	8.5	5969	4834	150	149	119	30	120	93

Table 4A.6 (page 7 of 13)

Wire Center	Wire Center Name	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Pct Cleared w/in 24 (unadj)	Pct Cleared w/in 24 (unadj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Average OOS Duration (mins)	Average OOS Duration (mins)	OOS Total	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 week
661405	LKLA011	441	1.42	0.78	44.7%	46.9%	4.2	3.5	2856	2609	150	144	83	6	98	53	1
530535	DLRY011	1452	1.92	1.21	36.9%	41.8%	10.6	9.1	5521	4841	669	650	422	166	414	253	83
626651	PSDN011	5678	1.09	0.57	47.9%	56.0%	5.0	3.5	2760	2022	1483	1385	772	108	969	468	43
707302	LKPT002	2063	1.58	0.98	38.0%	44.3%	15.9	9.1	7025	4378	784	755	486	193	560	332	107
619751	LKSD011	1806	1.54	1.03	33.3%	37.8%	7.7	6.6	4404	3752	669	642	446	110	418	303	63
661372	LAMT011	730	2.25	1.30	42.1%	47.2%	3.4	2.6	2609	2188	394	380	228	9	318	174	5
818646	NHWDC01	6183	1.38	0.73	46.9%	52.6%	5.6	4.1	3075	2298	2043	1941	1084	174	1359	685	62
415023	LKSC011	3144	0.95	0.52	45.4%	50.8%	5.8	4.6	3221	2609	720	682	393	69	525	274	35
559186	LATN011	186	4.69	3.41	27.3%	26.3%	6.5	5.6	3601	3281	209	208	152	20	158	118	12
209187	LGRD011	182	2.31	1.21	47.5%	49.3%	5.2	3.7	2840	2408	101	100	53	8	76	39	3
661373	LEBCC01	387	3.13	2.13	31.7%	41.2%	6.0	4.6	3594	2786	290	288	198	29	225	134	12
714701	ANHM01	7940	0.95	0.49	48.9%	52.6%	5.5	4.3	3105	2410	1811	1723	925	162	1331	667	76
559188	LEMR011	1226	2.23	1.38	38.1%	41.6%	6.1	5.1	3645	3047	656	639	406	75	500	301	37
559189	LEMR012	90	0.19	0.05	75.0%	100.0%	1.0	0.1	817	177	4	2	1	0	1	0	0
661374	LNVC011	327	3.58	2.49	30.6%	33.4%	6.5	5.5	4330	3784	281	273	195	43	204	142	27
530466	LSTN011	506	2.13	1.71	19.4%	24.1%	11.3	9.7	6339	5218	258	254	208	63	170	132	29
916467	LNCL011	848	1.17	0.55	53.4%	64.8%	3.1	2.6	2115	1690	238	223	111	8	161	62	4
858779	SNDG003	8148	0.79	0.47	40.7%	45.6%	7.4	6.1	4194	3419	1549	1474	918	17	1120	649	117
661375	LTRK011	977	3.30	1.77	46.3%	47.9%	3.6	3.3	2439	2164	775	750	416	22	499	276	14
530468	LVRM011	670	1.87	1.04	44.3%	48.3%	7.2	6.3	4088	3545	300	284	167	33	220	121	22
925025	LVMR011	6321	0.81	0.42	48.5%	54.1%	4.1	3.4	2486	2075	1231	1179	634	48	992	477	27
209190	LCFR011	249	2.44	1.10	54.8%	65.7%	6.6	3.5	2996	2028	146	144	66	15	97	35	6
209191	LODICA01	5634	1.87	0.85	54.3%	62.2%	5.9	3.7	3077	2353	2524	2420	1154	251	1724	691	115
707303	LOLETA	128	1.89	1.14	39.7%	49.9%	4.0	2.4	2451	1636	58	56	35	2	25	14	0
310622	LOMT011	5787	1.27	0.62	50.8%	55.1%	4.5	3.4	2627	2091	1761	1695	866	118	1355	642	42
916470	LOMIS	1405	1.17	0.60	48.7%	51.2%	4.5	4.3	2800	2482	394	378	202	26	275	143	17
707319	SNRSC01	2554	1.35	0.87	35.3%	43.0%	15.9	8.5	9754	4940	825	785	534	216	538	334	110
650024	LSAT011	4406	1.79	1.17	35.0%	39.7%	7.7	6.3	4780	3825	1894	1811	1232	394	1300	834	181
213625	LSANCA02	5825	0.50	0.21	57.1%	64.3%	3.4	2.5	1877	1432	672	619	288	17	492	195	5
213624	LSANCA02	8070	0.67	0.24	63.6%	67.8%	3.3	2.7	1788	1410	1302	1186	474	46	1013	364	24
213627	LSANCA06	4538	0.81	0.38	52.7%	58.7%	3.7	2.7	2180	1706	883	823	418	31	643	288	8
209193	LSBNCA12	2086	1.57	0.89	43.4%	46.4%	6.6	5.8	3650	3080	786	755	445	110	621	349	65
530469	LSMLCA11	359	2.21	1.11	49.5%	51.7%	6.8	7.3	4038	3942	190	182	96	25	120	62	16
530471	LLTNCA11	551	0.85	0.52	38.9%	38.1%	3.4	2.4	2537	2087	113	110	69	3	83	52	2
559194	MADRCA11	4019	1.89	0.85	54.8%	59.5%	4.0	3.0	2458	2017	1819	1755	823	99	1417	602	52
559243	MADRCA12	376	3.38	1.72	49.2%	53.5%	4.5	3.3	2430	1908	305	294	155	18	214	106	6
818647	NHWDC02	12830	1.28	0.67	47.7%	55.2%	5.0	3.6	2908	2222	3938	3731	2061	262	2630	1264	96
831113	MARNCA11	1362	0.87	0.44	49.1%	53.3%	4.8	3.8	2836	2378	285	273	145	21	233	114	6
619783	SNDGCA12	2199	1.59	1.08	32.5%	34.9%	8.5	6.6	5555	4729	841	809	588	140	692	471	84
925030	MRTZCA11	3573	0.99	0.44	54.9%	59.7%	3.6	2.9	2291	1824	845	797	381	43	616	268	18
530472	MYVICA01	3577	1.91	1.10	42.4%	49.2%	5.6	4.8	3666	3011	1638	1579	943	145	1179	630	74
707307	MKVLCA11	1109	0.71	0.36	49.7%	51.4%	4.1	3.5	2480	2093	189	177	95	9	137	71	5
323629	LSANCA08	11775	1.45	0.84	42.2%	42.2%	5.8	3.7	3345	2182	4087	3836	2361	408	2654	1438	99
707305	MNDCCA11	1566	1.89	1.37	27.9%	29.9%	9.8	8.8	6335	5409	712	695	513	185	522	374	108
559195	MNDTCA11	445	1.24	0.46	62.9%	65.5%	3.5	2.7	1831	1468	132	128	49	3	115	41	2
650028	MNPKCA11	4040	2.32	1.54	33.6%	39.1%	7.9	6.5	4710	3878	2249	2196	1493	408	1524	973	202
209196	MRCDC01	5376	1.29	0.64	50.2%	53.2%	5.9	4.7	3073	2594	1668	1593	831	167	1327	655	91

Table 4A.6 (page 8 of 13)

Wire Center Name	Wire Center	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Pct Cleared w/in 24 (unadj)	Pct Cleared w/in 24 (unadj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Average OOS (mins)	Average OOS (mins)	Duration (mins)	OOS Total	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC hour	CPUC OOS > 24 hours	CPUC OOS > 1 week
MERIDAN	530473	MRDNCA11	151	2.09	42.1%	44.1%	8.6	7.1	4049	3453	76	76	44	11	57	32	57	7
METTLER	661360	BKFDCA15	296	1.49	30.2%	29.2%	10.3	7.2	5707	5166	106	106	74	16	80	58	80	10
MEYERSJAPACHE	530512	STAHCA13	800	0.72	31.9%	35.7%	8.9	7.5	5055	4133	138	138	94	34	88	61	88	17
MIDDLETOWN	707306	MDTWCA11	888	1.98	38.6%	37.1%	9.6	10.8	5062	5562	422	422	259	71	240	166	240	46
MILL VALLEY	415027	MLVYCA01	3843	1.12	39.1%	42.3%	6.1	5.1	3621	3022	1034	1034	630	111	704	439	704	54
MILLBRAE	650026	MLBRCA11	2649	1.75	54.3%	62.6%	3.9	2.7	2406	2053	479	450	219	22	245	104	245	9
MILPITAS	408114	MLPSCA11	5685	1.01	50.1%	56.1%	4.5	3.5	2713	2154	1381	1320	689	72	1050	495	1050	32
MIRA MESA	858786	SNDGCA16	5352	0.69	39.1%	41.7%	6.6	5.4	3903	3393	890	890	542	113	647	402	647	56
MIRANDA	707308	MRNDCA11	293	1.67	24.8%	32.2%	6.3	5.0	5725	4617	117	117	114	13	53	38	114	1
MISSION VIEJO	949806	MSVJCAAT	1941	0.68	46.4%	47.9%	5.2	4.3	3332	2989	319	319	171	27	255	137	171	13
MISSION/SO. PAS.	628660	SPSDCA11	2873	0.83	46.2%	53.9%	4.9	3.4	2933	2134	571	571	307	35	393	195	393	8
MODESTO KELLOGG	209200	MDSTCA03	2663	1.92	43.2%	48.9%	7.4	5.4	3993	3180	1225	1182	696	167	911	487	911	88
MODESTO MAIN	209199	MDSTCA02	11184	1.13	46.3%	51.1%	6.6	5.0	3723	2943	3038	2967	1631	362	2342	1180	2342	202
MODESTO-KINGSWOOD	209201	MDSTCA04	1232	1.03	47.2%	55.1%	5.1	4.3	3175	2722	305	297	143	25	227	106	227	14
MOJAVE	661376	MOJVCA01	590	1.83	53.1%	56.8%	3.0	2.3	1845	1582	259	259	121	3	188	86	188	1
MOKELUMNE HILL	209202	MKHLCA12	190	3.03	29.0%	36.9%	11.0	8.6	6167	4409	138	138	98	38	65	43	65	10
MONTAGUE	530529	MTAGCA11	536	1.45	35.8%	40.4%	5.0	4.0	3221	2778	187	187	120	8	120	77	120	3
MONTE RIO	707309	MNRICA11	515	2.51	35.1%	35.1%	12.5	11.2	8492	6184	310	310	228	124	177	120	177	49
MONTEBELLO	323642	LSANCA35	7671	1.24	39.8%	44.2%	6.9	5.6	3749	3007	2275	2174	1370	274	1740	1028	1740	152
MONTEREY	831115	MTRYCA01	5830	0.88	47.2%	52.0%	4.8	3.9	2885	2190	1230	1153	650	59	863	452	863	12
MONTROSE	415065	FLSMCA14	11892	1.02	46.7%	52.5%	5.1	4.1	3141	2544	2917	2804	1556	205	2185	1094	2185	90
MOORPARK	805377	MRPKCA12	2484	0.88	57.3%	59.4%	3.1	2.6	2116	1835	524	489	224	15	399	173	399	9
MORAGA	925029	MORGCA12	1750	1.34	47.2%	50.6%	4.6	4.6	2936	2584	561	561	296	46	409	211	409	25
MORO	831123	SLNSCA14	1136	1.70	56.8%	59.7%	4.2	3.5	2252	1871	465	465	201	22	352	149	352	8
MORRO BAY	805378	MRBACA11	1016	1.05	40.5%	49.5%	4.2	3.3	2510	1945	257	257	245	153	132	72	132	1
MOSS BEACH	650031	MSBHCA11	843	1.01	26.3%	29.4%	7.5	6.7	4850	4399	205	205	204	42	148	106	148	27
MOUNT SHASTA	530474	MTSHCA12	1202	0.83	38.3%	42.0%	4.2	3.9	3652	2711	240	230	148	14	154	96	154	5
MOUNTAIN	510040	OKLDCA13	4597	0.78	40.9%	46.4%	6.2	5.0	3537	2932	866	813	512	82	613	356	613	52
MOUNTAIN PASS	760753	MTPSCA11	20	1.71	0.0%	0.0%	7.2	6.2	7123	6953	8	8	8	4	4	4	4	1
MOUNTAIN VIEW	650032	MTVWCA11	8011	0.77	40.7%	44.9%	6.9	5.6	4004	3208	1489	1431	883	207	1070	628	1070	103
MURPHYS	209203	MRPHCA11	846	2.74	26.3%	34.6%	16.4	18.1	10834	5453	556	539	410	181	288	199	288	61
NAPA	707310	NAPACA01	7681	1.32	43.0%	46.7%	8.0	5.7	8212	5975	2435	2347	1387	318	1782	998	1782	176
NATIONAL CITY	619754	NITCYCA11	1430	1.15	33.2%	36.3%	6.7	4.9	4009	3192	394	380	263	43	323	214	323	23
NEVADA CITY	530475	NVCYCA11	3451	2.25	31.9%	34.2%	10.6	9.2	6008	5195	1866	1793	1270	450	1136	790	1136	210
NEWCASTLE	916476	NWCSA11	931	2.28	30.3%	35.0%	7.2	5.9	4524	3460	509	509	355	89	322	216	322	29
NEWHALL	661379	NHLLCA01	5443	0.82	53.4%	57.7%	3.6	3.0	2601	2162	1077	1024	502	31	749	338	749	18
NEWMAN	209204	NWMNCA12	553	2.24	40.7%	44.3%	5.6	4.6	3217	2810	297	284	176	25	249	146	249	17
NIAGARA	530490	PLVLCA12	2250	3.60	24.2%	29.0%	14.3	11.2	8389	6661	1942	1901	1472	656	1169	854	1169	282
NICASIO	415033	NICSCA11	251	1.81	42.2%	46.2%	7.4	5.1	4283	2616	109	109	63	16	77	41	77	6
NICE	707311	NICECA11	477	2.65	37.8%	43.8%	12.3	11.1	5911	5001	304	294	189	72	222	131	222	48
NICOLAUS	530477	NCLSCA12	104	3.57	47.2%	50.0%	5.8	4.9	3858	2508	89	88	47	8	61	31	61	5
NILAND	760855	NILDCA12	84	1.98	22.5%	24.2%	5.5	4.9	4723	4196	40	40	39	6	31	25	31	5
NIPOMO	805380	NIPMCA11	1034	0.68	40.9%	45.7%	3.9	3.0	2414	1976	269	269	159	3	188	107	188	0
NOMAD	661409	BKFDCA19	2011	0.66	56.8%	62.8%	3.5	2.5	3177	1797	317	317	196	12	247	100	247	4
NORMANDY	323633	LSANCA12	9559	1.37	44.7%	52.9%	6.0	3.4	3401	2186	3149	2946	1741	336	2211	1130	2211	74
NORTH MATHILDA	408139	SNVACA11	1883	0.57	45.4%	52.0%	7.1	5.7	3854	3011	229	229	125	31	164	85	164	17
NORTH NATOMAS	916537	NSRCRA12	2114	0.44	56.4%	61.2%	3.9	3.4	2283	1944	225	211	98	10	165	70	165	6

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Wire Center Name	Wire Center	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	Pct clear 90% OOS (unadj)	# days to clear OOS (unadj)	# days to clear 90% OOS (adj)	Average Duration (mins)	Average OOS (mins)	CPUC OOS (mins)	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 week
NORTH SAN JUAN	530480	NSJNCA11	491	3.28	1.49	54.7%	62.2%	5.2	3.9	2720	2111	386	376	175	32	219	89	13
NORTH STAR	530516	TRUCA12	606	0.14	0.09	41.0%	41.0%	10.0	6.9	5935	4122	20	19	13	5	12	8	2
NORTH YUBA	530481	NYUBCA11	513	2.96	1.78	39.8%	49.7%	6.3	4.1	3534	2561	364	355	219	30	251	132	14
NORTHBRIDGE	818648	NORCA11	10567	1.14	0.54	53.0%	59.1%	4.0	3.1	3626	3174	2898	2752	1361	141	2158	937	91
OAKDALE	209205	OKDLCA11	2073	1.90	1.08	43.3%	47.6%	8.2	4.0	4166	3271	944	923	535	143	663	360	68
OAKLAND	510038	OKLDCA11	9209	0.94	0.54	42.6%	47.2%	5.6	4.3	3225	2636	2077	1904	1193	168	1478	867	108
OAKLEY	925041	OKLYCA11	1118	1.11	0.52	52.9%	59.6%	8.0	6.9	2959	2637	297	286	140	21	244	104	19
OAKVIEW	805381	OKVWCA11	619	2.40	1.70	29.2%	33.9%	17.0	14.6	9619	8037	386	341	252	79	234	164	47
OCCIDENTAL	707312	OCNDCA11	630	1.77	1.12	36.6%	43.2%	8.5	7.0	4750	4023	268	256	170	50	172	105	26
OCEANSIDE	760758	OCSDCA11	4409	0.96	0.57	41.2%	44.7%	6.4	5.2	4415	3800	1020	971	600	105	845	493	59
OJAI	805382	OJAICA11	1662	2.01	1.47	26.7%	36.7%	21.0	5.0	11969	4499	802	772	588	137	467	316	41
OLIVE	714760	ORNGCA13	5178	1.08	0.54	50.3%	53.4%	6.0	4.6	3430	2892	1344	1279	668	144	1034	509	81
ORANGE COVE	559206	ORCVCA11	403	2.89	1.62	43.9%	45.8%	4.7	4.2	2618	2319	280	278	157	20	243	133	12
ORANGE WEST	714761	ORNGCA14	3216	0.59	0.31	47.1%	49.5%	5.5	4.7	2937	2435	456	440	241	41	336	178	21
ORANGEVALE	916482	ORVACA11	2309	1.43	0.73	48.8%	54.0%	5.5	4.4	4876	3320	796	766	407	66	581	281	31
ORINDA	925042	ORNDCA11	1953	1.57	0.86	45.5%	52.6%	6.1	5.7	3216	2817	738	709	402	65	509	253	35
ORLAND	530483	ORLDCA11	1417	2.14	1.23	42.6%	46.6%	5.9	4.9	3499	2843	727	700	417	87	479	270	40
OROSI	559207	ORSICA11	771	3.02	1.43	52.6%	56.8%	4.2	3.2	2698	2323	559	552	265	34	481	212	22
OROVILLE EAST	530485	ORVLCA12	1526	4.61	3.47	24.7%	32.4%	7.4	5.8	5200	4179	1690	1653	1272	300	849	589	91
OROVILLE MAIN	530484	ORVLCA11	3572	2.25	1.52	32.2%	40.9%	9.7	7.0	8172	3944	1928	1849	1307	395	971	606	122
OTAY MESA	619853	OTMSCA11	1014	0.69	0.45	34.1%	38.5%	8.0	6.9	4576	3763	167	156	110	31	129	86	23
PACIFICA	650043	PCFCCA11	3042	1.19	0.58	51.5%	56.2%	4.1	3.2	2438	1950	866	866	420	43	517	242	18
PALMDALE	661384	PLDLCA01	4437	0.81	0.42	47.7%	53.0%	4.3	3.3	2976	2479	861	812	450	53	643	323	24
PALMDALE EAST	661412	PLDLCA02	919	1.00	0.53	47.5%	50.2%	4.3	3.4	2562	2184	221	208	116	10	158	85	5
PALO ALTO MAIN	650045	PLALCA02	10625	0.94	0.58	37.8%	42.5%	7.2	6.1	4462	3738	2390	2285	1486	363	1690	1034	191
PALO ALTO SOUTH	650046	PLALCA12	4023	0.94	0.60	36.4%	42.9%	7.3	5.8	4484	3538	905	864	576	145	619	378	63
PARADISE MAIN	530486	PRDSCA11	1959	1.19	0.60	49.9%	57.8%	4.3	3.0	2923	2004	559	527	280	16	293	138	4
PARADISE PINES	530487	PRDSCA12	1145	2.62	1.62	38.1%	51.5%	12.4	4.6	7823	3659	719	692	445	149	319	172	20
PARAMOUNT	562649	PRMTCOA11	4475	1.67	0.88	47.2%	53.3%	5.2	3.3	3040	1984	1795	1729	948	166	1329	634	33
PARKWAY	415073	SNRFCA11	3016	0.83	0.51	38.3%	42.2%	7.5	6.2	3993	3335	601	563	371	88	449	281	43
PARLIER	559208	PRLRCA11	488	2.08	1.33	35.8%	38.8%	5.0	4.2	3181	2697	243	240	156	14	211	131	8
PASKENTA	805385	PSKNCA11	100	2.46	1.63	33.9%	32.5%	7.0	7.6	4443	4622	59	58	39	9	24	18	5
PASO ROBLES	805388	PSRBCA01	5022	1.33	0.78	41.1%	45.3%	4.0	3.5	2574	2146	1604	1536	944	52	1101	637	9
PAUMA VALLEY	760764	PALACA11	812	3.53	2.55	27.8%	30.5%	6.8	5.7	4398	3694	667	667	496	102	544	390	49
PEDLEY	951765	PDLYCA11	2502	1.19	0.46	61.3%	66.3%	3.2	2.6	1861	1629	713	688	276	27	499	175	11
PEPPERWOOD	707313	PPWDCA11	75	3.16	2.44	22.8%	15.1%	5.2	4.7	3732	3601	57	57	44	3	33	28	1
PESCADERO	650051	PCSDCA11	572	1.44	0.88	38.9%	34.0%	7.2	6.2	4388	4056	198	195	121	33	120	74	21
PETALUMA	707314	PTLMCA01	5056	0.83	0.56	32.2%	34.0%	10.9	9.2	6192	5338	1009	953	684	284	779	550	194
PINE VALLEY	619766	PNVYCA11	250	2.23	1.43	35.8%	40.9%	6.5	4.4	4156	3055	134	133	86	16	101	61	5
PINECREST	209209	PNRCRA11	933	0.98	0.60	36.8%	47.4%	5.6	4.0	4152	2556	219	210	134	22	128	73	6
PIRU	805386	PIRUCA11	145	1.78	1.24	30.6%	31.6%	3.7	3.7	3085	2993	62	60	43	4	51	36	4
PISMO BEACH	805387	PSBHCA11	757	0.71	0.42	41.1%	46.9%	3.4	2.9	2247	1898	129	124	76	0	77	44	0
PITTSBURG MAIN	925049	PSBGCA01	2493	1.22	0.55	54.7%	61.6%	3.9	2.6	2238	1743	731	704	331	704	562	225	11
PIXLEY	559210	PXLYCA11	279	3.45	2.21	35.9%	39.4%	6.1	5.2	3563	2932	231	228	148	25	188	116	8
PLACENTIA	714767	PLCNCA11	5458	1.05	0.50	52.1%	58.2%	5.4	4.1	3361	2667	1376	1320	659	126	993	440	62
PLACER HILLS	530429	AUBNCA11	1539	1.93	1.19	36.2%	43.2%	7.4	6.1	4049	3297	714	693	441	105	400	240	45
PLACERVILLE	530489	PLVLCA11	7068	3.30	2.25	31.7%	35.5%	11.2	9.3	6208	5337	5604	5410	3825	1435	3345	2276	754

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Wire Center Name	Wire Center	CLLI	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Pct Cleared w/in 24 (unadj) hours	Pct Cleared w/in 24 (unadj) hours	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Average OOS Duration (mins)	Average OOS Duration (mins)	Total OOS	OOS > 1 hour	OOS > 24 Hours	OOS > 1 week	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 Week
PLANADA	209211	PLNDCA11	281	2.36	1.17	50.3%	52.5%	5.6	4.6	2943	2408	159	156	79	16	132	64	7
PLEASANT	323626	PLSANGA05	6998	2.19	1.24	43.5%	51.4%	5.6	4.1	3261	2346	3683	3511	2080	383	2335	1202	125
PLEASANT GROVE	916491	PLGVCA12	162	3.94	2.37	39.9%	45.7%	6.3	5.2	3537	2560	153	152	92	13	108	59	7
PLEASANTON BAY ST	925047	PLTNCA12	4105	0.50	0.24	52.3%	57.9%	3.6	3.0	2192	1873	495	460	236	13	375	173	5
PLYMOUTH	323634	PLMOCA13	5839	2.86	1.41	50.8%	55.9%	5.0	3.7	2858	2223	4007	3751	1973	324	3100	1469	134
PLYMOUTH MAIN	209212	PLMOCA11	1537	2.76	1.84	33.5%	38.4%	8.2	7.1	4426	3663	1018	995	677	167	592	379	71
POINT ARENA	707315	PNARCA11	600	1.98	1.65	16.8%	22.0%	12.4	10.7	7611	6158	285	282	237	84	208	166	44
POINT REYES	415048	PRNSCA11	853	1.86	0.82	55.8%	58.8%	5.2	3.3	2890	2184	380	360	168	27	250	110	11
PORTERVILLE	559213	PTVLCA11	5055	1.70	1.13	33.7%	37.1%	5.6	4.6	3738	3116	2067	2008	1370	189	1565	1021	91
PORTOLA	530492	PTOLCA01	998	0.60	0.32	46.9%	47.8%	3.5	2.9	2242	1943	143	134	76	5	102	58	2
POTTER VALLEY	707316	PTVYCA11	532	3.68	2.87	22.1%	24.8%	13.3	11.0	7839	6198	470	461	366	148	356	275	88
POWAY MIDLAND	858768	POWYCA11	2745	0.72	0.42	42.1%	46.3%	6.6	5.8	3643	3149	477	457	64	64	368	209	34
QUINCY	530493	QNYCYA12	1849	1.77	1.03	41.6%	44.7%	6.1	5.0	3710	3177	784	753	458	85	427	251	32
R. S. MARGARITA	949808	RSMGCA11	1991	0.62	0.38	39.3%	42.7%	6.3	4.5	5195	4401	298	290	181	35	233	139	11
RAMONA	760769	RAMNCA11	1876	1.61	1.11	31.2%	36.8%	8.2	7.2	4951	4118	725	701	499	129	555	365	72
RAMPART	213632	LSANCA11	11064	0.80	0.34	56.9%	62.6%	4.4	2.9	2473	1812	2121	1954	914	112	1533	631	28
RAN. PENASQUITOS	858854	RNPSCA11	1465	0.43	0.27	36.8%	38.9%	10.6	6.3	5929	4118	152	143	96	40	109	71	14
RANCHO BERNARDO	858770	RBRNCA11	4277	0.70	0.43	39.2%	42.9%	6.6	5.2	3863	3023	720	680	438	87	561	344	48
RANCHO MURIETTA	916533	RNMRC A11	534	0.90	0.38	57.4%	62.9%	2.8	2.5	3156	2319	115	109	49	6	87	35	3
RANCHO SAN DIEGO	919852	RNSDCA11	834	0.59	0.37	37.8%	37.4%	6.6	6.1	4616	3966	119	115	74	18	88	57	11
RANCHO SANTA FE	858771	RSFECA12	3281	1.17	0.80	31.6%	35.4%	7.0	5.4	4236	3539	919	884	629	130	714	486	66
RED BLUFF	530494	RDBLCA01	3789	1.71	0.89	47.7%	52.5%	6.3	5.9	3481	2976	1552	1491	811	194	936	471	91
REDDING ENTERPR.	530531	RDNGCA11	3336	1.33	0.84	36.9%	42.0%	8.8	7.1	5025	3802	1066	1025	673	197	745	450	102
REDDING MAIN	530495	RDNGCA12	5029	1.73	1.12	35.3%	41.1%	9.7	6.3	5637	3820	2083	2014	1422	418	1335	826	166
REDWOOD	209223	SKTNCA14	1491	1.08	0.63	42.3%	43.0%	7.1	6.5	3566	3156	388	378	224	43	320	187	24
REDWOOD CITY	650053	RDCYCA01	7993	1.09	0.57	48.0%	53.8%	4.1	3.1	2604	2057	2099	1986	1092	105	1465	730	49
REGENTS	858785	SNDGCA15	7016	0.50	0.32	36.1%	38.8%	8.3	7.0	5078	4294	847	796	542	161	600	400	87
REPUBLIC	323643	LSANCA38	6173	1.73	0.96	44.4%	51.3%	5.7	3.9	3158	2273	2556	2440	1422	262	1512	791	90
RESEDA	818652	RES DCA01	10163	1.29	0.63	51.2%	57.3%	4.0	2.8	2306	1823	3158	2998	1540	103	2272	1029	31
RIALTO	909773	RILTCA11	3931	1.83	1.09	40.5%	43.6%	6.1	5.1	3611	3003	1729	1651	1029	200	1292	767	83
RICHMOND	213630	RCMDCA09	6085	0.84	0.39	53.7%	60.8%	4.4	2.8	2556	1602	1223	1130	566	62	860	373	16
RICHMOND MACDONALD AVE	510052	RCMDCA11	7221	1.72	1.16	32.9%	36.8%	9.3	7.6	4707	3834	2982	2860	2002	489	2457	1636	321
RICHVALE	530496	RCVACA11	106	1.14	0.75	34.5%	42.0%	9.3	9.1	5285	4016	29	29	19	7	11	6	2
RIO DELL	707317	RILNCA11	237	0.79	0.49	37.8%	41.5%	4.1	3.3	2423	2076	45	45	28	0	27	16	0
RIO LINDA	916526	RILNCA12	1172	2.24	1.16	48.2%	55.0%	7.1	5.7	3453	2823	629	605	326	64	407	194	35
RIVERBANK	209214	RVRBCA11	998	1.00	0.55	44.8%	49.4%	4.9	5.8	3234	2924	239	227	132	20	185	100	14
RIVERDALE	559215	RVDLCA11	343	3.53	2.23	36.8%	39.0%	6.6	4.9	3642	3255	291	284	184	36	235	148	19
RIVERSIDE ORANGE	951774	RVSDCA01	7985	1.17	0.64	44.8%	48.1%	5.8	5.0	3301	2801	2238	2159	1236	226	1714	930	98
ROCKLIN	916527	ROK LCA01	1249	0.64	0.29	55.2%	64.1%	3.4	2.4	1891	1527	192	181	86	2	144	56	2
ROHNERT PARK	707337	RTPKCA11	2157	0.64	0.38	39.8%	45.6%	9.7	7.9	5731	4252	329	308	173	73	359	147	40
ROSEMONT	661388	RSM DCA11	1138	1.77	0.92	47.8%	52.9%	3.5	2.6	2313	1768	483	471	252	11	369	179	4
ROSEDALE	661361	BKFDCA17	3377	0.99	0.49	50.5%	55.7%	3.4	2.5	2975	2560	800	766	396	14	634	298	11
ROSEMEAD	916541	ROSMCA11	6532	1.22	0.81	33.5%	38.6%	8.1	5.7	4958	4042	1917	1839	1275	316	1213	787	129
ROSEVILLE LEAD HILL BLVD	916541	RSVLCA11	3189	0.63	0.31	50.0%	54.8%	5.1	4.5	2560	2158	480	459	240	30	366	175	21
S. J. CAPISTRANO	949791	SJCPCA12	4096	1.05	0.63	39.9%	42.7%	6.1	5.1	4638	4104	1037	995	623	128	784	473	68
SACRAMENTO MAIN	916497	SCRMCA1R	6210	0.75	0.37	50.8%	61.6%	5.1	4.0	3023	2027	1113	1015	548	83	659	290	31
SAIPAN	619780	SNDGCA05	2201	1.52	0.99	34.8%	37.8%	8.0	6.9	4657	3863	802	759	523	126	627	415	81

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Wire Center Name	Wire Center	CLLI	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Cleared w/in 24 (unadj)	Pct Cleared w/in 24 hours	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Average OOS (mins)	Duration 90% (mins)	Average OOS (mins)	CPUC OOS (mins)	OOS Total	OOS > 1 hour	OOS > 24 hour	OOS > 1 week	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 Week
SALINAS MAIN	831119	SLNSCA01	5843	0.89	0.42	52.8%	57.3%	4.0	3.2	2336	1889	1255	1183	592	59	889	411	889	411	24
SAN ANDREAS	209216	SNADCA11	1278	2.88	1.86	35.6%	43.5%	8.9	6.3	4407	3683	868	518	569	133	518	302	518	302	54
SAN ARDO	831124	SNARCA11	118	1.66	1.16	29.8%	28.9%	6.9	5.5	3920	3296	47	43	33	5	37	29	37	29	4
SAN BRUNO	650055	SNBUCA02	9913	0.91	0.41	54.4%	61.8%	4.0	3.1	2595	2131	2157	2058	983	136	1261	526	1261	526	75
SAN CARLOS	650056	SNCRCA11	6890	0.79	0.42	46.8%	52.8%	4.5	3.5	2711	2138	1268	1211	675	64	868	435	868	435	35
SAN CLEMENTE	949776	SNCLCA12	2610	1.03	0.68	34.6%	38.8%	7.0	5.4	4844	3990	648	637	424	100	513	320	513	320	50
SAN FRANCISCO 35TH ST	415060	SNFCCA05	10223	0.70	0.37	46.7%	51.2%	5.0	3.8	2800	2210	1717	1621	916	118	1216	642	1216	642	39
SAN FRANCISCO 9TH AVE	415064	SNFCCA13	9253	0.78	0.42	45.9%	50.3%	4.8	3.8	2814	2247	1736	1590	940	114	1218	676	1218	676	47
SAN FRANCISCO MCCOPPIN	415059	SNFCCA04	11057	0.65	0.34	47.6%	53.1%	4.7	3.6	2907	2214	1718	1611	901	99	1260	643	1260	643	44
SAN GABRIEL	626658	SNGBCA01	4662	1.07	0.70	34.5%	39.9%	7.0	5.4	4213	3238	1193	1138	781	171	766	490	766	490	71
SAN GERONIMO	415069	SNGNCA11	461	2.34	1.33	43.2%	50.4%	5.2	3.5	2928	2165	259	252	147	19	188	96	188	96	5
SAN JOSE CHYNOWETH AV	408131	SNJSCA13	7641	1.71	0.61	64.4%	70.3%	3.1	2.3	2007	1617	3130	3012	1114	109	2406	752	2406	752	57
SAN JOSE DIAL WAY	408130	SNJSCA12	13190	1.21	0.76	37.2%	42.8%	7.5	6.1	4516	3546	3846	3680	2414	650	2441	1494	2441	1494	278
SAN JOSE MAIN	408128	SNJSCA02	13076	0.89	0.45	49.5%	55.0%	4.0	3.0	2831	1951	2787	2645	1407	142	2096	1005	2096	1005	50
SAN JOSE SAN FILIPE	408133	SNJSCA15	5146	1.24	0.57	53.5%	60.6%	3.6	2.7	2799	2337	1528	1480	710	64	1144	473	1144	473	34
SAN JUAN BAUTISTA	831127	SNJNCA11	380	1.71	0.88	48.7%	54.0%	3.2	2.5	2215	1609	156	153	80	5	125	59	125	59	0
SAN LEANDRO	510070	SNLNCA11	8344	1.11	0.59	46.4%	59.4%	8.8	4.0	4150	2218	2213	2106	1186	364	1391	616	1391	616	81
SAN LUCAS	831135	SNLCCA11	44	1.81	1.05	42.1%	45.6%	6.9	2.5	2976	1839	19	19	2	18	10	0	18	10	0
SAN LUIS OBISPO	805389	SNLOCA01	4453	0.87	0.44	49.1%	54.9%	3.0	2.6	1943	1690	930	870	473	9	654	321	654	321	3
SAN MARCOS	760792	SNMCCA11	4986	0.85	0.51	40.1%	42.9%	8.0	7.1	4290	3694	1019	988	610	144	830	491	830	491	97
SAN MARTIN	408136	SNMACA11	643	1.87	0.79	57.6%	61.9%	3.7	2.9	2024	1672	288	279	122	15	231	93	231	93	11
SAN MATEO	650071	SNMTCA11	7944	1.04	0.55	47.2%	53.9%	5.3	4.3	3041	2368	1982	1908	1047	149	1381	669	1381	669	76
SAN PEDRO	310659	SNPDCA01	7488	1.42	0.69	51.6%	56.1%	4.8	3.8	2778	2210	2555	2403	1237	208	1889	891	1889	891	87
SAN RAFAEL MAIN	415072	SNRFA01	7051	1.07	0.64	40.0%	45.4%	8.4	5.3	4740	3147	1803	1707	1082	298	1302	758	1302	758	113
SAN RAMON	925074	SNRMCA11	4230	0.50	0.25	50.3%	53.0%	4.0	3.6	3075	2789	505	470	251	25	385	197	385	197	11
SAN YSIDRO	619794	SNYSCA12	1289	1.31	0.91	30.4%	33.0%	7.9	6.4	4834	3857	405	394	282	55	325	224	325	224	36
SANTA CLARA-BELLOMY	408137	SNYSCA11	9047	1.08	0.64	40.9%	45.2%	7.0	5.2	3904	3031	2337	2237	1382	305	1527	889	1527	889	128
SANTA CRUZ	831125	SNZCA11	6348	1.14	0.67	41.1%	45.8%	6.0	4.8	3527	2948	1740	1674	1024	164	1160	664	1160	664	80
SANTA CRUZ CAPITOLA RD	831126	SNZCA11	5004	1.04	0.52	49.7%	54.1%	6.3	4.9	3186	2560	1245	1174	626	142	875	435	875	435	76
SANTA MARGARITA	805390	SNMICA11	539	1.79	1.23	31.2%	37.8%	10.1	7.8	7450	4373	2524	2386	1438	543	1826	1016	1826	1016	291
SANTA ROSA MAIN	707320	SNRSCA01	11678	0.90	0.51	43.0%	48.2%	10.1	7.8	7450	4373	2524	2386	1438	543	1826	1016	1826	1016	291
SANTEE	619795	SANTCA01	2222	0.81	0.46	43.1%	44.8%	6.4	5.7	3919	3544	434	412	247	56	315	183	315	183	36
SATICOY	805391	SATCCA12	1977	1.00	0.55	45.2%	49.9%	4.7	3.8	3541	2794	473	446	259	34	364	196	364	196	15
SAUCIG	661407	SAGSCA11	2547	1.17	0.59	50.0%	56.9%	4.0	2.9	2782	2093	718	685	359	38	491	229	491	229	13
SAUSALITO	415075	SSLTCA11	1768	0.93	0.56	39.9%	45.4%	5.8	5.0	3393	2932	396	379	238	40	275	157	275	157	17
SCOTT'S VALLEY	831116	SCVCA01	1374	0.89	0.48	46.4%	53.4%	5.8	4.5	3153	2587	293	278	157	24	190	95	190	95	12
SEASIDE	831117	SESDCA11	1868	0.83	0.38	53.9%	57.4%	4.5	3.8	2434	2074	371	346	171	14	285	133	285	133	5
SEBASTAPOL	707321	SBSTCA11	2809	2.09	1.27	39.3%	43.0%	9.0	7.9	4995	4080	1410	1362	856	309	960	577	960	577	157
SELMA	559217	SELMCA11	1640	2.20	1.14	48.4%	51.0%	5.1	3.6	2872	2393	867	828	447	70	715	368	715	368	43
SEQUOIA PARK ASH MTN	559152	ASMTCA11	85	2.29	2.30	17.5%	16.2%	4.8	6.0	5577	6864	57	57	47	4	26	22	26	22	2
SHAFTER	661392	SHFTCA11	783	2.29	1.44	37.2%	41.4%	4.5	3.5	2901	2375	430	423	270	15	325	195	325	195	5
SHASTA LAKE	530503	SHLKA01	342	5.53	3.74	32.4%	41.5%	11.0	6.8	6034	3590	454	444	307	90	207	128	207	128	31
SHERMAN OAKS	818656	SHOKCA01	13477	0.99	0.50	48.9%	59.1%	4.9	3.0	2873	2007	3194	2969	1631	210	2092	937	2092	937	72
SHERMAN OAKS VENTURA BLVD	818666	SHOKCA05	3878	1.23	0.63	48.3%	53.0%	4.2	3.3	3248	2439	1141	1101	590	58	857	416	857	416	30
SHINGLE SPRINGS	530504	SGSPCA11	3462	2.46	1.64	33.2%	38.7%	9.8	7.9	5323	4226	2042	1977	1365	445	1312	844	1312	844	212
SHOSHONE	760796	SHSHCA11	132	4.14	3.70	10.7%	11.6%	18.7	15.8	16171	15977	131	130	117	61	77	69	77	69	35
SIERRA CITY	530505	SRCYCA11	415	1.58	0.93	40.8%	53.2%	7.2	4.7	4132	3650	157	151	93	17	87	43	87	43	43

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Wire Center Name	Wire Center	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Cleared w/in 24 (unadj)	Pct Cleared w/in 24	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Average OOS (mins)	Duration 90% (mins)	Average OOS (mins)	Total OOS	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 week
SIERRAVILLE	SRVLC11	161	0.83	0.44	46.9%	57.6%	4.0	3.0	2099	1547	32	26	17	11	20	11	11	0
SILVERADO	SLVRCA11	190	2.15	1.27	40.8%	53.5%	4.5	2.9	2808	1727	98	96	58	5	67	32	0	0
SIMI	SIMICA11	7879	0.96	0.44	54.5%	59.1%	3.7	2.9	2172	1760	1809	1720	823	45	1409	613	19	19
SMARTVILLE	SMAVCA11	322	2.46	1.58	35.8%	43.8%	8.4	7.7	4817	3748	190	185	122	28	118	69	16	16
SODA SPRINGS	SDSPCA11	532	1.67	1.14	31.5%	31.3%	8.6	7.1	4915	4005	213	208	146	42	118	84	21	21
SOLEDAD	SLDDCA11	950	1.17	0.74	37.1%	39.3%	4.9	4.4	2907	2590	267	260	168	15	229	143	8	8
SOLEMINT	SLMNCA11	3445	1.23	0.62	49.7%	55.2%	3.9	3.1	2983	2231	1014	965	510	33	717	347	17	17
SONOMA	SONMCA12	4019	1.29	0.72	44.5%	54.3%	32.8	5.6	12032	4613	1249	1199	693	254	750	372	68	68
SONORA	SONRCA13	4929	2.27	1.32	41.9%	47.2%	9.0	7.0	4399	3486	2688	2600	1563	481	1862	1024	241	241
SOUTH GATE	SGATCA01	4694	1.93	0.88	54.6%	66.7%	11.1	2.4	3691	1412	2173	2081	986	200	1474	532	12	12
SOUTH TAHOE SUSSEX AVE	STAHTCA01	2748	0.73	0.48	33.5%	35.7%	9.6	8.0	5578	4587	480	452	319	110	330	231	63	63
SPACE PARK	SNTPCA01	4786	0.52	0.28	46.5%	49.8%	6.7	5.4	3874	3059	594	552	318	82	416	229	33	33
SPECTRUM-IRVINE	IRVNCA12	1731	0.34	0.16	52.9%	51.9%	6.1	5.0	2867	2519	140	133	66	16	120	61	5	5
SPRINGVILLE	SPVLCA11	750	2.85	2.36	17.2%	20.4%	10.2	7.7	6456	5021	513	508	425	123	363	293	58	58
ST. HELENA	STHNCA11	2385	1.27	0.74	41.6%	46.4%	6.9	4.5	4221	2760	726	694	424	92	494	278	33	33
STEINER	SNFCCA12	22612	0.53	0.28	47.1%	52.2%	5.5	4.0	2959	2204	2870	2641	1517	235	2006	1068	93	93
STINSON BEACH	STBHCA11	1212	2.36	1.25	47.2%	57.9%	4.4	3.3	2450	1831	688	669	363	34	520	230	10	10
STOCKTON MAIN	SKTNCA01	7812	1.60	0.89	44.2%	48.5%	6.5	5.1	3585	2950	3001	2867	1675	334	2318	1266	170	170
STONYFORD	STFRCA11	136	2.30	1.97	14.7%	18.7%	13.0	10.2	10459	6464	75	73	64	34	46	39	16	16
STRAITFORD	SRFRCA11	91	3.13	2.02	35.3%	40.1%	6.3	5.2	3417	2929	68	67	44	8	54	33	4	4
SUISUN CITY	SUISCA11	348	0.41	0.20	50.0%	54.1%	4.3	4.0	2331	1854	34	32	17	0	25	12	0	0
SUNOL	SUNLCA11	190	1.89	1.10	41.9%	48.7%	4.8	4.2	2769	2243	86	83	50	6	59	32	2	2
SUNSET	LSANCA29	5408	1.34	0.77	42.5%	48.5%	5.4	3.9	3045	2276	1736	1652	998	150	1163	642	48	48
SUTTER CREEK	STCKCA11	710	2.46	1.59	35.5%	41.5%	8.8	7.7	4536	3724	420	404	271	79	273	169	42	42
TAHOE CITY	THCYCA01	2457	0.52	0.31	40.4%	44.3%	5.5	4.7	3194	2719	307	286	183	26	196	121	14	14
TALLY	MDSTCA05	641	0.78	0.41	47.5%	50.6%	6.9	5.8	3157	2558	120	110	63	12	88	49	8	8
TAMARACK	STAHTCA12	128	1.56	1.27	18.8%	28.0%	9.4	7.1	7462	4867	48	45	39	22	29	23	7	7
TASAJARA	DAVLA13	2381	0.50	0.24	51.1%	55.7%	3.8	3.1	2439	1995	284	272	139	13	236	110	5	5
TEHACHAPI CURRY ST	THCHCA01	1816	1.69	1.09	35.2%	41.6%	7.6	5.1	4568	3428	736	708	477	116	462	286	45	45
TEMPLE	BKFDCA14	6821	1.63	0.78	52.2%	56.9%	3.1	2.5	2199	1868	2676	2568	1279	50	2060	939	24	24
TEMPLETON	TMTNCA11	647	0.79	0.44	43.4%	51.2%	5.0	3.7	2742	2121	122	121	69	6	79	40	2	2
TENNYSON	SNDGCA14	2871	0.93	0.63	32.7%	36.0%	7.1	5.6	4287	3458	640	617	431	103	510	340	50	50
TERRA BELLA	TRBLCA11	413	4.61	3.22	30.2%	31.5%	5.7	4.8	3930	3486	457	434	319	42	359	261	22	22
THIRD AVENUE	THVSCA11	3950	1.31	0.84	35.8%	39.3%	7.4	5.8	4346	3648	1239	1175	796	168	960	620	97	97
THIRD STREET	MDSTCA03	4586	0.99	0.52	47.3%	51.4%	5.5	4.6	2912	2389	1091	1042	575	85	821	424	40	40
THORNTON	THTNCA11	100	2.82	1.41	50.0%	53.0%	5.6	4.2	2824	2733	68	66	34	6	45	22	4	4
THREE RIVERS	THRRCA11	595	4.80	3.13	34.7%	38.7%	4.5	4.3	3252	3397	685	665	447	30	251	164	13	13
TIBURON	TBRNCA11	1690	0.55	0.33	41.3%	46.5%	6.9	5.8	3798	3275	225	211	132	32	165	95	15	15
TIPTON	TPTNCA11	201	3.93	2.79	28.9%	28.4%	6.8	5.8	4380	3588	190	190	135	31	162	116	17	17
TOMALES	TMLSCA12	285	0.83	0.55	33.3%	49.9%	10.1	6.9	5306	3989	57	55	38	10	26	15	4	4
TORRANCE	TRNCCA11	4296	1.34	0.60	55.6%	59.3%	4.8	3.5	2723	2198	1363	1284	614	95	992	439	29	29
TRACY	TRACCA11	4374	1.77	0.90	49.2%	54.8%	6.7	4.6	3771	2983	1863	1802	947	204	1394	661	116	116
TRES PINOS	TRPNCA11	218	2.04	1.07	47.7%	52.4%	3.5	3.9	2937	2956	107	106	79	6	72	35	4	4
TRINIDAD	TRNDCA11	299	1.77	1.10	37.8%	43.6%	4.4	2.8	3040	2192	127	123	106	8	66	33	0	0
TRUCKEE	TRUCCA11	3396	0.53	0.31	41.5%	48.4%	5.5	4.5	3248	2592	434	421	254	39	282	150	17	17
TULARE	TULRCA11	3920	1.94	1.25	35.3%	38.6%	6.0	5.0	3577	3008	1821	1776	1178	172	1433	910	87	87
TURLOCK	TRLRCA11	6794	1.48	0.84	43.3%	48.4%	7.3	5.6	3947	3135	2411	2347	1367	337	1815	988	192	192

Table 4A.6 (page 13 of 13)

Wire Center	Wire Center Name	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Average OOS Duration (mins)	Average OOS Duration (mins)	CPUC OOS (mins)	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 week
714798	TUSTIN 11	7042	1.08	0.62	43.0%	47.6%	5.7	4.6	4820	3849	1825	1750	1041	174	1421	782	96
714805	TUSTIN 70	640	0.53	0.27	48.1%	48.0%	4.6	3.8	4820	2303	81	80	42	5	73	38	2
209233	TWAIN HART	1619	1.78	1.14	36.2%	40.9%	8.5	12.7	4730	3962	693	666	442	127	441	275	62
707328	UKIAH MAIN	3983	1.34	0.73	45.3%	49.8%	9.1	7.4	5362	4294	1283	1216	702	248	836	450	139
510078	UNION CITY	4865	1.12	0.45	60.0%	64.1%	3.2	2.5	2414	1816	1313	1265	525	51	1084	410	35
619778	UNIVERSITY	5512	0.71	0.50	29.9%	33.4%	7.6	6.3	4480	3844	939	901	658	144	764	537	93
707329	UPPER LAKE VALLEY RD	401	3.11	2.01	35.5%	42.6%	18.6	9.7	8751	5235	299	287	193	97	177	110	36
707330	VACAVILLE	5375	1.42	0.73	48.2%	52.3%	7.4	6.4	4350	3697	1827	1762	946	208	1420	711	132
707331	VALLEJO	6232	1.29	0.48	62.7%	66.7%	2.9	2.4	2205	1900	1935	1833	721	53	1598	572	31
760799	VALLEY CENTER	2303	2.15	1.49	30.7%	35.0%	7.5	6.2	4284	3510	1187	1157	822	184	952	638	106
707332	VALLEY FORD	192	1.63	1.13	30.7%	41.5%	10.0	8.3	6228	4897	75	75	52	17	54	31	9
209234	VALLEY SPRINGS	1113	2.86	1.83	36.0%	43.4%	8.2	5.7	4479	3334	763	741	488	137	452	272	44
818662	VAN NUYS	10328	1.10	0.56	48.9%	57.7%	5.4	3.1	2868	2005	2734	2563	1396	196	1794	828	67
805400	VENTURA/FIR	2398	0.96	0.59	38.0%	47.3%	19.3	4.8	8466	4000	550	513	341	86	372	216	24
805399	VENTURAMONTALVO	4799	0.89	0.47	47.8%	53.2%	8.0	3.8	4633	2814	1027	942	536	121	750	391	47
530517	VINA	71	2.48	1.24	50.0%	51.4%	3.1	4.7	1976	2004	42	42	21	1	20	9	1
559235	VISALIA MAIN	7013	1.26	0.75	40.6%	43.5%	5.2	4.3	3328	2835	2127	2061	1263	173	1695	996	93
760800	VISTA	5773	1.29	0.80	37.8%	41.8%	6.6	5.1	4407	3309	1787	1717	1112	227	1473	895	126
916479	WABASH	7148	1.03	0.48	53.0%	57.2%	5.4	4.6	2948	2373	1769	1684	832	135	1266	582	65
661401	WALKER BASIN	457	3.85	2.94	23.7%	28.7%	5.4	4.8	3815	3059	422	410	322	31	217	164	7
209236	WALLACE	398	2.24	1.14	49.1%	54.9%	5.6	4.5	3574	2690	214	208	109	20	161	76	5
925079	WALNUT CREEK	11316	0.83	0.33	59.9%	64.9%	4.3	3.4	2161	1751	2258	2104	905	105	1644	631	42
760801	WARNER SPRINGS	376	3.41	2.48	27.3%	30.3%	9.1	5.1	5202	3808	308	302	224	57	214	153	21
661402	WASCO	781	2.27	1.27	44.0%	47.2%	3.6	3.4	2568	2268	425	411	238	14	333	183	6
209237	WATERFORD	761	2.74	1.68	38.7%	44.4%	7.9	5.8	4197	3097	501	497	307	72	359	202	30
831141	WATSONVILLE	7634	1.18	0.68	42.1%	45.7%	6.3	5.3	3635	3021	2165	2095	1254	239	1589	902	143
323631	WAWONA	268	1.20	1.03	14.3%	15.8%	9.7	8.2	8295	7078	77	77	66	26	55	47	14
530518	WEBSTER	9972	1.49	0.84	43.6%	51.4%	6.0	3.9	3473	2274	3559	3311	2009	357	2261	1207	96
530518	WEED	858	1.23	0.79	35.8%	41.5%	4.5	3.6	2922	2308	254	239	163	7	173	111	1
707333	WEOTT	59	0.84	0.84	0.0%	0.0%	6.7	5.2	4612	3948	12	12	12	2	8	8	0
530520	WHEATLAND	505	1.96	1.16	40.9%	46.1%	8.0	6.5	4185	3304	237	232	140	34	199	110	25
408129	WHITE ROAD	8093	1.35	0.73	46.0%	51.2%	4.5	3.5	2789	2229	2613	2539	1411	158	1988	1013	82
707334	WILLITS	2060	2.16	1.31	39.5%	44.9%	10.4	8.9	6200	5153	1089	1018	647	244	725	424	139
925050	WILLOW PASS	1098	0.65	0.27	59.1%	60.3%	3.8	3.3	2215	1964	171	167	70	8	140	57	6
530521	WILLOWS	997	2.26	1.36	39.9%	47.8%	6.7	6.5	3850	3161	541	532	325	75	330	178	38
310664	WILMINGTON	5491	1.36	0.71	47.5%	52.8%	5.1	3.9	3122	2227	1787	1699	939	152	1314	658	48
707335	WINDSOR	1685	1.04	0.66	37.1%	38.6%	11.1	9.3	7176	6352	421	413	265	104	328	207	76
530522	WINTERS	736	2.44	1.47	39.9%	46.0%	10.5	8.6	5081	3945	431	422	259	79	320	180	52
951775	WOODCREST	2664	1.39	0.85	38.8%	41.5%	6.7	5.9	3830	3320	891	863	545	113	709	431	70
559239	WOODLAKE	543	4.10	2.75	33.1%	35.5%	5.1	4.2	3480	3055	535	530	358	37	392	261	15
530523	WOODLAND	4369	1.24	0.79	36.1%	38.5%	9.9	8.3	5862	4892	1303	1243	833	273	1079	701	184
714802	YORBA LINDA	3354	0.96	0.43	54.9%	60.4%	4.6	3.5	2426	1882	774	724	349	44	575	249	19
209240	YOSEMITE MAIN	529	0.98	0.85	12.9%	14.5%	11.1	9.4	7411	6297	124	121	108	42	107	94	28
707336	YOUNTVILLE	822	1.77	1.21	32.0%	38.3%	10.9	5.9	7981	4052	350	345	238	69	239	152	26
530524	YREKA	1349	0.64	0.36	44.2%	50.4%	4.0	3.4	2875	2149	206	190	115	8	121	69	1
530525	YUBA CITY	4669	1.04	0.58	44.0%	46.3%	7.9	6.9	4803	4084	1164	1124	652	162	970	543	114

AT&T Service Quality Performance

In our Phase 1 Report, we described a series of detailed analyses of AT&T service quality and performance in resolving out-of-service conditions both statewide and, more importantly, on a wire center-by-wire center basis. Each of these analyses are updated here to include results for 2018 and 2019.

“Adjusted” vs. “actual” results

As we explained in our Phase 1 Report, GO 133-C/D does not hold ILECs responsible for the entire outage duration if a Sunday or federal holiday intervenes. Outage durations are thus adjusted *for GO 133-C/D compliance purposes* by subtracting Sunday or federal holiday hours that fall within an outage situation. Certain additional situations have also been treated as “excluded” even though, from the customer’s perspective, the service is not functioning.¹⁰ As we explained in our Phase 1 Report, ETI does not believe that it is appropriate to entirely exclude all instances where, upon encountering an out-of-service condition, the customer has requested an appointment date/time at the customer’s convenience *because the requirement to accommodate the customer’s personal needs in order to effect a restoration of service is a direct result of the service outage itself*. Instead, the delay in the ultimate restoration of service attributable to the additional time needed to satisfy the customer’s request for an appointment should be adjusted out of the total out-of-service duration. ETI was advised that such an adjustment is already reflected in the “CPUC Duration” calculation provided on the individual Trouble Report data records. Figures 4A.4 through 4A.12 provide the OOS data on both an actual and an adjusted basis.

Focus upon 2018-2019 results

Inclusion of the additional 2018-2019 trouble tickets has enabled us to develop service quality trends over a 10-year period (2010-2019) whereas the Phase 1 study was limited to only 8 years of data. However, we also wanted to examine each of the two datasets separately in order to evaluate whether conditions in these last two years had improved or deteriorated relative to the Phase 1 study period. Each of the service quality charts presented in this chapter provides three separate trend lines – the full 10-year trend (the solid red line); the 8-year Phase 1 trend (the dashed green line, which is approximately the same as the 8-year trend line presented in our

10. Again serving to underscore the ILECs’ persistent lack of interest in their legacy services, principal ILEC competitors – cable MSOs and Commercial Mobile Radio Service (CMRS) carriers – typically provide customer support and are able to address most service outages on a 24/7 basis *without taking weekends and holidays off*. While the CPUC has given the ILECs a “pass” in this regard, competitive marketplace forces have generally failed to compel the ILECs to offer repair services comparable to what is routinely available from rival providers.

Phase 1 Report¹¹); and the 2-year Phase 2 trend line for 2018-2019 (the dashed purple line). This format provides a convenient visual comparison of the Phase 1 and Phase 2 results for each of the individual service quality metrics we examined.

Each of these three trend lines was calculated using a separate regression analysis, each confined to its respective period (i.e., 2010-2019, 2010-2017, and 2018-2019). In order to compare the results for 2018-2019 with the Phase 1 trends, the 2018-2019 analysis used the fourth quarter of 2017 as a starting point. Since these trends were each subject to separate calculations, their respective starting and ending points are discontinuous. For this reason, *the focus should be mainly upon the percentage change – up or down – over each of the periods studied*, rather than upon the absolute starting and ending values.

Out-of-service conditions overall

There has been a slight upward trend over the 10-year study period in the number of out-of-service trouble reports per 100 access lines, as shown on Figure 4A.2. The rate of increase, as shown on the 2018-2019 trend line, has accelerated slightly relative to where it had been for the 2010-2017 Phase 1 study period. Updated Figure 4A.2 eliminates all trouble tickets that did not involve an out-of-service condition. Updated Figure 4A.3 eliminates trouble reports that could be quickly resolved – for example, by advising the customer to make sure that the handset is plugged in or that the battery in a cordless phone has not run down. By excluding those OOS complaints that can typically be cleared up quickly, we refine our focus to conditions that will require more complex remedial measures. As shown on Figure 4A.3, while there had been a generally upward trend in the average duration of all OOS conditions over one (1) hour in duration over the Phase 1 study period, 2018-2019 saw a sharp increase for that metric. *It took AT&T some 29% longer on average to restore a service outage at the end of the 8-year study period than at its outset.* However, for 2018-2019, that trend increased even further, rising 26.3% in just two years. The long-term trend, calculated over the full 10-year (2010-2019) period, was 67.3% higher at the end of the period than at its outset.



The trend in average duration of all out-of-service conditions over one hour had been steadily increasing over the Phase 1 study period, and spiked further in 2018-2019. By the end of 2019, it took AT&T 67% longer to restore service than it took in 2010.

11. Some 2010-2017 trend lines differ slightly from those presented in the Phase 1 Report due to certain revisions and corrections that we have made to the earlier methodology for calculating “adjusted” results – those reflecting the GO 133 §3.4(b) “credit” for Sunday and Holiday time from the “actual” elapsed duration of service outages.

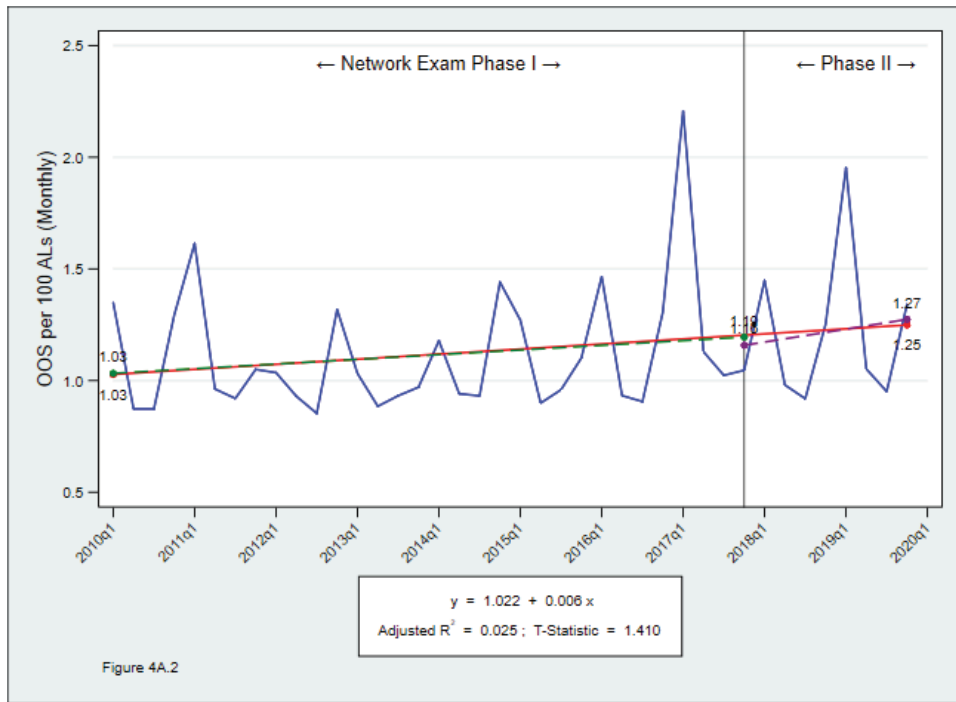


Figure 4A.2. Over the 2010-2017 period, the trend of AT&T California out-of-service incidents per 100 access lines (actual) had been increasing; for 2018-2019, that trend experienced a further increase.

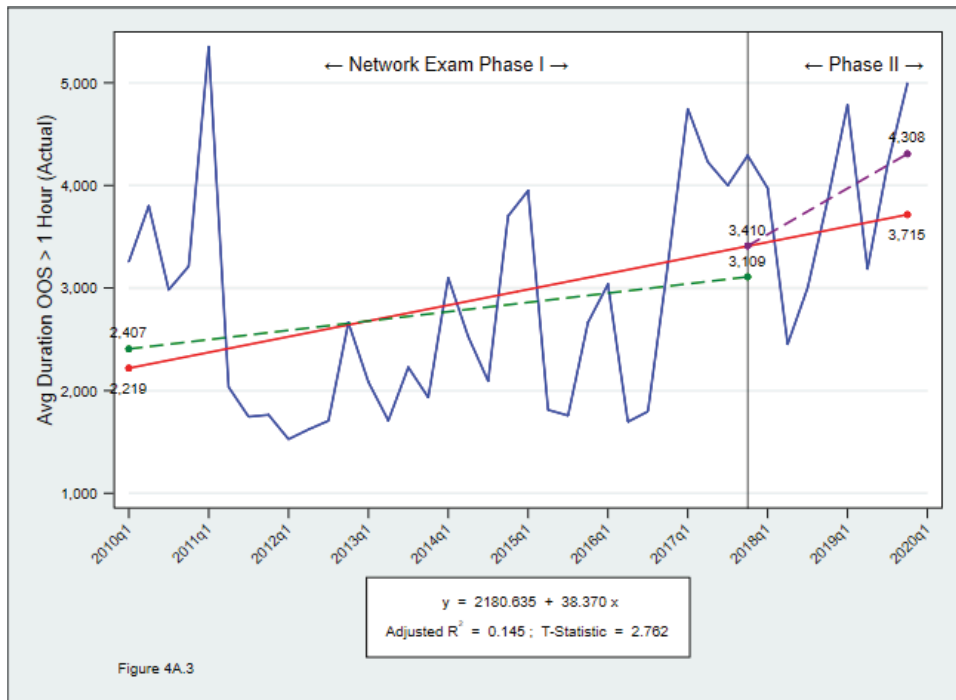


Figure 4A.3. The rate of increase in the average duration of AT&T California out-of-service incidents lasting more than one hour (actual) grew even larger in the 2018-2019 period.

Duration of out-of-service conditions

A principal focus of the Commission's concerns regarding ILEC service quality is with respect to both the frequency and the duration of out-of-service conditions. GO 133-C/D has placed particular emphasis upon protracted out-of-service situations, focusing specifically upon POTS lines that are not restored within the first 24 hours.

Updated Figures 4A.4 and 4A.5 track the average duration of all OOS conditions and the average duration of OOS conditions greater than 24 hours, respectively, together with their long-term trend lines, on an actual basis. Updated Figures 4A.6 and 4A.7 present these same metrics on an adjusted bases (i.e., excluding Sunday/holiday hours and OOS conditions deemed beyond the carrier's control). As the results show, for AT&T California overall, the actual durations of all reported service outages (Figure 4A.4), as reflected in the trend line, have steadily increased by 77.6% over the full 10-year study period. Looking at the Phase 1 and Phase 2 study periods separately, we observe a particularly sharp increase in 2018-2019. The 2010-2017 trend in average OOS duration increased by 31.0% from 2010 through 2017. However, in just the last two years, that metric jumped by another 28.4%. For outages that remained uncleared after 24 hours (Figure 4A.5), their trend line average durations was lengthened by 47% over the 2010-2017 period. For 2018 and 2019, average duration rose further, although the trend held steady over those last two years. The results were somewhat better for all OOS when Sunday/holiday hours and "excluded" situations were eliminated, but the trend was still in the upward direction, and increased for 2018-2019.

Finally, the incidence of OOS conditions lasting more than 24 hours (updated Figure 4A.8 – OOS > 24 Hours per 100 Access Lines), which had held steady over the 2010-2017 study period, experienced an increase over the 2018-2019 period.



Over the 2010-2019 study period, AT&T's average duration for service outages exceeding 24 hours has increased by roughly 67%.

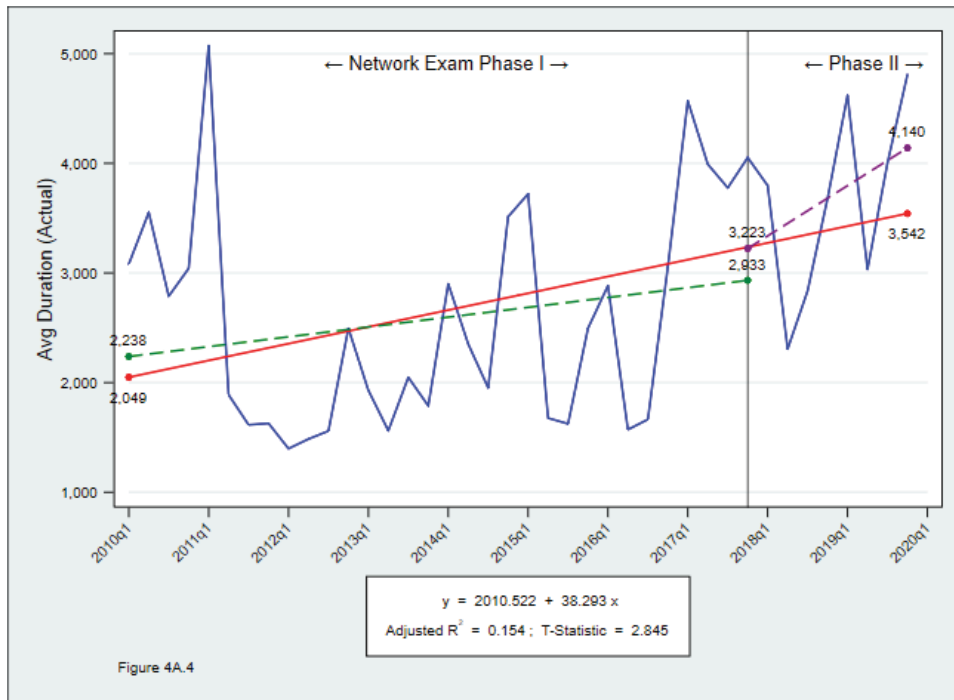


Figure 4A.4. The average duration of all AT&T California out-of-service incidents (actual) saw a significant jump during the 2018-2019 Phase 2 study period.

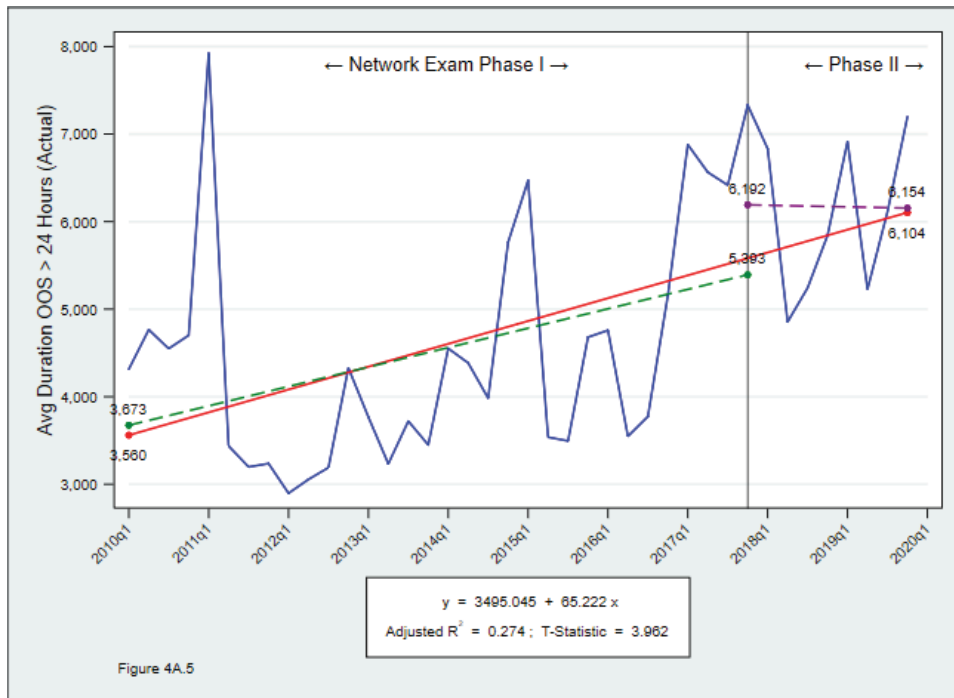


Figure 4A.5. The average duration of all AT&T California out-of-service incidents over 24 hours (actual) increased further over the 2018-2019 Phase 2 study period.

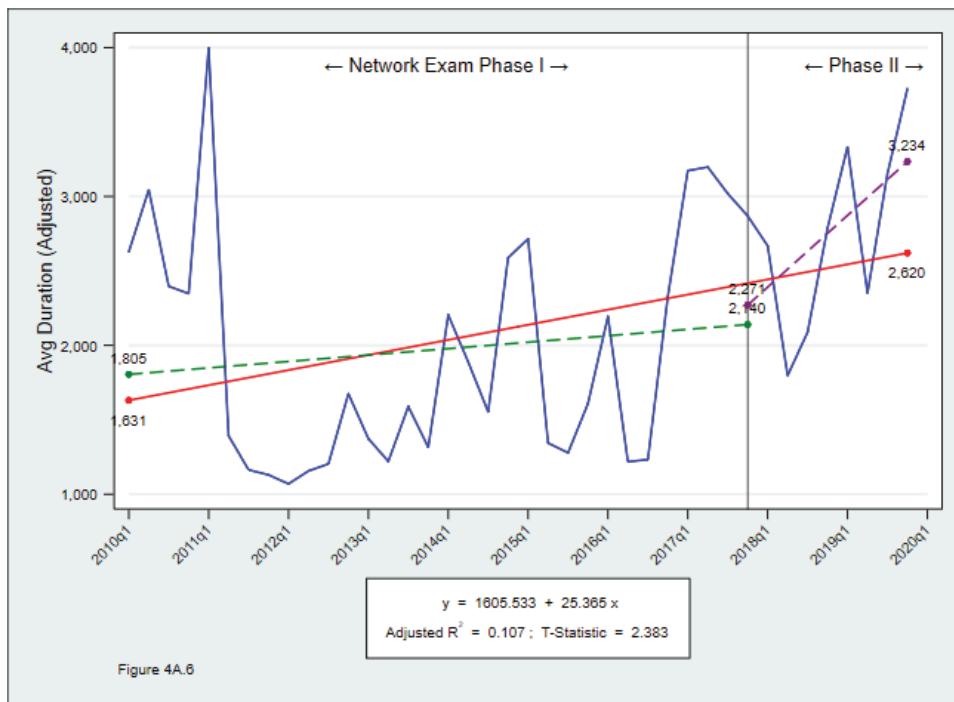


Figure 4A.6. The average duration of all AT&T California out-of-service incidents (adjusted) saw a significant jump during the 2018-2019 Phase 2 study period.

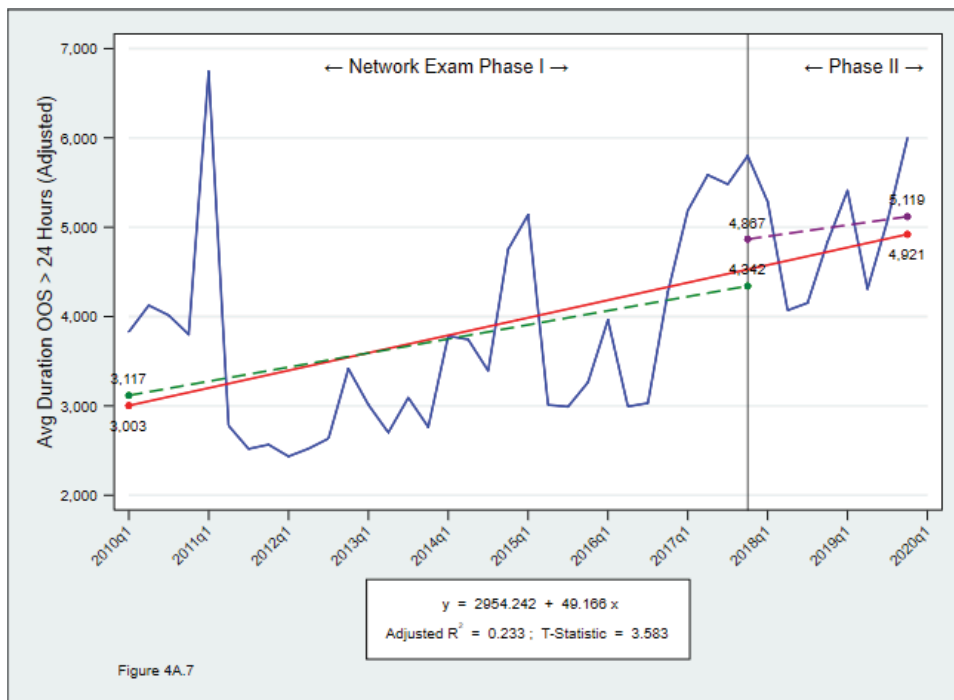


Figure 4A.7. The average duration of all AT&T California out-of-service incidents over 24 hours (adjusted) increased further over the 2018-2019 Phase 2 study period.

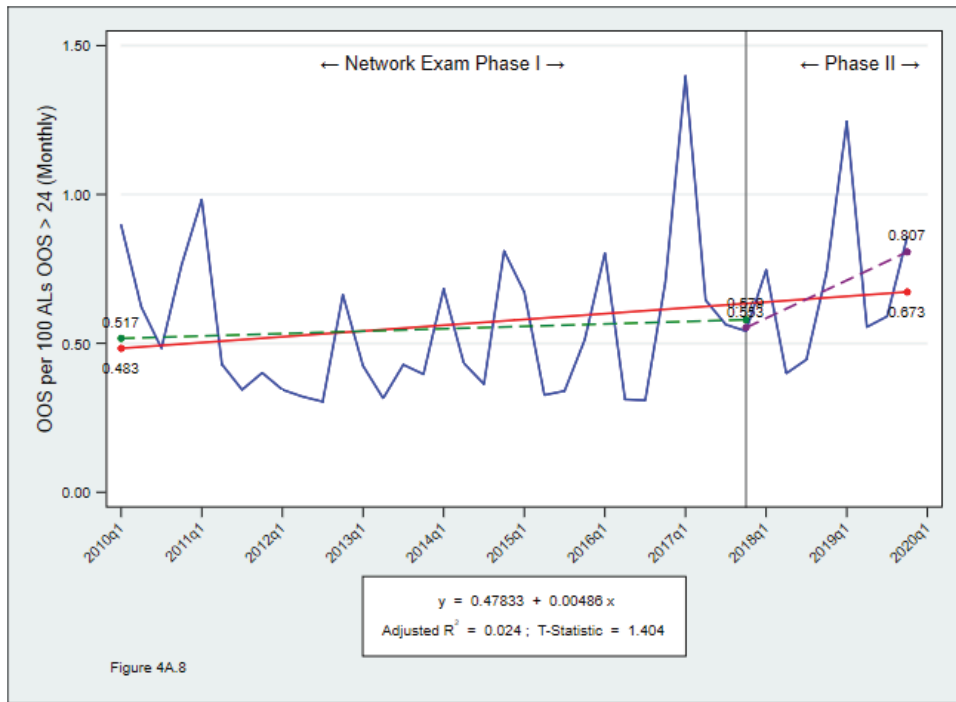


Figure 4A.8. 2018-2019 saw a 39% increase in the rate of AT&T California out-of-service conditions over 24 hours (actual), as compared with about 12% over the 2010-2017 Phase 1 study period.

Out-of-service conditions cleared within 24 hours

The average duration of AT&T California out-of-service conditions has been increasing over the study period, as plotted on Figure 4A.3 above. Taken over the 8-year (2010-2017) Phase 1 period, AT&T data identify a total of 5,000,823 trouble reports that involved an out of service condition of varying durations. 2,480,362 of these – nearly half – remained uncleared after 24 hours. Even on an adjusted basis, there were still 1,837,177 outages – some 44.05% – that remained uncleared after 24 hours. For the Phase 2 2018-2019 period, there were 573,581 trouble reports that involved an out of service condition of varying durations; 320,567 of these – 55.9% – remained uncleared after 24 hours. The various clearance rates are summarized in Table 4A.7 below:

Condition	2010 – 2017				2018 – 2019			
	Actual		Adjusted		Actual		Adjusted	
	Quantity	Pct	Quantity	Pct	Quantity	Pct	Quantity	Pct
Out-of-Service – all types	5,001,270	100.00%	4,170,490	100.00%	573,581	100.00%	434,737	100.00%
Out-of-Service – less than one (1) hour	329,043	6.58%	339,906	8.15%	25,858	4.51%	26,336	6.06%
Out-of-Service – 1 to 6 hours	857,648	17.15%	744,189	17.84%	109,786	19.14%	88,625	20.39%
Out-of-Service – 6 to 12 hours	272,620	5.45%	295,679	7.09%	27,384	4.77%	26,195	6.03%
Out-of-Service – 12 to 24 hours	1,061,366	21.22%	953,539	22.86%	89,986	15.69%	74,339	17.10%
Out-of-Service – more than 24 hours	2,480,593	49.60%	1,837,177	44.05%	320,567	55.89%	219,242	50.43%
Out-of-Service – more than 1 week	272,465	5.45%	140,948	3.38%	62,412	10.88%	29,627	6.81%

NOTE: Out-of-service more than 1 week is included in Out-of-service more than 24 hours..



Over the 8-year (2010-2017) Phase 1 period, 49.6% of AT&T out of service conditions remained uncleared after 24 hours. For the Phase 2 2018-2019 period, 55.9% of all reported service outages remained uncleared after 24 hours.

GO 133-C/D §3.4(c) establishes a “Minimum Standard Reporting Level” requiring that “90% of all out of service trouble reports [be cleared] within 24 hours [as] the set minimum standard.” As updated Table 4A.7 demonstrates, over the 2010-2017 period whose reporting was ordered by the adoption of GO 133-C, AT&T had not come even remotely close to meeting this

requirement: Only 50.4% of the roughly 5-million out-of-service conditions had been cleared within 24 hours; even on an adjusted basis, where Sunday and federal holiday hours were subtracted out of the outage duration, only 63.3% of out-of-service conditions had been restored within 24 hours. The shortfall relative to the GO 133-D 90% standard increased further in 2018-2019, where service had been restored to only 44.1% of the 573,581 out-of-service conditions (61.8% for “adjusted”) within 24 hours.



During 2018-2019, 55.9% of the 573,581 out-of-service conditions (38.2% on an “adjusted” basis) remained uncleared after 24 hours, up from the corresponding 49.6% / 36.7% levels during the 2010-2017 period. To satisfy the GO 133-C §3.4(c) requirement, these percentages would need to drop to less than 10%.

There was considerable variation across all of AT&T’s 612¹² California wire centers both in terms of percent of out-of-service trouble tickets cleared within 24 hours and the number of days required to clear 90% of all out-of-service conditions. Updated Table 4A.8 below provides the results of linear regression trend line calculations for the GO 133-C/D §3.4(c) “set minimum standard” of “90% of all out of service trouble reports within 24 hours” for each of the 612 AT&T California wire centers over the full 2010-2019 period (Table 4A.8(a)) and for 2018-2019 only (Table 4A-8(b)). These tables also provide similar trend line calculations for the number of days required to clear 90% of all out-of-service conditions, and for each on both an actual and adjusted basis.

The values shown for the trend lines are the coefficients of the independent variable in each case – i.e., the quarterly time period – which when applied to the time variable produced the predicted value for the percent cleared within 24 hours, or the number of days required to clear 90%. The coefficient would appear graphically as the slope of a plotted trend line. For the “percentage cleared within 24 hours” metrics, a positive value of the coefficient indicates improvement over time (i.e., an upward sloping trend line); a negative value indicates that over time the ILEC’s record of meeting this standard has been deteriorating. For “days required to clear 90%,” a negative value of the slope of the trend line indicates that, over time, it is taking less time for the ILEC to meet the 90% completion objective – thus, an improvement in

12. AT&T furnished several tabulations of its California wire centers, with differing numbers of wire centers, over the course of the study (615 in its response to DR-01A, Data Request 3, Attachment 4; 624 in response to DR-03A, Data Requests 1,2, and 6, Corrected Attachment 1; 622 in DR-03A, Corrected Attachment 2; 626 in DR-03A, Corrected Attachment 2, DR-03A, Corrected Attachment 4). The GO 133-C/D service quality data covers only 612 wire centers.

performance. Positive values for the coefficient of “days required to clear 90%” indicates that it is taking longer for the Company to reach the target 90% cleared threshold.

We have sorted this table by the coefficient of Percent Cleared within 24 Hours, from lowest (i.e., most negative, or worst result) to highest (most positive, or best result). The “Coefficient” shown for each of the four metrics on this table represents the slope of the estimated trend line based upon the actual out-of-service incidents experienced in the wire center over the full 10-year period (Table 4A-8(a)) and for the 2-year 2018-2019 period (Table 4A-8(b)). A positive value for the coefficient indicates an upward trend – i.e., that if plotted on a graph the trend line would go from the lower left to the upper right of the chart. The higher the positive value of a coefficient, the greater the rate of increase over time.

The regression calculations were prepared using quarterly time-series data. The tables provide the starting and ending predicted values for the variable being examined (e.g., the starting and ending predicted values for the percentage of out-of-service tickets cleared within 24 hours) and the mean value over the full 10-year period or the 2-year Phase 2 period. The regression coefficient represents the change, up or down, in the trend on a per-quarter basis. For example, the following values are shown for AT&T’s Acton wire center (ACTNCA12) over the 2010-2019 period with respect to the Percent Cleared within 24 Hours.

Acton – Percent out-of-service cleared within 24 hours – 2010-2019					
Mean Value (Mean Val)	Regression Coefficient (Coef)	t-statistic (t-stat)	Confidence Interval (Conf.)	Starting value - 1st Quarter 2010 (1Q10 Val)	Ending value - 4th Quarter 2019 (4Q19 Val)
56.63%	-0.0970	-0.4036	31.1%	58.52%	54.74%

From this, we learn that the mean (average) percentage of out-of-service conditions cleared by AT&T within 24 hours in the Acton wire center was 56.63% over the full 10-year period. At the beginning of the period (first quarter 2010), the predicted regression trend line indicated that AT&T was clearing 58.52% within 24 hours; by the end of the period (fourth quarter of 2019), it was only slightly lower, at 54.74%. These are not the actual clearance percentages for either of the two quarters; they are the projected rate of OOS clearances based upon the linear regression calculation. The “regression coefficient” of -0.0970 is interpreted as the change in the predicted trend per quarter – i.e., as each quarter went by, the percent cleared within 24 hours was *decreasing* by approximately 0.097%. The *t*-statistic is a measure of the statistical significance of the estimated coefficient, specifically, the confidence that the regression coefficient is significantly different from zero. In general, a *t*-value with an absolute value in excess of roughly 2.0 denotes statistical significance at the 95% confidence level. Here, a *t*-value of -0.4036

corresponds to a confidence level of 31.1%. The confidence level corresponding with the t -values are also provided on the tables. In this instance, the performance of the Acton wire center with respect to the “percent cleared within 24 hours” metric was virtually unchanged over the full 20-year time frame – i.e., the slope of the trend line was close to zero, as confirmed by the low value of the t -statistic.

If we then compare the results for the Acton wire center over the full 2010-2019 period with the corresponding results for the 2018-2019 Phase 2 study period from Table 4A.8(b), we observe a dramatic shift in performance:

Acton – Percent out-of-service cleared within 24 hours						
Period	Mean Value (Mean Val)	Regression Coefficient (Coef)	t -statistic (t -stat)	Confidence Interval (Conf.)	Starting value - (1Q10 or 4Q2017 Value)	Ending value - 4th Quarter 2019 (4Q19 Val)
2010-19	56.63%	-0.0970	-0.4036	31.1%	58.52%	54.74%
2018-19	45.87%	-9.0096	-4.2320	99.5%	77.40%	14.33%

The regression coefficient for the 2018-2019 period has become highly negative, indicating a highly pronounced downward trend. The high value for the t -statistic, reflecting a confidence level of 99.5%, further confirms the statistical significance of this drop-off in performance.

Updated Table 4A.9 summarizes the percentages of out-of-service incidents that are cleared within 24 hours and the number of days required to clear 90% of all reported out-of-service conditions, on both an actual and an adjusted (for weekends and holidays) basis, across all of AT&T’s wire centers over the 2010-2019 period. GO 133-C/D §3.4(c) requires that 90% of all out of service trouble reports are expected to be cleared within 24 hours. As the results indicate, on a companywide basis, AT&T California has not come even close to meeting the 90% cleared within 24 hours standard.

Wire Center Name	Wtr Ctr	GLI	OOS Ratio (actual)			Average Duration (actual)			Sorted by Coefficient of Pct Cleared within 24 hours			Days to Clear 90% (actual)			1016 Val	1016 Conf	1016 Val	1016 Conf					
			Mean Val	Coef	1010 Val	1010 Val	1010 Val	1010 Val	1010 Val	1010 Val	1010 Val	1010 Val	1010 Val	1010 Val					1010 Val	1010 Val	1010 Val		
			Mean Val	Coef	1010 Val	1010 Val	1010 Val	1010 Val	1010 Val	1010 Val	1010 Val	1010 Val	1010 Val	1010 Val					1010 Val	1010 Val	1010 Val		
PLACERVILLE	530489	PVLCAC11	2.40	0.0022	3.0703	99.6%	1.38	342	3828	96.73	3.8505	100.0%	40.36	-0.3833	40.36	93.3%	1.8689	3.7270	99.3%	3.11	94.3		
PLACERVILLE	530490	PVLCAC12	2.40	0.0022	3.0703	99.6%	1.38	342	3828	96.73	3.8505	100.0%	40.36	-0.3833	40.36	93.3%	1.8689	3.7270	99.3%	3.11	94.3		
PLACERVILLE	530491	PVLCAC13	2.40	0.0022	3.0703	99.6%	1.38	342	3828	96.73	3.8505	100.0%	40.36	-0.3833	40.36	93.3%	1.8689	3.7270	99.3%	3.11	94.3		
EL DORADO HILLS	916654	FLRDCAC11	0.85	0.0100	1.8816	93.2%	0.64	107	2782	467.9	5.1709	99.6%	52.36	-1.7621	52.36	91.4%	1.7621	4.290	92.3%	2.67	57.1		
EL DORADO HILLS	916655	FLRDCAC12	0.85	0.0100	1.8816	93.2%	0.64	107	2782	467.9	5.1709	99.6%	52.36	-1.7621	52.36	91.4%	1.7621	4.290	92.3%	2.67	57.1		
EL DORADO HILLS	916656	FLRDCAC13	0.85	0.0100	1.8816	93.2%	0.64	107	2782	467.9	5.1709	99.6%	52.36	-1.7621	52.36	91.4%	1.7621	4.290	92.3%	2.67	57.1		
BLAIRSDEN	707988	BLRDCAC11	2.15	0.0070	3.0611	95.7%	2.01	128	4787	161.41	4.5238	100.0%	36.33	-0.3724	36.33	90.7%	1.7206	6.46	93.54	1.61	53.1		
BLAIRSDEN	707989	BLRDCAC12	2.15	0.0070	3.0611	95.7%	2.01	128	4787	161.41	4.5238	100.0%	36.33	-0.3724	36.33	90.7%	1.7206	6.46	93.54	1.61	53.1		
BLAIRSDEN	707990	BLRDCAC13	2.15	0.0070	3.0611	95.7%	2.01	128	4787	161.41	4.5238	100.0%	36.33	-0.3724	36.33	90.7%	1.7206	6.46	93.54	1.61	53.1		
NORTH DOWMAS	530433	BLRSCAC12	0.82	0.0165	3.0362	99.6%	0.49	114	2392	92.37	2.3009	97.3%	3192	47.96	-0.3678	3192	91.0%	55.13	40.78	94.1%	2.50	51.6	
NORTH DOWMAS	530434	BLRSCAC12	0.82	0.0165	3.0362	99.6%	0.49	114	2392	92.37	2.3009	97.3%	3192	47.96	-0.3678	3192	91.0%	55.13	40.78	94.1%	2.50	51.6	
NORTH DOWMAS	530435	BLRSCAC12	0.82	0.0165	3.0362	99.6%	0.49	114	2392	92.37	2.3009	97.3%	3192	47.96	-0.3678	3192	91.0%	55.13	40.78	94.1%	2.50	51.6	
RIVERSIDE ORANGE	916377	RVSDCA01	1.09	-0.0033	-0.8713	61.1%	1.16	102	2384	106.41	4.1427	100.0%	1633	44.77	-0.3661	1633	88.9%	1.6330	3.65	90.40	1.2118	76.0%	
RIVERSIDE ORANGE	916378	RVSDCA01	1.09	-0.0033	-0.8713	61.1%	1.16	102	2384	106.41	4.1427	100.0%	1633	44.77	-0.3661	1633	88.9%	1.6330	3.65	90.40	1.2118	76.0%	
RIVERSIDE ORANGE	916379	RVSDCA01	1.09	-0.0033	-0.8713	61.1%	1.16	102	2384	106.41	4.1427	100.0%	1633	44.77	-0.3661	1633	88.9%	1.6330	3.65	90.40	1.2118	76.0%	
WOODLAND	530523	WLDCA01	1.29	0.0011	0.0225	1.8%	1.29	129	3708	106.41	4.1427	100.0%	1633	44.77	-0.3661	1633	88.9%	1.6330	3.65	90.40	1.2118	76.0%	
WOODLAND	530524	WLDCA01	1.29	0.0011	0.0225	1.8%	1.29	129	3708	106.41	4.1427	100.0%	1633	44.77	-0.3661	1633	88.9%	1.6330	3.65	90.40	1.2118	76.0%	
WOODLAND	530525	WLDCA01	1.29	0.0011	0.0225	1.8%	1.29	129	3708	106.41	4.1427	100.0%	1633	44.77	-0.3661	1633	88.9%	1.6330	3.65	90.40	1.2118	76.0%	
BODERA BAY	707279	BDRCA11	1.13	0.0318	4.0995	100.0%	0.51	175	3735	136.83	4.2621	100.0%	1086	63.93	-0.3632	1086	91.9%	1.9198	4.96	91.9%	3.76	98.1	
BODERA BAY	707280	BDRCA11	1.13	0.0318	4.0995	100.0%	0.51	175	3735	136.83	4.2621	100.0%	1086	63.93	-0.3632	1086	91.9%	1.9198	4.96	91.9%	3.76	98.1	
BODERA BAY	707281	BDRCA11	1.13	0.0318	4.0995	100.0%	0.51	175	3735	136.83	4.2621	100.0%	1086	63.93	-0.3632	1086	91.9%	1.9198	4.96	91.9%	3.76	98.1	
BEAUMONT	916453	BEAUCAC11	0.52	0.0000	0.0000	50.0%	0.45	60	1460	256.4	3.9556	99.6%	27.45	-0.3555	27.45	94.2%	1.9959	3.46	98.1%	2.15	98.1		
BEAUMONT	916454	BEAUCAC11	0.52	0.0000	0.0000	50.0%	0.45	60	1460	256.4	3.9556	99.6%	27.45	-0.3555	27.45	94.2%	1.9959	3.46	98.1%	2.15	98.1		
CAMP PHELTON	707928	CPHCA01	1.22	0.0089	1.6893	80.5%	1.05	140	3759	113.22	4.4483	100.0%	1511	5987	46.07	-0.3567	1511	95.8%	53.02	39.11	100.0%	1.94	12.13
CAMP PHELTON	707929	CPHCA01	1.22	0.0089	1.6893	80.5%	1.05	140	3759	113.22	4.4483	100.0%	1511	5987	46.07	-0.3567	1511	95.8%	53.02	39.11	100.0%	1.94	12.13
CAMP PHELTON	707930	CPHCA01	1.22	0.0089	1.6893	80.5%	1.05	140	3759	113.22	4.4483	100.0%	1511	5987	46.07	-0.3567	1511	95.8%	53.02	39.11	100.0%	1.94	12.13
LOOMIS	916170	LMSCA11	1.04	0.0010	0.2185	98.9%	0.81	127	2179	34.22	2.4003	98.1%	1511	5987	46.07	-0.3567	1511	95.8%	53.02	39.11	100.0%	1.94	12.13
LOOMIS	916171	LMSCA11	1.04	0.0010	0.2185	98.9%	0.81	127	2179	34.22	2.4003	98.1%	1511	5987	46.07	-0.3567	1511	95.8%	53.02	39.11	100.0%	1.94	12.13
LOOMIS	916172	LMSCA11	1.04	0.0010	0.2185	98.9%	0.81	127	2179	34.22	2.4003	98.1%	1511	5987	46.07	-0.3567	1511	95.8%	53.02	39.11	100.0%	1.94	12.13
SAN CARLOS	626658	SNGCA01	1.01	-0.0015	-0.3294	25.6%	1.04	398	3271	35.95	1.5507	87.1%	2346	3748	45.66	-0.3566	2346	92.2%	52.60	38.73	92.2%	3.81	5.86
SAN CARLOS	626659	SNGCA01	1.01	-0.0015	-0.3294	25.6%	1.04	398	3271	35.95	1.5507	87.1%	2346	3748	45.66	-0.3566	2346	92.2%	52.60	38.73	92.2%	3.81	5.86
SAN CARLOS	626660	SNGCA01	1.01	-0.0015	-0.3294	25.6%	1.04	398	3271	35.95	1.5507	87.1%	2346	3748	45.66	-0.3566	2346	92.2%	52.60	38.73	92.2%	3.81	5.86
RANCHO SANTA FE	883771	RNFCA12	1.00	0.0089	2.1977	96.6%	0.83	118	3201	63.20	2.8314	98.3%	1896	4416	43.92	-0.3552	1896	94.2%	56.85	37.00	99.4%	3.08	7.54
RANCHO SANTA FE	883772	RNFCA12	1.00	0.0089	2.1977	96.6%	0.83	118	3201	63.20	2.8314	98.3%	1896	4416	43.92	-0.3552	1896	94.2%	56.85	37.00	99.4%	3.08	7.54
RANCHO SANTA FE	883773	RNFCA12	1.00	0.0089	2.1977	96.6%	0.83	118	3201	63.20	2.8314	98.3%	1896	4416	43.92	-0.3552	1896	94.2%	56.85	37.00	99.4%	3.08	7.54
FATCANY	805391	SATCA12	0.83	0.0000	0.0000	98.9%	0.62	104	2512	47.90	2.4613	98.2%	1578	3446	54.80	-0.3537	1578	96.5%	61.69	47.90	99.2%	3.41	4.50
FATCANY	805392	SATCA12	0.83	0.0000	0.0000	98.9%	0.62	104	2512	47.90	2.4613	98.2%	1578	3446	54.80	-0.3537	1578	96.5%	61.69	47.90	99.2%	3.41	4.50
FATCANY	805393	SATCA12	0.83	0.0000	0.0000	98.9%	0.62	104	2512	47.90	2.4613	98.2%	1578	3446	54.80	-0.3537	1578	96.5%	61.69	47.90	99.2%	3.41	4.50
SHINGLE SPRINGS	530504	SOSPCA11	1.12	0.0039	3.6197	98.9%	1.10	254	3922	94.27	3.1724	98.9%	1859	5146	41.93	-0.3524	1859	90.8%	46.79	35.08	97.3%	2.64	8.61
SHINGLE SPRINGS	530505	SOSPCA11	1.12	0.0039	3.6197	98.9%	1.10	254	3922	94.27	3.1724	98.9%	1859	5146	41.93	-0.3524	1859	90.8%	46.79	35.08	97.3%	2.64	8.61
SHINGLE SPRINGS	530506	SOSPCA11	1.12	0.0039	3.6197	98.9%	1.10	254	3922	94.27	3.1724	98.9%	1859	5146	41.93	-0.3524	1859	90.8%	46.79	35.08	97.3%	2.64	8.61
BRIDGEVILLE	707281	BGVCA11	4.40	0.0685	1.3089	80.2%	3.07	574	3252	58.31	2.2892	97.2%	2154	4360	29.68	-0.3491	2154	85.7%	36.48	22.87	94.3%	1.44	91.0
BRIDGEVILLE	707282	BGVCA11	4.40	0.0685	1.3089	80.2%	3.07	574	3252	58.31	2.2892	97.2%	2154	4360	29.68	-0.3491	2154	85.7%	36.48	22.87	94.3%	1.44	91.0
BRIDGEVILLE	707283	BGVCA11	4.40	0.0685	1.3089	80.2%	3.07	574	3252	58.31	2.2892	97.2%	2154	4360	29.68	-0.3491	2154	85.7%	36.48	22.87	94.3%	1.44	91.0
ALLEGHEEY	530425	ALHCA11	2.65	0.0789	1.9016	78.0%	1.02	410	4606	18.93	3.8411	100.0%	1272	5404	46.50	-0.3466	1272	89.8%	59.89	59.89	99.2%	4.99	6.91
ALLEGHEEY	530426	ALHCA11	2.65	0.0789	1.9016	78.0%	1.02	410	4606	18.93	3.8411	100.0%	1272	5404	46.50	-0.3466	1272	89.8%	59.89	59.89	99.2%	4.99	6.91
ALLEGHEEY	530427	ALHCA11	2.65	0.0789																			

Wrs Ctr	GLI	Mean Val	OOS Ratio (actual)				Sorted by Coefficient Of Pct Cleared within 24 hours								Days to Clear 90% (actual)				1010 Val	1010 Var	1010 StDev	4Q19 Val	4Q19 Var	4Q19 StDev	1010 Val	1010 Var	1010 StDev										
			T-stat		Coef		T-stat		Coef		T-stat		Coef		T-stat		Coef																				
			T-stat	Coef	T-stat	Coef	T-stat	Coef	T-stat	Coef	T-stat	Coef	T-stat	Coef	T-stat	Coef	T-stat	Coef																			
			1010 Val	1010 Var	1010 Val	1010 Var	1010 Val	1010 Var	1010 Val	1010 Var	1010 Val	1010 Var	1010 Val	1010 Var	1010 Val	1010 Var	1010 Val	1010 Var																			
58952	ASMTCA11	264	0.0051	0.2237	18.3%	2.55	2.74	3676	4154	3207	4154	2268	-0.0426	-0.1355	10.7%	22.50	2184	4.39	-0.0257	-0.7705	55.3%	4.89	388	4.89	388	4.89	388	4.89	388	4.89	388	4.89	388				
58953	SECDUAPR ASH MITN	176	0.0051	0.2237	18.3%	2.55	2.74	3676	4154	3207	4154	2268	-0.0426	-0.1355	10.7%	22.50	2184	4.39	-0.0257	-0.7705	55.3%	4.89	388	4.89	388	4.89	388	4.89	388	4.89	388	4.89	388				
58954	SECDUAPR ASH MITN	176	0.0051	0.2237	18.3%	2.55	2.74	3676	4154	3207	4154	2268	-0.0426	-0.1355	10.7%	22.50	2184	4.39	-0.0257	-0.7705	55.3%	4.89	388	4.89	388	4.89	388	4.89	388	4.89	388	4.89	388	4.89	388		
58955	SECDUAPR ASH MITN	176	0.0051	0.2237	18.3%	2.55	2.74	3676	4154	3207	4154	2268	-0.0426	-0.1355	10.7%	22.50	2184	4.39	-0.0257	-0.7705	55.3%	4.89	388	4.89	388	4.89	388	4.89	388	4.89	388	4.89	388	4.89	388	4.89	388



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Wire Center	GLI	Wtr Ctr	OOS Ratio (Actual)			4Q19 Val	4Q18 Val	Mean Val	Average Duration (Actual)			4Q19 Val	4Q18 Val	Mean Val	Pct Cleared within 24 hours			4Q19 Val	4Q18 Val	Mean Val	Days to Clear 90% (Actual)			4Q19 Val	4Q18 Val	Mean Val
			T-Start	Coef	T-End				T-Start	Coef	T-End				T-Start	Coef	T-End				T-Start	Coef	T-End			
ALHAMBRA	32343	LSMCA08	1.89	0.0039	0.77	1.01	1.33	283	3.39	10%	1930	1943	4907	-1.0535	86.6%	86.6%	86.6%	3.26	0.2265	0.586	18.78	18.78	18.78	3.46	4.87	
ALHAMBRA	32343	LSMCA08	1.89	0.0039	0.77	1.01	1.33	283	3.39	10%	1930	1943	4907	-1.0535	86.6%	86.6%	86.6%	3.26	0.2265	0.586	18.78	18.78	18.78	3.46	4.87	
ALHAMBRA	32343	LSMCA08	1.89	0.0039	0.77	1.01	1.33	283	3.39	10%	1930	1943	4907	-1.0535	86.6%	86.6%	86.6%	3.26	0.2265	0.586	18.78	18.78	18.78	3.46	4.87	
ALHAMBRA	32343	LSMCA08	1.89	0.0039	0.77	1.01	1.33	283	3.39	10%	1930	1943	4907	-1.0535	86.6%	86.6%	86.6%	3.26	0.2265	0.586	18.78	18.78	18.78	3.46	4.87	
ALHAMBRA	32343	LSMCA08	1.89	0.0039	0.77	1.01	1.33	283	3.39	10%	1930	1943	4907	-1.0535	86.6%	86.6%	86.6%	3.26	0.2265	0.586	18.78	18.78	18.78	3.46	4.87	
ALHAMBRA	32343	LSMCA08	1.89	0.0039	0.77	1.01	1.33	283	3.39	10%	1930	1943	4907	-1.0535	86.6%	86.6%	86.6%	3.26	0.2265	0.586	18.78	18.78	18.78	3.46	4.87	
ALHAMBRA	32343	LSMCA08	1.89	0.0039	0.77	1.01	1.33	283	3.39	10%	1930	1943	4907	-1.0535	86.6%	86.6%	86.6%	3.26	0.2265	0.586	18.78	18.78	18.78	3.46	4.87	
ALHAMBRA	32343	LSMCA08	1.89	0.0039	0.77	1.01	1.33	283	3.39	10%	1930	1943	4907	-1.0535	86.6%	86.6%	86.6%	3.26	0.2265	0.586	18.78	18.78	18.78	3.46	4.87	
ALHAMBRA	32343	LSMCA08	1.89	0.0039	0.77	1.01	1.33	283	3.39	10%	1930	1943	4907	-1.0535	86.6%	86.6%	86.6%	3.26	0.2265	0.586	18.78	18.78	18.78	3.46	4.87	
ALHAMBRA	32343	LSMCA08	1.89	0.0039	0.77	1.01	1.33	283	3.39	10%	1930	1943	4907	-1.0535	86.6%	86.6%	86.6%	3.26	0.2265	0.586	18.78	18.78	18.78	3.46	4.87	

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Wire Center	GLI	Mean Val	OOS Ratio (Adj) (Continued)		Sorted by Coefficient of Per Cleared within 24 hours				Days to Clear 90% (Actual)				4Q18 Val	4Q19 Val	4Q18 Val	4Q19 Val				
			Total	Conf	Mean Val	Coef	t-Stat	Mean Val	Coef	t-Stat	Mean Val	Coef					t-Stat	Mean Val	Coef	t-Stat
LA PALMA	17103	4933	0.83	1.66	184	489.70	1.01	0.82	2184	489.70	1.01	0.82	2184	489.70	1.01	0.82	2184	489.70		
MARLBOROUGH	17103	4933	0.83	1.66	184	489.70	1.01	0.82	2184	489.70	1.01	0.82	2184	489.70	1.01	0.82	2184	489.70		
MOJAVE	17103	4933	0.83	1.66	184	489.70	1.01	0.82	2184	489.70	1.01	0.82	2184	489.70	1.01	0.82	2184	489.70		
MURFRESNO	17103	4933	0.83	1.66	184	489.70	1.01	0.82	2184	489.70	1.01	0.82	2184	489.70	1.01	0.82	2184	489.70		

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Wire Center Name	G.L.I.	Mean Val	OOS Ratio (adj) (continued)			Sorted by Coefficient Of Pct Cleared within 24 Hours														
			Wins/Chr	Totals	Coef	4Q17 Val	4Q18 Val	4Q19 Val	4Q19 Val	4Q19 Val	4Q19 Val	Mean Val	Pct Coefficient	Coef	Days to Clear 90% (actual)	Mean Val	4Q19 Val	4Q19 Val		
						4Q17 Val	4Q18 Val	4Q19 Val	4Q19 Val	4Q19 Val	4Q19 Val	4Q19 Val	4Q19 Val	4Q19 Val	4Q19 Val	4Q19 Val	4Q19 Val	4Q19 Val	4Q19 Val	4Q19 Val
WINSTON-SALEM		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
ALBUQUERQUE		0.82	0.1443	53.3%	0.64	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96

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Table with columns: Wire Center Name, Wire Ctr, GLLI, Mean Val, Coef, OOS Ratio (Std), 4Q19 Val, 4Q19 Vol, 4Q19 Vel, Mean Val, Coef, Average Duration (Actual), T-Stat, Coef, Days to Clear 90% (Actual), Mean Val, Coef, Days to Clear 90% (Actual), 4Q19 Val, 4Q19 Vol, 4Q19 Vel, Mean Val, Coef, Days to Clear 90% (Actual), 4Q19 Val, 4Q19 Vol, 4Q19 Vel, Mean Val, Coef, Days to Clear 90% (Actual). Rows list wire centers such as ABERNETHY, ACACIA, and ADA.

Table 4A.9				
AT&T CALIFORNIA				
PERCENTAGES OF ACTUAL AND ADJUSTED (“CPUC”) OUT-OF-SERVICE CONDITIONS CLEARED WITHIN 24 HOURS AND DAYS REQUIRED TO CLEAR 90%				
	Actual		Adjusted	
Quarter	Pct. Cleared within 24 hours	Days Required to Clear 90%	Pct. Cleared within 24 hours	Days Required to Clear 90%
2010q1	33.5%	4.86	36.5%	4.10
2010q2	28.7%	5.04	30.1%	4.14
2010q3	44.6%	4.92	46.8%	4.08
2010q4	41.0%	5.15	43.8%	4.48
2011q1	39.1%	11.52	57.3%	11.15
2011q2	55.3%	2.97	71.9%	2.03
2011q3	62.6%	2.29	77.9%	1.77
2011q4	61.8%	2.64	77.8%	1.86
2012q1	66.7%	2.07	78.4%	1.67
2012q2	65.5%	2.17	76.8%	1.81
2012q3	64.3%	2.44	75.1%	1.89
2012q4	49.7%	4.22	71.3%	3.05
2013q1	58.9%	3.13	75.1%	2.20
2013q2	64.4%	2.67	75.6%	1.95
2013q3	54.0%	3.24	65.6%	2.72
2013q4	59.2%	3.00	71.5%	2.11
2014q1	42.1%	4.86	58.0%	3.84
2014q2	53.9%	4.10	64.3%	3.25
2014q3	61.0%	3.23	70.2%	2.74
2014q4	43.8%	6.15	61.0%	4.92
2015q1	47.1%	5.64	59.7%	4.23
2015q2	63.7%	2.91	73.1%	2.09
2015q3	64.5%	2.81	73.7%	2.04
2015q4	53.5%	3.93	67.0%	2.93
2016q1	45.2%	4.94	61.5%	3.92
2016q2	66.6%	2.70	77.6%	1.91
2016q3	65.9%	2.50	76.8%	1.90
2016q4	46.0%	5.26	61.0%	4.20
2017q1	36.7%	8.08	78.4%	5.49
2017q2	42.9%	6.93	59.4%	5.57
2017q3	45.0%	6.95	58.4%	5.82
2017q4	48.3%	7.02	63.2%	5.30
2018q1	48.5%	6.33	65.9%	4.98
2018q2	59.3%	3.31	71.5%	2.77
2018q3	51.5%	4.08	65.4%	3.05
2018q4	41.0%	6.15	59.2%	4.99
2019q1	36.3%	7.90	60.3%	6.01
2019q2	47.3%	4.82	62.4%	3.59
2019q3	37.9%	6.13	52.7%	5.00
2019q4	36.1%	8.13	55.5%	6.86

Updated Figures 4A.9 and 4A.10 plot these data and trends graphically. The AT&T California companywide percentages of outages cleared within 24 hours – actual and adjusted – are plotted, along with associated trend lines. While there is considerable year-to-year variation in the completion percentages, the long term trend shows some, albeit modest, improvement – i.e., over the Phase 1 2010-2017 period, a successively larger percentage of outages are being cleared within 24 hours. Mathematically, the trend lines for both actual and adjusted metrics have *positive* slopes, reflecting the increasing percentages of OOS completions within 24 hours over the 2010-2017 period. However, this is decidedly not the case for the 2018-2019 Phase 2 period, where the slopes of both the actual and adjusted metrics turn sharply negative.

Another approach to examining this “90% cleared within 24 hours” requirement is to look at the length of time it takes AT&T to reach the 90% cleared threshold. These results are also plotted, for AT&T statewide, on updated Figures 4A.11 (actual) and 4A.12 (adjusted). On an adjusted basis, the number of days required for 90% OOS cleared ranges from a low of 1.67 days in the first quarter of 2012 to a high of 11.15 days in the first quarter of 2011. For the most recent year (2019), the adjusted number of days to achieve 90% OOS cleared falls in the 3.8 to 5.2 range. The plotted trend lines for both the actual and adjusted days to achieve 90% OOS cleared shows a lengthening of this duration over time. Here, the slope of the trend lines are positive, reflecting the successively larger number of days required to achieve 90% OOS cleared over the 2010-17 period, becoming even more positive over the 2018-2019 time frame.



On an adjusted basis, the number of days required for AT&T to clear 90% of all out-of-service conditions was increasing at a faster rate over the 2018-2019 period than over the longer Phase 1 period. Over the eight years from 2010Q1 through 2017Q4, the number of days required for AT&T to clear 90% of service outages increased at an annual rate of 3.37%, from 4.10 days to 5.30 days. Over the next 24 months, from 2017Q4 to 2019Q4, the days to clear 90% jumped at an annual rate of 13.77%, from 5.30 to 6.86.

There is considerable variation across all of AT&T’s 612 California wire centers both in terms of percent OOS cleared within 24 hours and days required to achieve 90% OOS cleared. Trend lines for these four metrics – actual and adjusted percentages of OOS cleared within 24 hours, and actual and adjusted days required to achieve 90% OOS cleared – have been calculated for each wire center. The values shown for the trend lines are the coefficient of the independent variable, *time* in this case, and would appear graphically as the slope of a plotted trend line.

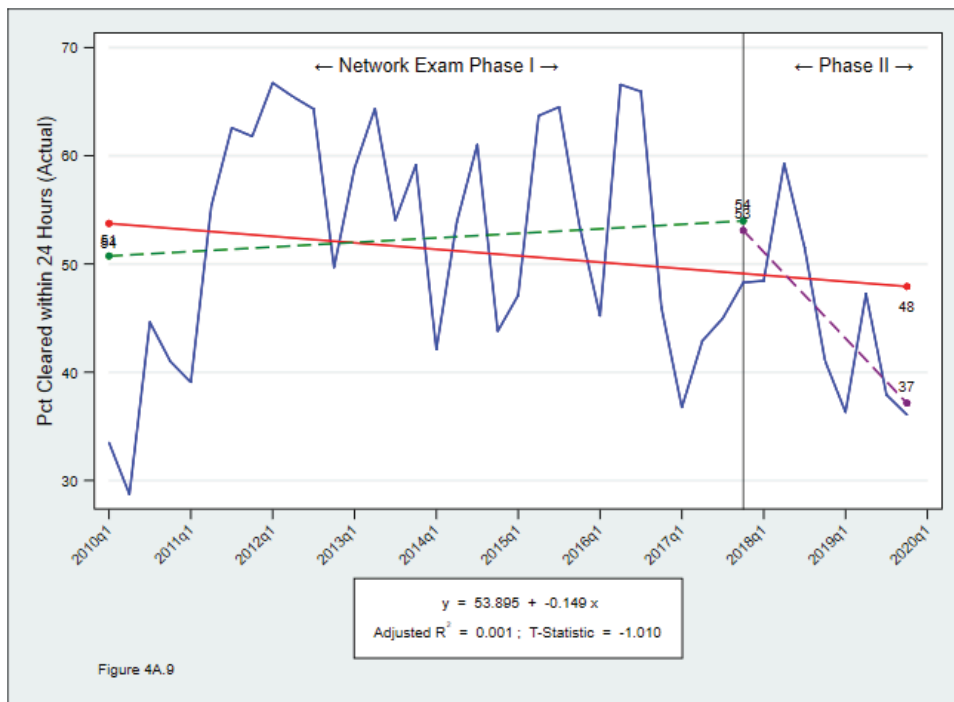


Figure 4A.9. AT&T California had not come even close to achieving the GO 133-CD §3.4(c) goal of 90% of all OOS cleared within 24 hours (actual) during the Phase 1 study period, and that metric saw a significant degradation in 2018-2019.

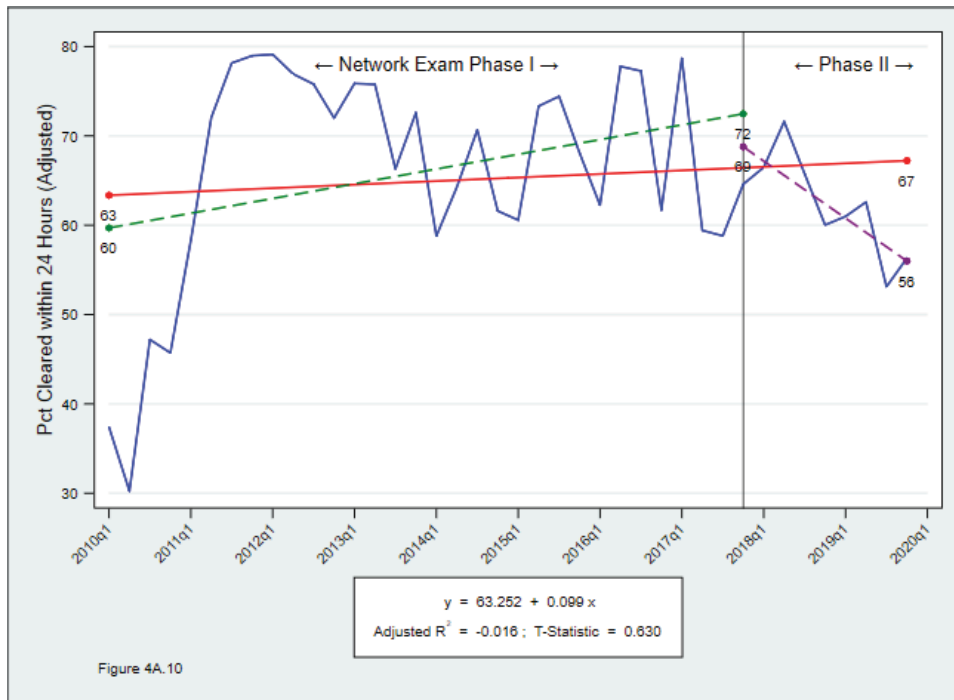


Figure 4A.10. The percentage of all AT&T California OOS cleared within 24 hours (adjusted) has consistently fallen far short of meeting the GO 133-C/D §3.4(c) 90% cleared within 24 hours standard, and got a lot lower in 2018-2019.

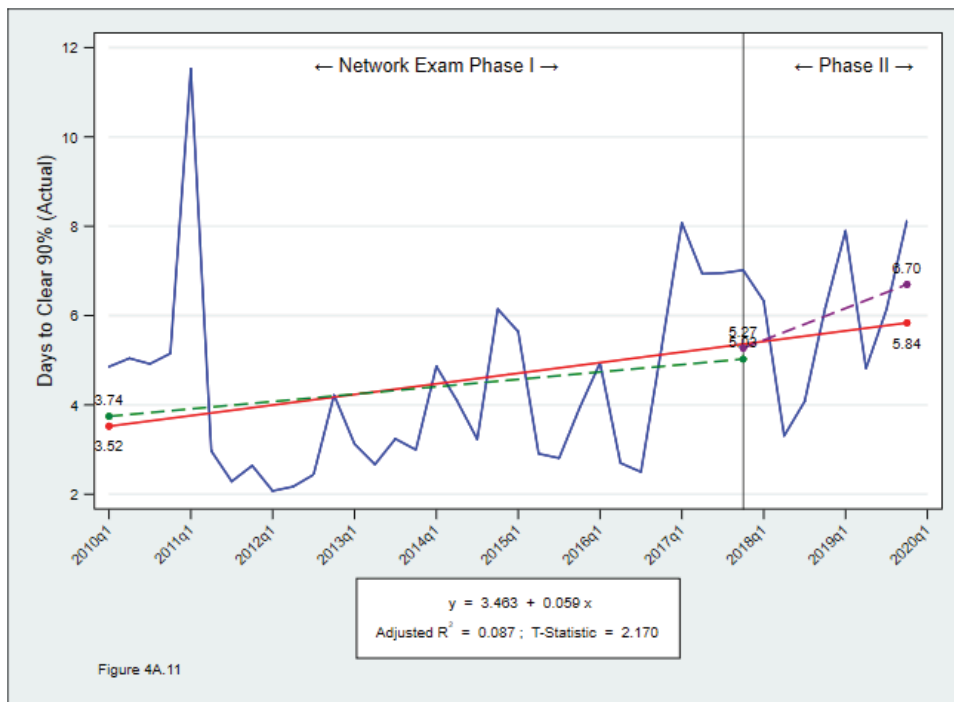


Figure 4A.11. The number of days required to clear 90% of AT&T California out-of-service incidents (actual) increased considerably in 2018-2019.

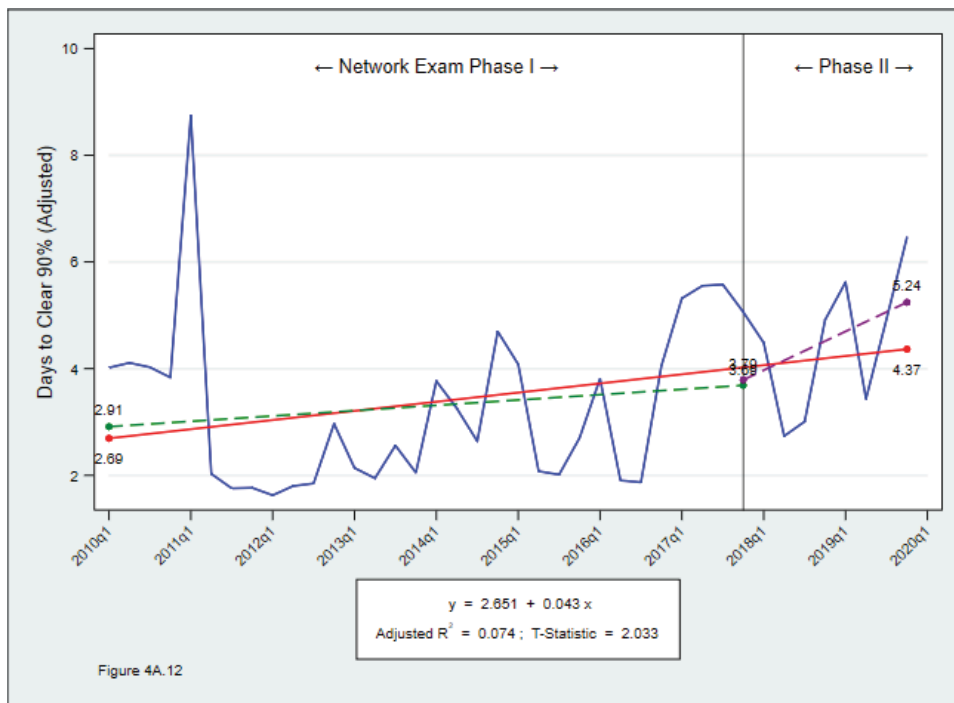


Figure 4A.12. The number of days required to clear 90% of AT&T California out-of-service incidents (adjusted) also increased in 2018-2019.

For the “percentages of OOS cleared within 24 hours” metric, a positive value of the slope of the trend line indicates that, over time, the durations of service outages are getting shorter and it is taking less time, on average, for AT&T to restore service; a negative value indicates just the opposite. For the “days required to achieve 90% OOS cleared” metric, a positive value of the slope of the trend line indicates that, over time, it is taking longer to meet the 90% completion objective; a negative value indicates an improvement in performance in that it is taking less time to meet the 90% completion objective. Positive values for the “percentages of OOS cleared within 24 hours” metrics indicate an improving trend over time; negative values indicate that the completion percentage is decreasing over time.

Updated Appendix 4A-1 provides a compilation of individual wire center statistics and includes, for each AT&T California wire center, data and trend line calculations for several performance metrics relating to OOS conditions cleared within varying lengths of time.

AT&T has continued to increase rates for its legacy services while service quality continues to be degraded

As we discussed in our Phase 1 Report, AT&T California appears to have implemented a “harvesting strategy” similar to one that its parent company had pursued in the period immediately following its July 2005 announcement of its intention to merge with SBC Communications, which was accompanied by the withdrawal of AT&T Corp. from CLEC operations. AT&T had described this “harvesting” tactic in testimony submitted in the CPUC’s AT&T/SBC merger proceeding.¹³ Consistent with this approach and as shown in updated Table 4A.10 below, AT&T California had been steadily raising prices for its legacy POTS services since such actions became possible following the CPUC’s adoption of the Uniform Regulatory Framework in 2006, although no further increases were put into effect after 2018.¹⁴ “Harvesting” both explains and

13. CPUC 2005 SBC/AT&T merger proceeding, A.05-02-027, Declaration of Dennis W. Carlton and Hal S. Sider, Joint Applicants’ Exhibit 1, at para. 41, citing AT&T 4Q04 Earnings Conference Call, January 20, 2005, p. 8; paras. 46, 48-49. As we explained in our Phase 1 Report, in a “harvesting strategy,” the firm ceases active marketing of and organizational support for those services that it considers to be on the decline and no longer of strategic importance, relying instead upon customer inertia to maintain its revenue stream, albeit decreasing, for as long as possible. That AT&T has allowed its POTS service quality to deteriorate over the past decade even in the face of putative “competition” suggests that the carrier is and has been pursuing the very same kind of “harvesting” approach for POTS that its predecessor CLEC operation had employed back in the mid- to late-2000s. In fact, and as shown in Table 4A.10, concurrently with the deterioration in service quality that was the impetus for this Study, AT&T has effected a succession of even larger rate increases for the very services that it now seeks to exit than its CLEC predecessor had done back in the mid-2000s.

14. *Uniform Regulatory Framework*, D.06-08-030.

relies upon the seemingly inverse relationship between the impact of competition (as reflected in POTS line losses) and AT&T's service quality record. If the market were so competitive that customers confronted actual alternatives to traditional POTS services, one would expect to see the greatest loss of demand in wire centers exhibiting the poorest service quality, with only minimal losses where service quality is being maintained or improved. Yet the actual result appears to be just the opposite – line losses are greatest in those wire centers exhibiting the best performance with respect to addressing and responding to service outages.

Table 4A.10

**AT&T CALIFORNIA
BASIC RESIDENTIAL (POTS) ACCESS LINE SERVICE
RATE INCREASE HISTORY 2006-2020**

Year	Effective date	Flat-rate Residence (1FR)			Measured Rate Residence (1MR)		
		Monthly Rate	% incr since onset of URF	% incr relative to 1/1/10	Monthly Rate	% incr since onset of URF	% incr relative to 1/1/10
2006	9/1/2006	\$10.69	–		\$5.70	–	
2008	1/1/2008	\$10.94	2.34%		\$5.83	2.28%	
2009	1/1/2009	\$13.50	26.29%		\$7.28	27.72%	
2010	1/1/2010	\$16.45	53.88%	–	\$8.87	55.61%	–
2011	1/1/2011	\$19.95	86.62%	21.28%	\$12.37	117.02%	39.46%
2012	3/1/2012	\$21.00	96.45%	27.66%	\$15.37	169.65%	73.28%
2013	1/1/2013	\$23.00	115.15%	39.82%	\$18.25	220.18%	105.75%
2014	1/1/2014	\$24.00	124.51%	45.90%	\$21.25	272.81%	139.57%
2015	1/1/2015	\$24.00	124.51%	45.90%	\$21.25	272.81%	139.57%
2016	1/1/2016	\$25.00	133.86%	51.98%	\$22.25	290.35%	150.85%
2017	1/1/2017	\$26.00	143.22%	58.05%	\$23.25	307.89%	162.12%
2018	1/1/2018	\$27.00	152.57%	64.13%	\$24.25	325.44%	173.39%
2019	1/1/2019	\$27.00	152.57%	64.13%	\$24.25	325.44%	173.39%
2020	1/1/2020	\$27.00	152.57%	64.13%	\$24.25	325.44%	173.39%

Source: CPUC Communications Division Staff.



There continues to be little effective competition for POTS services. If the market were sufficiently competitive, the greatest loss of demand would occur in wire centers exhibiting the poorest service quality. In fact, the greatest drop-off in demand continues to arise in wire centers with the best service quality records.

Effects of geographic and other wire center attributes upon performance results

While examinations of individual wire centers is essential to isolating specific problem areas and sources of concern, it is also instructive to create groups of individual wire centers having similar geographic or other attributes. In Phase 1, ETI had constructed five different attribute dimensions – (1) the presence of fiber upgrades; (2) wire center size (number of access lines); (3) the percentage decrease (loss) in the number of access lines in service to competing providers and/or to competing services over the study period; (4) the AT&T Technology Field Services (TRs) organization to which the wire center has been assigned; and (5) the population density of the area served by the wire center (households per square mile). For each of these five attribute dimensions, ETI defined a set of categories whose potential effect upon service quality was then individually examined. These were summarized in Table 4A.11 in our Phase 1 Report, and in Table 4A.12 of the Phase 1 Report, we showed, for each of these five attribute dimensions, the category in which each individual AT&T wire center has been classified.¹⁵ In addition, Table 4A.12 also provided the median household income for the population served from the specified wire center. Updated versions of these two Tables are provided below:

15. For example, the Alhambra wire center in Los Angeles County (ALHBCA01) was assigned to the "Yes" category with respect to Fiber Deployment, to the "Over 20,000 Lines" category with respect to Wire Center Size; to the 70%-80% category with respect to Access Line Loss, to the "1800+ per Square Mile" category with respect to Population Density, to the San Gabriel Technical Field Services District, and to the \$55,000-\$66,999 Median Household Income category.

Table 4A.11	
AT&T CALIFORNIA WIRE CENTER ATTRIBUTE DIMENSIONS AND CATEGORIES	
Attribute Dimension	Categories
Fiber upgrade	<i>FTTN or FTTP</i> services available <i>FTTN or FTTP</i> services not available
Wire Center Size	Less than 1000 lines 1,000-2,999 lines 3,000-10,000 lines 10,001-20,000 lines over 20,000 lines
Access Line Loss	< 50% 50%-60% 60%-70% 70%-80% over 80%
Technical Field Services	Greater LA / Bakersfield San Gabriel Bay / Central Coast Southern California Northern California/Central Valley
Density (Households per square mile)	0-16 per Sq. Mile 17-94 per Sq. Mile 95-449 per Sq. Mile 450-1799 per Sq. Mile 1800 + per Sq. Mile

Table 4A.12

AT&T CALIFORNIA
WIRE CENTER ATTRIBUTE CLASSIFICATIONS

Wire Center Name	Wire Center	CLLI	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
ACTION	661410	ACTNCA11	LOS ANGELES	No	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
AGUA DULCE	661351	AGDLCA11	LOS ANGELES	No	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Greater LA / Bakersfield	\$88,000 +
AGOURA	818600	AGORCA11	LOS ANGELES	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$88,000 +
ALBANY SOLANO	510001	ALBYCA11	ALAMEDA	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
ALLEGHANEY	530425	ALGHCA11	SIERRA	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
ALHAMBRA	626601	ALHBCA01	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	San Gabriel	\$55,000-\$66,999
ALAMEDA CENTRAL	510002	ALMDCA11	ALAMEDA	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
ALPINE	619700	ALPICA12	SAN DIEGO	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Southern CA	\$67,000-\$87,999
ANGELS CAMP	209150	ANCMCA01	CALAVERAS	No	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
ANGWIN	707275	ANGWCA11	NAPA	No	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
ANAHEIM LEMON	714701	ANHMCA01	ORANGE	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$55,000-\$66,999
ANAHEIM CYPRESS	714702	ANHMCA11	ORANGE	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$55,000-\$66,999
ANAHEIM LA PALMA	714703	ANHMCA12	ORANGE	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$55,000-\$66,999
ANHM HILLS	714811	ANHMCA17	ORANGE	No	3000-10000 Lines	60%-70%	450-1799 per Sq. Mile	Southern CA	\$43,000-\$54,999
ANNAPOLIS	707322	ANNPCA11	SONOMA	Yes	3000-10000 Lines	>80%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
ANTIOCH	925003	ANTCCA11	CONTRA COSTA	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	0
APTOS	831100	APTSCA12	SANTA CRUZ	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
ARCADIA	626602	ARCDCA11	LOS ANGELES	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	San Gabriel	\$0-\$42,999
ARCATO	707276	ARCTCA11	HUMBOLDT	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
ARROYO GRANDE	805352	ARGRCA12	SAN LUIS OBISPO	No	10001-20000 Lines	70%-80%	17-94 per Sq. Mile	Bay / Central Coast	\$88,000 +
AROMAS	831144	ARMSCA11	SAN BENITO	No	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Bay / Central Coast	\$43,000-\$54,999
ARNOLD	209151	ARNLCA11	CALAVERAS	No	3000-10000 Lines	60%-70%	95-449 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
ANDERSON	530427	ARNSCA11	SHASTA	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
ARLINGTON	951704	ARTNCA11	RIVERSIDE	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
ARVIN	661353	ARVNCA11	KERN	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
SEQUOIA ASH MTN	559152	ASMTCA11	FRESNO	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
ATASCADERO	805354	ATSCCA11	SAN LUIS OBISPO	No	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
ATWATER	209153	ATWRCA12	MERCED	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
AUBURN MAIN	530428	AUBNCA01	PLACER	Yes	10001-20000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
AUBURN PLACER HILLS	530429	AUBNCA11	PLACER	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
AVILA BEACH	805355	AVBHCA11	SAN LUIS OBISPO	No	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
AVENAL	559154	AVNLCA12	KINGS	No	1001-2999 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
BAKER	760705	BAKRCA11	SAN BERNARDINO	No	0-1000 Lines	50%-60%	1800 + per Sq. Mile	Southern CA	\$0-\$42,999
BALBOA	949706	BALBCA01	ORANGE	Yes	10001-20000 Lines	60%-70%	1800 + per Sq. Mile	Southern CA	\$88,000 +
BROCKWAY	530434	BCWYCA11	PLACER	No	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
BODEGA BAY	707279	BDBACA11	SONOMA	No	1001-2999 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999

Table 4A.12: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

Wire Center Name	Wire Center	CLLI	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
BEALE	530431	BEALCA11	YUBA	No	0-1000 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
BELL	323604	BELLCA11	LOS ANGELES	Yes	10001-20000 Lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
BIGGS	530432	BGSSCA11	BUTTE	No	0-1000 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
BIG SUR	831101	BGSRCA11	MONTEREY	No	0-1000 Lines	<50%	0-16 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
BRIDGEVILLE	707281	BGVLCA11	HUMBOLDT	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
BAKERSFIELD EMPIRE	661356	BKFDCA11	KERN	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
BAKERSFIELD MAIN FAIR	661357	BKFDCA12	KERN	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
BAKERSFIELD COLUMBUS	661358	BKFDCA13	KERN	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$55,000-\$66,999
BAKERSFIELD TEMPLE	661359	BKFDCA14	KERN	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
BAKERSFIELD METTLER	661360	BKFDCA15	KERN	No	0-1000 Lines	<50%	0-16 per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
BAKERSFIELD WEST ROS	661361	BKFDCA17	KERN	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$88,000 +
BAKERSFIELD NOMAD	661409	BKFDCA19	KERN	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$88,000 +
BERKELEY BANCROFT	510004	BKLYCA01	ALAMEDA	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
BOULDER CREEK	831102	BLCKCA11	SANTA CRUZ	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
BLUE LAKE	707278	BLKCA11	HUMBOLDT	No	0-1000 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
BLAIRSDEN	530433	BLRSCA12	PLUMAS	No	1001-2999 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
BENICIA	707277	BNCICA11	SOLANO	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
BANGOR	530430	BNGRCA11	BUTTE	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
BEN LOMOND	831103	BNLMCA11	SANTA CRUZ	No	1001-2999 Lines	60%-70%	450-1799 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
BUENA PARK	714710	BNPKCA11	ORANGE	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$67,000-\$87,999
BOONVILLE	707280	BNVLC A11	MENDOCINO	No	1001-2999 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
BURBANK PALM	818605	BRBNCA11	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
BURBANK THORNTON	818606	BRBNCA13	LOS ANGELES	No	1001-2999 Lines	50%-60%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
BRADLEY	805363	BRDLCA90	MONTEREY	No	0-1000 Lines	<50%	0	Bay / Central Coast	0
BREA	714709	BREACA12	ORANGE	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$67,000-\$87,999
BURLINGAME	650006	BRLNCA01	SAN MATEO	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
BORREGO SPRINGS	760707	BRSPCA11	SAN DIEGO	No	1001-2999 Lines	60%-70%	0-16 per Sq. Mile	Southern CA	\$0-\$42,999
BRENTWOOD	925007	BRWDCA12	CONTRA COSTA	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$88,000 +
BRAWLEY	760708	BRWLCA11	IMPERIAL	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Southern CA	\$43,000-\$54,999
BISHOP RANCH	925082	BSRNCA70	CONTRA COSTA	No	3000-10000 Lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
BUTTE CITY	530435	BTYCA11	GLENN	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
BETHEL ISLAND	925008	BTISCA11	CONTRA COSTA	Yes	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Bay / Central Coast	\$43,000-\$54,999
BURRELL	559242	BURLCA11	FRESNO	No	0-1000 Lines	50%-60%	0	Northern CA / Central Valley	0
BEVERLY HILLS	310607	BVHLCA01	LOS ANGELES	Yes	Over 20000 lines	50%-60%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
BEAR VALLEY	209155	BVLYCA11	CALAVERAS	No	0-1000 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
BEAR VILLY SPRING	661403	BVSPCA11	KERN	No	1001-2999 Lines	>80%	17-94 per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
BAYWOOD PARK	805362	BYPKCA11	SAN LUIS OBISPO	No	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
CAMPO	619715	CAMPCA11	SAN DIEGO	No	1001-2999 Lines	60%-70%	0-16 per Sq. Mile	Southern CA	\$0-\$42,999
COBB MOUNTAIN	707285	CBMCA11	LAKE	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
CHICO MAIN	530438	CHICCA01	BUTTE	Yes	Over 20000 lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
CHALLENGE	530437	CHLNCA11	YUBA	No	1001-2999 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
CHUALAR	831104	CHLRCA11	MONTEREY	No	0-1000 Lines	50%-60%	0	Bay / Central Coast	0

Table 4A.12: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

Wire Center Name	Wire Center	CLLI	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
CHULA VISTA THIRD AVEI	619718	CHVSCA11	SAN DIEGO	Yes	10001-20000 Lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$43,000-\$54,999
CHULA VISTA APACHE	619719	CHVSCA12	SAN DIEGO	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
CHOWCHILLA	559158	CHWCCA11	MADERA	Yes	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
CALABASAS PARK SORRE	818666	CLBSCA11	LOS ANGELES	Yes	10001-20000 Lines	60%-70%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$88,000 +
CALABASAS LOS VIRGENI	818665	CLBSCA50	LOS ANGELES	No	3000-10000 Lines	60%-70%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$88,000 +
CULVER CITY	310608	CLCYCA11	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
COALINGA	559160	CLNGCA01	FRESNO	No	3000-10000 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
CLEAR LAKE OAKS	707283	CLOKCA11	LAKE	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
CLEARPATRIA	760713	CLPTCA11	IMPERIAL	No	1001-2999 Lines	70%-80%	0-16 per Sq. Mile	Southern CA	\$0-\$42,999
CALISTOGA	707282	CLSTCA11	NAPA	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
CLOVIS	559159	CLVSCA11	FRESNO	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
CALEXICO	760712	CLXCCA12	IMPERIAL	No	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Southern CA	\$0-\$42,999
CAMBRIA	805364	CMBACA11	SAN LUIS OBISPO	No	3000-10000 Lines	60%-70%	0-16 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
CAMP NELSON	559156	CMNLCA11	TULARE	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
CAMP PENDLETON	760714	CMPDCA01	SAN DIEGO	No	0-1000 Lines	60%-70%	0	Southern CA	0
CAMPIONVILLE	530436	CMPCVA11	YUBA	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
COMPTON	310609	CMTNCA01	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
CONCORD	925009	CNCRCA01	CONTRA COSTA	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
CANOGA PARK	818610	CNPKCA01	LOS ANGELES	Yes	Over 20000 Lines	70%-80%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
CENTRAL VALLEY	530528	CNVYCA11	SHASTA	No	3000-10000 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
CLOVERDALE	707284	CODLCA11	SONOMA	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
COLIMA DALY CITY	650010	COLACA01	SAN MATEO	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
CORDELIA	707286	CORDECA12	SOLANO	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
CORONA	951721	CORNCA11	RIVERSIDE	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$67,000-\$87,999
COLTON	909720	COTNCA11	SAN BERNARDINO	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Southern CA	\$43,000-\$54,999
CROCKETT	510011	CRCTCA02	CONTRA COSTA	No	1001-2999 Lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
CORONA DEL MAR	949722	CRDMCA11	ORANGE	Yes	10001-20000 Lines	60%-70%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
CARLSBAD HARDING	760716	CRLSCA11	SAN DIEGO	Yes	10001-20000 Lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$67,000-\$87,999
CARLSBAD LA COSTA	760717	CRLSCA12	SAN DIEGO	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
CARMEL MAIN	831105	CRMLCA11	MONTEREY	Yes	10001-20000 Lines	60%-70%	95-449 per Sq. Mile	Bay / Central Coast	\$88,000 +
CORNADO	619723	CRNDCA11	SAN DIEGO	Yes	3000-10000 Lines	60%-70%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
CORNING	530440	CRNGCA12	TEHAMA	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
CARUTHERS	559157	CRTHCA11	FRESNO	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
CARMEL VALLEY	831106	CRVYCA11	MONTEREY	No	3000-10000 Lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
COSTA MESA	949725	CMSMCA11	ORANGE	Yes	Over 20000 lines	70%-80%	17-94 per Sq. Mile	Greater LA / Bakersfield	\$88,000 +
CASTAIC	661408	CSTCA11	LOS ANGELES	Yes	10001-20000 Lines	60%-70%	95-449 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
CASTROVILLE	831107	CSVLCA11	MONTEREY	No	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
COTATI	707287	CTTICA12	SONOMA	Yes	0-1000 Lines	<50%	0	Northern CA / Central Valley	\$0-\$42,999
COULTERVILLE	209161	CTVLC A11	MARIPOSA	No	0-1000 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
COTTONWOOD	530441	CTWDCA11	TEHAMA	No	3000-10000 Lines	50%-60%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
CROWS LANDING	209162	CWLDC A12	STANISLAUS	No	0-1000 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
CAYUCOS	805366	CYCSCA11	SAN LUIS OBISPO	No	1001-2999 Lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999



Table 4A.12: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

Wire Center Name	Wire Center	CLLI	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
CLAYTON	925081	CYTNCA11	CONTRA COSTA	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$88,000 +
COYOTE WELLS	760726	CYWLCA11	IMPERIAL	No	0-1000 Lines	60%-70%	0-16 per Sq. Mile	Southern CA	\$0-\$42,999
DANVILLE MAIN 12	925012	DAVLCA12	CONTRA COSTA	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
DANVILLE TASSAJARA 13	925085	DAVLCA13	CONTRA COSTA	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$88,000 +
DAVIS	530442	DAVSCA11	YOLO	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
DELANO	661367	DELNCA11	TULARE	Yes	10001-20000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
DINUBA	559164	DINBCA01	TULARE	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
DIXON	707443	DIXNCA11	SOLANO	Yes	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
DEL MAR	858727	DLMRCA12	SAN DIEGO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
DEL REY	559163	DLRYCA11	FRESNO	No	0-1000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
DULZURA	619728	DLZRCA11	SAN DIEGO	No	1001-2999 Lines	<50%	0-16 per Sq. Mile	Southern CA	\$67,000-\$87,999
DUNNIGAN	530445	DNGNCA12	YOLO	No	0-1000 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
DUNSMUIR	530446	DNSMCA11	SISKIYOU	No	1001-2999 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
ALTA DUTCH FLATS	530447	DTFLCA11	PLACER	No	1001-2999 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
DOWNIEVILLE	530444	DWNVCA11	SIERRA	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
EDWARDS	661369	EDWRCA01	KERN	No	0-1000 Lines	60%-70%	0-16 per Sq. Mile	Greater LA / Bakersfield	\$55,000-\$66,999
ELK CREEK	530448	EKCKCA11	GLENN	No	0-1000 Lines	50%-60%	0	Northern CA / Central Valley	0
EL CAJON	619729	ELCJCA11	SAN DIEGO	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$55,000-\$66,999
EL CENTRO	760730	ELCNCA01	IMPERIAL	No	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Southern CA	\$43,000-\$54,999
ELK	707288	ELKCA11	MENDOCINO	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
EL MONTE	626611	ELMNCA01	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	San Gabriel	\$43,000-\$54,999
RICH APPIAN WAY EL SOF	510013	ELSBCA11	CONTRA COSTA	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
EL SEGUNDO DOUGLAS	310613	ELSGCA12	LOS ANGELES	Yes	10001-20000 Lines	60%-70%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
EL TORO	949731	ELTRCA11	ORANGE	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
ENCINITAS	760732	ENCTCA12	SAN DIEGO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
EARLIMART	661368	ERLMCA11	TULARE	No	1001-2999 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
ESCALON	209192	ESCLCA11	SAN JOAQUIN	Yes	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
ESCONDIDO	760733	ESCNCA01	SAN DIEGO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$55,000-\$66,999
ESPARTO	530450	ESPRCA11	YOLO	No	1001-2999 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
EUREKA	707289	EURKCA01	HUMBOLDT	No	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
FELTON	831108	FETNCA11	SANTA CRUZ	No	3000-10000 Lines	60%-70%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
FALLBROOK	760735	FLBKCA12	SAN DIEGO	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
FILLMORE	805370	FLMRCA11	VENTURA	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Southern CA	\$55,000-\$66,999
FOLSOM NIMBUS	916453	FLSMCA12	SACRAMENTO	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$88,000 +
FOLSOM EL DORADO HILL	916454	FLSMCA13	SACRAMENTO	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
FOLSOM BLUE RAVINE	916536	FLSMCA14	SACRAMENTO	Yes	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
FONTANA	909736	FNTACA11	SAN BERNARDINO	Yes	Over 20000 lines	>80%	95-449 per Sq. Mile	Southern CA	\$55,000-\$66,999
FIREBAUGH	559166	FRBHCA11	FRESNO	No	1001-2999 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
FURNACE CREEK	760738	FRCKCA11	SAN BERNARDINO	No	0-1000 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
FAIRFIELD	707290	FRFDCA01	SOLANO	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Southern CA	\$55,000-\$66,999
FRENCH GULCH	530455	FRGLCA11	SHASTA	No	0-1000 Lines	50%-60%	0	Northern CA / Central Valley	0
FREMONT MAIN 11	510014	FRMTCA11	ALAMEDA	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +

Table 4A.12: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

Wire Center Name	Wire Center	CLLI	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
FREMONT ADAMS OLIVER	510015	FRMTCA12	ALAMEDA	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
FAIR OAKS	916451	FROKCA11	SACRAMENTO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
FRESNO MAIN	559168	FRSNCA01	FRESNO	Yes	Over 20000 lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
FRESNO BALDWIN	559169	FRSNCA11	FRESNO	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
FRESNO CLINTON	559172	FRSNCA12	FRESNO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
FRESNO SIERRA	559170	FRSNCA13	FRESNO	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
FRESNO WEST HIGHWAY	559245	FRSNCA14	FRESNO	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
FRESNO WOODWARD	559247	FRSNCA15	FRESNO	Yes	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
FARMERSVILLE	559165	FRVLC A11	TULARE	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
FORESTVILLE	707291	FSVLC A11	SONOMA	No	1001-2999 Lines	60%-70%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
FORT BRAGG	707292	FTBRCA02	MENDOCINO	No	3000-10000 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
FORTUNA	707293	FTUNCA11	HUMBOLDT	No	3000-10000 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
FULLERTON	714737	FVFNCA01	ORANGE	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$67,000-\$87,999
FIVE POINTS	559167	FVFNCA11	FRESNO	No	0-1000 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
FRAZIER PARK	661371	FZPKCA11	KERN	No	1001-2999 Lines	60%-70%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
GALT	209171	GALTC A11	SACRAMENTO	Yes	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
GLENDALE	818614	GLDLCA11	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$55,000-\$66,999
GREEN FIELD	831109	GNFDCA11	MONTEREY	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Bay / Central Coast	\$43,000-\$54,999
GONZALES	831110	GNZLCA11	MONTEREY	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Bay / Central Coast	\$43,000-\$54,999
GERBER	530458	GRBRCA11	TEHAMA	No	0-1000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
GRIDLEY	530461	GRDLCA11	BUTTE	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
GARDENA	310615	GRDNCA01	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$55,000-\$66,999
EUCLID	714739	GRGVCA01	ORANGE	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$43,000-\$54,999
GRENADA	530460	GRNDCA13	SISKIYOU	No	0-1000 Lines	70%-80%	0	Northern CA / Central Valley	0
GEORGETOWN	530457	GRTWCA11	EL DORADO	No	1001-2999 Lines	<50%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
GRASS VALLEY	530459	GRVYCA01	NEVADA	No	Over 20000 lines	60%-70%	95-449 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
LAKE OF THE PINE	530532	GRVYCA11	NEVADA	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
WILDWOOD	530535	GRVYCA12	NEVADA	No	3000-10000 Lines	60%-70%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
GOSHEN	559246	GSHNCA11	TULARE	No	1001-2999 Lines	50%-60%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
GUALALA	707295	GULLCA11	MENDOCINO	No	1001-2999 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
GUSTINE	209174	GUSTCA11	MERCED	No	1001-2999 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
GUERNEVILLE	707296	GUVLCA11	SONOMA	No	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
GROVELAND	209173	GVLDCA11	TUOLUMNE	No	3000-10000 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
GEYERSVILLE	707294	GYVLC A11	SONOMA	No	0-1000 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
GAZELLE	530456	GZVLC A11	SISKIYOU	No	0-1000 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
HERALD	209176	HERLCA11	SACRAMENTO	No	1001-2999 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
HIGHLAND	909741	HGLDCA11	SAN BERNARDINO	Yes	10001-20000 Lines	>80%	95-449 per Sq. Mile	Southern CA	\$88,000 +
HUGHSON	209177	HGSNCA11	STANISLAUS	Yes	1001-2999 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
HEALDSBURG	707297	HLBGCA11	SONOMA	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
HOLLISTER	831111	HLSTCA11	SAN BENITO	Yes	10001-20000 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
HOLTVILLE	760742	HLVLC A11	IMPERIAL	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
HOLLYWOOD	323616	HLWDCA01	LOS ANGELES	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999

Table 4A.12: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

Wire Center Name	Wire Center	CLLI	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
HALF MOON BAY	650016	HMBACA12	SAN MATEO	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Bay / Central Coast	\$88,000 +
HAMILTON CITY	530462	HMCYCA11	GLENN	No	0-1000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
HOMELWOOD	530463	HMWDCA11	EL DORADO	No	3000-10000 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
HANFORD	559175	HNFRCA01	KINGS	Yes	10001-20000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
HUNTINGTON PARK	323617	HNPKA01	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
HOPLAND	707298	HPLDCA12	MENDOCINO	No	0-1000 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
HORN BROOK	530464	HRBKCA11	SISKIYOU	No	0-1000 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
HERCULES PINOLE	510080	HRCLCA11	CONTRA COSTA	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
HURON	559178	HURNCA11	FRESNO	No	1001-2999 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
HAWTHORNE	310618	HWTHCA01	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
HYDESVILLE	707299	HYVLCA11	HUMBOLDT	No	0-1000 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
HAYWARD MAIN	510017	HYWRCA01	ALAMEDA	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
HAYWARD DEPOT	510018	HYWRCA11	ALAMEDA	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
IGNACIO	415019	IGNCCA12	MARIN	No	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
INGLEWOOD	310619	IGWDCA01	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
IMPERIAL BEACH	619744	IMBHCA11	SAN DIEGO	Yes	3000-10000 Lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$43,000-\$54,999
IMPERIAL	760743	IMPRCA11	IMPERIAL	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Southern CA	\$67,000-\$87,999
INVERNESS	415020	INVRCA11	MARIN	No	0-1000 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
IONE	209179	IONECA11	AMADOR	No	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
IRVINE	949745	IRVNCA01	ORANGE	Yes	10001-20000 Lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$88,000 +
IRVINE AIRPORT	949807	IRVNCA11	ORANGE	Yes	10001-20000 Lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$67,000-\$87,999
SPECTRUM IRVINE	949810	IRVNCA12	ORANGE	Yes	3000-10000 Lines	<50%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
IVANHOE	559180	IVNHCA11	TULARE	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
JAMUL	619851	JAMLCA60	SAN DIEGO	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
JACUMBA	619746	JCMBCA11	SAN DIEGO	No	1001-2999 Lines	60%-70%	0	Southern CA	0
JACKSON	209181	JCSNCA01	AMADOR	No	3000-10000 Lines	50%-60%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
JAMESTOWN	209182	JMTWCA11	TUOLUMNE	No	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
JULIAN	760748	JULNCA12	SAN DIEGO	No	1001-2999 Lines	50%-60%	17-94 per Sq. Mile	Southern CA	\$43,000-\$54,999
KINGSBURG	559183	KGBGCA11	TULARE	No	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
KING CITY	831112	KGCYCA11	MONTEREY	No	3000-10000 Lines	60%-70%	0-16 per Sq. Mile	Bay / Central Coast	\$43,000-\$54,999
KELSEYVILLE	707300	KLVLCA12	LAKE	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
KNIGHTS FERRY	209184	KNFYCA11	STANISLAUS	No	3000-10000 Lines	50%-60%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
KYBURZ	530465	KYBRCA11	EL DORADO	No	0-1000 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
LA CANADA OAK GROVE	818621	LACNCA11	LOS ANGELES	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$88,000 +
LA CRESCENTA	650021	LACRCA11	LOS ANGELES	No	0-1000 Lines	50%-60%	0-16 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
LA HONDA	858750	LAHNCA11	SAN MATEO	Yes	10001-20000 Lines	60%-70%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
LA JOLLA GIRARD	661372	LAMTCA11	SAN DIEGO	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$55,000-\$66,999
LA MESA	661372	LAMTCA11	KERN	No	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
LAMONT	559186	LATNCA11	FRESNO	No	0-1000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
LATON	209190	LCFRCA11	SAN JOAQUIN	No	1001-2999 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
LOCKEFORD	661373	LEBCCA11	KERN	No	0-1000 Lines	50%-60%	0-16 per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999

Table 4A.12: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

Wire Center Name	Wire Center	CLLI	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
PINE MOUNTAIN	661404	LEBCCA12	KERN	No	1001-2999 Lines	50%-60%	0-16 per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
LEMORE MAIN	559188	LEMRA11	KINGS	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
LEMORE WYMAN	559189	LEMRA12	KINGS	No	0-1000 Lines	>80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
LAFAYETTE	925022	LFYTC11	CONTRA COSTA	Yes	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
LAGUNA NIGUEL	949749	LGNGCA12	ORANGE	Yes	10001-20000 Lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$88,000 +
LE GRANDE	209187	LGRDCA11	MERCED	No	0-1000 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
LAGRANDE D PEDRO	209185	LGRNCA12	STANISLAUS	No	1001-2999 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
LAKE BERRYESSA	707301	LKBRCA11	NAPA	No	0-1000 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
LAKE LOS ANGELES	661374	LKLACA11	LOS ANGELES	No	1001-2999 Lines	70%-80%	0-16 per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
LAKEPORT	707302	LKPTCA02	LAKE	No	3000-10000 Lines	50%-60%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
LAKESIDE	619751	LKSDCA12	SAN DIEGO	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Southern CA	\$67,000-\$87,999
LOYALTON	530471	LLTNCA11	PLUMAS	No	1001-2999 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
LINCOLN	916467	LNCLCA11	PLACER	Yes	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
LEONA VALLEY	661374	LNVC11	LOS ANGELES	No	1001-2999 Lines	60%-70%	0-16 per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
LODI	209191	LODICA01	SAN JOAQUIN	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
LOLITA	707303	LOLTCA11	HUMBOLDT	No	0-1000 Lines	60%-70%	0	Northern CA / Central Valley	0
LOOMIS	916470	LOMSCA11	PLACER	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
LOMITA	310622	LOMTCA11	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$55,000-\$66,999
LARKSPUR CORTE MADEI	415023	LRKSCA11	MARIN	Yes	10001-20000 Lines	60%-70%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
MADISON 02 MO	213624	LSANCA02	LOS ANGELES	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
MADISON 03 MA	213625	LSANCA03	LOS ANGELES	Yes	10001-20000 Lines	50%-60%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
LSAN PLEASANT	323626	LSANCA05	LOS ANGELES	No	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
UNION	213627	LSANCA06	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
LSAN AIRPORT	310628	LSANCA07	LOS ANGELES	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
LSAN MELROSE	323629	LSANCA08	LOS ANGELES	No	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
RICHMOND	213630	LSANCA09	LOS ANGELES	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$55,000-\$66,999
LSAN WEBSTER	323631	LSANCA10	LOS ANGELES	No	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
RAMPART	213632	LSANCA11	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
NORMANDY	323633	LSANCA12	LOS ANGELES	No	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
LSAN PLYMOUTH	323634	LSANCA13	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
LSAN ADAMS	323635	LSANCA14	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
LSAN AXMINSTER	323636	LSANCA15	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
LSAN CAPITOL	323638	LSANCA23	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	San Gabriel	\$0-\$42,999
LSAN SUNSET	323640	LSANCA29	LOS ANGELES	Yes	10001-20000 Lines	60%-70%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
LSAN ANGELES	323641	LSANCA34	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	San Gabriel	\$67,000-\$87,999
LSAN MONTEBELLO	323642	LSANCA35	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	San Gabriel	\$0-\$42,999
LSAN REPUBLIC	323643	LSANCA38	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
LSAN CLINTON	323644	LSANCA56	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	San Gabriel	\$55,000-\$66,999
LOS ALTOS	650024	LSATCA11	SANTA CLARA	Yes	10001-20000 Lines	60%-70%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
LOS BANOS	209193	LSBNCA12	MERCED	Yes	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
LOS MOLINOS	530469	LSMLCA11	TEHAMA	No	1001-2999 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
LEWISTON	530466	LSTNCA11	TRINITY	No	0-1000 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999

Table 4A.12: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

Wire Center Name	Wire Center	CLLI	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
LITTLE ROCK	661375	LTRKCA11	LOS ANGELES	No	3000-10000 Lines	70%-80%	0-16 per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
LIVERMORE	925025	LVMRCA11	ALAMEDA	Yes	Over 20000 lines	60%-70%	95-449 per Sq. Mile	Bay / Central Coast	\$88,000 +
LIVE OAK	530468	LVOKCA11	SUTTER	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
LOWER LAKE	707304	LWLKCA11	LAKE	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
MADERA MAIN	559194	MADRCA11	MADERA	Yes	10001-20000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
MADERA BONNADELLI	559243	MADRCA12	MADERA	Yes	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
MARINA	831113	MARNCA11	MONTEREY	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
MODESTO MAIN	209199	MDSTCA02	STANISLAUS	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
MODESTO KELLOG SOUT	209200	MDSTCA03	STANISLAUS	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
MODESTO KINGSWOOD C	209201	MDSTCA04	STANISLAUS	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
MODESTO TALLY	209248	MDSTCA05	STANISLAUS	Yes	3000-10000 Lines	>80%	1800 + per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
MODESTO DAVIS	209249	MDSTCA52	STANISLAUS	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
MIDDLETOWN	707306	MDTWCA11	LAKE	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
MOKELUMNE HILL	209202	MKHLCA12	CALAVERAS	No	0-1000 Lines	50%-60%	0	Northern CA / Central Valley	0
MCKINLEYVILLE	707307	MKVLCA11	HUMBOLDT	No	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
MILLBRAE	650026	MLBRCA11	SAN MATEO	Yes	3000-10000 Lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
MILPITAS	408114	MLPSCA11	SANTA CLARA	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
MILL VALLEY	415027	MLVYCA01	MARIN	Yes	10001-20000 Lines	60%-70%	95-449 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
MENDOCINO	707305	MNDCCA11	MENDOCINO	No	3000-10000 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
MENDOTA	559195	MNDTCA11	FRESNO	No	1001-2999 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
MENLO PARK	650028	MNPKCA11	SAN MATEO	Yes	10001-20000 Lines	60%-70%	95-449 per Sq. Mile	Bay / Central Coast	\$88,000 +
MONTE RIO	707309	MNRICA11	SONOMA	No	1001-2999 Lines	50%-60%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
MOJAVE	661376	MOJVCA01	KERN	No	1001-2999 Lines	60%-70%	0-16 per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
MORAGA	925029	MORGCA12	CONTRA COSTA	No	3000-10000 Lines	60%-70%	95-449 per Sq. Mile	Bay / Central Coast	\$88,000 +
MORRO BAY	805378	MRBACA11	SAN LUIS OBISPO	No	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$43,000-\$54,999
MERCED	209196	MRCDCA01	MERCED	Yes	Over 20000 lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
MERIDAN	530473	MRDNCA11	SUTTER	No	0-1000 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
MIRANDA	707308	MRNDCA11	HUMBOLDT	No	0-1000 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
MURPHYS	209203	MRPHCA11	CALAVERAS	No	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
MOORPARK	805377	MRPKCA12	VENTURA	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$88,000 +
MARTINEZ	925030	MRTZCA11	CONTRA COSTA	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
MOSS BEACH	650031	MSBHCA11	SAN MATEO	No	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$88,000 +
MISSION VIEJO	949806	MSVJCAAT	ORANGE	Yes	3000-10000 Lines	60%-70%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
MONTAGUE	530529	MTAGCA11	SISKIYOU	No	1001-2999 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
MOUNTAIN PASS	760753	MTPSCA11	SAN BERNARDINO	No	0-1000 Lines	50%-60%	0	Northern CA	0
MONTEREY	831115	MTRYCA01	MONTEREY	No	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
MOUNT SHASTA	530474	MTSHCA12	SISKIYOU	No	3000-10000 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
MOUNTAIN VIEW	650032	MTVWCA11	SANTA CLARA	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
MARYSVILLE	530472	MYVICA01	YUBA	Yes	10001-20000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
NAPA	707310	NAPACA01	NAPA	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
NICOLAUS	530477	NCLSCA12	SUTTER	No	0-1000 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
EDGEWOOD N HIGHL	916478	NHLDCA11	SACRAMENTO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999

Table 4A.12: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

Wire Center Name	Wire Center	CLLI	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
NEWHALL	661379	NHLLCA01	LOS ANGELES	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$88,000 +
NHWD LANKERSHIM	818646	NHWDCA01	LOS ANGELES	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
NHWD MAGNOLIA	818647	NHWDCA02	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$55,000-\$66,999
NICE	707311	NICECA11	LAKE	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
NICASIO	415033	NICSCA11	MARIN	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
NILAND MAIN	760855	NILDCA11	IMPERIAL	No	0-1000 Lines	70%-80%	0-16 per Sq. Mile	Southern CA	\$0-\$42,999
NINLAND BOMBAY BEACH	760856	NILDCA12	IMPERIAL	No	0-1000 Lines	>80%	0-16 per Sq. Mile	Southern CA	\$0-\$42,999
NIPOMO	805380	NIPMCA11	SAN LUIS OBISPO	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
NORTHBRIDGE	818648	NORGCA11	LOS ANGELES	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
WABASH	916479	NSRCRA11	SACRAMENTO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
NORTH NATOMAS	916537	NSRCRA12	SACRAMENTO	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
NORTH SAN JUAN	530480	NSJNCA11	NEVADA	No	1001-2999 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
NATIONAL CITY HIGHLAND	619754	NTCYCA11	SAN DIEGO	Yes	3000-10000 Lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$0-\$42,999
NEVADA CITY	530475	NVCYCA11	NEVADA	No	3000-10000 Lines	50%-60%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
NEWCASTLE	916476	NWCSCA11	PLACER	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
NEWMAN	209204	NWMNCA12	STANISLAUS	No	1001-2999 Lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
NORTH YUBA	530481	NYUBCA11	YUBA	No	1001-2999 Lines	50%-60%	0	Northern CA / Central Valley	0
OCCIDENTAL	707312	OCNDCA11	SAN DIEGO	No	1001-2999 Lines	50%-60%	17-94 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
OCEANSIDE MISSION	760758	OCSDCA11	SAN DIEGO	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Southern CA	\$55,000-\$66,999
OJAI	805382	OJAICA11	VENTURA	No	3000-10000 Lines	70%-80%	0-16 per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
OAKDALE	209205	OKDLCA11	STANISLAUS	Yes	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
OAKLAND FRANKLIN	510036	OKLDA03	ALAMEDA	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$43,000-\$54,999
OAKLAND KELLOGFRUITV	510037	OKLDA04	ALAMEDA	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$0-\$42,999
OAKLAND 45TH OLYMPIC	510039	OKLDA11	ALAMEDA	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
OAKLAND HOLLY	510039	OKLDA12	ALAMEDA	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
OAKLAND MOUNTAIN	510040	OKLDA13	ALAMEDA	Yes	10001-20000 Lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
OAKLEY	925041	OKLYCA11	CONTRA COSTA	Yes	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
OAKVIEW	805381	OKVWCA11	VENTURA	No	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
EXPORT OILDALE	661383	OLDLCA11	KERN	Yes	10001-20000 Lines	70%-80%	17-94 per Sq. Mile	Greater LA / Bakersfield	\$55,000-\$66,999
ORANGE COVE	559206	ORCVCA11	FRESNO	No	1001-2999 Lines	70%-80%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$55,000-\$66,999
ORLAND	530483	ORLDA11	GLENN	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
ORINDA	925042	ORNDA11	CONTRA COSTA	Yes	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
ORANGE CHAPMAN	714759	ORNGCA11	ORANGE	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
ORANGE OLIVE	714760	ORNGCA13	ORANGE	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$67,000-\$87,999
ORANGE WEST	714761	ORNGCA14	ORANGE	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
OROSI	559207	ORSICA11	TULARE	No	3000-10000 Lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$55,000-\$66,999
ORANGEVALE	916482	ORVACA11	SACRAMENTO	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
OROVILLE MAIN	530484	ORVLCA11	BUTTE	No	10001-20000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
OROVILLE EAST	530485	ORVLCA12	BUTTE	No	10001-20000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
OTAY MESA	619853	OTMSCA11	SAN DIEGO	Yes	3000-10000 Lines	60%-70%	95-449 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
PAUMIA VALLEY	760764	PALACA11	SAN DIEGO	No	1001-2999 Lines	50%-60%	17-94 per Sq. Mile	Southern CA	\$88,000 +
GARNET	858762	PCBHCA01	SAN DIEGO	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$67,000-\$87,999

Table 4A.12: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

Wire Center Name	Wire Center	CLLI	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
HORNBLEND	858763	PCBHCA11	SAN DIEGO	Yes	1001-2999 Lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$67,000-\$87,999
PACIFICA	650043	PCFCA11	SAN MATEO	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
PEDLEY	951765	PDLCA11	RIVERSIDE	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$55,000-\$66,999
PIRU	805386	PIRUC11	VENTURA	No	0-1000 Lines	70%-80%	0-16 per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
PALO ALTO MAIN	650045	PLALCA02	SANTA CLARA	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
PALO ALTO SOUTH	650046	PLALCA12	SANTA CLARA	Yes	10001-20000 Lines	60%-70%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
PLACENTIA	714767	PLCNCA11	ORANGE	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$67,000-\$87,999
PALMDALE	661384	PLDLCA01	LOS ANGELES	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
PALMDALE EAST 47TH ST	661412	PLDLCA11	LOS ANGELES	Yes	Over 20000 lines	>80%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
PLEASANT GROVE	916491	PLGVCA12	PLACER	No	0-1000 Lines	50%-60%	0	Northern CA / Central Valley	0
PLYMOUTH	209212	PLMOCA11	AMADOR	No	3000-10000 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
PLANADA	209211	PLNDCA11	MERCED	No	1001-2999 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
PLEASANTON MAIN HOPY	925047	PLTNCA12	ALAMEDA	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$88,000 +
PLEASANTON HACIENDA	925083	PLTNCA13	ALAMEDA	No	3000-10000 Lines	60%-70%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
PLACERVILLE MAIN	530489	PLVCA11	EL DORADO	No	Over 20000 lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
PLACERVILLE NIAGARA	530490	PLVCA12	EL DORADO	No	3000-10000 Lines	60%-70%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
POINT ARENA	707315	PNARCA11	MENDOCINO	No	1001-2999 Lines	<50%	0	Northern CA / Central Valley	0
PINECREST	209209	PNRCRA11	TUOLUMNE	No	1001-2999 Lines	<50%	0	Northern CA / Central Valley	0
PINE VALLEY	619766	PNVCA11	SAN DIEGO	No	1001-2999 Lines	70%-80%	0-16 per Sq. Mile	Southern CA	\$67,000-\$87,999
POWAY MIDLAND	858768	POWYCA11	SAN DIEGO	Yes	3000-10000 Lines	60%-70%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
PEPPERWOOD	707313	PPWDCA11	HUMBOLDT	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
PARADISE MAIN	530486	PRDSCA11	BUTTE	No	10001-20000 Lines	60%-70%	95-449 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
PARADISE PINES	530487	PRDSCA12	BUTTE	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
PARLIER	559208	PRLRCA11	FRESNO	Yes	1001-2999 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
PARAMOUNT	562649	PRMTCA01	FRESNO	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
POINT REYES	415048	PRSNCA11	MARIN	No	1001-2999 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
PITTSBURG MAIN	925049	PSBGCA01	CONTRA COSTA	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
PITTSBURG BAY POINT W	925050	PSBGCA11	CONTRA COSTA	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
PISMO BEACH	805387	PSBHCA11	SAN LUIS OBISPO	No	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
PESCADERO	650051	PSCDCA11	SAN MATEO	No	1001-2999 Lines	<50%	0	Bay / Central Coast	0
PASADENA MT WILSON G	626650	PSDNCA11	LOS ANGELES	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	San Gabriel	\$67,000-\$87,999
PASADENA LAKE	626651	PSDNCA12	LOS ANGELES	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	San Gabriel	\$67,000-\$87,999
PASKENTA	805388	PSKNCA11	TEHAMA	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
PASO ROBLES	530488	PSRBCA01	SAN LUIS OBISPO	No	10001-20000 Lines	60%-70%	17-94 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
PETALUMA	707314	PTLMCA01	SONOMA	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
PORTOLA	530492	PTOLCA01	PLUMAS	No	1001-2999 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
PORTERVILLE	559213	PTVLC11	TULARE	Yes	Over 20000 lines	60%-70%	95-449 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
POTTER VALLEY	707316	PTVYCA11	MENDOCINO	No	1001-2999 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
PIXLEY	559210	PXLYCA11	TULARE	No	1001-2999 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
QUINCY	530493	QNCYCA12	PLUMAS	No	3000-10000 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
RAMONA	760769	RAMNCA11	SAN DIEGO	Yes	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Southern CA	\$67,000-\$87,999
RANCHO BERNARDO	858770	RBRNCA11	SAN DIEGO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$88,000 +

Table 4A.12: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

Wire Center Name	Wire Center	CLL	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
STANFORD RANCH	916541	RKLCOA01	PLACER	Yes	10001-20000 Lines	>80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
ROCKLIN	916527	RKLCOA11	PLACER	Yes	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
RICHMOND SF	510052	RCMDCA11	CONTRA COSTA	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
RICHVALE	530496	RCVACA11	BUTTE	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
RED BLUFF	530494	RDBLCA01	TEHAMA	No	10001-20000 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
REDWOOD CITY	650053	RDCYCA01	SAN MATEO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
REDDING MAIN	530495	RDNGCA02	SHASTA	Yes	Over 20000 lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
REDDING ENTERPR	530531	RDNGCA11	SHASTA	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
RESEDA	818652	RESOCA11	LOS ANGELES	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$55,000-\$66,999
RIO DELL	707317	RIDECA11	HUMBOLDT	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
RIO LINDA	916526	RILNCA12	SACRAMENTO	No	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
RIALTO	909773	RILTCA11	SAN BERNARDINO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$43,000-\$54,999
RANCHO MURIETTA	916533	RNMCA11	SACRAMENTO	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
RANCHO PENASQUITOS	858854	RNPSCA11	SAN DIEGO	Yes	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
RANCHO SAN DIEGO	619852	RNSDCA11	SAN DIEGO	Yes	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$67,000-\$87,999
ROSEMEAD	626654	ROSMCA11	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	San Gabriel	\$43,000-\$54,999
RANCHO SANTA FE	858771	RSFECA12	SAN DIEGO	Yes	3000-10000 Lines	60%-70%	95-449 per Sq. Mile	Southern CA	\$88,000 +
ROSAMOND	661388	RSMGCA11	KERN	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
R S MARGARITA	949808	RSMGCA11	ORANGE	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA	\$88,000 +
ROHNERT PARK	707337	RTPKCA11	SONOMA	Yes	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
RIVERDALE	559215	RVDLCA11	FRESNO	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
RIVERBANK	209214	RVRBCA11	STANISLAUS	Yes	3000-10000 Lines	>80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
RIVERSIDE ORANGE	951774	RVSDCA01	RIVERSIDE	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
WOODCREST	951775	RVSDCA11	RIVERSIDE	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$55,000-\$66,999
SAUGUS	661407	SAGSCA11	LOS ANGELES	Yes	10001-20000 Lines	>80%	95-449 per Sq. Mile	Southern CA	\$88,000 +
SANTEE	619795	SANTCA01	SAN DIEGO	Yes	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
SATICOY	805391	SATCCA12	VENTURA	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Southern CA	\$67,000-\$87,999
SEBASTAPOL	707321	SBSTCA11	SONOMA	No	10001-20000 Lines	70%-80%	1800 + per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
SACRAMENTO MN	916497	SCRMCA01	SACRAMENTO	Yes	Over 20000 lines	60%-70%	95-449 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
SCRM IVANHOE	916498	SCRMCA02	SACRAMENTO	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
SCRM GARDEN	916499	SCRMCA03	SACRAMENTO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
SCRM GLADSTONE	916500	SCRMCA11	SACRAMENTO	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
SCRM EMPIRE	916501	SCRMCA12	SACRAMENTO	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
SCRM FRUITRIDGE	916502	SCRMCA13	SACRAMENTO	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
SCOTT'S VALLEY	831116	SCVYCA01	SANTA CRUZ	Yes	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
SODA SPRINGS	530508	SDSPCA11	NEVADA	No	1001-2999 Lines	50%-60%	0	Bay / Central Coast	\$88,000 +
SELMA	559217	SELMCA11	FRESNO	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
SEASIDE	831117	SESDCA11	MONTEREY	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
SOUTH GATE	323655	SGATCA01	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
SHINGLE SPRINGS	530504	SGSPCA11	EL DORADO	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
SHAFTER	661392	SHFTCA11	KERN	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
SHASTA LAKE	530503	SHLKCA01	SHASTA	No	0-1000 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999

Table 4A.12: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

Wire Center Name	Wire Center	CLLI	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
SHERMAN OAKS	818656	SHOKCA01	LOS ANGELES	No	Over 20000 lines	60%-70%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$88,000 +
SHOSHONE	760796	SHSHCA11	SAN BERNARDINO	No	0-1000 Lines	<50%	0	Southern CA	0
SIMI	805393	SIMICA11	VENTURA	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$88,000 +
S J CAPISTRANO	949791	SJCPCA12	ORANGE	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Southern CA	\$67,000-\$87,999
STOCKTON MAIN	209220	SKTNCA01	SAN JOAQUIN	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
STOCKTON GRANITE	209221	SKTNCA11	SAN JOAQUIN	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
STOCKTON ASHLEY	209222	SKTNCA12	SAN JOAQUIN	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
STOCKTON REDWOOD	209223	SKTNCA14	SAN JOAQUIN	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
SOLEDAD	831118	SLDDCA11	MONTEREY	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Bay / Central Coast	\$43,000-\$54,999
SOLEMINT	661394	SLMNCA11	LOS ANGELES	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
SALINAS MAIN	831119	SLNSCA01	MONTEREY	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$43,000-\$54,999
HICKORY SALINAS	831120	SLNSCA11	MONTEREY	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
GLENVIEW	831121	SLNSCA12	MONTEREY	No	1001-2999 Lines	60%-70%	95-449 per Sq. Mile	Bay / Central Coast	\$88,000 +
HUNTER	831122	SLNSCA13	MONTEREY	No	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Bay / Central Coast	\$88,000 +
MORO	831123	SLNSCA14	MONTEREY	No	3000-10000 Lines	60%-70%	95-449 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
SILVERADO	714797	SLVRCA11	ORANGE	No	0-1000 Lines	50%-60%	17-94 per Sq. Mile	Southern CA	\$88,000 +
SMARTSVILLE	530507	SMAVCA11	YUBA	No	0-1000 Lines	50%-60%	0	Northern CA / Central Valley	0
SAN ANDREAS	209216	SNADCA11	CALAVERAS	No	3000-10000 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
BUSH	714788	SNANCA01	ORANGE	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Northern CA	\$43,000-\$54,999
BRISTOL	714789	SNANCA11	ORANGE	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$67,000-\$87,999
SANTA ANA WEST SNAN E	714804	SNANCA12	ORANGE	Yes	10001-20000 Lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$55,000-\$66,999
SAN ARDO	831124	SNARCA11	MONTEREY	No	0-1000 Lines	50%-60%	0	Bay / Central Coast	0
SAN BRUNO	650055	SNBUCA02	SAN MATEO	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
SAN CLEMENTE	949776	SNCLCA12	ORANGE	No	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Southern CA	\$88,000 +
SAN CARLOS	650056	SNCRCA11	SAN MATEO	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
SANTA CRUZ	831125	SN CZCA01	SANTA CRUZ	Yes	Over 20000 lines	60%-70%	95-449 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
SANTA CRUZ CAPITOLA	831126	SN CZCA11	SANTA CRUZ	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
SNDG C STREET	619777	SNDGCA01	SAN DIEGO	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Southern CA	\$43,000-\$54,999
SNDG UNIVERSITY	619778	SNDGCA02	SAN DIEGO	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Southern CA	\$67,000-\$87,999
SNDG LINDA VISTA	858779	SNDGCA03	SAN DIEGO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$67,000-\$87,999
SNDG SAIPAN	619780	SNDGCA05	SAN DIEGO	Yes	10001-20000 Lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$55,000-\$66,999
SNDG 37TH STREET	619781	SNDGCA06	SAN DIEGO	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$43,000-\$54,999
SNDG COLLEGE	619782	SNDGCA11	SAN DIEGO	Yes	10001-20000 Lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$55,000-\$66,999
SNDG MARKET STREET	619783	SNDGCA12	SAN DIEGO	Yes	10001-20000 Lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$55,000-\$66,999
SNDG TENNYSON	619784	SNDGCA14	SAN DIEGO	Yes	10001-20000 Lines	70%-80%	1800 + per Sq. Mile	Southern CA	\$43,000-\$54,999
SNDG REGENTS	858785	SNDGCA15	SAN DIEGO	Yes	Over 20000 lines	60%-70%	450-1799 per Sq. Mile	Southern CA	\$55,000-\$66,999
SNDG MIRA MESA	858786	SNDGCA16	SAN DIEGO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$67,000-\$87,999
SF BUSH PINE	415058	SNFCCA01	SAN FRANCISCO	Yes	Over 20000 lines	50%-60%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
SF MARKET MCCOPPIN	415059	SNFCCA04	SAN FRANCISCO	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$43,000-\$54,999
SF MISSION 25TH ST	415060	SNFCCA05	SAN FRANCISCO	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
SF JUNIPER ONONDAGA	415061	SNFCCA06	SAN FRANCISCO	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
SF LARKIN STEINER	415067	SNFCCA12	SAN FRANCISCO	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999

Table 4A.12: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

Wire Center Name	Wire Center	CLLI	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
SF EVERGREEN 6TH AVE	415064	SNFCCA13	SAN FRANCISCO	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
SF MONTROSE 19TH	415065	SNFCCA14	SAN FRANCISCO	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
SF THIRD ST	415066	SNFCCA17	SAN MATEO	Yes	10001-20000 Lines	60%-70%	450-1799 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
SF FOLSOM	415068	SNFCCA21	SAN FRANCISCO	Yes	10001-20000 Lines	50%-60%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
SAN GABRIEL	628658	SNGBCA01	LOS ANGELES	No	Over 20000 lines	70%-80%	1800 + per Sq. Mile	San Gabriel	\$67,000-\$87,999
SAN GERONIMO	415069	SNGNCA11	MARIN	No	1001-2999 Lines	60%-70%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
SAN JUAN BAUSTISTA	831127	SNJNCA11	SAN BENITO	No	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
SAN JOSE MAIN	408128	SNJSCA02	SANTA CLARA	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
SAN JOSE WHITE RD	408129	SNJSCA11	SANTA CLARA	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
SAN JOSE DIAL WAY	408130	SNJSCA12	SANTA CLARA	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
SAN JOSE CHYNOWETH	408131	SNJSCA13	SANTA CLARA	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
SAN JOSE FOXWORTHY	408132	SNJSCA14	SANTA CLARA	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
SAN JOSE EVERGREEN S	408133	SNJSCA15	SANTA CLARA	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
SAN JOSE ALMADEN VALI	408134	SNJSCA18	SANTA CLARA	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
SAN JOSE JUNCTION	408145	SNJSCA21	SANTA CLARA	Yes	10001-20000 Lines	60%-70%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
SAN JOSE BAILEY	408142	SNJSCA22	SANTA CLARA	No	0-1000 Lines	50%-60%	0	Bay / Central Coast	0
SAN LUCAS	831135	SNLCCA11	MONTEREY	No	0-1000 Lines	50%-60%	0	Bay / Central Coast	0
SAN LEANDRO	510070	SNLNCA11	ALAMEDA	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
SAN LUIS OBISPO	805389	SNLOCA01	SAN LUIS OBISPO	Yes	10001-20000 Lines	60%-70%	0-16 per Sq. Mile	Bay / Central Coast	\$43,000-\$54,999
SAN MARTIN	408136	SNMACA11	SANTA CLARA	No	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Bay / Central Coast	\$88,000 +
SAN MARCOS	760792	SNMCCA00	SAN DIEGO	No	Over 20000 lines	70%-80%	0	Southern CA	0
SANTA MARGARITA	805390	SNMICA11	SAN LUIS OBISPO	No	1001-2999 Lines	50%-60%	0-16 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
SAN MATEO	650071	SNMTCOA11	SAN MATEO	Yes	Over 20000 lines	60%-70%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
SAN PEDRO	310659	SNPDCA01	LOS ANGELES	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999
SONORA	209218	SNRACA13	TUOLUMNE	No	10001-20000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
SAN RAFAEL MAIN PARKWAY	415072	SNRFCA01	MARIN	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
SAN RAMON	415073	SNRFCA11	MARIN	Yes	Over 20000 lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
SANTA ROSA MAIN	925074	SNRMCA11	ALAMEDA	Yes	Over 20000 Lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
LOS ALAMOS	707320	SNRSCA01	SONOMA	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
SANTA CLARA SPACEPAF	707319	SNRSCA11	SONOMA	No	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
SANTA CLARA BELLOWY	408143	SNTCCA01	SANTA CLARA	Yes	10001-20000 Lines	50%-60%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
CAROL SUNNYVALE	408137	SNTCCA11	SANTA CLARA	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
MATHILDA SUNNEVALE	408138	SNVACA01	SANTA CLARA	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
SAN YSIDRO	619794	SNYSACA12	SAN DIEGO	No	3000-10000 Lines	70%-80%	1800 + per Sq. Mile	Bay / Central Coast	\$88,000 +
SONOMA	707323	SONMCA12	SONOMA	No	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$43,000-\$54,999
SOUT PASADENA MISSIOI	628660	SPSDCA11	LOS ANGELES	No	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
SPRINGVILLE	559219	SPVLCA11	TULARE	No	1001-2999 Lines	50%-60%	0-16 per Sq. Mile	San Gabriel	\$88,000 +
SIERRA CITY	530505	SRCYCA11	SIERRA	No	0-1000 Lines	<50%	0	Northern CA / Central Valley	0
STRATFORD	559224	SRFRCA11	KINGS	No	0-1000 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
SIERRAVILLE	530506	SRVLCOA11	SIERRA	No	0-1000 Lines	50%-60%	0	Northern CA / Central Valley	0
SAUSALITO LARKSPUR	415075	SSLTCA11	MARIN	Yes	3000-10000 Lines	70%-80%	1800 + per Sq. Mile	Northern CA / Central Valley	\$88,000 +

Table 4A.12: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

Wire Center Name	Wire Center	CLLI	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
SOUTH TAHOE SUSSEX	530509	STAHA01	EL DORADO	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
SOUTH TAHOE TAMARAC	530511	STAHA12	EL DORADO	No	0-1000 Lines	70%-80%	0	Northern CA / Central Valley	0
SOUTH TAHOE MEYERS A	530512	STAHA13	EL DORADO	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
STINSON BEACH	415076	STBHA11	MARIN	No	1001-2999 Lines	<50%	17-94 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
SUTTER CREEK	209225	STCKA11	AMADOR	No	1001-2999 Lines	50%-60%	0	Northern CA / Central Valley	0
STONYFORD	530513	STFRCA11	COLUSA	No	0-1000 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
ST HELENA	707318	STHNCA11	NAPA	No	3000-10000 Lines	50%-60%	17-94 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
SUISUN CITY	707324	SUISCA11	SOLANO	Yes	1001-2999 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
SUNOL	925077	SUNLCA11	ALAMEDA	No	0-1000 Lines	50%-60%	0	Bay / Central Coast	0
TIBURON	415005	TBRNCA11	MARIN	No	3000-10000 Lines	60%-70%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$88,000 +
TECHACHAPI	661395	THCHCA01	KERN	Yes	3000-10000 Lines	70%-80%	0-16 per Sq. Mile	Greater LA / Bakersfield	\$55,000-\$66,999
TAHOE CITY	530514	THCYCA01	PLACER	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
THREE RIVERS	559228	THRRCa11	TULARE	No	1001-2999 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
THORNTON	209227	THTNCA11	SAN JOAQUIN	No	0-1000 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
TOMALES	707325	TMLSCA12	SONOMA	No	0-1000 Lines	50%-60%	0	Northern CA / Central Valley	0
TEMPLETON	805396	TMTNCA11	SAN LUIS OBISPO	No	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Bay / Central Coast	\$67,000-\$87,999
TIPTON	559229	TPTNCA11	TULARE	No	0-1000 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
TRACY	209230	TRACCA11	SAN JOAQUIN	Yes	Over 20000 lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
TERRA BELLA	559226	TRBLCA11	TULARE	No	1001-2999 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
TURLOCK	209232	TRLCCA11	STANISLAUS	Yes	Over 20000 lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
TORRANCE	310661	TRNCCA11	LOS ANGELES	Yes	10001-20000 Lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$55,000-\$66,999
TRINIDAD	707326	TRNDCA11	HUMBOLDT	No	1001-2999 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
TRES PINOS	831140	TRPSCA11	SAN BENITO	No	0-1000 Lines	<50%	0	Bay / Central Coast	0
TRUCKEE	530515	TRUCCA11	NEVADA	No	10001-20000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
NORTH STAR	530516	TRUCCA12	PLACER	No	1001-2999 Lines	50%-60%	0	Northern CA / Central Valley	0
TULARE	559231	TULRCA11	TULARE	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
TUSTIN 11	714798	TUSTCA11	ORANGE	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
TUSTIN 70	714805	TUSTCA70	ORANGE	Yes	1001-2999 Lines	50%-60%	0	Southern CA	0
TWAIN HARTE	209233	TWHRCA11	TUOLUMNE	No	3000-10000 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
UKIAH MAIN	707328	UKIHCA01	MENDOCINO	No	10001-20000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
CAPELLA IVANHOE	707327	UKIHCA12	MENDOCINO	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
UNION CITY	510078	UNCYCA11	ALAMEDA	No	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
UPPER LAKE	707329	UPLKCA11	LAKE	No	1001-2999 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
VACAVILLE	707330	CVVLA12	SOLANO	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
VINA	530517	VINACA12	TEHAMA	No	0-1000 Lines	50%-60%	0	Northern CA / Central Valley	0
VISALIA MAIN	559235	VISLCA11	TULARE	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
VISTA	760800	VISTCA12	SAN DIEGO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$55,000-\$66,999
VALLEY CENTER	760799	VLCTCA11	SAN DIEGO	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Southern CA	\$67,000-\$87,999
VALLEJO	707331	VLLJCA01	SOLANO	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
VAN NUYS	818662	VNNYCA02	LOS ANGELES	Yes	Over 20000 lines	70%-80%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$43,000-\$54,999
VENTURA FIR	805400	VNTRCA02	VENTURA	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Greater LA / Bakersfield	\$55,000-\$66,999
VENTURA MAIN MONTALV	805399	VNTRCA11	VENTURA	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$67,000-\$87,999


Table 4A.12: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

Wire Center Name	Wire Center	CLLI	County	Fiber	Wire Center Size Category	Pct Line Loss Category	Household Density Category	AT&T Field Operations District	Median Household Income Category
VALLEY FORD	707332	VYFRCA11	SONOMA	No	0-1000 Lines	50%-60%	0	Northern CA / Central Valley	0
VALLEY SPRINGS	209234	YVSPCA11	CALAVERAS	No	3000-10000 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
WAWANA	209238	WANACA11	MARIPOSA	No	0-1000 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
WASCO	661402	WASCCA01	KERN	No	3000-10000 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
WOODLAND	530523	WDLCA11	YOLO	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
WOODLAKE	559239	WDLKCA11	TULARE	No	1001-2999 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
WEED	530518	WEEDCA01	SISKIYOU	No	3000-10000 Lines	60%-70%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
WEOTT	707333	WEOTCA11	HUMBOLDT	No	0-1000 Lines	50%-60%	0	Northern CA / Central Valley	0
CENTURY CITY	310663	WLANCA01	LOS ANGELES	Yes	10001-20000 Lines	60%-70%	1800 + per Sq. Mile	Greater LA / Bakersfield	\$88,000 +
WALKER BASIN	661401	WLBSCA11	KERN	No	0-1000 Lines	<50%	0-16 per Sq. Mile	Greater LA / Bakersfield	\$0-\$42,999
WALLACE	209236	WLLCCA11	CALAVERAS	No	0-1000 Lines	50%-60%	0	Northern CA / Central Valley	0
WILMINGTON	310664	WLMGCA01	LOS ANGELES	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Greater LA / Bakersfield	\$55,000-\$66,999
WILLIAMS	707334	WLTSCA12	MENDOCINO	No	3000-10000 Lines	50%-60%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
WILLOWS	530521	WLWSCA11	GLENN	No	3000-10000 Lines	70%-80%	0-16 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
WALNUT CREEK	925079	WNCKCA11	CONTRA COSTA	Yes	Over 20000 lines	70%-80%	450-1799 per Sq. Mile	Bay / Central Coast	\$88,000 +
WINDSOR	707335	WNSCA11	SONOMA	Yes	3000-10000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999
WARNER SPRINGS	760801	WNSPCA12	SAN DIEGO	No	1001-2999 Lines	50%-60%	0-16 per Sq. Mile	Southern CA	\$0-\$42,999
WINTERS	530522	WNTRCA11	YOLO	Yes	1001-2999 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
FRONTIER	916519	WSCRA11	SACRAMENTO	Yes	10001-20000 Lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
WATERFORD	209237	WTFRCA11	STANISLAUS	No	3000-10000 Lines	70%-80%	17-94 per Sq. Mile	Northern CA / Central Valley	\$43,000-\$54,999
WHEATLAND	530520	WTLCA12	SUTTER	Yes	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
WATSONVILLE	831141	WTVLCA01	SANTA CRUZ	Yes	Over 20000 lines	60%-70%	95-449 per Sq. Mile	Bay / Central Coast	\$55,000-\$66,999
YUBA CITY MARYSVILLE	530525	YBCYCA01	SUTTER	Yes	Over 20000 lines	70%-80%	95-449 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
YOUNTVILLE	707336	YNVLCA11	NAPA	No	1001-2999 Lines	60%-70%	450-1799 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
YREKA	530524	YREKCA11	SISKIYOU	No	1001-2999 Lines	60%-70%	17-94 per Sq. Mile	Northern CA / Central Valley	\$0-\$42,999
YORBA LINDA	714802	YRLNCA11	ORANGE	Yes	3000-10000 Lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
GYPSUM CANYON	714809	YRLNCA12	ORANGE	Yes	10001-20000 Lines	70%-80%	450-1799 per Sq. Mile	Southern CA	\$88,000 +
YOSEMITE MAIN	209240	YSMTCA11	MARIPOSA	No	0-1000 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$55,000-\$66,999
EL PORTAL	209241	YSMTCA12	MARIPOSA	No	0-1000 Lines	<50%	0-16 per Sq. Mile	Northern CA / Central Valley	\$67,000-\$87,999

For Phase 2, ETI has updated each of the four (4) graphs for each of the five category dimensions that correspond to AT&T Companywide graphs provided above. These have now been updated to include data for 2018-2019. As with the companywide service quality metric graphs discussed above, we have calculated three separate trend lines for each graph – covering the periods 2010-2019 (solid red line); 2010-2017 (dashed green line); and 2018-2019 (dashed purple line). Two separate charts are provided for each graph. The first, or “A” chart, provides category trend lines for the full 2010-2019 period. The second, or “B” chart, provides trend lines for the 2010-2017 period and for the 2018-2019 period. Table 4A.13 below provides an index to the figures for each set of attributes.

Table 4A.13						
SUMMARY OF AT&T ATTRIBUTE DIMENSION GRAPHS						
	Company wide	Fiber	Wire Center Size	POTS Line Loss	Density	TRS District
OOS per 100 Access Lines	Fig. 4A.2	Fig. 4A.13	Fig. 4A.17	Fig. 4A.22	Fig. 4A.26	Fig. 4A.30
Avg OOS>24 hrs Duration	Fig. 4A.5	Fig. 4A.14	Fig. 4A.18	Fig. 4A.23	Fig. 4A.27	Fig. 4A.31
Pct OOS cleared in 24 hrs	Fig. 4A.9	Fig. 4A.15	Fig. 4A.19	Fig. 4A.24	Fig. 4A.28	Fig. 4A.32
Days required to clear 90%	Fig. 4A.11	Fig. 4A.16	Fig. 4A.20	Fig. 4A.25	Fig. 4A.29	Fig. 4A.33

As we discuss in the remainder of this Chapter, these wire center category analyses have generally retained the same overall relationships among the individual categories that we had identified in Phase 1. Performance across most service quality metrics is better in wire centers that have been upgraded with fiber optic distribution facilities, in wire centers serving relatively high-density urban and suburban communities, in larger wire centers, and in wire centers that have experienced the largest losses of customers to competitors. However, in almost every instance and category of wire center serving area, performance across most service quality metrics has significantly deteriorated over the 2018-2019 period relative to where it had been during the Phase 1 2010-2017 time frame.

 Performance across most service quality metrics is better in wire centers that have been upgraded with fiber optic distribution facilities, in those serving higher-density urban and suburban communities, in larger wire centers, and in those with the largest losses of customers to competitors. But in almost every category, performance has significantly deteriorated over the 2018-2019 period.

Fiber optic upgraded wire centers offering broadband services availability.

Although this study and GO 133-C/D are primarily focused upon traditional circuit-switched POTS services, ETI hypothesized that the availability of fiber optic feeder and/or distribution (FTTN or FTTP) facilities capable of supporting broadband services in a particular wire center

indicates that AT&T has undertaken to invest in and to upgrade the central office and outside plant facilities therein. To test the hypothesis, we compared service quality metrics in upgraded vs. non-upgraded wire centers to see if performance was better where upgrades had occurred and, in general, our expectations had been borne out.

As of 2017, approximately half (338) out of the 612 AT&T California wire centers had been upgraded with the capability to support high-speed broadband services.¹⁶ That number has remained unchanged since that date.¹⁷ The only one of these services that falls within the scope of this study is VoIP; broadband Internet access and video do not. Using fiber availability as a surrogate for specific data on capital investment in each wire center, we examined whether the presence of one or more broadband offerings in any given wire center had a beneficial impact upon POTS service quality being furnished out of that same building – specifically, on the incidence of out-of-service situations, their duration, and the extent to which the 90% cleared within 24 hours standard had been achieved.

In general, and as illustrated on updated Figures 4A.13 through 4A.16, wire centers that had been upgraded with fiber performed noticeably better on all OOS metrics than those for which no broadband investment had been made. In non-fiber upgraded wire centers, the long-term trend of monthly out-of-service incidents per 100 POTS lines in service mushroomed from 1.32 in the first quarter of 2010 to 1.86 as of the fourth quarter of 2017. For the 2018-2019 Phase 2 study period, however, service quality performance deteriorated in both fiber- and non-fiber wire centers, although those that had been upgraded continued to perform significantly better.



Wire centers upgraded with fiber to support broadband achieve better service quality performance scores in every category – but in 2018-2019, service quality in both types of wire centers was decidedly inferior to what had been achieved during the Phase 1 2010-2017 period. AT&T needed only 1.15 days to clear 90% of service outages in upgraded wire centers as of the end of 2019; for non-upgraded wire centers, it took 2.43 days to clear 90%. The corresponding Phase 1 (4Q2017) were 1.10 and 1.86.



As of December 31, 2020, AT&T California had not upgraded any additional wire centers for Broadband since at least May 11, 2018.



In 2018-2019, service quality in both Broadband-enabled and non-Broadband wire centers was decidedly inferior to what had been achieved during the Phase 1 2010-2017 period.

16. AT&T response to DR-01

17. AT&T Response to DR-12-A-10.

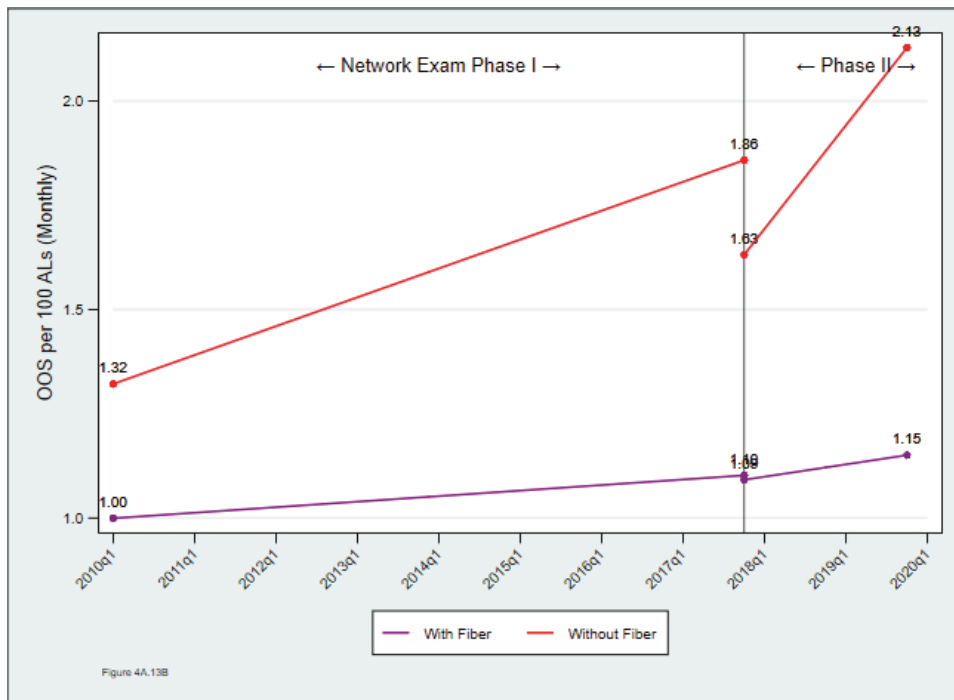
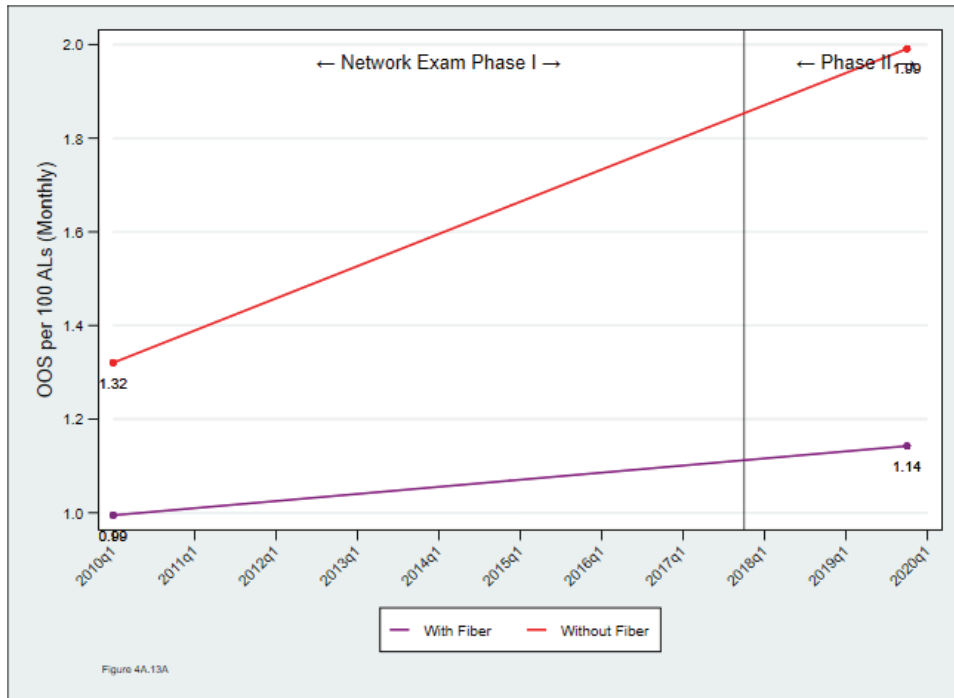


Figure 4A.13. Wire centers that had not been upgraded with fiber optic facilities experienced further degradation in the number of out-of-service incidents per 100 access lines (actual) in 2018-2019.

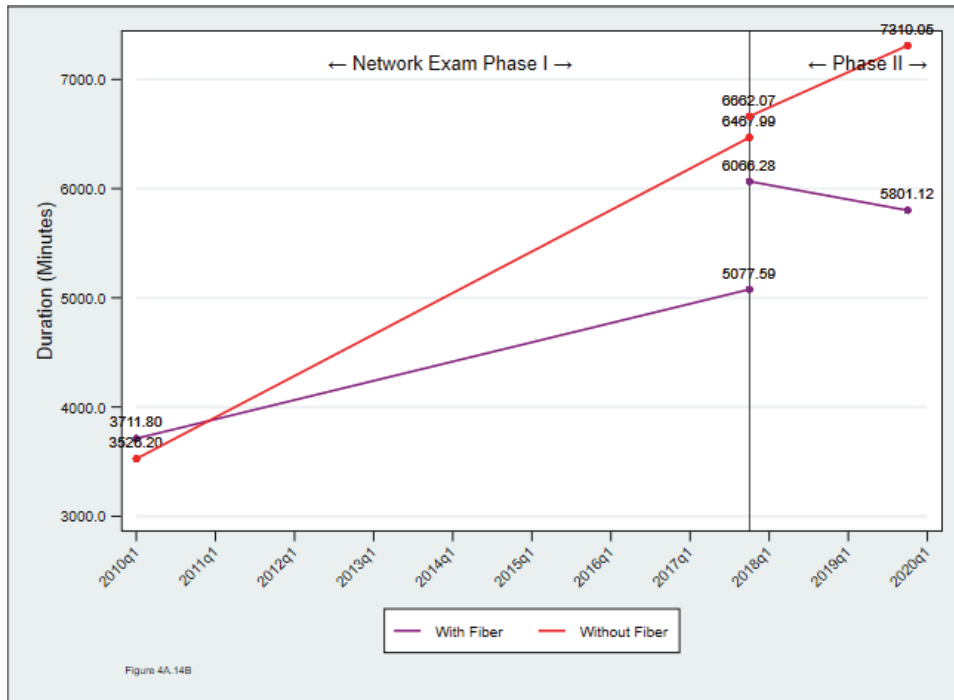
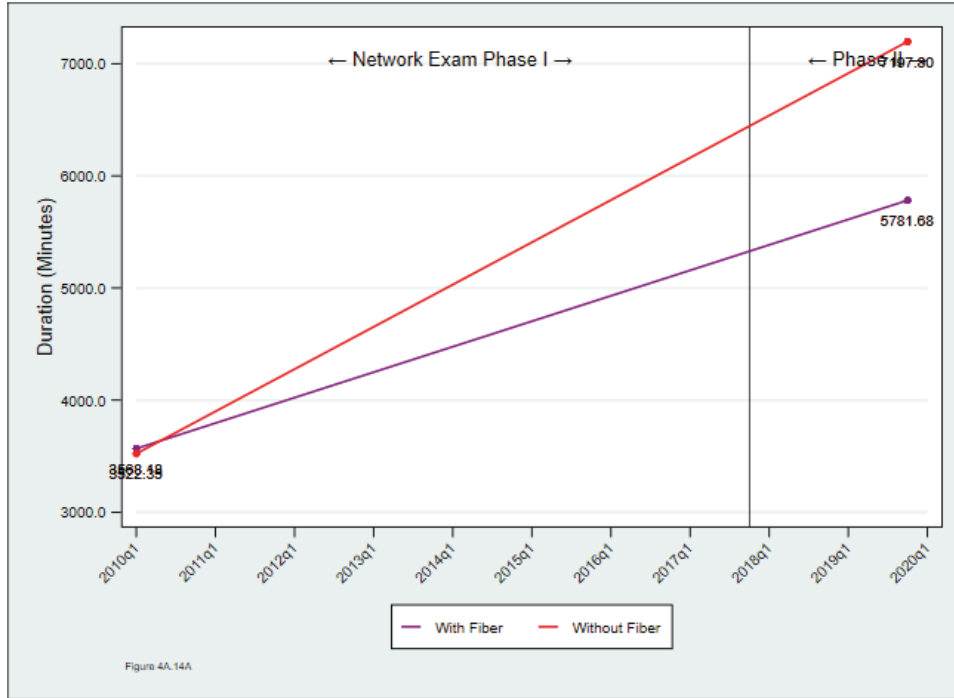


Figure 4A.14. The average duration for OOS over 24 hours (actual) in wire centers that had not been upgraded with fiber optic facilities grew even longer in 2018-2019.

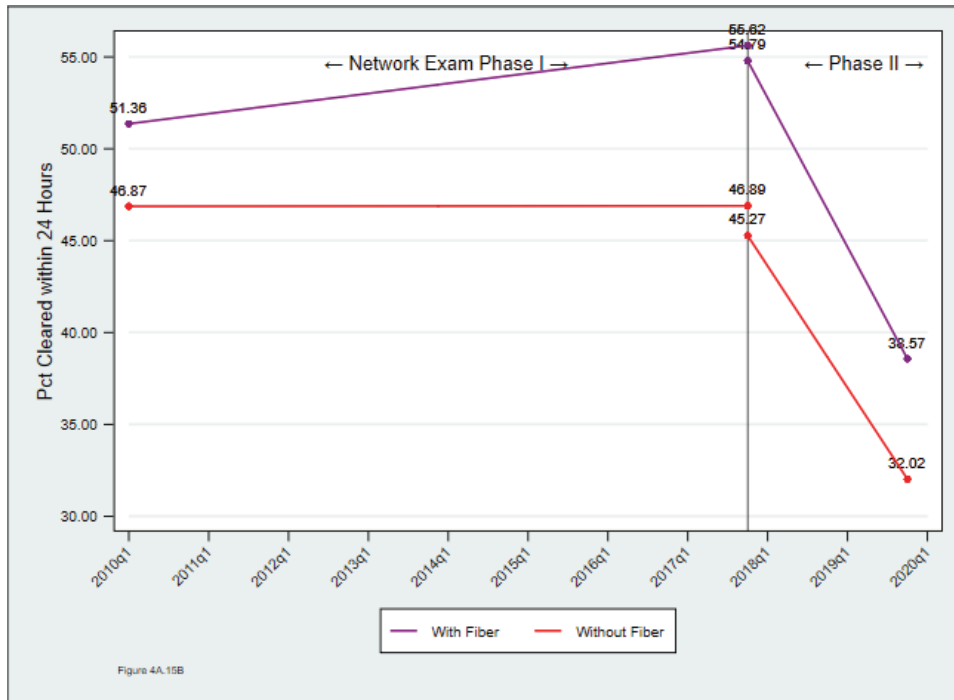
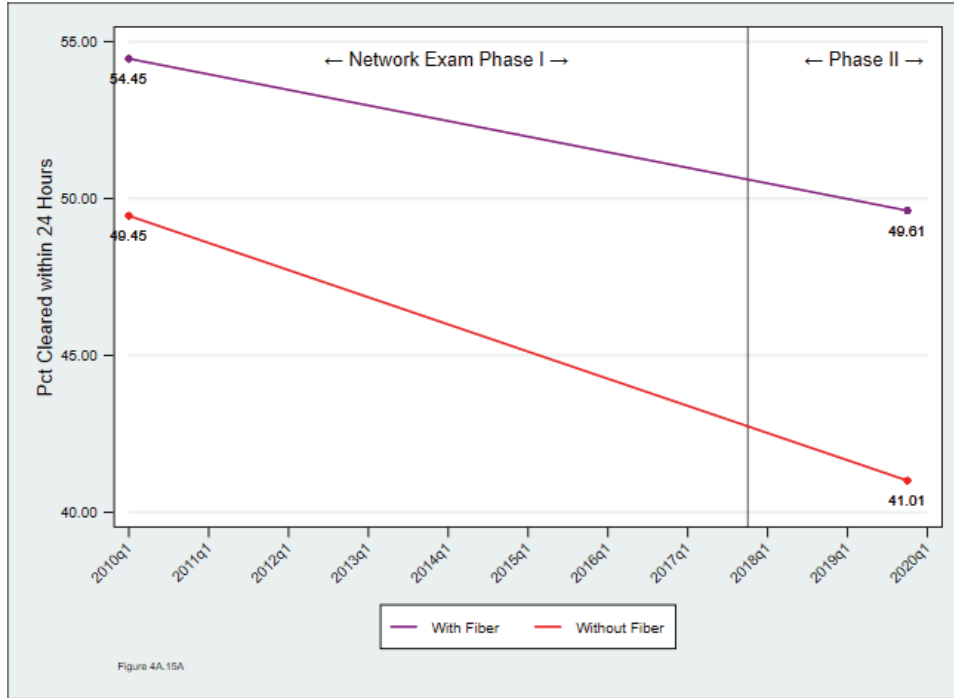


Figure 4A.15. The percentage of all OOS cleared within 24 hours (actual) dropped considerably both in fiber and non-fiber wire centers in 2018-2019.

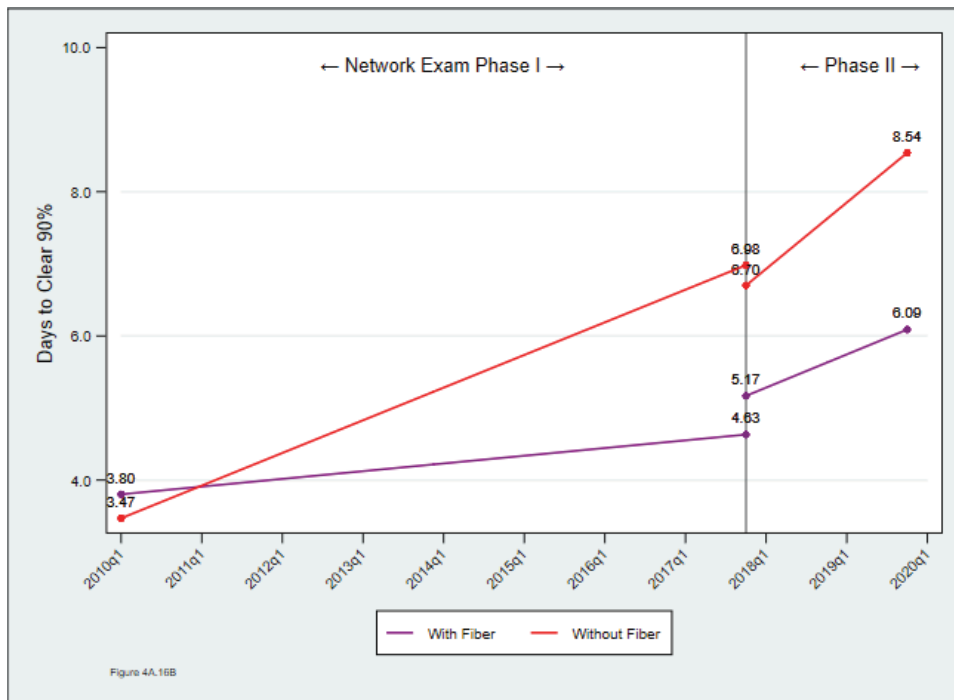
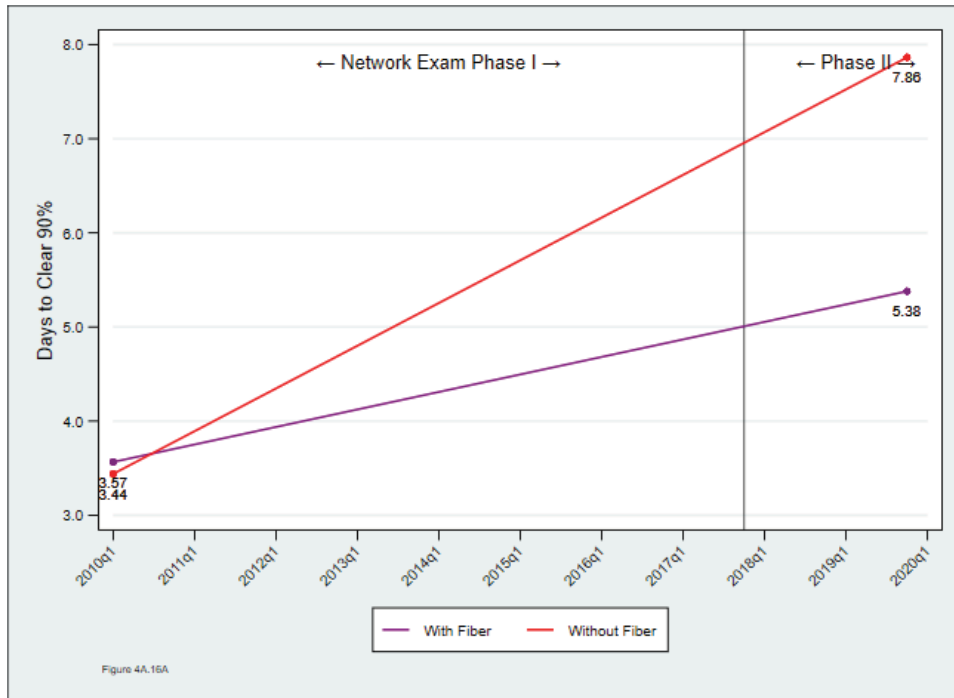


Figure 4A.16. It took AT&T California more days to clear 90% of outages (actual) both in fiber and non-fiber wire centers in 2018-2019.

Wire center size

GO 133-C/D refers to three sizes of ILEC wire centers. Small (1000 or fewer POTS lines), Medium (1001-2999 lines), and Large (3000 or more lines).¹⁸ As shown in Table 4A.1 above, 413 out of the total 612 AT&T wire centers would fall in the “Large” category (3000 or more POTS lines in service). The large drop-off in AT&T POTS access line demand over the 2010-2019 period would require the reclassification of individual wire centers as category thresholds were crossed. However, given that these individual wire centers were configured for the number of POTS lines in service pre-dating January 2010, the size categorization extant as of the beginning of the Phase 1 study period was retained throughout the 10-year time frame.¹⁹ Additionally, for analytical purposes, ETI determined that it would be useful to split the “Large” category into several more granular classifications, as we have done on Table 4A.14.

Table 4A.14		
AT&T CALIFORNIA		
CLASSIFICATIONS OF WIRE CENTERS BY POTS LINES IN SERVICE AS OF JANUARY 2010		
POTS Lines range	Category	No. of WCs
1,000 or fewer	Small	90
1,001 - 2,999	Medium	108
3,000 - 9,999	Large Metro	141
10,000 - 19,999	Large Urban	105
20,000 and above	Very Large	168
TOTAL		612

There appears to be a strong relationship between the overall size of a wire center (in terms of the number of POTS lines in service as of January 2010) and the quality of service that is being

18. GO 133-C/D, at §3.3(c).

19. Indeed, GO 133-C/D’s reliance upon *current* wire center size for purposes of determining the applicable TRPH performance standard – 10, 8 or 6 for Small, Medium size, or Large, respectively, seems misplaced, in that it operates to apply successively more lenient performance standards as access line losses increase. For example, a wire center that had 3,100 POTS lines in service in 2010 would then have been required to satisfy a 6.0 TRPH standard. Once that access line count dropped below 3,000, the allowable TRPH level would have automatically increased to 8.0 and if, by the end of the study period, the wire center’s access line count had dropped below 1,000, the allowable TRPH level would have increased further, to 10.0. ETI sees no obvious reason why a decrease in the number of POTS lines in service in a given wire center should justify a more lenient service quality performance standard. Indeed, if anything, the very competitive marketplace forces that had been assumed to exist as a basis for adoption of the URF should have precisely the opposite effect – confronted with persistent and growing line losses, the ILEC’s incentive should be to improve service quality so as to discourage further losses, rather than simply allow conditions to deteriorate further.

provided. Figure 4A.17 highlights this relationship. While there has been an increase in the number of out-of-service conditions per 100 POTS lines in all wire center size categories, both the number and the rate of increase in OOS per 100 POTS lines have been lowest in the very largest (over 20,000 lines) wire centers, and highest in the under 1,000 line wire center category. A similar relationship is observed with respect to out-of-service duration. As shown on Figure 4A.18, while durations have been rising across all size categories, the highest rate of increase – and the longest durations prior to restorations – are occurring in the smallest wire centers. The largest wire centers also exhibit the highest percentage of all outages cleared within 24 hours (actual) (Figure 4A.19) and the fewest number of days to clear 90% of all out-of-service incidents (actual) (Figure 4A.20).

The differences in these outcomes based upon wire center size are striking. In the fourth quarter of 2017, AT&T was able to clear 57% of outages within 24 hours, and had actually improved that clearance rate from 51% in 1Q2010. But in the smallest wire center category, the 4Q2017 trend value clearance rate was 36%, actually *down* from the 38% trend value in 1Q2010. A corresponding size/service quality relationship is also evident with respect to the days required to clear 90%. That time frame increased in all five size categories, but the rate of increase – and the number of days to reach 90% – were lowest in the over-20,000 line category and highest in the under-1,000 line category.

After 2017, the ordinal relationships among the five wire center size categories generally persisted, although almost all of the size categories saw deteriorating results after 2017.



The strong relationship between the number of POTS lines in a wire center and the quality of service provided has persisted into the 2018-2019 period, with the number and the rate of increase in OOS per 100 POTS lines continuing to be lowest in the very largest (over 20,000 lines) wire centers. However, service quality has deteriorated in all line-size categories since 2017.

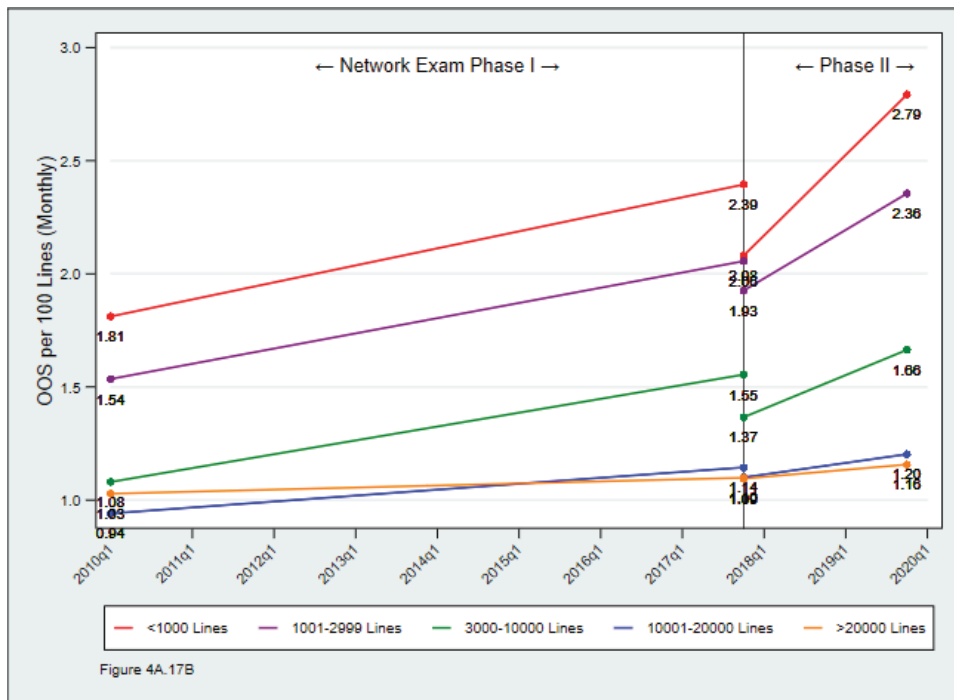
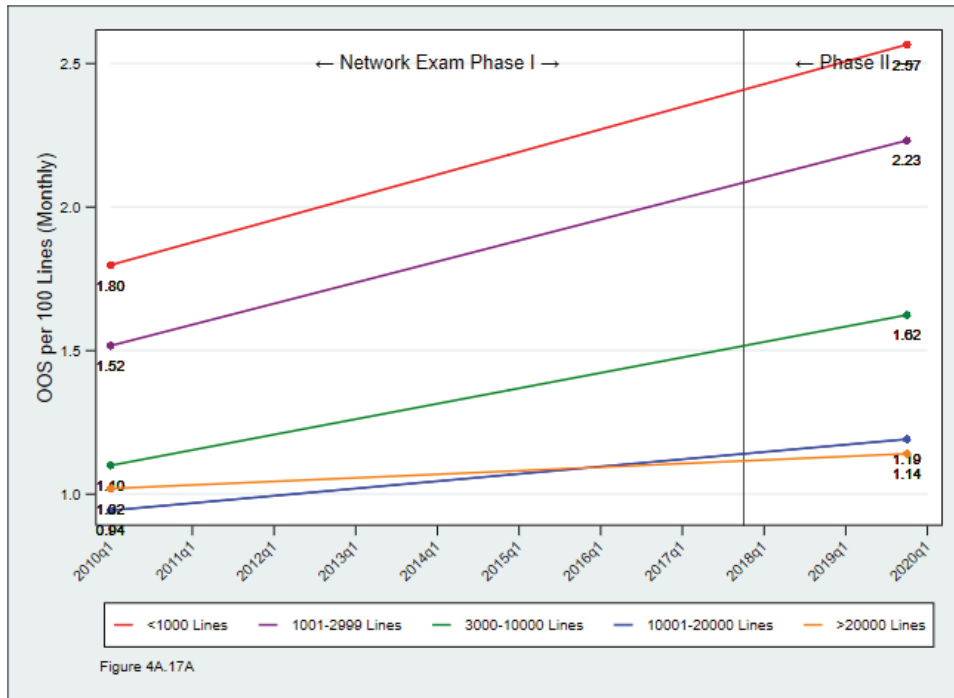


Figure 4A.17. The largest wire centers generally experienced the lowest out-of-service rate per 100 lines in service (actual), but the outage rate increased for all wire center size categories in 2018-2019.

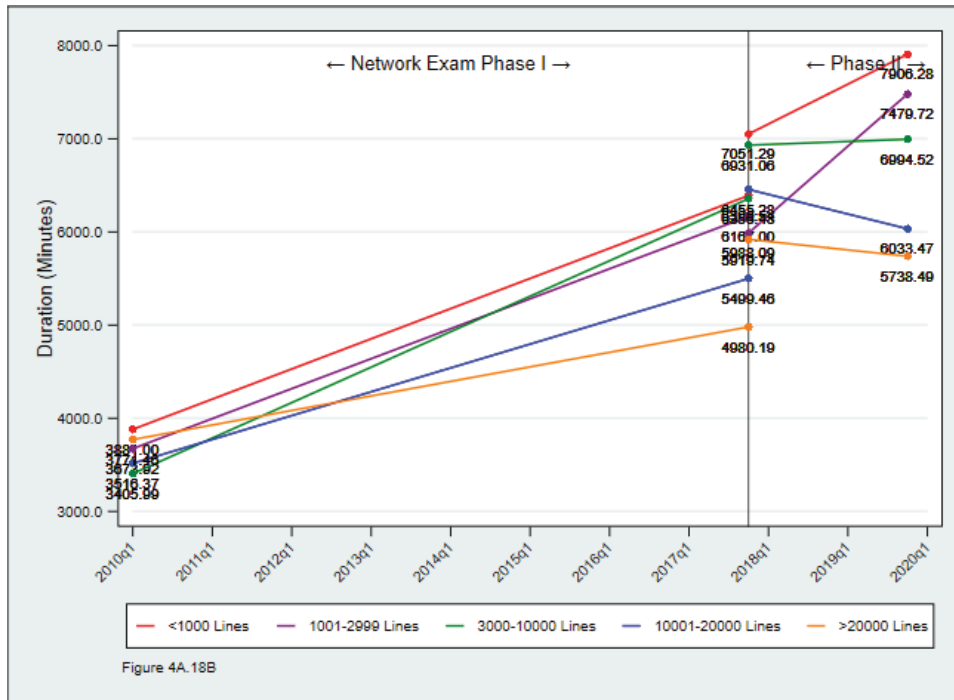
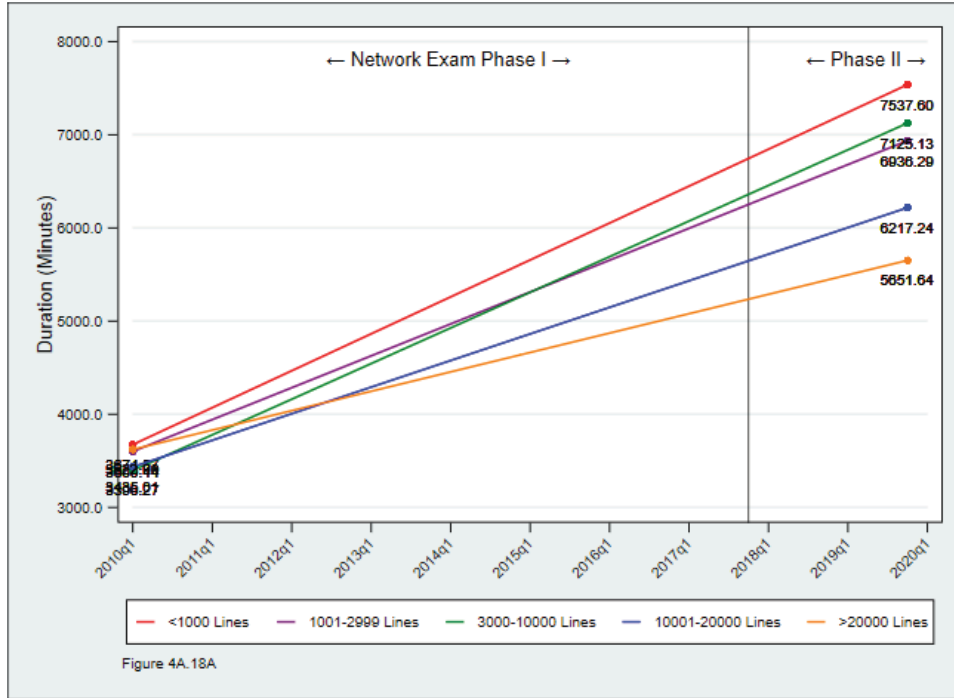


Figure 4A.18. The largest wire centers generally exhibited the shortest average duration of OOS over 24 hours (actual); the two largest size categories saw some improvement in 2018-2019, while the two smallest size categories experienced even longer durations than in the Phase 1 study period.

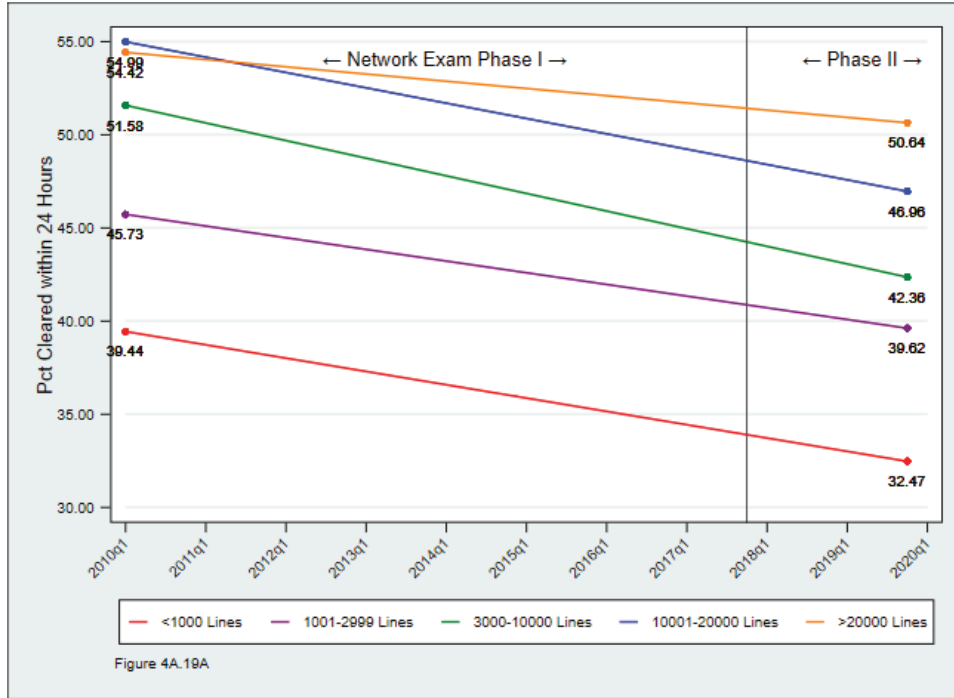


Figure 4A.19A

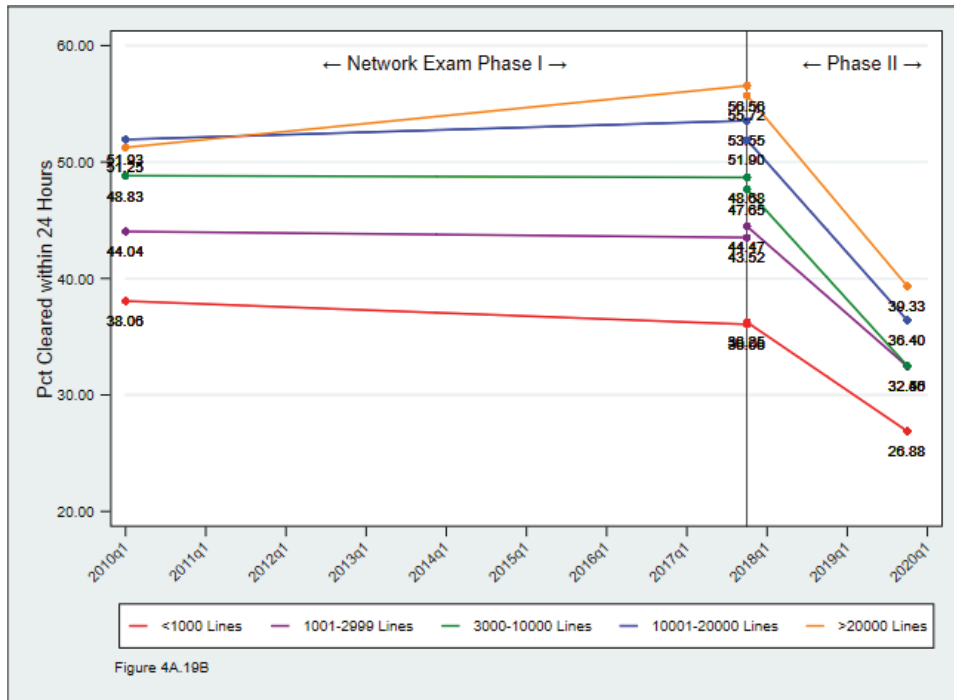


Figure 4A.19B

Figure 4A.19. The largest wire centers generally exhibited the highest percentage of all OOS cleared within 24 hours (actual), but all five size categories saw significant decreases in this metric in 2018-2019.

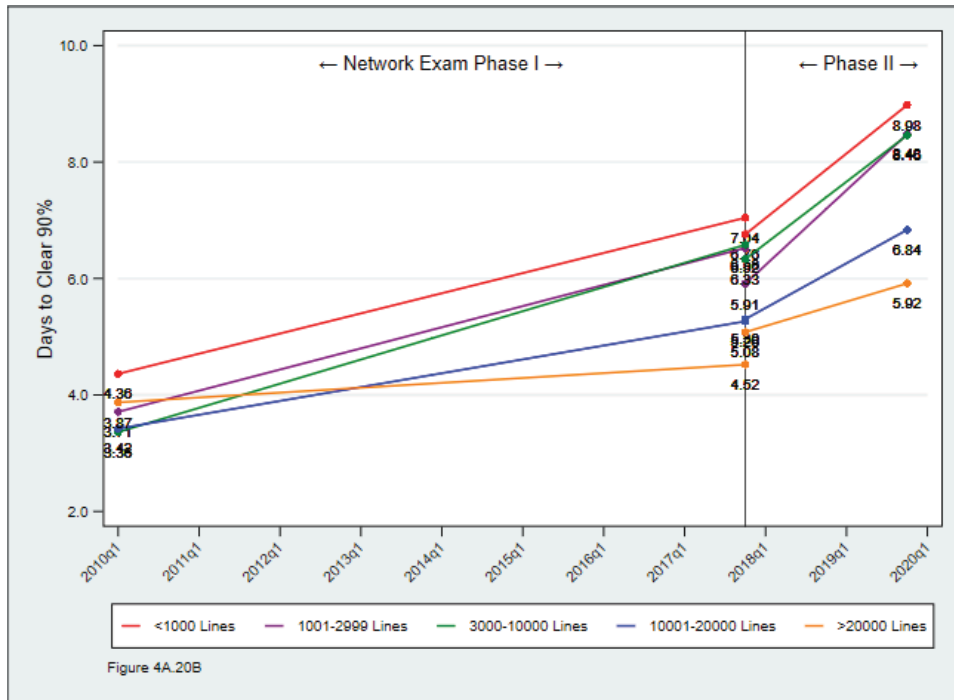
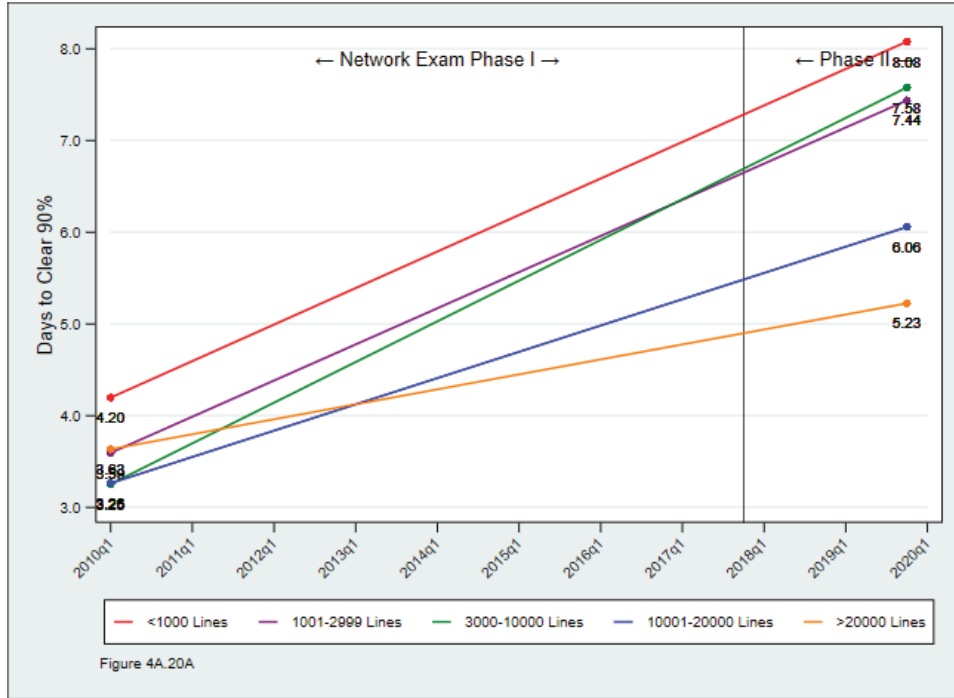


Figure 4A.20. The largest wire centers generally required the fewest number of days to clear 90% of all out-of-service incidents (actual), but the days-to-clear metric increased across all size categories in 2018-2019.

Access Line Loss.

Figure 4A.21 highlights the precipitous drop in AT&T California POTS lines in service over the full 2010-2019 study period. Companywide, AT&T California experienced a net loss of 79.1% of its POTS access lines, going from 8,035,134 in January 2010 to only 1,679,543 as of December 2019. These POTS losses were offset to some extent by the growth in interconnected VoIP access lines, as shown in Figure 4.4 above for all wireline carriers statewide and in Table 14.1 (in Chapter 14) for AT&T California specifically. We don't have carrier-specific residential and business losses, but FCC state-level data covering all wireline carriers (summarized on Figures 4.2 and 4.3 above) confirms that, as a general matter, residential wireline (POTS) losses were far greater than business losses as increasing numbers of households migrated to non-ILEC providers (primarily to cable MSOs offering interconnected VoIP-based telephone services) and to wireless.²⁰

However, the actual extent of AT&T POTS line losses varied widely among individual wire centers, from a *gain* of 18.75% in the Modesto 13th Street wire center to a loss of 96.56% in Paradise Main. In light of these large variations, we wanted to examine the potential impact that POTS line losses might have upon the overall service quality in each wire center. Large POTS line losses would likely result in a reduction of maintenance personnel, which could in turn have an adverse impact upon the Company's ability to respond to OOS situations. Alternatively, a large drop in the number of working lines could have the effect of making additional spare capacity available for rapid deployment as replacements for defective loops, switch ports or other service components. On the other hand, persistent and increasing service quality problems could work to stimulate even more demand shifts away from the ILEC and over to an alternative service provider. We have grouped the AT&T wire centers into five (5) POTS Line Loss categories, as shown on Table 4A.15 below:

20. See, generally, Figures 4.1 through 4.4 above. These were based upon data obtained from FCC Industry Analysis Division Office of Economics and Analytics, *Voice Telephone Services: Status as of December 31, 2018*, re. March 2020, Supplemental Table 1. Voice Subscriptions (in Thousands) - California, available at <https://www.fcc.gov/voice-telephone-services-report> (accessed 6/9/21).

Table 4A.15	
AT&T CALIFORNIA	
CLASSIFICATIONS OF WIRE CENTERS BY POTS LINE LOSS PERCENTAGE JANUARY 2010 THROUGH DECEMBER 2019	
POTS Lines Loss range	No. of WCs
Less than 50%	25
50% - 60%	32
60% - 70%	67
70% - 80%	248
80% and above	240
TOTAL	612

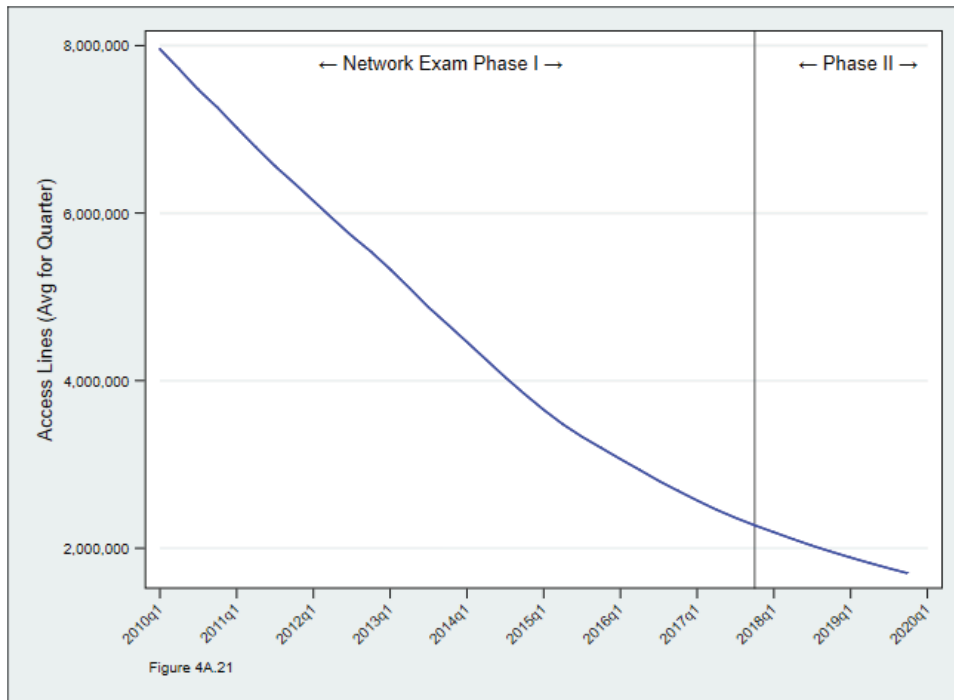


Figure 4A.21. Companywide, AT&T California experienced a net loss of 78.6% of its POTS access lines in service over the 2010-2019 period.

In Phase 1, we observed that those wire centers that had experienced the lowest rate of POTS line losses – less than 50% over the study period – experienced the largest increases in the rate of outages per 100 POTS lines; for wire centers with successively larger line loss percentages, increases in OOS per 100 POTS lines were much smaller – as too were the numbers of outages per 100 POTS lines – with the group exhibiting the second largest POTS line losses – 70% to 80% – remaining almost constant over the study period (Figure 4A.22). For average duration of OOS over 24 hours, the outcome was directly inverse to line loss percentage. Here, the wire centers experiencing POTS line losses in excess of 80% show virtually no change in average duration – going from 3,604 minutes (2.50 days) in 1Q2010 to 5,297 minutes (3.67 days) in 4Q2019. For wire centers experiencing the smallest rate of line loss (less than 50%), durations of outages over 24 hours jumped by 89%, from 3,672 minutes (2.55 days) in 1Q2010 to 7,810 minutes (5.42 days) in 4Q2019 (Figure 4A.23). Similar patterns were found for the percentage of outages restored within 24 hours and for the number of days required to reach the 90% cleared objective. The wire centers experiencing the highest loss of POTS lines performed best on both of these metrics, whereas those with the smallest losses suffered the greatest degradation in service quality (Figure 4A.24 and 4A.25).

For the most part, these relationships persisted into 2018-2019, although service quality performance was poorer on most of the metrics that we examined. One notable exception was a particularly large spike in out-of-service durations in the very largest wire centers over the 2018-2019 period relative to the earlier trend (Figure 4A.23).

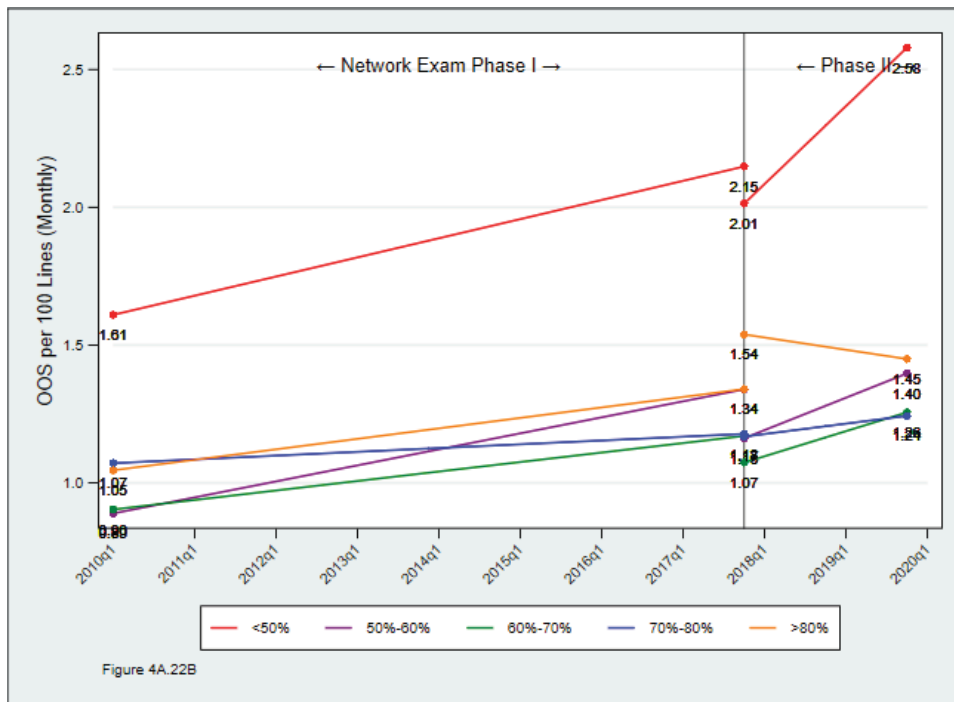
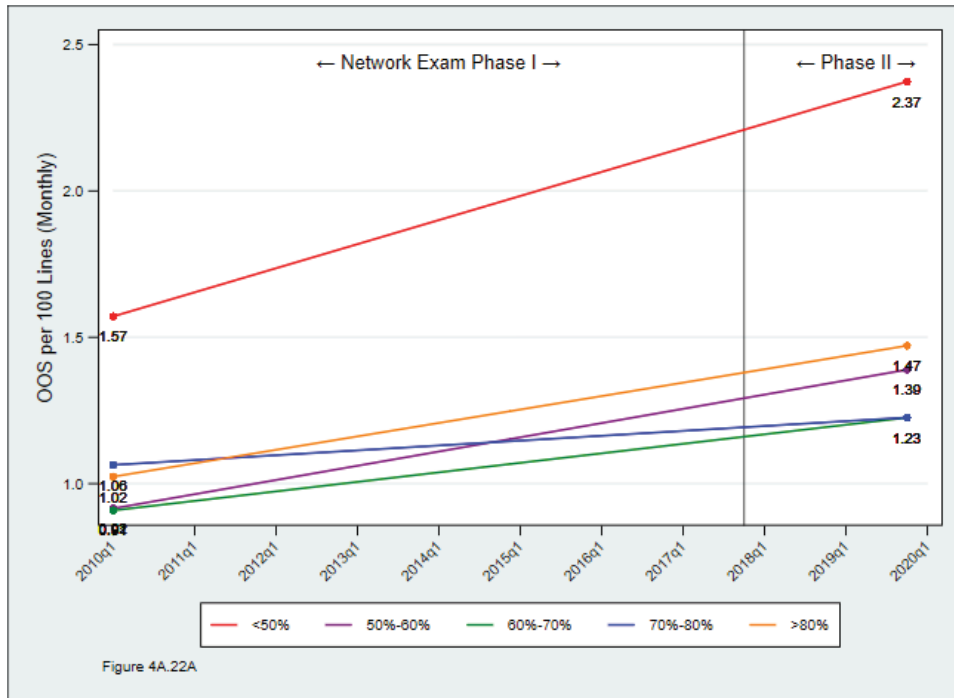


Figure 4A.22. AT&T California wire centers with the fewest POTS line losses have experienced the greatest increase in OOS per 100 lines in service (actual), a disparity that became even greater in 2018-2019.

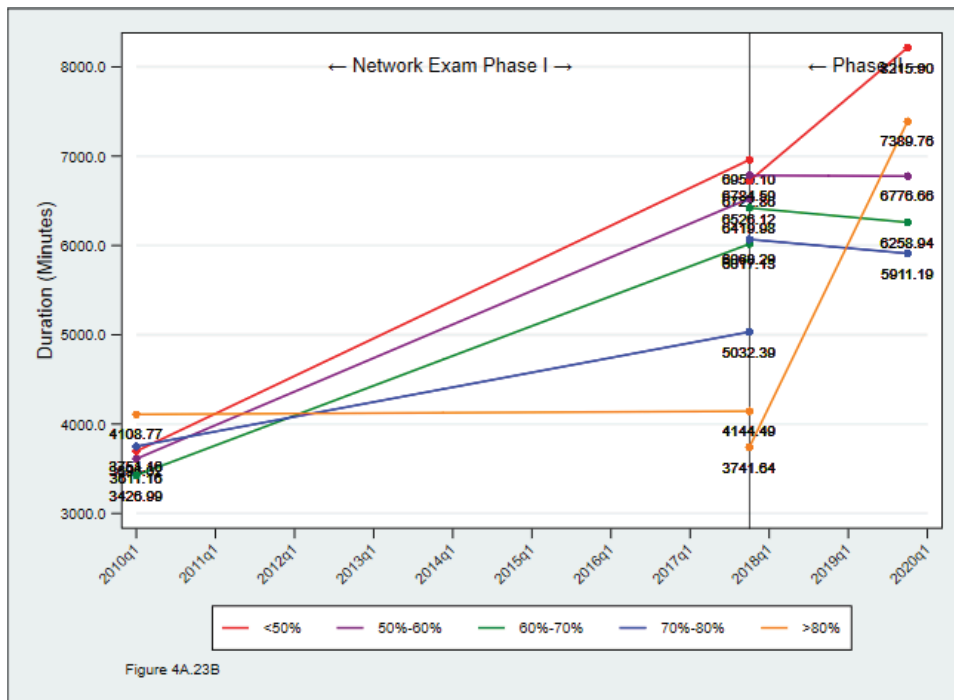
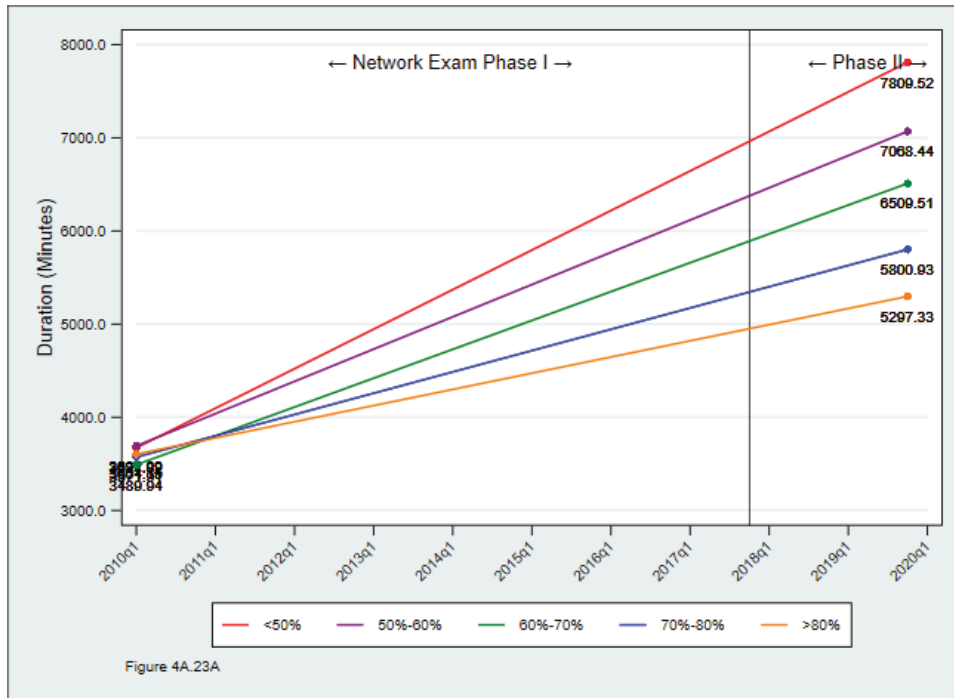


Figure 4A.23. AT&T California wire centers with the largest POTS line losses had been experiencing the shortest average durations of OOS over 24 hours (actual) in the Phase 1 study period, but durations in this category saw a huge spike in the 2018-2019 period.

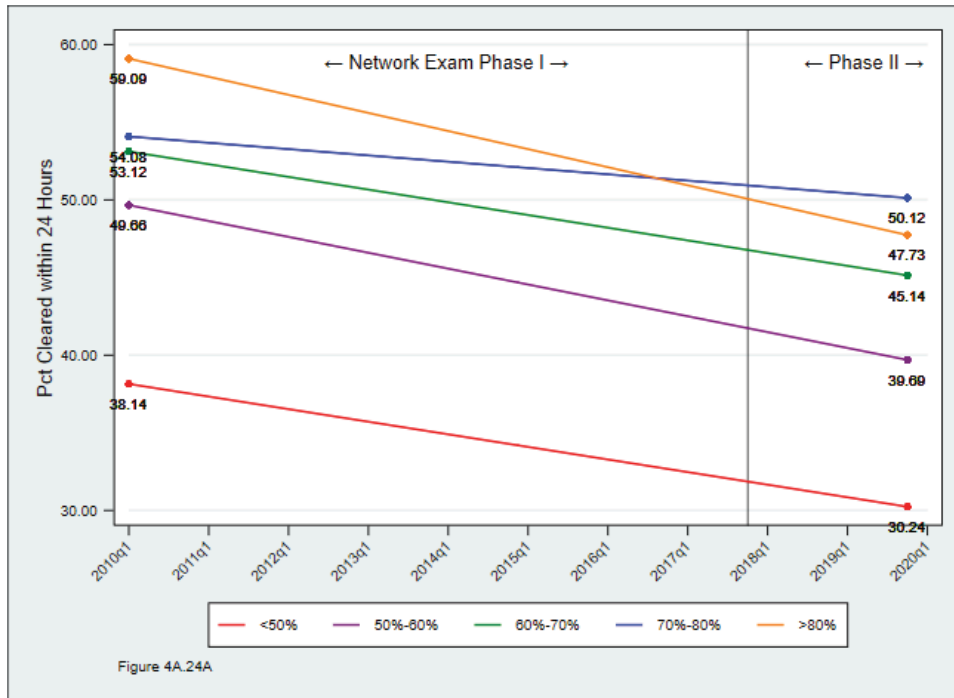


Figure 4A.24A

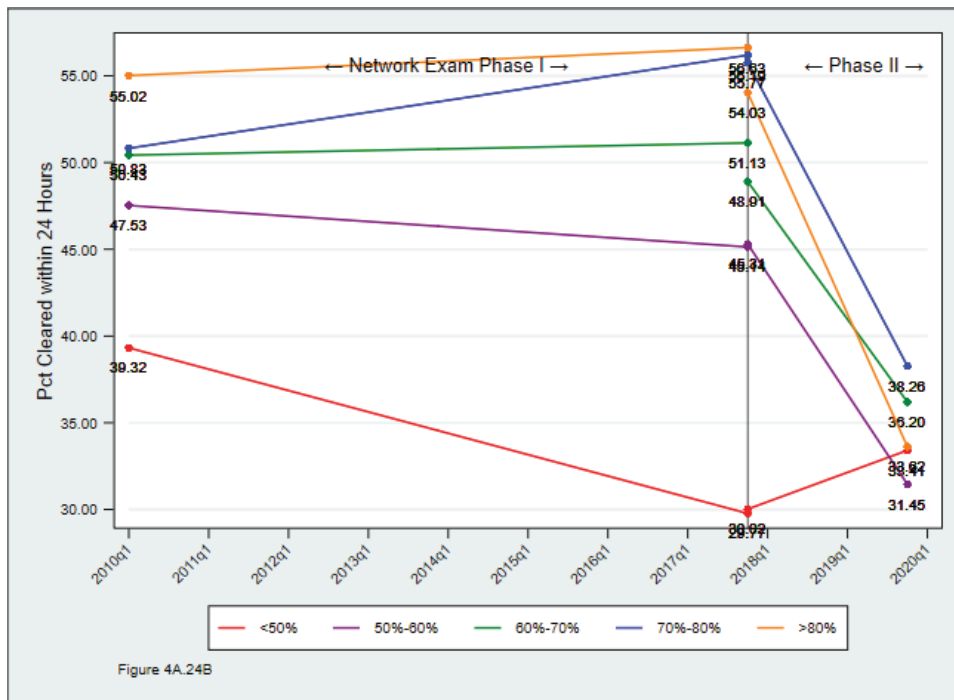


Figure 4A.24B

Figure 4A.24. AT&T California wire centers with the largest POTS line losses are experiencing the highest percentages of all OOS cleared within 24 hours (actual), but this metric worsened for all except the smallest line loss category in 2018-2019.

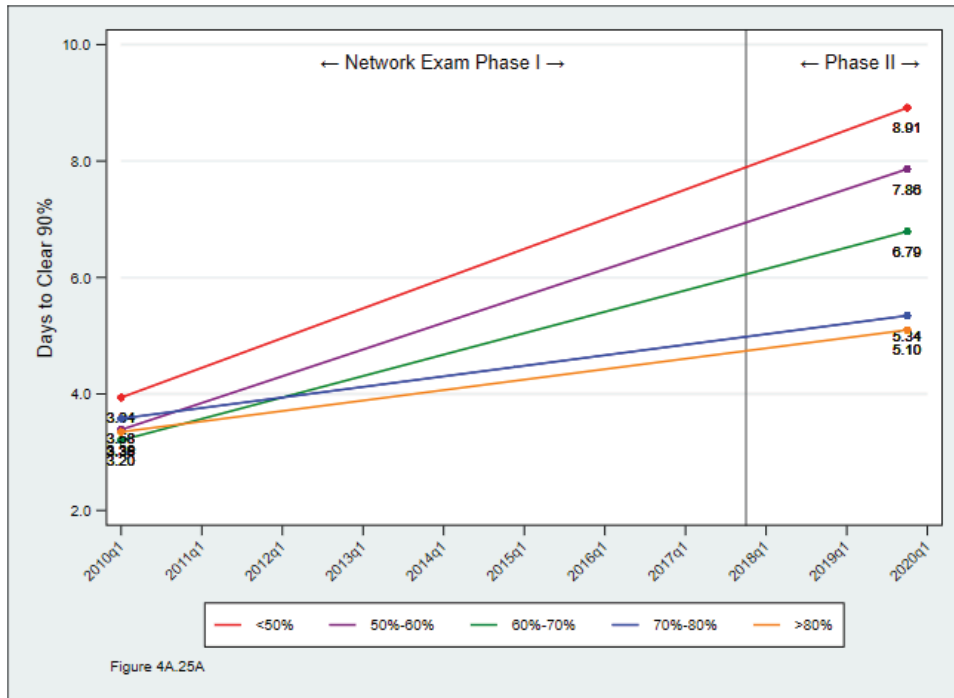


Figure 4A.25A

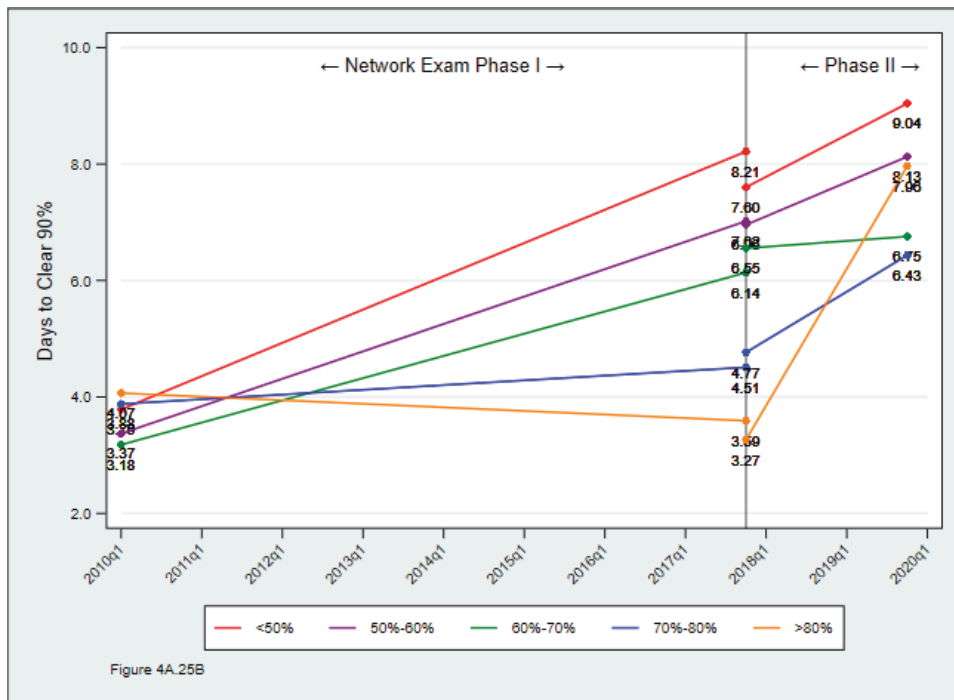


Figure 4A.25B

Figure 4A.25. AT&T California wire centers with the largest POTS lines losses requires the fewest number of days to clear 90% of all OOS (actual), but days-to-clear-90% increased for all line loss categories in 2018-2019.



Wire centers that had experienced the lowest rate of POTS line losses – less than 50% over the study period – saw the largest increase in service outages; for those with successively larger line loss percentages, the incidence of service outages increased more slowly or remained almost constant over the study period. But performance in nearly all of the service quality metrics we studied deteriorated after 2017.

Urban/Suburban/Rural

In support of our work on Phase 1, CD/GIS had provided us with a mapping of the roughly 500,000 Census Blocks in AT&T California’s operating areas to the AT&T wire center serving that Census Block. Included in this dataset were the 2017 population, number of households, and median household income for each Census Block. The Census Bureau does not provide Census Block-level area data, but does provide land area in square miles for each Census Tract. Census Tracts are small, relatively permanent statistical subdivisions of a county, with populations that range between 1,200 and 8,000, with an average of about 4,000.²¹ We aggregated the individual Census Block data to the Census Tract level within each AT&T wire center serving area. Where a Census Tract was served by more than a single wire center, we assigned it to the wire center that served the majority of the Census Tract. Finally, we aggregated all Census Tracts within each wire center serving area to obtain land area and population for that wire center.

We were then able to calculate the population density for each wire center serving area by dividing its total land area by the number of households. Because wireline telephone service is typically furnished to a *household* rather than to an individual, we used total households rather than total population for this purpose. Wire centers were then assigned to one of five quintiles in terms of their density – the lowest 20% were assigned to Density Group 1, the next 20% to Density Group 2, and so on.

Over the Phase 1 study period, AT&T’s responses to out-of-service conditions had generally deteriorated, except in areas with the highest population density (in terms of households per square mile). The incidence of out-of-service per 100 lines in service (actual) has been increasing except in the highest density wire centers. The average duration of those out-of-service conditions that remain uncleared for more than 24 hours (actual) has increased in all areas, but with the largest increases occurring in areas with the lowest population densities. The percentage of all out-of-service conditions that are being cleared within 24 hours, for which GO 133-C/D has established a 90% objective, remains lowest in areas with the lowest population densities, and does not appear to have improved, except in the highest density wire centers, where the trend line values improved from about 50% in 2010 to 58% in 2017. Finally, the

21. United States Census Bureau, <https://www2.census.gov/geo/pdfs/education/CensusTracts.pdf>, accessed 9/6/18).

number of days required for AT&T California to achieve the 90% OOS cleared objective has gotten longer, except in the highest density areas.

For the 2018-2019 period, we observed little change in the relationships among the five density categories. However, overall performance was considerably poorer in all five categories and for all four of the metrics we studied. These results are plotted on Figures 4A.26, 4A.27, 4A.28 and 4A.29 below:



Except in areas with the highest population density, AT&T's response to out-of-service conditions has generally deteriorated over the study period. That deterioration appears to have accelerated for all population density categories in the 2018-2019 period.

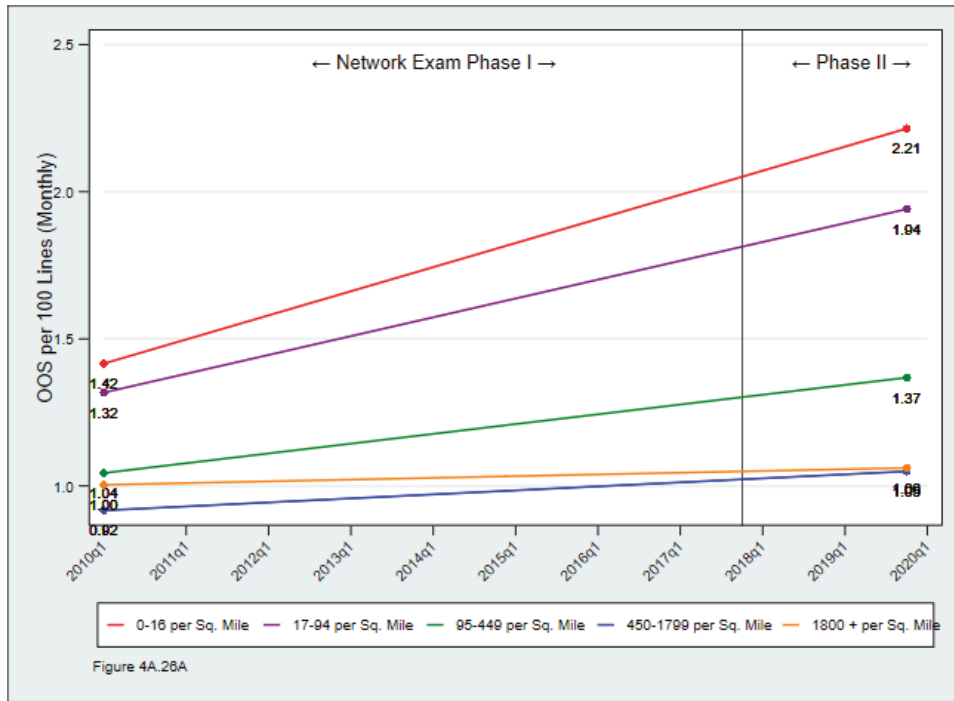


Figure 4A.26A

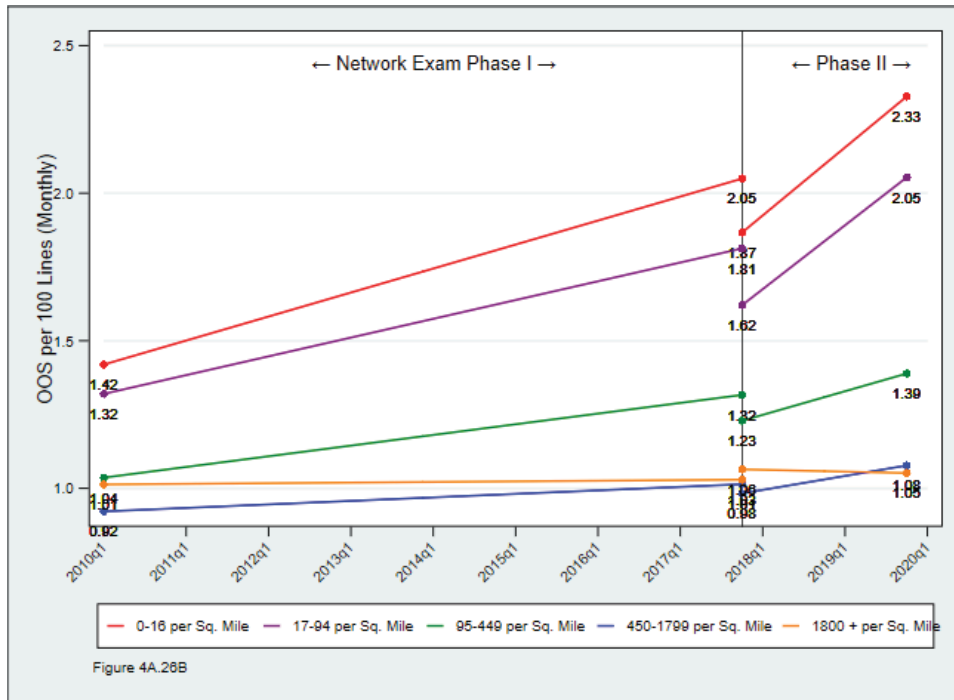


Figure 4A.26B

Figure 4A.26. AT&T California OOS per 100 lines in service (actual) had been increasing except in the highest density categories, and escalated further in all but one density category in 2018-2019.

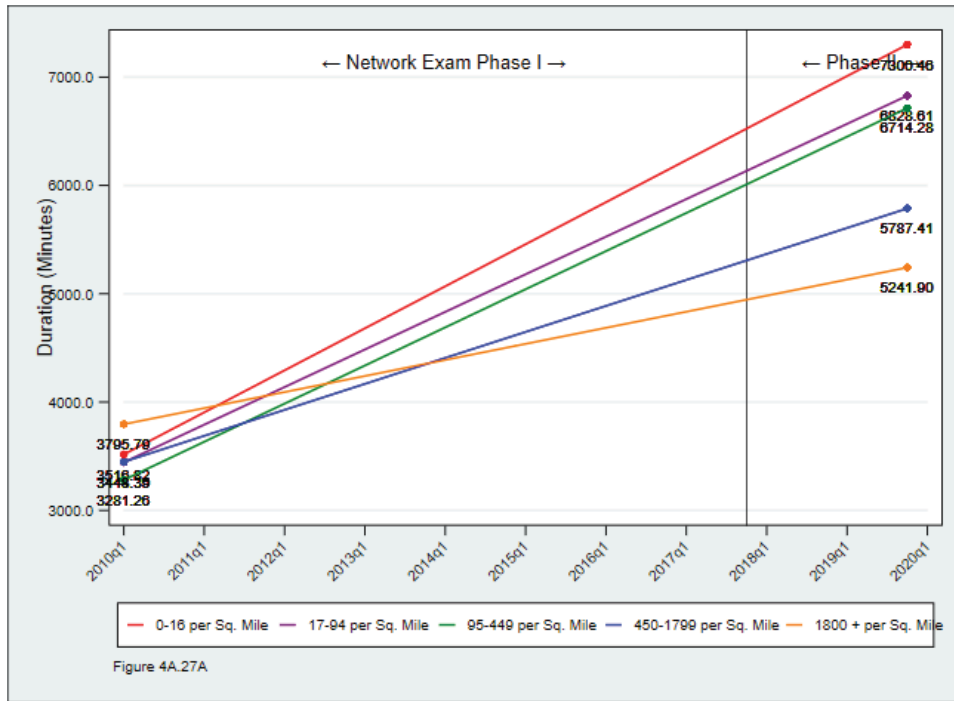


Figure 4A.27A

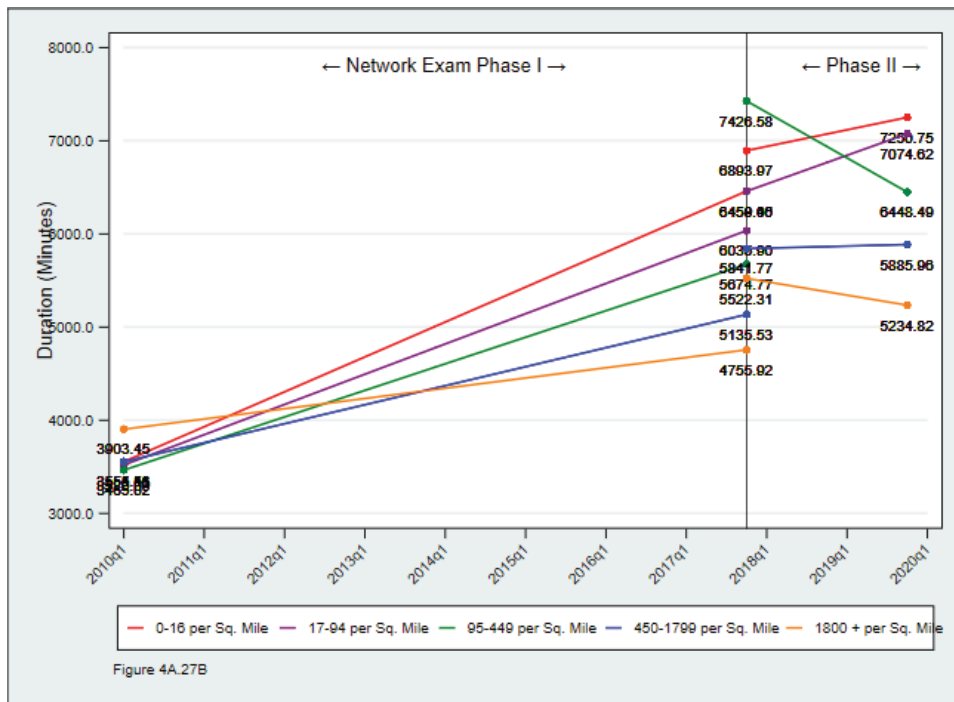


Figure 4A.27B

Figure 4A.27. AT&T California average duration of OOS over 24 hours (actual) had increased the most in areas with the lowest population density, and saw further increases in 2018-2019 across all density categories.

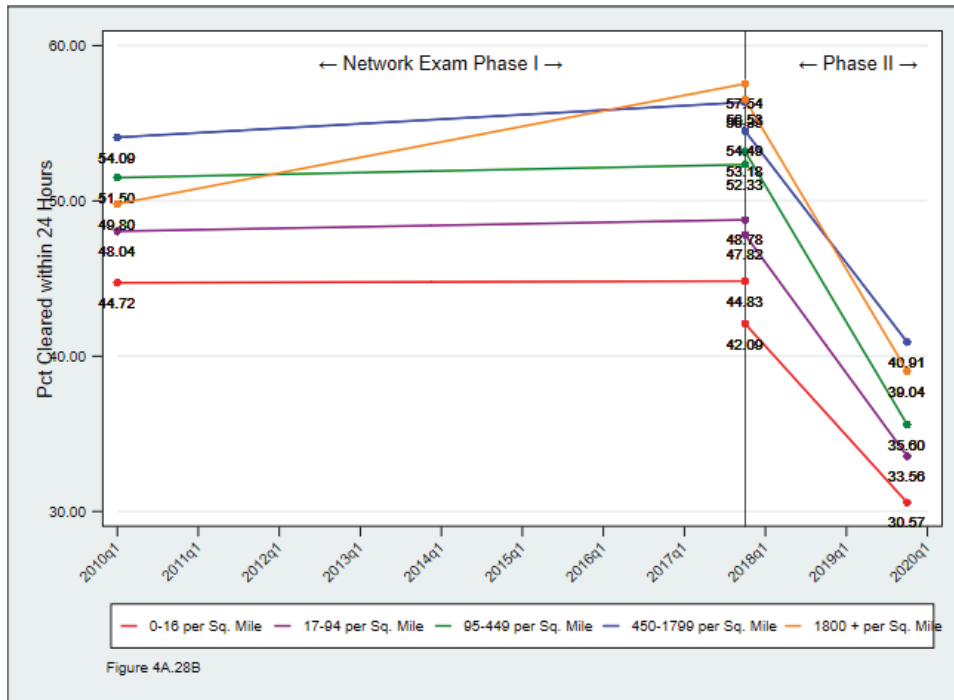
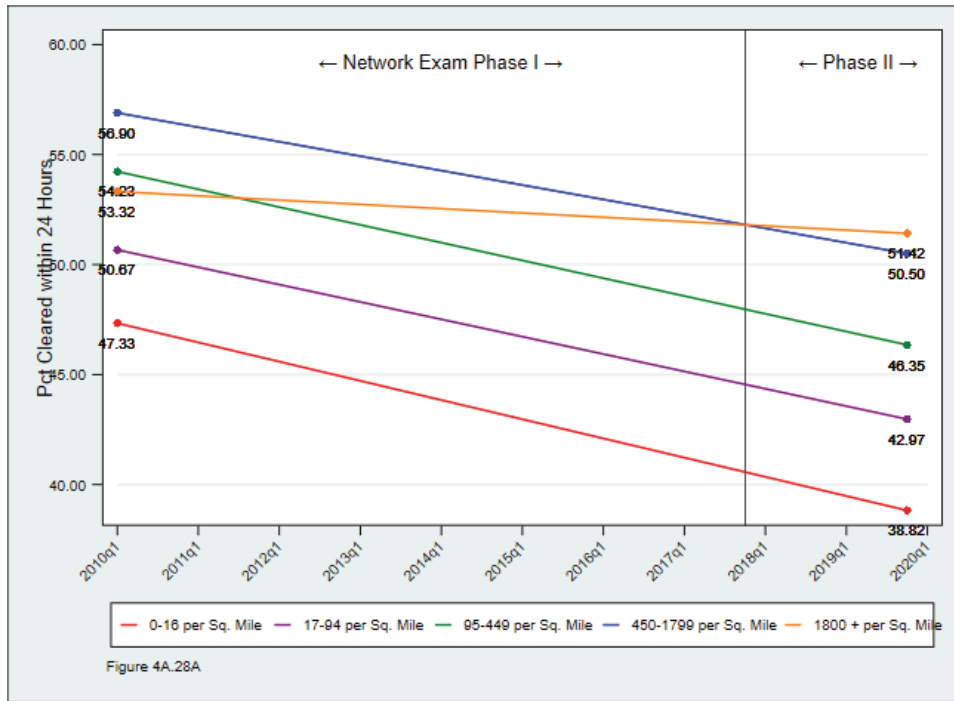


Figure 4A.28. AT&T California percent of all OOS cleared within 24 hours (actual) had remained stable except in areas with the highest population density, but saw decreases in all five density categories in 2018-2019.

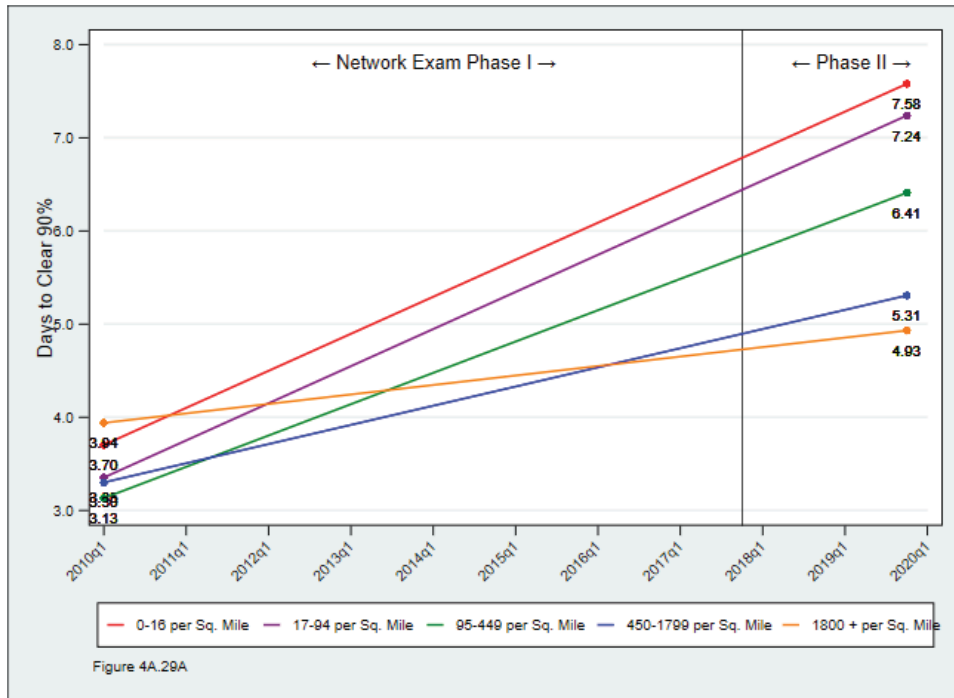


Figure 4A.29A

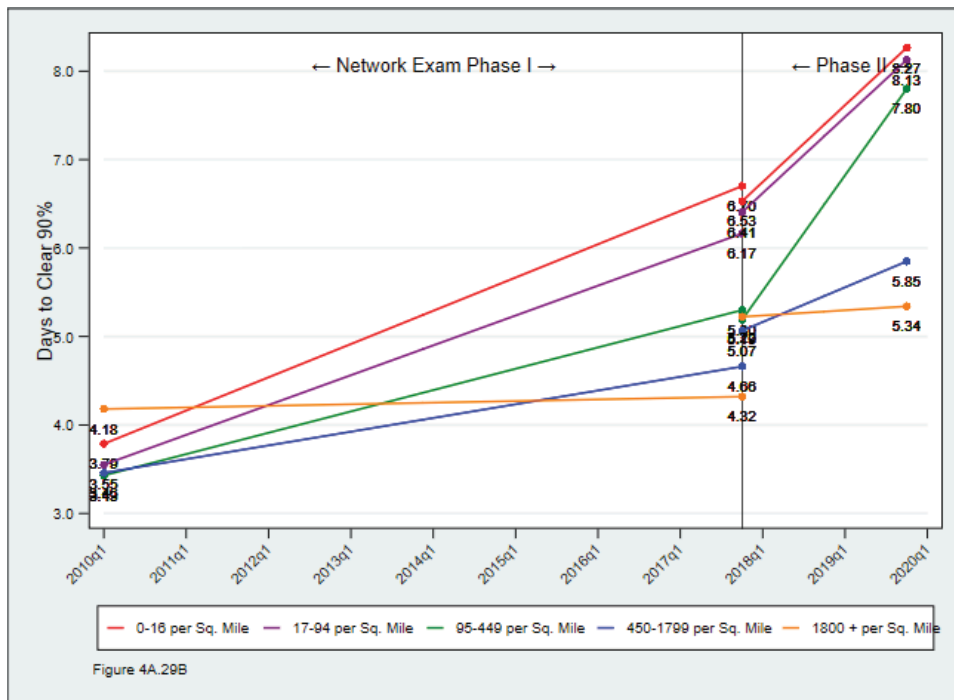


Figure 4A.29B

Figure 4A.29. The number of days required for AT&T California, to clear 90% of all OOS (actual) has increased in all five density categories over the entire 2010-2019 period.

ILEC Organizational Assignment

AT&T California’s principal network maintenance organization had been known as “Technical Field Services (TFS) West (Core)” although it was sometimes referred to as Technology Field Services. In its May 15, 2020 response to CD Network Exam Phase 2 Data Request 11-A-1, AT&T California advised that “[i]n October 2019 the name of the Technology Field Services West (TFS) organization was changed to AT&T Field Operations (AFO) West.”²² We shall henceforth utilize that revised designation. According to AT&T, AFO “is responsible for the installation and repair of Legacy and IP voice and broadband data services (from central offices, through outside cable plant, terminals, and to the customer premises), as well as network infrastructure support and maintenance of those same central office and outside cable plant network facilities.”²³ AT&T has established five (5) regional AFO maintenance organizations, which we refer to as AFO Districts – Greater LA/Bakersfield; San Gabriel; Bay Area/Central Coast; Northern California/Central Valley, and Southern California. Of the five AFO Districts, the Los Angeles/Bakersfield and San Gabriel districts – both of which serve wire centers in the greater Los Angeles metropolitan area – were showing significant improvements in most OOS metrics – decreasing numbers of OOS per 100 POTS lines in service, shorter out-of-service durations until cleared, higher percentages of OOS cleared within 24 hours, and fewer days required to reach the 90% cleared level – over the Phase 1 2010-2017 study period. However, even those gains were largely reversed in 2018-2019, when performance by all AFO Districts in most service quality metrics suffered. The poorest performing AFO District continue to be the one serving Northern California. These results are plotted on Figures 4A.30, 4A.31, 4A.32 and 4A.33 below:



Of the five AT&T maintenance (AFO) districts, LA/Bakersfield and San Gabriel had shown significant improvements in most OOS metrics during the Phase 1 study period. However, even those improvements appear to have largely reversed in 2018-2019.

The stark differences in performance among the five AFO Districts may well be explained by the relative amount of broadband investment that AT&T had made in each of these areas. Table 4A.16 below summarizes, for each AFO District, the total number of wire centers for which the District is responsible together with the number of those wire centers that have been upgraded for broadband services as of the end of 2017. As noted above, AT&T has confirmed that no additional wire centers have been upgraded for broadband since that date.

22. AT&T California response to DR 11-A-1 dated May 15, 2020. In that response, AT&T further advised that “This is the only update to the narrative response provided to Data Request 1, Question 1 on May 11, 2018.” On that basis, we have assumed that the specific assignments of individual wire centers to each of the five now-known-as-AFO districts is the same as it had been in Phase 1.

23. AT&T California response to DR-01A, Request 1.

Table 4A.16			
AT&T CALIFORNIA			
AT&T FIELD OPERATIONS (AFO) DISTRICTS TOTAL WIRE CENTERS AND WIRE CENTERS UPGRADED WITH FIBER TO SUPPORT BROADBAND SERVICES AS OF DECEMBER 2019			
AFO District	Total WCs	Upgraded WCs	Percent Upgraded
Bay / Central Coast	126	85	67.5%
Greater LA / Bakersfield	85	64	75.3%
Northern CA / Central Valley	286	95	33.2%
San Gabriel	13	12	92.3%
Southern California	105	81	77.1%
TOTAL	615	337	54.8%

It seems hardly surprising that the AFO District with the poorest overall performance on all of the relevant service quality metrics – Northern CA / Central Valley – also has the lowest percentage of upgraded wire centers (33.2%) and, conversely, the AFO District exhibiting the best performance and improvement overall – San Gabriel – also happens to have the highest percentage of upgraded wire centers (92.3%). However, while investment in wire center upgrades may well account for a net *gain* in service quality overall (as in the case of the Los Angeles and San Gabriel AFO Districts), it would not by itself explain why those AFO Districts with the smallest percentage of wire center upgrades have experienced so substantial a degradation in service quality over the period, except perhaps to underscore the pressing need for investment and upgrades in these other wire centers as well.

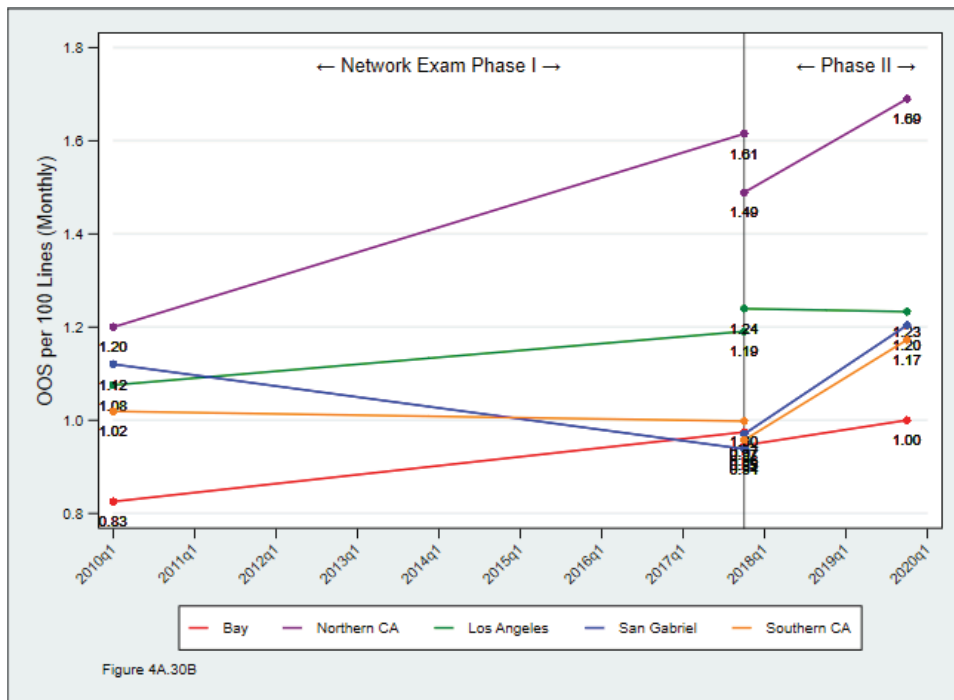
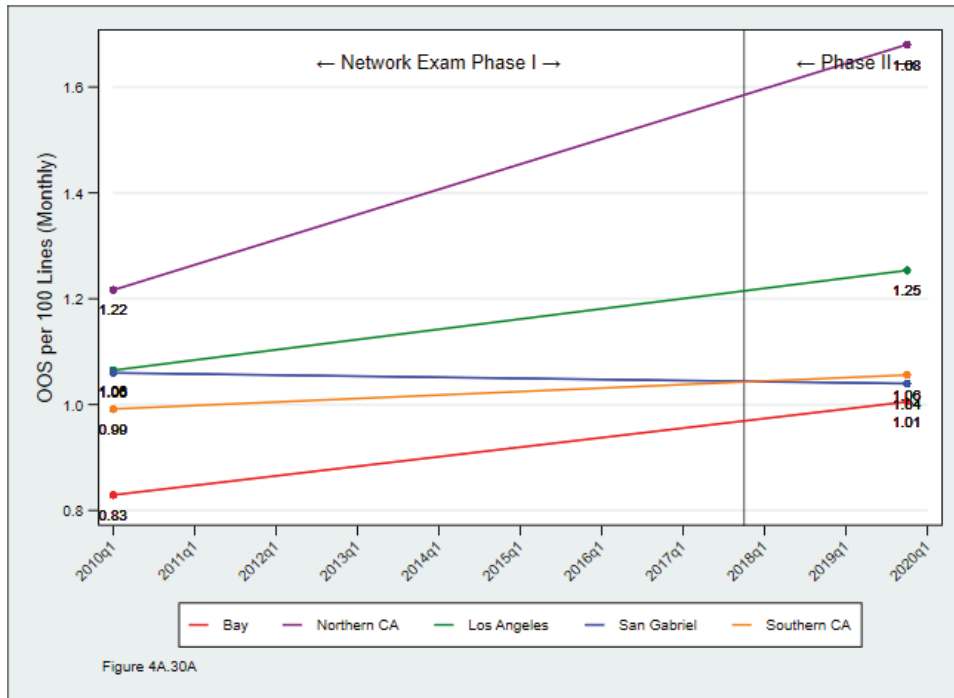


Figure 4A.30. AT&T California. OOS per 100 lines in service (actual) varied inversely with the type of area being supported by each AFO district – lowest in the largest metro areas, but saw large increases in the San Gabriel and Southern California districts.

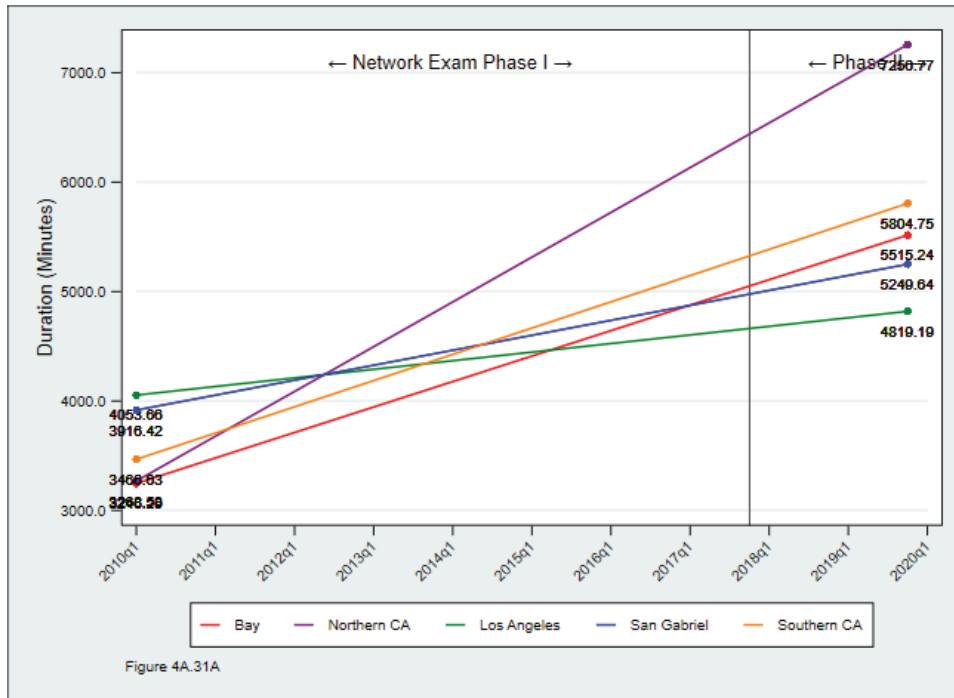


Figure 4A.31A

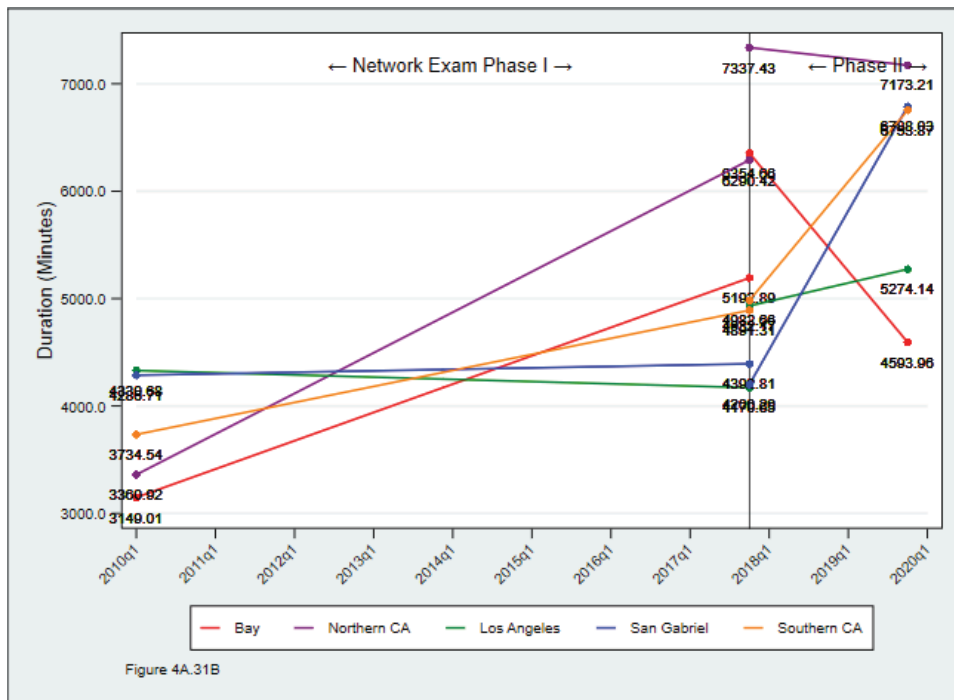


Figure 4A.31B

Figure 4A.31. The average duration of OOS over 24 hours (actual) is longest – and had been increasing – in AT&T California AFO districts covering non-metro and rural areas, and also saw large increases in the San Gabriel and Southern California districts.

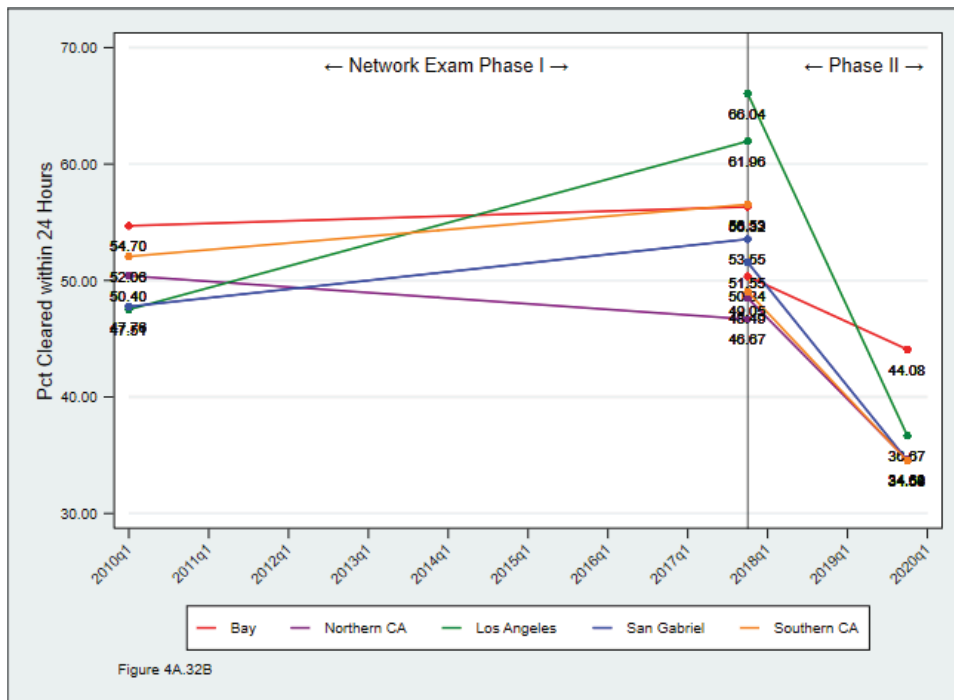
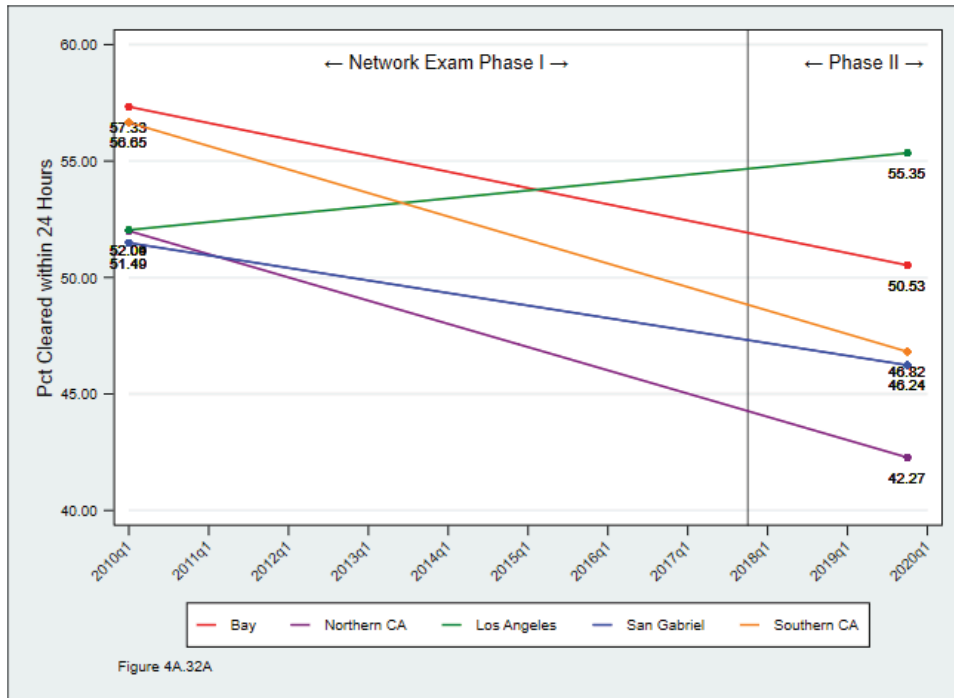


Figure 4A.32. The percentages of OOS to be cleared within 24 hours (actual) decreased in all five AFO districts in 2018-2019.

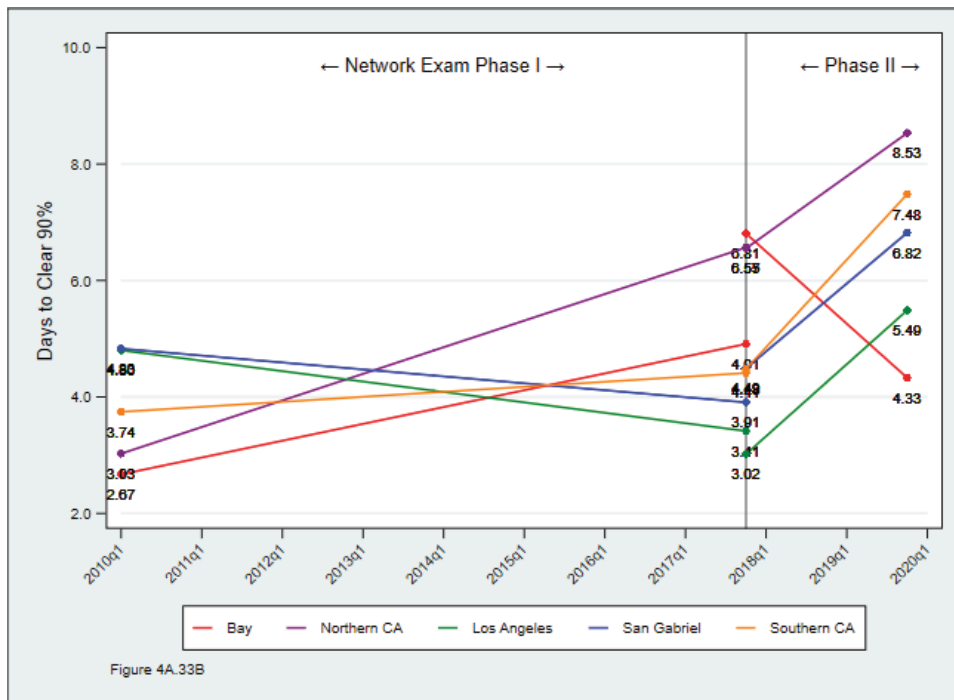
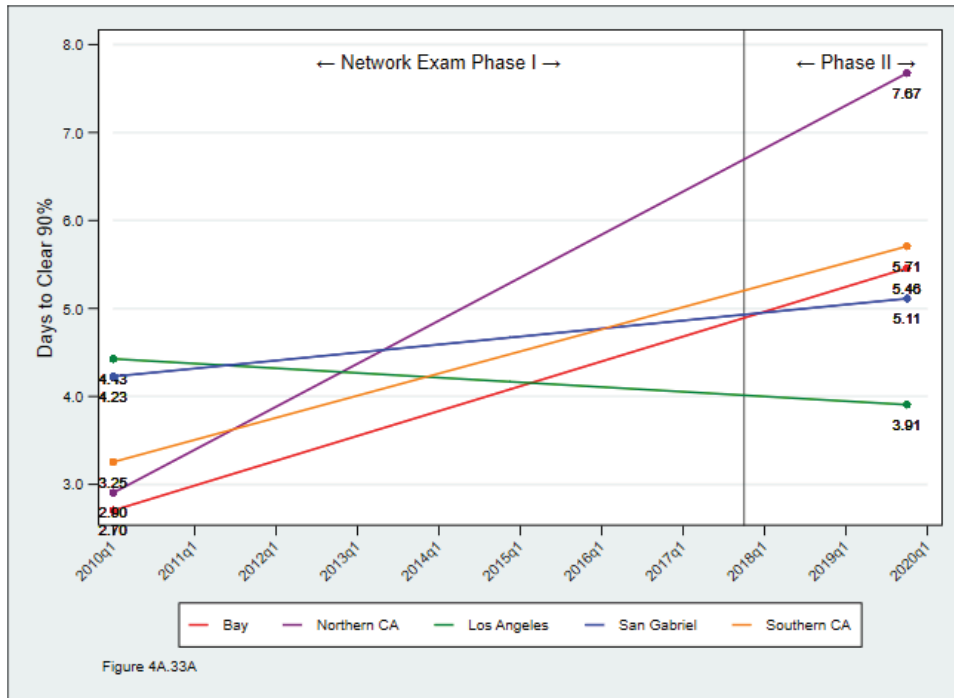


Figure 4A.33. The number of days required to clear 90% of all OOS (actual) increased in all five AFO districts in 2018-2019.



Since the bulk of AT&T's investments in its ILEC network have been aimed at upgrades that support broadband services, the AFO Districts with the smallest percentage of such upgrades have continued to experience substantial degradations in service quality into the 2018-2019 period. This result further underscores the pressing need for infrastructure investment irrespective of AT&T's pursuit of the broadband market.

Summary

Overall, ETI's analysis of the 5.6-million AT&T out-of-service Trouble Report records and other pertinent AT&T service quality data over the full 10-year 2010-2019 period indicates that the company's service quality and its response to protracted out-of-service conditions has declined, in some cases significantly, over this time frame. Of particular concern, the degradation in AT&T service quality overall appears to have accelerated in 2018-2019. There were few exceptions within the overall AT&T California network.

Wire Centers that have received broadband upgrades – and hence benefitted from an infusion of new investment – have fared a lot better than those locations where little or no such upgrades had taken place. Service quality and responses to outages in the very largest wire centers – particularly those in the Los Angeles area (the Los Angeles and San Gabriel AFO Districts) actually showed some improvements, whereas other AFO Districts exhibited deteriorating service quality conditions. In terms of absolute numbers, AT&T out-of-service incidents declined, but the decline was less than in proportion to the large decrease in the number of POTS lines in service that AT&T has experienced over the 10-year study period. The various inter-category relationships were largely maintained in the last two years, but most metrics saw significant losses in all categories in 2018-2019.

4F

SERVICE QUALITY ANALYSIS UPDATE: FRONTIER CALIFORNIA

Principal observations and takeaways:

- The greatest demand drop-offs for legacy POTS services generally occurred in the largest of Frontier's reporting units.
- Over the 2016-2019 Frontier ownership period, POTS access lines in service experienced a 52.3% decrease, dropping from 1,201,218 to 572,975. Thus, in less than four years after taking over the ILEC, more than half of Frontier California's POTS customers had discontinued their service.
- Over the period of Frontier ownership, the relative drop-off in legacy POTS access lines greatly exceeded the relative decrease in total out-of-service incidents; thus, under Frontier ownership, out-of-service incidents per 100 access lines in service increased.
- Improvements in service quality that were accomplished during the first seven quarters following Frontier's takeover were reversed in 2018-2019, which saw increases in the numbers of service outages lasting more than 24 hours and in the average duration of all service outages.
- 57.85% of the roughly 112,022 out-of-service conditions (34.84% on an "adjusted" basis) remained uncleared after 24 hours by Frontier during the 2018-2019 Phase 2 period. For the 118,402 out-of-service conditions during the 4/2016-12/2017 Phase 1 period, 53.83% (47.01% on an adjusted basis) remained uncleared after 24 hours. To satisfy the GO 133-C/D §3.4(c) requirement, these percentages would need to drop to less than 10%.
- Wire centers upgraded with Fiber-to-the-Premises ("FTTP") capable of providing FiOS broadband services achieve better service quality performance scores in virtually every category than those without such upgrades. But Frontier lost ground in all of these metrics both in upgraded and non-upgraded wire centers over the 2018-2019 period.
- The strong relationship between the number of POTS lines in a wire center and the quality of service provided that we had identified in Phase 1 has generally persisted into Phase 2.

Principal observations and takeaways (continued):

- The largest increases in service outages occurred in wire centers with the lowest POTS drop-off rates; the incidence of service outages increased more slowly or remained almost constant in wire centers with successively larger drop-off rates.
- Frontier service quality metrics continue to show the best results in higher-density serving areas.
- Except in those areas with the lowest population density, Frontier's response to out-of-service conditions had generally improved over the period immediately following its takeover. However, by 2018, these gains had started to reverse.
- Service quality metrics in all six Frontier Operating Areas generally improved from the April 2016 acquisition date through the end of 2017, but this pattern reversed course starting in 2018.
- The Operating Areas with the largest presence of fiber upgrades continue to exhibit the lowest number of OOS incidents and the shortest outage durations for those that do occur over the full 2016-2019 period.
- The trend in average duration of all out-of-service conditions, excluding those cleared within one hour, has been steadily increasing over the 2016-2019 Frontier ownership period.
- The largest increases in service outages continued to occur in wire centers with the lowest POTS drop-off rates.
- The Operating Areas within which most of the Verizon and Frontier FTTP upgrades have occurred have experienced the lowest number of OOS incidents and the shortest outage durations for those that do occur.

SERVICE QUALITY ANALYSIS UPDATE:
FRONTIER CALIFORNIA

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A NOTE ABOUT FRONTIER WIRE CENTER DATA

In total, Frontier California, and Verizon California before it, operate approximately 270 wire centers. Under Verizon ownership, the company had been reporting trouble ticket and out-of-service data separately for each of these 270 wire centers. However, for some unexplained reason, following its takeover, Frontier has administratively – *but not physically* – implemented a succession of consolidations of a number of these individual wire centers *for reporting purposes*, ultimately into approximately 198 combined “reporting units.” ETI believes that Frontier’s unexplained restructuring of its wire center data undermines the Commission’s clear intent, in adopting the various GO 133 reporting requirements, to obtain *and track service quality at the individual wire center level*. By merging two or more separate wire centers into a single unit for reporting purposes, Frontier effectively conceals its service quality metrics for each of the individual wire centers within the consolidated group. As a consequence, the Commission can no longer track GO 133-C/D service quality performance at the wire center level for roughly half of all Frontier wire centers. Additionally, because some data continues to be reported at the individual wire center level and some wire center names and CLLI codes seem to have been changed or eliminated altogether, these consolidations have made it difficult to accurately integrate multiple datasets for analysis purposes. Henceforth in this Report, we shall refer to Frontier “reporting units” rather than as wire centers.

Introduction

The study period for Phase 1 of this Network Examination ended in December 2017. Only 21 of the 96 months under examination post-dated the transfer of control of the former Verizon California ILEC entity to Frontier Communications Corp. In order to provide a long-run assessment of the company’s service quality performance, it was necessary to include all eight years of trouble report records and other relevant data as submitted by the company under both Verizon and Frontier management. As of the end of December 2019, however, the company will have been under Frontier management for 45 months. During this period, Frontier has put its own stamp on the company’s operations and, accordingly, there seems little point in retaining the Verizon ownership period in our analysis. More importantly, and as discussed in greater detail in Chapter 8 below, the company’s parent has been in the throws of a massive financial crisis that began shortly after it took over the three former Verizon ILECs – in California, Texas and Florida (the “CTF acquisition”) – that ultimately led to its seeking Chapter 11 bankruptcy protection in April 2020. For all of these reasons, our Phase 2 analysis of Frontier California’s service quality performance will be limited to the April 2016 through December 2019 period of Frontier ownership.

Frontier has been hemorrhaging customers almost from the date of the acquisition

Like ILECs nationwide, Verizon California had been losing customers for its legacy services long before it announced its deal in February 2015 to sell the three CTF companies to Frontier for \$10.54-billion. On the date of that announcement, Verizon California was still serving

approximately 1.45-million POTS access lines.²⁴ By the time the deal closed on April 1, 2016, that number had dwindled by 16.6%, to 1,201,218.²⁵ As of the end of the Phase 1 study period (December 31, 2017), Frontier California was serving only 879,489 POTS access lines,²⁶ representing a drop of 26.8%, relative to the April 1, 2016 acquisition date, and as of the closing date of the Phase 2 study period (December 31, 2019), only 572,975 legacy service access lines remained on the Frontier California network,²⁷ a decrease of 52.3% relative to the April 1, 2016 closing date of the CTF acquisition.²⁸ Moreover, these losses were hardly confined to POTS-type services. As of February 2015 when the deal was announced, *FiOS* – Verizon’s brand name for its Fiber-to-the-Premises (“FTTP”) broadband service – was available to approximately 2.65-million homes within the Verizon California operating area.²⁹ Indeed, the broad availability of *FiOS* across all three of the CTF companies was seen as a major justification for Frontier’s acquisition. But by the closing date on April 1, 2016, only ██████ Frontier California customers were still taking *FiOS* from the company, and as of the end of 2019, that number had dwindled to only ██████.³⁰ Table 4F.1 presents POTS access line data for the Frontier ownership period.

In total, Frontier California, and Verizon California before it, operate approximately 270 wire centers.³¹ Under Verizon ownership, the company had been reporting trouble ticket and out-of-service data separately for each of these 270 wire centers. However, for some unexplained reason, following its takeover, Frontier has administratively -- but not physically -- consolidated a number of these individual wire centers *for reporting purposes*, ultimately into around 198 combined “reporting units.”³² ETI believes that Frontier’s unexplained restructuring of its wire center data undermines the Commission’s clear intent, in adopting the various GO 133 reporting requirements, of obtaining *and tracking* service quality at the wire center level. By combining two or more separate wire centers into a single reporting unit, Frontier has effectively concealed its service quality metrics for each of the wire centers that had been

24. Verizon California GO-133-C Quarterly Report, 1Q15.

25. Frontier California responses to CD Data Requests 11-F-07, 13-F-02.

26. Frontier California response to CD Data Requests 11-F-07, 13-F-01.

27. *Id.*

28. *Id.*

29. CD Staff has advised us that Verizon offered broadband in 85,973 Census blocks in California at the end of 2015. As of that date there were an estimated 2,645,000 households in those 85,973 Census blocks. Thus, approximately 2,645,000 households in California were passed by *FiOS*-capable facilities as of that date.

30. Frontier California Response to CD Data Request 13-F-3.

31. Frontier Response to CD DR 11-F-06, “Attachment 11-F-6 - Confidential Wire Center Name and CLLI Code Data.xlsx”.

32. Frontier California response to CD Data Requests 11-F-07, 13-F-01.

consolidated. As a consequence, the Commission can no longer track GO-133 C/D service quality performance at the wire center level for roughly half of all Frontier wire centers. Additionally, because some data continues to be reported at the individual wire center level, these consolidations have made it difficult to accurately integrate multiple datasets for analysis purposes. Henceforth in this Report, we shall refer to Frontier “reporting units” rather than as wire centers.

Notably, the greatest demand drop-offs generally occurred in the largest reporting units:


 Over the 2016-2019 Frontier ownership period, POTS access lines in service experienced a 52.3% decrease, dropping from 1,201,218 to 572,975. Thus, in less than four years after taking over the ILEC, more than half of Frontier California's POTS customers had discontinued their service.

Table 4F.1

FRONTIER CALIFORNIA
DROP-OFF IN POTS DEMAND AT REPORTING UNITS OF VARYING SIZES
APRIL 2016 – DECEMBER 2019

Reporting Unit Size	April 1, 2016		December 2017		December 2019	
	Reporting Units	Total lines	Reporting Units	Total lines	Reporting Units	Total lines
0-1,000	81	30,422	88	30,805	101	32,267
1,001-3,000	29	51,011	40	77,591	35	60,164
3,001-10,000	45	269,117	43	290,377	48	272,928
10,001-20,000	27	378,236	19	268,812	12	163,538
20,000+	16	472,432	8	211,904	2	44,078
TOTAL	198	1,201,218	198	879,489	198	572,975

Figure 4F.1 below tracks total Frontier California POTS access lines in service over the entire 2016-2019 period.

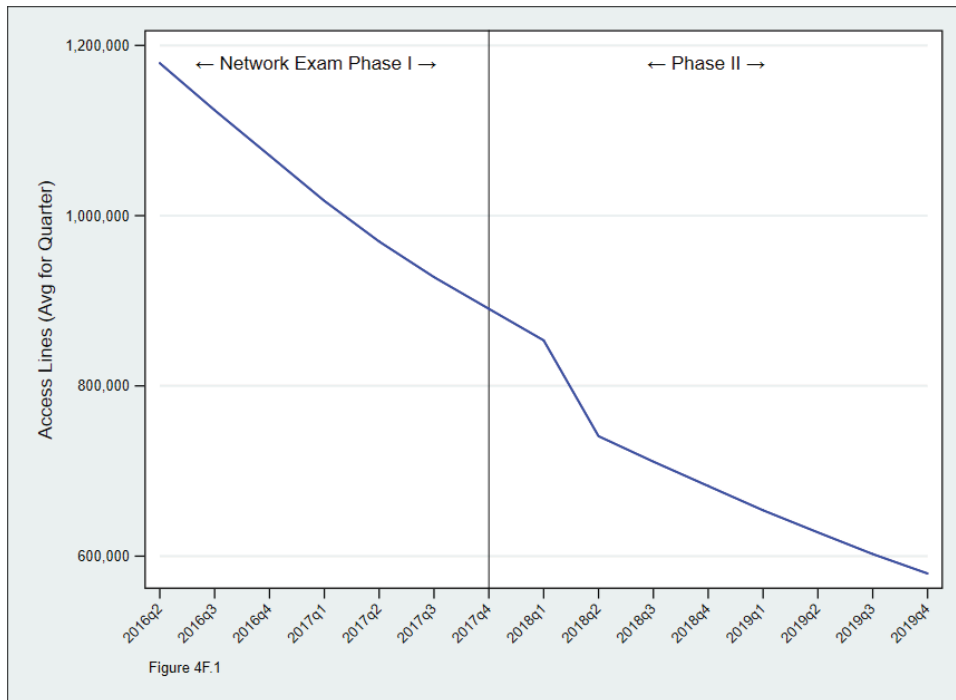


Figure 4F.1. Frontier California has lost more than half of its POTS Access Lines in Service since taking over the company in 2016.

Trouble Reports and POTS Lines in service – a more granular perspective

Viewed at the individual reporting unit level, the ratio of out-of-service conditions to total POTS lines has varied both from month-to-month and as a long-term trend over time. Focusing specifically upon out-of-service conditions not cleared after 24 hours, some wire centers have experienced significant increases in the incidence of this condition, while others have seen improvements. The following Tables summarize the most recent 24 months' (2018-2019) experience, all under Frontier ownership, with respect to four service quality metrics. Each table provides the 20 wire centers with the poorest and the 10 wire centers with the best performance with respect to each of these four metrics. Table 4F.2 presents the percentages of out-of-service conditions not cleared within 24 hours (expressed on a per 100 POTS lines per month basis). Table 4F.3 provides the average out-of-service durations. Table 4F.4 provides the percentages of out-of-service incidents cleared within 24 hours. Table 4F.5 provides the number of days to clear 90% of out-of-service conditions. Table 4F.6 provides all of these data elements for all post-acquisition Frontier reporting units, sorted alphabetically.

Table 4F.2

FRONTIER CALIFORNIA
OUT-OF-SERVICE OVER 24 HOURS' DURATION PER 100 POTS LINES IN SERVICE
20 POOREST PERFORMING AND 10 BEST PERFORMING WIRE CENTERS
2018-2019

Wire Center Name	CLLJ	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Avg OOS Duration (mins)	Avg CPUC OOS Duration (mins)	OOS Total	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 Week
20 POOREST PERFORMING WIRE CENTERS																	
DESERT CENTER	DSCTCAXG	20	10.87	5.12	52.9%	68.6%	3.9	4.0	3291	2761	51	51	24	5	46	16	3
BADGER	BDGRCAFX	67	6.01	4.96	17.5%	50.5%	10.5	11.9	7419	6286	97	97	80	28	28	71	14
SALTON CITY	SLCYCAXF	142	6.97	4.83	30.7%	54.2%	5.0	4.4	3958	3278	238	237	165	23	190	109	11
MIRANTPHST	MRMNCASF	77	5.13	4.26	16.8%	41.1%	13.5	12.8	9207	7551	95	95	79	41	74	56	27
DUNLAP	DNLPCAXF	223	6.26	4.19	33.1%	49.6%	9.0	7.7	5398	4501	335	335	224	67	285	169	47
BERRANDA MESA	BRMSCAXF	19	4.61	3.73	19.0%	61.9%	5.7	4.9	5162	3592	21	21	17	3	12	8	0
DESERT SHORES	DSHCAFX	73	3.63	2.78	23.4%	53.7%	5.3	4.4	3352	2942	64	64	49	4	45	29	1
CUCAMONGA (SAGE)	CCMNCAXF	494	3.76	2.46	34.4%	53.5%	5.5	4.5	4196	3265	445	443	292	53	367	207	28
SNELLING	SNNGCAXG	130	3.02	2.41	20.2%	50.0%	6.2	4.4	4769	3301	94	94	75	18	67	47	1
SQUAW VALLEY	SVYFCAXF	133	3.21	2.20	31.4%	46.1%	10.4	8.7	6116	5029	102	102	70	25	90	55	15
NEWBERRY SPRINGS	NWBRCAFX	178	3.42	2.15	37.0%	62.3%	7.8	5.9	4589	3802	146	146	92	26	113	55	16
TIVY VALLEY	TVVYCAFX	469	3.45	1.98	42.5%	64.4%	5.7	4.3	4006	2981	388	384	223	67	308	138	30
LEGGETT	LGGTCAFX	65	2.62	1.92	26.8%	48.8%	15.9	5.4	8054	4961	41	41	30	14	32	21	6
MAD RIVER	MDRVCAFX	175	2.04	1.88	8.1%	37.2%	13.6	11.6	9923	8381	86	86	79	38	61	54	21
COVELO	CVLCAFX	496	2.33	1.81	22.4%	48.7%	14.9	10.7	7894	6134	277	274	215	73	214	142	35
ANZA	ANZACAXF	354	2.77	1.78	35.7%	58.7%	6.4	5.4	5089	3859	235	234	151	42	196	97	20
GLENNVILLE	GLVLCAXF	343	1.90	1.70	10.8%	40.8%	11.4	7.9	7252	5622	157	157	140	44	113	93	20
SUMMIT VILY	SMVYCAFX	52	2.64	1.68	36.4%	66.7%	6.1	5.9	3180	2502	33	33	21	2	24	11	1
ALDERPOINT	ALPNCAXF	91	2.21	1.66	25.0%	45.8%	23.3	25.5	9281	9123	48	48	36	16	38	26	9
CALIFORNIA HOT SPRINGS	CHSPCAXF	283	2.18	1.65	24.3%	56.1%	9.0	6.6	5941	3947	148	146	112	30	104	65	8
10 BEST PERFORMING WIRE CENTERS																	
HERMOSA BEACH/MANHATTAN BI	HRBHCAXA	24438	0.36	0.17	52.0%	71.5%	4.4	2.8	2715	1949	2100	2084	1007	118	1754	598	44
REDONDO BEACH	RDBHCAXF	1031	0.32	0.17	47.5%	77.5%	3.0	2.0	2212	1524	80	80	42	0	58	18	0
MORENOJEDGEMONT/SUNNYMEAL	NGSCAXF/I	7832	0.34	0.17	51.2%	69.6%	4.6	3.2	3103	2270	644	639	314	51	530	196	20
THOUSAND OAKS	THOKCAXF	8683	0.30	0.17	43.7%	64.1%	6.7	5.1	4434	3322	616	611	347	100	495	221	52
CAMARILLO	CMRLCAXF	7778	0.28	0.16	40.5%	64.7%	5.2	3.2	3237	2225	516	511	307	45	397	182	16
EL RIO	ELRICAXF	5625	0.28	0.16	43.7%	67.3%	5.1	3.9	2864	2136	382	380	215	31	299	125	14
MURRIETA	MURTCAXF	7128	0.29	0.15	47.8%	69.4%	4.2	3.4	3029	2365	500	497	261	31	398	153	8
CHINOLOS SERRANOS	CHNOCAXF	12546	0.34	0.15	56.8%	73.0%	2.9	1.7	1960	1478	1022	1018	441	18	874	276	8
NEWBURY PARK	NWPKCAXF	5539	0.18	0.11	38.7%	62.1%	7.9	5.1	7056	5816	243	240	149	51	186	92	21
FORT IRWIN	FTIRCAXF	159	0.05	0.00	100.0%	100.0%	0.4	0.4	492	492	2	2	0	0	2	0	0

Table 4F.3
FRONTIER CALIFORNIA
AVERAGE OUT-OF-SERVICE DURATION
20 POOREST PERFORMING AND 10 BEST PERFORMING WIRE CENTERS
2018-2019

Wire Center Name	CLLJ	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Avg OOS Duration (mins)	Avg CPUC OOS Duration (mins)	OOS Total	OOS > 1 hour	OOS > 24 Hours	OOS > 1 week	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 Week
20 POOREST PERFORMING WIRE CENTERS																	
VTVL HSPR (GLENDDORA)		4	1.09	1.09	0.0%	0.0%	11.2	10.2	16080	14640	1	1	1	1	1	1	1
TOPANGA		610	0.81	0.72	56.8%	56.8%	24.5	12.7	12979	7889	118	118	106	51	66	51	18
INDEPENDENCE		122	0.92	0.61	33.3%	66.7%	16.3	14.9	11662	10962	27	27	18	9	19	9	6
MALIBU		4397	0.47	0.33	28.8%	63.3%	18.1	9.8	10893	6820	493	487	351	134	323	181	52
MAD RIVER		175	2.04	1.88	8.1%	37.2%	13.6	11.6	9923	8381	86	86	79	38	61	54	21
SANTA PAULA		2236	1.21	0.89	26.9%	55.1%	21.9	17.3	9409	6793	650	650	475	169	474	292	99
ALDERPOINT		91	2.21	1.66	25.0%	45.8%	23.3	25.5	9281	9123	48	48	36	16	38	26	9
MIRANTPHST		77	5.13	4.26	16.8%	41.1%	13.5	12.8	9207	7551	95	95	79	41	74	56	27
BEL AIR (SOMIS)		433	1.05	0.78	25.7%	54.1%	10.5	7.7	8076	5927	109	109	81	25	82	50	12
LEGGETT		65	2.62	1.92	26.8%	48.8%	15.9	5.4	8054	4961	41	41	30	14	32	21	6
KENWOOD		317	1.20	1.03	14.3%	50.5%	8.6	6.8	7903	3966	91	91	78	23	61	45	8
COVELO		496	2.33	1.81	22.4%	48.7%	14.9	10.7	7894	6134	277	274	215	73	214	142	35
LAYTONVILLE		690	1.70	1.25	26.6%	55.0%	14.1	11.5	7839	6196	282	279	207	78	204	127	41
OLANGHA (OJA)		89	0.89	0.80	10.5%	63.2%	13.6	12.5	7690	9729	19	19	17	6	9	7	2
BADGER		67	6.01	4.96	17.5%	50.5%	10.5	11.9	7419	6286	97	97	80	28	71	48	14
GLENNVILLE		343	1.90	1.70	10.8%	40.8%	11.4	7.9	7252	5622	157	157	140	44	113	93	20
NEWBURY PARK		5539	0.18	0.11	38.7%	62.1%	7.9	5.1	7056	5816	243	240	149	51	186	92	21
CAZADERO		363	1.76	1.28	27.5%	55.6%	10.5	8.6	7022	5849	153	152	111	42	115	68	27
MORONGO VALLEY		332	2.41	1.62	32.8%	57.3%	9.9	8.3	6810	5299	192	191	129	67	150	82	35
SANTA MARIA/ORTUTT		9508	0.35	0.22	38.8%	57.0%	6.5	5.3	6672	5874	810	807	496	110	678	348	65
10 BEST PERFORMING WIRE CENTERS																	
POMONA		5820	0.53	0.27	48.8%	70.1%	3.6	2.1	2444	1794	742	740	380	20	596	222	7
CLEMENTS		262	1.72	0.75	56.5%	76.9%	4.5	2.9	2399	1702	108	107	47	7	88	25	2
LINDEN		598	1.16	0.68	41.3%	67.7%	3.5	2.2	2338	1583	167	167	98	1	131	54	0
REDONDO BEACH		1031	0.32	0.17	47.5%	77.5%	3.0	2.0	2212	1524	80	80	42	0	58	18	0
MCFARLAND		634	1.39	0.68	51.4%	75.0%	3.5	2.0	2191	1490	212	209	103	8	164	53	2
CALIFORNIA CITY		989	0.98	0.41	58.1%	75.8%	4.0	2.0	2157	1380	227	226	95	9	191	55	2
LANCASTER ANTELOPE (HIVISTA)		58	1.36	0.50	63.2%	68.4%	4.9	4.3	2152	1839	19	19	7	1	18	6	1
CHINO/LOS SERRANOS		12546	0.34	0.15	56.8%	73.0%	2.9	1.7	1960	1478	1022	1018	441	18	874	276	8
PARKFIELD		22	0.96	0.58	40.0%	100.0%	1.8	0.8	1380	676	5	5	3	0	5	0	0
FORT IRWIN		159	0.05	0.00	100.0%	100.0%	0.4	0.4	492	492	2	2	0	0	2	0	0

Table 4F.4

FRONTIER CALIFORNIA
PERCENT OUT-OF-SERVICE CLEARED WITHIN 24 HOURS
20 POOREST PERFORMING AND 10 BEST PERFORMING WIRE CENTERS
2018-2019

Wire Center Name	CLLJ	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Avg OOS Duration (mins)	Avg CPUO OOS Duration (mins)	OOS Total	OOS > 1 hour	OOS > 24 Hours	OOS > 1 week	CPUC OOS > 1 hour	CPUC OOS > 24 hours	CPUC OOS > 1 Week
20 POOREST PERFORMING WIRE CENTERS																	
WALNUT		5	0.80	0.80	0.0%	0.0%	4.1	3.1	5929	4489	1	1	1	0	1	1	0
VTVL HSPR (GLENDDORA)		4	1.09	1.09	0.0%	0.0%	11.2	10.2	16080	14640	1	1	1	1	1	1	1
MAD RIVER		175	2.04	1.88	8.1%	37.2%	13.6	11.6	9923	6381	86	79	38	61	54	51	21
TOPANGA		610	0.81	0.72	10.2%	56.8%	24.5	12.7	12979	7689	118	106	51	66	66	51	18
OLANCHA (OJAI)		89	0.89	0.80	10.5%	63.2%	13.6	12.5	7690	9729	19	17	6	9	7	7	2
GLENNVILLE		343	1.90	1.70	10.8%	40.8%	11.4	7.9	7252	5622	157	157	140	44	113	93	20
RANDESBURG		42	0.69	0.59	14.3%	71.4%	8.0	3.6	6298	2958	7	7	6	2	4	2	0
KENWOOD		317	1.03	1.03	14.3%	50.5%	8.6	6.8	3966	3966	91	78	23	61	45	45	8
WILLOW CRK		804	1.16	0.98	15.2%	49.8%	8.0	6.4	5767	4230	223	223	189	50	153	112	16
ROBBINS		74	1.46	1.24	15.4%	53.8%	5.6	2.6	3892	2168	26	22	2	2	16	12	0
MIRANTPHST		77	5.13	4.26	16.8%	41.1%	13.5	12.8	9207	7551	95	95	79	41	74	56	27
BADGER		67	6.01	4.96	17.5%	50.5%	10.5	11.9	7419	6286	97	97	80	28	71	48	14
TRONA		440	1.49	1.21	18.5%	44.6%	9.0	5.8	5242	3884	157	157	128	27	121	87	11
HOOPA		519	0.64	0.52	18.8%	43.8%	6.1	4.7	4454	3432	80	80	65	11	61	45	4
BERRANDA MESA		19	4.61	3.73	19.0%	61.9%	5.7	4.9	5162	3592	21	21	17	3	12	8	0
SNELLING		130	3.02	2.41	20.2%	50.0%	6.2	4.4	4789	3301	94	94	75	18	67	47	1
BENTON		96	1.82	1.43	21.4%	61.9%	6.8	4.5	4512	3060	42	42	33	6	24	16	0
EL MIRAGE		81	1.44	1.13	21.4%	42.9%	7.8	6.4	6515	5596	28	28	22	5	22	16	4
COVELO		496	2.33	1.81	22.4%	48.7%	14.9	10.7	7894	6134	277	274	215	73	214	142	35
SOLVANG (SANTA YNEZ)		4073	0.89	0.69	22.6%	47.4%	9.8	8.8	6115	5064	871	868	674	172	663	458	90
10 BEST PERFORMING WIRE CENTERS																	
MCFARLAND		634	1.39	0.68	51.4%	75.0%	3.5	2.0	2191	1490	212	209	103	8	164	53	2
HERMOSA BEACH/MANHATTAN BIRBHACAXA		24438	0.36	0.17	52.0%	71.5%	4.4	2.8	2715	1949	2100	2084	1007	118	1754	598	44
EXETER		1580	1.04	0.50	52.2%	74.2%	4.3	2.5	2774	1783	395	391	189	25	315	102	8
BIG BEAR CITY		1537	0.73	0.34	52.6%	78.4%	5.6	2.6	3008	1609	268	264	127	26	209	58	3
DESERT CENTER		20	10.87	5.12	52.9%	68.6%	3.9	4.0	3291	2761	51	51	24	5	46	16	3
CLEMENTS		262	1.72	0.75	56.5%	76.9%	4.5	2.9	2399	1702	108	107	47	7	88	25	2
CHINOLOS SERRANOS		12546	0.34	0.15	56.8%	73.0%	2.9	1.7	1960	1478	1022	1018	441	18	874	276	8
CALIFORNIA CITY		969	0.98	0.41	58.1%	75.8%	4.0	2.0	2157	1380	227	226	95	9	191	55	2
LANCASTER ANTELOPE (HIVISTA LNCSCAXF)		58	1.36	0.50	63.2%	68.4%	4.9	4.3	2152	1839	19	19	7	1	18	6	1
FORT IRWIN		159	0.05	0.00	100.0%	100.0%	0.4	0.4	492	492	2	2	0	0	2	0	0

Table 4F.5

FRONTIER CALIFORNIA
DAYS REQUIRED TO CLEAR 90% OF OUT-OF-SERVICE CONDITIONS
20 POOREST PERFORMING AND 10 BEST PERFORMING WIRE CENTERS
2018-2019

Wire Center Name	CLLJ	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS-24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Avg OOS Duration (mins)	Avg CPUOOS Duration (mins)	OOS Total	OOS > 1 hour	OOS > 24 Hours	OOS > 1 week	CPUC OOS > 24 hours	CPUC OOS > 1 Week
20 POOREST PERFORMING WIRE CENTERS																
TOPANGA		610	0.81	0.72	10.2%	56.8%	24.5	12.7	12979	7689	118	118	106	51	66	18
ALDERPOINT		91	2.21	1.66	25.0%	45.8%	23.3	25.5	9281	9123	48	48	36	16	38	9
SANTA PAULA		2236	1.21	0.89	26.9%	55.1%	21.9	17.3	9409	6793	650	650	475	169	474	99
MALIBU		4397	0.47	0.33	28.8%	63.3%	18.1	9.8	10893	6820	493	487	351	134	323	52
INDEPENDENCE		122	0.92	0.61	33.3%	66.7%	16.3	14.9	11662	10962	27	27	18	9	19	6
LEGGETT		65	2.62	1.92	26.8%	48.8%	15.9	5.4	8054	4961	41	41	30	14	32	6
GRANT GROVE VILLAGE		246	1.08	0.76	29.7%	64.1%	15.0	14.7	5748	5365	64	63	45	12	41	7
COVELO		496	2.33	1.81	22.4%	48.7%	14.9	10.7	7894	6134	277	274	215	73	214	35
LAYTONVILLE		890	1.70	1.25	26.6%	55.0%	14.1	11.5	7839	6196	282	279	207	78	204	41
OLANCHA (OJA)		89	0.89	0.80	10.5%	63.2%	13.6	12.5	7690	9729	19	19	17	6	9	2
MAD RIVER		175	2.04	1.88	8.1%	37.2%	13.6	11.6	9923	8381	86	86	79	38	61	21
MIRANTPHST		77	5.13	4.26	16.8%	41.1%	13.5	12.8	9207	7551	95	95	79	41	74	27
LEE VINING		133	0.78	0.53	32.0%	56.0%	13.3	13.6	6617	6108	25	25	17	8	19	5
BRIDGEPORT		443	0.73	0.49	33.3%	60.3%	12.0	8.9	6319	4497	78	78	52	18	59	9
GLENNVILLE		343	1.90	1.70	10.8%	40.8%	11.4	7.9	7252	5622	157	157	140	44	113	20
VTVL HSPR (GLENORA)		4	1.09	1.09	0.0%	0.0%	11.2	10.2	16080	14640	1	1	1	1	1	1
BADGER		67	6.01	4.96	17.5%	50.5%	10.5	11.9	7419	6286	97	97	80	28	71	14
BEL AIR (SOMIS)		433	1.05	0.78	25.7%	54.1%	10.5	7.7	8076	5927	109	109	81	25	82	12
CAZADERO		363	1.76	1.28	27.5%	55.6%	10.5	8.6	7022	5849	153	152	111	42	115	27
SQUAW VALLEY		133	3.21	2.20	31.4%	46.1%	10.4	8.7	6116	5029	102	102	70	25	90	15
10 BEST PERFORMING WIRE CENTERS																
ETTIVANDA		1885	0.52	0.30	41.7%	65.1%	3.8	2.9	3135	2489	235	234	137	12	187	6
ONTARIO/ONTARIO SOUTHWEST		12929	0.36	0.19	45.5%	67.5%	3.7	2.7	2722	1978	1103	1099	601	53	875	14
SUN CITY/QUAIL VALLEY		4552	0.55	0.29	47.7%	68.9%	3.6	2.6	2891	2094	598	594	313	26	482	7
POMONA		5820	0.53	0.27	48.8%	70.1%	3.6	2.1	2444	1794	742	740	380	20	596	7
LINDEN		598	1.16	0.68	41.3%	67.7%	3.5	2.2	2338	1583	167	167	98	1	131	0
MCFARLAND		634	1.39	0.68	51.4%	75.0%	3.5	2.0	2191	1490	212	209	103	8	164	0
REDONDO BEACH		1031	0.32	0.17	47.5%	77.5%	3.0	2.0	2212	1524	80	80	42	0	58	0
CHINO/LOS SERRANOS		12546	0.34	0.15	56.8%	73.0%	2.9	1.7	1960	1478	1022	1018	441	18	874	8
PARKFIELD		22	0.96	0.58	40.0%	100.0%	1.8	0.8	1380	676	5	5	3	0	5	0
FORT IRWIN		159	0.05	0.00	100.0%	100.0%	0.4	0.4	492	492	2	2	0	0	2	0

Table 4F.6

FRONTIER CALIFORNIA
TROUBLE REPORT OUT-OF-SERVICE DATA
2018-2019

Wire Center Name	CLI	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Avg OOS Duration (mins)	Avg CPUC OOS Duration (mins)	OOS Total	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC OOS > 24 hours	CPUC OOS > 1 week
ADELANTO	ADLNCAFX	1584	0.59	0.34	43.1%	75.1%	5.7	4.6	3752	2431	225	224	128	33	156	56
ALDERPOINT	ALPNCAXF	91	2.21	1.66	25.0%	45.8%	23.3	25.5	9281	9123	48	48	36	16	38	26
ALPFAUGH	ALPFCAXF	70	2.39	1.37	42.5%	65.0%	5.9	3.7	2106	2106	40	40	23	1	32	14
ANZA	ANZACAXF	354	2.77	1.78	35.7%	58.7%	6.4	5.4	5089	3859	235	234	151	42	196	97
APPLE VALLEY/DESERT KNOLLS	APVYCAFX	4222	0.76	0.46	38.6%	64.3%	6.0	4.5	3841	2620	765	764	470	110	593	273
ARROWHEAD	ARHDCAXF	1968	0.91	0.53	41.1%	72.7%	7.3	4.2	4283	2313	428	427	252	62	315	117
AZUSA/LENORA	AZUSCAFX	7129	0.75	0.41	45.2%	69.2%	4.6	3.4	3060	2089	1284	1275	703	99	1015	396
BADGER	BDRGCAXF	67	6.01	4.96	17.5%	50.5%	10.5	11.9	7419	6286	97	97	80	28	71	48
BANNING/BEAUMONT	BNNNGCAXF	4345	0.72	0.45	37.6%	59.6%	5.7	4.4	3968	3058	750	744	468	92	592	303
BARSTOW/BARSTOW SOUTH	BRSWCAXH	1889	0.94	0.54	42.2%	65.6%	6.6	4.9	4055	2813	424	419	245	64	321	146
BEL AIR (SOMIS)	BELRCAXF	433	1.05	0.78	25.7%	54.1%	10.5	7.7	8076	5927	109	109	81	25	82	50
BENTON	BNNTCAXF	96	1.82	1.43	21.4%	61.9%	6.8	4.5	4512	3060	42	42	33	6	24	16
BERRENDA MESA	BRRENCAFX	19	4.61	3.73	19.0%	61.9%	5.7	4.9	5162	3592	21	21	17	3	12	8
BIG BEAR CITY	BBYCAFX	1537	0.73	0.34	52.6%	78.4%	5.6	2.6	3008	1609	268	264	127	26	209	58
BIG BEAR LAKE	BBKCAFX	1340	0.62	0.30	51.0%	82.5%	6.6	2.3	3565	1466	200	200	98	22	141	35
BIG PINE	BGPICAXF	167	0.80	0.55	31.3%	56.3%	6.4	4.7	3966	2967	32	32	22	5	26	14
BISHOP	BSHPCAXG	1887	0.63	0.38	39.4%	56.7%	5.9	4.9	4163	3302	284	283	172	40	241	123
BORON/NORTH EDWARDS	BORNCAFX	323	1.18	0.66	44.0%	64.8%	5.7	4.0	3202	2163	91	91	51	8	74	32
BRIDGEPORT	BRPTCAXF	443	0.73	0.49	33.3%	60.3%	12.0	8.9	6319	4497	78	78	52	18	59	31
BRSW YERMI/YERMO	YERMCAFX	252	1.85	1.16	37.5%	64.3%	5.8	4.6	4023	3332	112	112	70	15	84	40
BUTTONWILLow	BTNWCAXF	310	1.52	1.10	27.4%	57.5%	6.2	5.0	4671	3485	113	113	82	23	85	48
CALIFORNIA CITY	CFYCAXF	969	0.98	0.41	58.1%	75.8%	4.0	2.0	2157	1380	227	226	95	9	191	55
CALIFORNIA HOT SPRINGS	CHSPCAXF	283	2.18	1.65	24.3%	56.1%	9.0	6.6	5941	3947	148	146	112	10	104	65
CALIMESAYUCAIPA	CLMSCAXF	4360	0.92	0.61	33.0%	55.1%	6.5	4.8	4252	3126	960	951	643	143	761	431
CAMARILLO	CMRLCAXF	7778	0.28	0.16	40.5%	64.7%	5.2	3.2	3237	2225	516	511	307	45	397	182
CANTUA CREEK	CNCKCAXF	71	1.99	1.52	23.5%	47.1%	8.6	5.8	5290	3521	34	34	26	5	25	18
CARPINTERIA	CRPRCAXF	1881	1.18	0.73	38.3%	59.3%	6.7	4.6	5540	4009	533	531	329	62	442	217
CAZADERO	CZDRCAFX	363	1.76	1.28	27.5%	55.6%	10.5	8.6	7022	5849	153	152	111	42	115	68
CHINOLOS SERRANOS	CHNOCAXF	12546	0.34	0.15	56.8%	73.0%	2.9	1.7	1960	1478	1022	1018	441	18	874	276
CLAREMONT/LA VERNE/SAN DIMA/CLMTCAXF	CLMTCAXF	14088	0.50	0.27	45.7%	66.8%	4.1	2.7	2634	1926	1680	1674	912	75	1379	557
CLEMENTS	CLEMCAFX	262	1.72	0.75	56.5%	76.9%	4.5	2.9	2399	1702	108	107	47	7	88	25
COLFAX	CLFXCAFX	735	1.29	0.84	34.4%	64.8%	4.2	2.7	2944	1943	227	227	149	11	169	80
CORCORAN	CRRCAXF	760	1.74	1.20	31.1%	54.4%	7.1	4.8	4207	3005	318	318	219	36	249	145
COVELO	CVELCAFX	496	2.33	1.81	22.4%	48.7%	14.9	10.7	7894	6134	277	274	215	73	214	142
COVINA	COVNCAXF	18323	0.57	0.29	49.0%	70.8%	4.5	3.1	2886	1953	2502	2491	1276	161	2046	731
CRESTLINE	CRNLCAFX	1203	1.39	0.85	38.7%	71.3%	7.1	4.8	4415	2670	401	401	246	55	288	115
CROWLEY LAKE	CRKLCAXF	237	0.54	0.35	35.5%	58.1%	4.4	4.2	3291	2256	31	31	20	2	26	13
CUCAMONGA (SAGE)	CCMNCAXF	494	3.76	2.46	34.4%	53.5%	5.5	4.5	4196	3265	445	443	292	53	367	207
CUYAMA	CUYMCAFX	155	1.23	0.91	26.1%	71.7%	7.0	9.1	6188	4994	46	46	34	12	26	13
DESERT CENTER	DSCTCAXG	20	10.87	5.12	52.9%	68.6%	3.9	4.0	2761	2761	51	51	24	5	46	16
DESERT HOT SPRINGS	DHSPCAXF	1824	2.38	1.49	37.2%	63.3%	4.7	3.5	3834	2651	1041	1037	654	84	797	382
DESERT SHORES	DSSHCAFX	73	3.63	2.78	23.4%	54.7%	5.3	4.4	3352	2942	64	64	49	4	45	29
DIAMOND BAR	DMBRCAFX	8178	0.31	0.18	43.1%	66.7%	4.5	3.2	2904	2130	612	607	348	36	479	204
DOS PALOS/ORO LOMA	DSPLCAXF	784	1.51	1.01	32.7%	62.3%	5.7	4.7	3495	2555	284	284	191	23	206	107
DOWNEY/DOWNEY IMPERIAL/BEL DNLYCAXF	DNLYCAXF	9517	0.90	0.48	46.8%	69.5%	6.0	4.5	3502	2436	2046	2040	1089	266	1638	624
DUNLAP	DNLPCAXF	223	6.26	4.19	49.6%	63.1%	9.0	7.7	5398	4501	335	335	224	67	285	169
EL MIRAGE	ELMGCAXF	81	1.44	1.13	21.4%	42.9%	7.8	6.4	6515	5596	28	28	22	5	22	16
EL RIO	ELRCAXF	5625	0.28	0.16	43.7%	67.3%	5.1	3.9	2864	2136	382	380	215	31	289	125
ELLWOOD (GAVIOTA)	ELWDCAXF	178	1.12	0.70	37.5%	62.5%	9.7	7.9	5511	4240	48	48	30	10	36	18

Table 4F.6 (continued)

Wire Center Name	CLLI	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Avg OOS Duration (mins)	Avg CPUC Duration (mins)	OOS Total	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC OOS > 24 hours	CPUC OOS > 1 Week
ELSINORE	GRANDE/ELSINORE	M/ELSINORXG/	3714	0.51	0.28	45.9%	70.8%	4.2	2.5	2843	1904	455	246	23	352	133
ETIWA	ETIWA	ETIWA	1885	0.52	0.30	41.7%	65.1%	3.8	2.9	3135	2489	235	137	12	187	82
EXETER	EXETER	EXETER	1580	1.04	0.50	52.2%	74.2%	4.3	2.5	2774	1783	395	189	25	315	102
FARMERSVILLE	FARMERSVILLE	FRVLCAXF	438	1.66	0.96	42.3%	65.1%	4.8	3.4	3087	2246	175	101	18	141	61
FARMINGTON	FARMINGTON	FRTNCAFX	148	1.40	0.73	48.0%	76.0%	5.1	3.1	3032	1983	50	26	4	38	12
FORT IRWIN	FORT IRWIN	FTRCAXF	159	0.05	0.00	100.0%	100.0%	0.4	0.4	492	492	2	0	0	2	0
FOWLER	FOWLER	FWRLCAXF	1236	1.54	0.83	46.0%	64.8%	4.5	3.4	3005	2306	457	247	39	385	161
GARBERVILLE	GARBERVILLE	GRVLCAXF	893	1.63	1.01	37.8%	52.4%	8.3	6.0	4525	349	345	217	56	301	166
GILROY	GILROY	GLRYCAXF	5921	0.72	0.49	32.4%	58.2%	7.2	5.5	5329	3816	1030	696	265	785	431
GLENVILLE	GLENVILLE	GLVLCAXF	343	1.90	1.70	10.8%	40.8%	11.4	7.9	7252	5622	157	140	44	113	93
GRANADA HILLS	GRANADA HILLS	GRHLCAFX	5224	0.64	0.36	44.3%	67.8%	5.4	4.3	3574	2490	804	448	77	634	259
GRANT GROVE VILLAGE	GRANT GROVE VILLAGE	GGVGCAXF	246	1.08	0.76	29.7%	84.1%	15.0	14.7	5748	5365	64	63	45	12	23
GUADALUPE	GUADALUPE	GDLPCAXG	844	0.34	0.22	34.8%	55.1%	7.9	5.1	4520	2971	69	69	45	15	31
HAYFORK	HAYFORK	HFKCAXF	548	0.94	0.54	42.3%	61.0%	5.5	4.4	3462	2525	123	122	71	16	102
HEMET VALLE VISTA	HEMET VALLE VISTA	HEMTCAXF/	6004	0.64	0.35	44.4%	67.8%	6.5	4.9	4069	3165	917	914	510	721	295
HERMOSA BEACH/MANHATTAN	HERMOSA BEACH/MANHATTAN	BHRBHCAX/	24438	0.36	0.17	52.0%	71.5%	4.4	2.8	1949	2100	2084	1007	118	1754	598
HESPERIA	HESPERIA	HSPRCAXF	5433	0.80	0.44	44.9%	65.8%	6.0	4.5	3734	2681	1039	1036	143	839	355
HOMELAND	HOMELAND	HMLDCAFX	1113	1.55	0.82	47.1%	67.1%	4.5	3.2	3037	2279	414	219	25	335	136
HOMESTEAD VALLEY	HOMESTEAD VALLEY	HMYCAXF	504	1.82	1.21	33.2%	59.1%	6.9	4.8	4286	2889	220	147	34	170	90
HOOPA	HOOPA	HOPACAXF	519	0.64	0.52	18.8%	43.8%	6.1	4.7	4454	3432	80	65	11	61	45
HUNTINGTON BEACH	HUNTINGTON BEACH	HNBHCAXG	13746	0.71	0.42	40.5%	63.0%	6.6	4.8	4197	2882	2357	2344	1402	305	1884
IDYLLWILD	IDYLLWILD	IDYLCAXF	1126	0.98	0.64	34.7%	65.3%	6.0	4.1	4246	3018	265	173	45	192	92
INDEPENDENCE	INDEPENDENCE	INDPCAFX	122	0.92	0.61	33.3%	66.7%	16.3	14.9	11662	10962	27	18	9	19	9
INDIO LA QUINTA/MECCANORTH	INDIO LA QUINTA/MECCANORTH	INDICAXG/L	9775	1.57	0.92	41.4%	65.2%	4.9	3.5	3397	2526	3677	2154	308	2857	1280
INYO KERN	INYO KERN	INYKCAFX	467	1.60	0.90	43.6%	65.4%	9.4	6.1	5410	3627	179	178	101	36	144
JOSHUA TREE	JOSHUA TREE	JSTRCAFX	632	0.90	0.58	35.8%	61.3%	6.9	5.2	5120	4115	137	137	88	34	109
JUNE LAKE	JUNE LAKE	JNLKCAFX	283	0.44	0.31	30.0%	40.0%	5.5	3.9	4540	3907	30	21	3	28	18
KENWOOD	KENWOOD	KNWDCAFX	317	1.20	1.03	14.3%	50.5%	8.6	6.8	7903	3966	91	91	78	23	61
KERNVILLE	KERNVILLE	KRVLCAXF	851	1.39	0.93	32.9%	56.9%	8.7	6.8	5366	3960	283	283	191	58	219
KNIGHTS LANDING	KNIGHTS LANDING	KNLDCAXF	134	1.46	1.06	27.7%	63.8%	5.4	3.3	3936	2375	47	47	34	4	30
LA HABRA/WHITTIER LA HABRA	LA HABRA/WHITTIER LA HABRA	LAHBCAXF/	7474	0.82	0.48	41.2%	66.7%	6.5	5.0	4045	3036	1477	1473	868	210	1144
LA PUENTE	LA PUENTE	LAPNCAFX/	13818	0.72	0.36	49.8%	70.3%	4.2	2.7	2724	1909	2396	2386	1202	124	1953
LAGUNA BEACH/SOUTH LAGUNA	LAGUNA BEACH/SOUTH LAGUNA	ILGBHCAXF/	2634	0.75	0.47	36.7%	61.7%	7.8	5.6	4443	3180	472	471	299	59	372
LAKE HUGHES	LAKE HUGHES	LKHGCAFX	576	1.32	0.78	41.0%	71.0%	6.9	4.7	4123	2563	183	182	108	29	137
LAKE ISABELLA	LAKE ISABELLA	LKISCAFX	1155	1.20	0.75	37.2%	60.4%	7.9	7.3	4532	3726	333	332	209	50	262
LANCASTER ANTELOPE (HI VISTA)	LANCASTER ANTELOPE (HI VISTA)	LNCSCAXF	58	1.36	0.50	63.2%	68.4%	4.9	4.3	2152	1839	19	7	1	18	6
LANCASTER/QUARTZ HILL	LANCASTER/QUARTZ HILL	LNCSCAXG/	10345	0.63	0.35	45.3%	69.2%	6.7	4.9	3770	2672	1573	1566	860	210	1243
LAYTONVILLE	LAYTONVILLE	LYVLCAXF	690	1.70	1.25	26.6%	55.0%	14.1	11.5	7639	6196	282	279	207	78	204
LEE VINING	LEE VINING	LVNGCAFX	133	0.78	0.53	32.0%	56.0%	13.3	13.6	6617	6108	25	17	8	19	11
LEGGETT	LEGGETT	LGTCAXF	65	2.62	1.92	26.8%	48.8%	15.9	5.4	8054	4961	41	41	30	14	32
LEMON COVE	LEMON COVE	LMCVCAFX	84	0.99	0.69	30.0%	60.0%	7.0	4.0	4724	3008	20	20	14	4	14
LENWOOD	LENWOOD	LNWDCAFX	370	1.40	0.77	45.2%	65.3%	6.4	4.3	3789	2438	124	124	68	14	99
LINDEN	LINDEN	LNDCAXF	598	1.16	0.68	41.3%	67.7%	3.5	2.2	2338	1583	167	167	98	1	131
LINDSAY/STRATHMORE	LINDSAY/STRATHMORE	LNDCAXF/	1681	1.53	0.77	49.5%	66.9%	4.6	3.3	2984	2196	616	616	46	514	204
LOMPOC/VANDENBERG AFB	LOMPOC/VANDENBERG AFB	LMPCCAXF/	3940	0.60	0.38	35.7%	57.2%	9.0	7.2	5697	4598	563	561	362	90	451
LONG PINE	LONG PINE	LNPNCAFX	464	1.01	0.74	27.4%	55.8%	9.6	5.3	5153	3007	113	113	82	18	82
LONG BEACH	LONG BEACH	LNBNCAFX/	17831	0.55	0.27	50.9%	73.5%	5.6	4.1	3100	2122	2334	2310	1146	210	1864
LONG BEACH STADIUM (LAKEWOL)	LONG BEACH STADIUM (LAKEWOL)	LNBNHCAXS	4718	0.54	0.27	50.1%	66.9%	6.1	4.7	3466	2586	613	611	306	87	524
LOS ALAMOS	LOS ALAMOS	LSALCAFX	422	0.51	0.34	34.6%	48.1%	5.9	4.5	4376	3508	52	52	34	12	46
LOS ANGELES (MARS VISTA)	LOS ANGELES (MARS VISTA)	CLCYCAXG	5245	0.71	0.37	48.0%	70.8%	4.4	3.5	2740	1996	890	887	463	48	724
LOS GATOS	LOS GATOS	LSGTCAAI	6283	1.05	0.75	28.6%	57.5%	7.8	5.6	5796	4145	1580	1572	128	411	1152
LOST HILLS	LOST HILLS	LSHLCAFX	228	1.10	0.84	23.3%	53.3%	5.9	4.8	3877	3005	60	60	46	5	44
LUCERNE VALLEY	LUCERNE VALLEY	LCVYCAFX	500	2.24	1.47	34.6%	56.9%	6.2	4.8	3881	2784	269	267	176	39	210
MAD RIVER	MAD RIVER	MDRVCAFX	175	2.04	1.88	8.1%	37.2%	13.6	11.6	9923	8381	86	86	79	38	61
MALIBU	MALIBU	MALBXCAG/	4397	0.47	0.33	28.8%	63.3%	18.1	9.8	10893	6820	493	487	351	134	323



Table 4F.6 (continued)

Wire Center Name	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Avg OOS Duration (mins)	Avg CPUC Duration (mins)	OOS Total	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC OOS > 24 hours	CPUC OOS > 1 Week
MAMMOTH LAKES	1934	0.47	0.30	59.0%	8.0	4.6	5556	3576	217	215	139	31	171	89	14
MANTECALA THROP	5345	0.67	0.36	45.9%	66.1%	4.9	3.6	3078	2148	858	855	464	67	706	291
MARSHALL MUSCOY	4657	1.07	0.72	33.1%	55.4%	3.7	4.1	4060	2999	1196	1194	800	137	962	50
MC FARLAND	634	1.39	0.68	51.4%	75.0%	5.5	2.0	2191	1490	212	209	103	8	164	2
MCKITTRICK	153	1.47	0.98	33.3%	53.7%	9.9	5.9	4915	3674	54	54	36	12	43	6
MENTONE	1898	0.80	0.59	26.5%	62.0%	8.5	5.5	5377	3497	366	366	269	65	256	24
MIRANTPHST	77	5.13	4.26	16.8%	41.1%	13.5	12.8	9207	7551	95	95	79	41	74	56
MORNOVA	6715	0.83	0.43	48.1%	70.3%	4.6	3.2	3103	2270	1336	1328	693	73	1076	397
MORENO/EDGEMONT/SUNNYMEALNCSXAF//	7832	0.34	0.17	51.2%	69.6%	4.3	3.2	6044	639	314	51	530	196	196	20
MORGAN HILL	4904	0.62	0.43	31.3%	54.8%	7.4	5.3	5253	3530	732	732	503	154	577	69
MORONGO VALLEY	332	2.41	1.62	32.8%	57.3%	9.9	8.3	6810	5299	192	191	129	67	150	35
MURRIETA	7128	0.29	0.15	47.8%	69.4%	4.2	3.4	3029	2365	500	497	261	31	398	8
NEWBERRY SPRINGS	178	3.42	2.15	37.0%	62.3%	7.8	5.9	4589	3802	146	146	92	26	113	16
NEWBURY PARK	5539	0.18	0.11	38.7%	62.1%	7.9	5.1	7056	5816	243	240	149	51	186	21
NORWALK/NORWALK ALONDRA/ARWLXCAF/	18040	0.56	0.28	50.1%	70.3%	5.5	4.2	3230	2297	2434	2419	1215	278	1992	130
NOVATO	3335	0.63	0.44	30.9%	51.6%	7.1	5.0	4579	3276	508	507	351	80	411	36
OLANCHA (OJAI)	89	0.89	0.80	10.5%	63.2%	13.6	12.5	7690	9729	19	19	17	6	9	7
ONTARIO/ONTARIO SOUTH/ONTA/ONTRCXC	12929	0.36	0.19	45.5%	67.5%	3.7	2.7	2722	1978	1103	1099	601	53	875	359
ORLEANS	170	0.83	0.64	23.5%	50.4%	4.9	4.1	3872	3253	34	34	26	3	26	17
OXNARD/OXNARD W WOOLEY	6952	0.44	0.25	41.9%	64.0%	6.0	4.7	3801	3035	730	727	424	90	581	260
PACIFIC PALISADES	6250	0.75	0.40	45.8%	72.9%	5.1	3.2	3095	2068	1119	1114	606	92	859	303
PACOIMA	3725	0.57	0.32	43.9%	66.4%	6.3	5.1	3997	2993	506	505	284	70	402	170
PALM DESERT/THOUSAND PALMS/PLDSCXAF/	11789	0.99	0.57	42.6%	67.3%	4.6	3.4	3678	2781	2804	2797	1610	230	2199	916
PALM SPRINGS/RANCHO MIRAGE/PLSPCAXF/	10122	1.29	0.75	41.8%	66.8%	5.1	3.6	4305	3316	3143	3139	1829	313	2432	1043
PARKFIELD	22	0.96	0.58	40.0%	100.0%	1.8	0.8	1380	676	5	5	3	0	5	0
PERRIS	3025	0.81	0.45	44.4%	68.7%	5.0	3.4	3536	2548	588	586	327	55	448	184
PERRIS (LAKEVIEW NU)	1267	1.53	0.85	44.8%	70.4%	4.9	3.2	3571	2719	466	463	257	46	361	138
PHELAN	1832	0.97	0.56	42.5%	66.7%	6.0	4.2	3885	2774	426	426	245	58	327	142
PICO RIVERA	7411	0.79	0.45	42.9%	67.4%	5.5	4.0	3520	2446	1406	1401	809	173	1087	459
PIERCY	52	1.69	1.05	38.1%	52.4%	7.3	3.9	5587	3382	21	21	13	8	18	10
PINE CREEK	127	0.86	0.53	38.5%	61.5%	6.0	4.1	3662	2207	26	25	16	3	21	10
PINYON	145	1.99	1.27	36.2%	59.4%	5.3	4.8	3587	2864	69	69	44	6	53	28
PLAYA DEL REY	6562	0.78	0.41	47.2%	69.0%	5.4	4.4	3220	2312	1232	1226	651	103	996	382
POINT MUGU	1814	0.71	0.44	38.1%	61.2%	6.1	4.9	4243	3517	307	307	190	47	248	119
POMONA	5820	0.53	0.27	48.8%	70.1%	3.6	2.1	2444	1794	742	740	380	20	596	222
RANDBURG	42	0.69	0.59	14.3%	71.4%	8.0	3.6	6298	2958	7	7	6	2	4	2
REDLANDS/LOMA LINDA	9001	0.50	0.29	42.4%	63.8%	5.2	4.2	3431	2713	1076	1065	620	96	846	390
REDONDO BEACH	1031	0.32	0.17	47.5%	77.5%	3.0	2.0	2212	1624	80	80	42	0	58	18
REDDLEY	2116	1.31	0.76	42.4%	61.5%	4.9	3.8	3365	2620	667	665	384	64	558	257
RIDGECREST	3589	1.20	0.75	37.9%	58.7%	8.9	6.7	4798	3509	1035	1033	643	165	833	427
RIPON	1686	0.82	0.45	44.5%	65.8%	5.4	4.1	3297	2310	330	328	183	34	264	113
ROBBINS	74	1.46	1.24	15.4%	53.8%	5.6	2.6	3892	2168	26	26	22	2	16	12
RUNNING SPRINGS	587	1.23	0.61	50.3%	74.0%	5.5	2.7	3085	1940	173	173	86	15	140	45
SALTON CITY	142	6.97	4.83	30.7%	54.2%	5.0	4.4	3958	3278	238	237	165	23	190	109
SAN BERNARDINO/SAN BERARDINO/SNBRXCAX/	7512	1.03	0.65	36.6%	61.7%	5.4	4.1	3496	2637	1851	1844	1173	170	1424	709
SAN FERNANDO (SNFN SNFN)	3521	0.63	0.38	39.7%	63.5%	6.0	4.5	3808	2833	532	532	321	75	425	194
SAN JACINTO	1874	0.75	0.41	45.4%	70.9%	5.0	3.1	3766	2378	337	335	184	33	256	98
SAN JOAQUIN/TRANQUILLITY	431	1.26	0.89	29.2%	46.2%	5.9	4.5	3888	2986	130	130	92	14	108	70
SAN MIGUEL	496	0.54	0.29	46.9%	68.8%	5.4	5.0	5482	4375	64	61	34	5	47	20
SANGER	2005	1.47	0.99	32.8%	56.2%	6.1	4.8	4592	3577	705	703	474	126	545	309
SANTA BARBARA/GOLETO/MONTE/SNBBXCAX/	17859	0.91	0.58	35.8%	59.1%	7.0	5.5	4682	3440	3897	3875	2503	543	3089	1593
SANTA MARIA/ORCUTT	9508	0.35	0.22	38.8%	57.0%	6.5	5.3	6672	5874	810	807	496	110	678	348
SANTA MONICA/SANTA MONICA O SNMNCXAF	19895	0.60	0.30	49.6%	66.1%	4.4	3.1	2596	1965	2885	2874	1454	147	2474	979
SANTA PAULA	2236	1.21	0.89	26.9%	55.1%	21.9	17.3	9409	6793	650	650	475	169	474	292
SEA RANCH	557	1.14	0.70	39.2%	66.0%	7.3	5.4	5418	3329	153	153	93	26	116	52

Table 4F.6 (continued)

Wire Center Name	Access Lines (avg for Quarter)	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	Pct Cleared w/in 24 hours (adj)	# days to clear 90% OOS (unadj)	# days to clear 90% OOS (adj)	Avg OOS Duration (mins)	Avg CPUC OOS Duration (mins)	OOS Total	OOS > 1 hour	OOS > 24 hours	OOS > 1 week	CPUC OOS > 24 hours	CPUC OOS > 1 Week
SEAL BEACH (ALAMITOS)	13392	0.53	0.27	49.4%	72.5%	4.5	2.9	2717	1892	1699	1690	860	107	1390	468
SEPULVEDA	5210	0.60	0.35	42.3%	61.5%	6.4	5.1	3700	2871	750	749	433	95	622	289
SIERRA MADRE/PASADENA	2874	0.83	0.47	43.6%	67.2%	5.1	3.7	3124	2210	574	574	324	45	463	188
SNELLING	130	3.02	2.41	20.2%	50.0%	6.2	4.4	4769	3301	94	94	75	18	67	47
SOLVANG (SANTA YNEZ)	4073	0.89	0.69	22.6%	47.4%	9.8	8.8	6115	5064	871	868	674	172	663	458
SQUAW VALLEY	133	3.21	2.20	31.4%	46.1%	10.4	8.7	6116	5029	102	102	70	25	90	55
SUMMIT VLY	52	2.64	1.68	36.4%	66.7%	6.1	5.9	3180	2502	33	33	21	2	24	11
SUN CITY/QUAIL VALLEY	4552	0.55	0.29	47.7%	68.9%	3.6	2.6	2891	2094	598	594	313	26	482	186
SUN CITY/VALLEY	3073	0.77	0.51	33.3%	60.0%	7.1	5.5	4370	3353	568	568	441	88	441	227
SUNLD T.JNG	3137	0.58	0.33	43.6%	67.7%	6.3	4.8	3971	2903	440	439	248	60	347	142
SYLMAR	1117	0.82	0.45	45.7%	64.3%	4.9	3.4	3116	2309	221	219	120	17	178	79
TAFT/FELLOWS/MARICOPA	10239	0.46	0.26	44.6%	67.8%	4.0	2.7	3008	1995	1138	1135	630	69	906	366
TEMECULA/RANCHO CALIFORNIA	8683	0.30	0.17	43.7%	64.1%	6.7	5.1	4434	3322	616	611	347	100	495	221
THOUSAND OAKS	1712	0.31	0.18	43.3%	68.5%	6.8	5.4	4012	2854	127	126	72	15	99	40
THOUSAND OAKS(CONEJO)	412	1.38	1.02	25.7%	50.0%	10.1	6.7	6494	4724	136	136	101	36	104	68
TIMBER COVE	469	3.45	1.98	42.5%	64.4%	5.7	4.3	4006	2981	388	384	223	67	308	138
TIVY VALLEY	610	0.81	0.72	10.2%	56.8%	24.5	12.7	12979	7689	118	118	106	51	66	51
TOPANGA	440	1.49	1.21	18.5%	44.6%	9.0	5.8	5242	3884	157	157	128	27	121	87
TRONA	1069	1.58	1.01	36.0%	56.2%	6.6	5.3	4464	3262	406	404	260	76	329	178
TWENTYNINE PALMS/MARINE BAS	22127	0.49	0.25	48.6%	70.2%	3.9	2.6	2743	2011	2577	2561	1325	130	2057	768
UPLAND	7126	0.48	0.28	42.5%	65.2%	5.8	4.5	3846	2893	819	818	471	107	654	285
VICTORVILLE/HELENDALE-SILVER	4	1.09	1.09	0.0%	0.0%	11.2	10.2	16080	14640	1	1	1	1	1	1
VTVL HSPR (GLENDDORA)	5	0.80	0.80	0.0%	0.0%	4.1	3.1	5929	4489	1	1	1	0	1	1
WEAVERVILLE	1802	0.65	0.35	46.4%	72.4%	4.9	3.2	2891	1893	250	248	134	18	194	69
WEIMAR	367	1.10	0.77	29.9%	54.6%	3.9	2.5	2813	1963	97	97	68	3	75	44
WELDON	455	1.81	1.21	33.3%	57.6%	7.5	6.0	4567	3259	198	197	132	30	156	84
WEST LOS ANGELES/WEST LOS A	26947	0.55	0.29	47.1%	70.0%	5.5	4.0	3170	2139	3544	3527	1876	395	2823	1063
WESTMINSTER	10879	0.71	0.40	43.9%	65.3%	6.3	4.7	4149	2976	1862	1854	1045	279	1501	646
WHITEHORNS	552	1.61	1.10	31.5%	48.4%	8.8	5.2	5491	3926	213	208	146	37	177	110
WHITTIER/WHITTIER TELEGRAPH	10762	0.47	0.26	45.6%	67.8%	5.1	4.0	3102	2329	1219	1211	663	110	969	393
WILLOW CRK	804	1.16	0.80	15.2%	49.8%	8.0	6.4	5767	4230	223	223	189	50	153	112
WRIGHTWOOD	795	0.89	0.60	32.0%	63.9%	6.5	5.2	4595	3609	169	169	115	25	124	61
YUCCA VALLEY	1845	0.97	0.63	35.3%	63.1%	8.0	5.8	5349	3841	431	431	279	106	325	159

Frontier Service Quality Performance

In this section, we present the companywide results in a form comparable to that provided above for AT&T. Appendix 4F-1 provides a compilation of individual wire center and reporting unit statistics covering the Frontier ownership period and includes, for each wire center (or reporting unit under Frontier), data and trend line calculations for several performance metrics relating to OOS conditions cleared within varying lengths of time.

Effect of persistent access line losses on the volume of customer trouble reports

As noted above, over the April 2016 to December 2019 study period, Frontier California experienced a net loss of 628,243 of its POTS access lines, going from 1,201,218 as of April 1, 2016 to only 572,975 as of December 2019, a 52.3% drop-off. Notably, the calculated long-term trend in total out-of-service incidents decreased by only 28.5%, from 17,824 in the second quarter of 2016 to 12,752 in the fourth quarter of 2019. Thus, while POTS lines in service saw a 52.3% decrease over the period, out-of-service incidents decreased by about 28.5% (see Figure 4F.2). Over the period of Frontier ownership, the relative drop-off in legacy POTS access lines greatly exceeded the relative decrease in total out-of-service incidents. Out-of-service incidents per 100 access lines in service thus *increased* over the period under Frontier management. The relationship between these two downward trends is also demonstrated in Figure 4F.2, which plots both the drop-off in access lines and in out-of-service incidents. Figure 4F.3 plots the number of out-of-service incidents per 100 POTS lines in service, and shows this metric steadily increasing from a predicted level of 0.50 in the second quarter of 2016 to 0.75 in the fourth quarter of 2019, a 50% increase. Over the 2018-2019 Phase 2 study period, this metric increased from a predicted value as of the beginning of 2018 of .055 to 0.77 as of the end of 2019, an increase of 41.8% in just the past two years.



Over the period of Frontier ownership, the relative drop-off in legacy POTS access lines greatly exceeded the relative decrease in total out-of-service incidents; thus, under Frontier ownership, out-of-service incidents per 100 access lines in service increased.

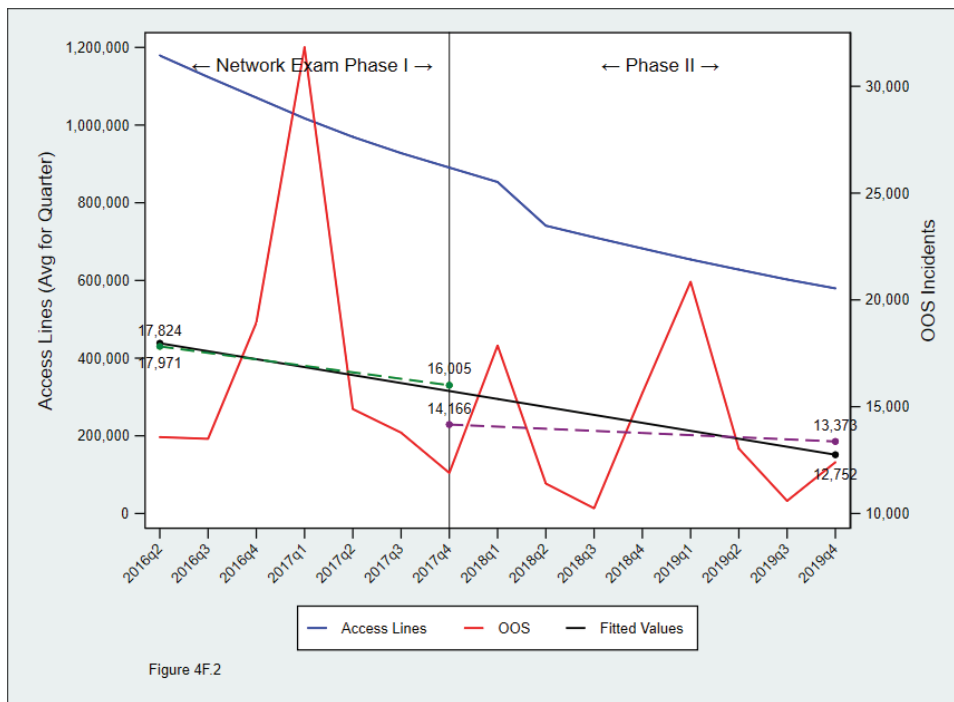


Figure 4F.2. The number of Out-Of-Service incidents has fallen by a smaller percentage than the drop-off in POTS access lines over the 2016-2019 period of Frontier ownership.

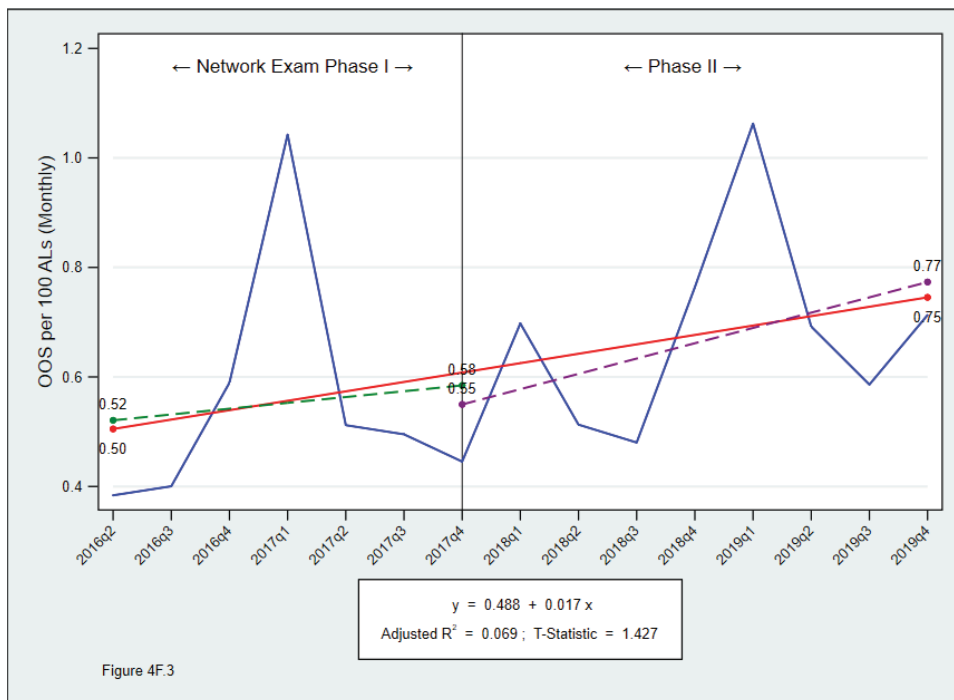


Figure 4F.3. There has been a steady upward trend in the number of out-of-service incidents per 100 access lines in service under Frontier ownership, and a further increase over the 2018-2019 Phase 2 study period.

Out-of-service conditions

Not only has Frontier seen a significant upward trend over the 45-month Phase 1/2 study period in the total number of out-of-service incidents per 100 access lines, the number of out-of-service incidents extending for more than 24 hours per 100 access lines, which had been falling over the first seven quarters of Frontier ownership, has reversed course and is rising over the 2018-2019 Phase 2 period, as shown in Figure 4F.4.

Duration of out-of-service conditions

A principal focus of the Commission's concerns regarding ILEC service quality is with respect to the frequency and duration of out-of-service conditions. GO 133-C/D has placed particular emphasis upon protracted out-of-service situations, focusing specifically upon POTS lines that are not restored within the first 24 hours.

Gains that had been achieved by Frontier in reducing the actual durations of reported OOS conditions occurring in the immediate post-acquisition period were reversed, with outages becoming progressively longer in overall duration after 2017. Figure 4F.5 plots the average duration of all out-of-service conditions. The immediate post-acquisition improvement also reversed course after the beginning of 2018. As shown in Figure 4F.6, a similar pattern can be seen for the average duration of all out-of-service conditions in excess of one hour – this metric eliminates those incidents that can typically be easily resolved through telephonic interaction with the customer, such as advising the customer to make sure that the handset is plugged in or that the battery in a cordless phone has not run down. Even the most problematic out-of-service situations – those extending beyond 24 hours – which had held roughly constant over the 2016-2017 period, showed a marked increase in average duration for 2018-2019 (Figure 4F.7). Figures 4F.8 and 4F.9 present these same metrics on an adjusted basis (i.e., excluding Sunday and holiday hours and OOS conditions beyond management's control), both of which follow similar patterns to those for actual durations.



Improvements in service quality that were accomplished during the first seven quarters following Frontier's takeover were reversed in 2018-2019, which saw increases in the numbers of service outages lasting more than 24 hours and in the average duration of all service outages.

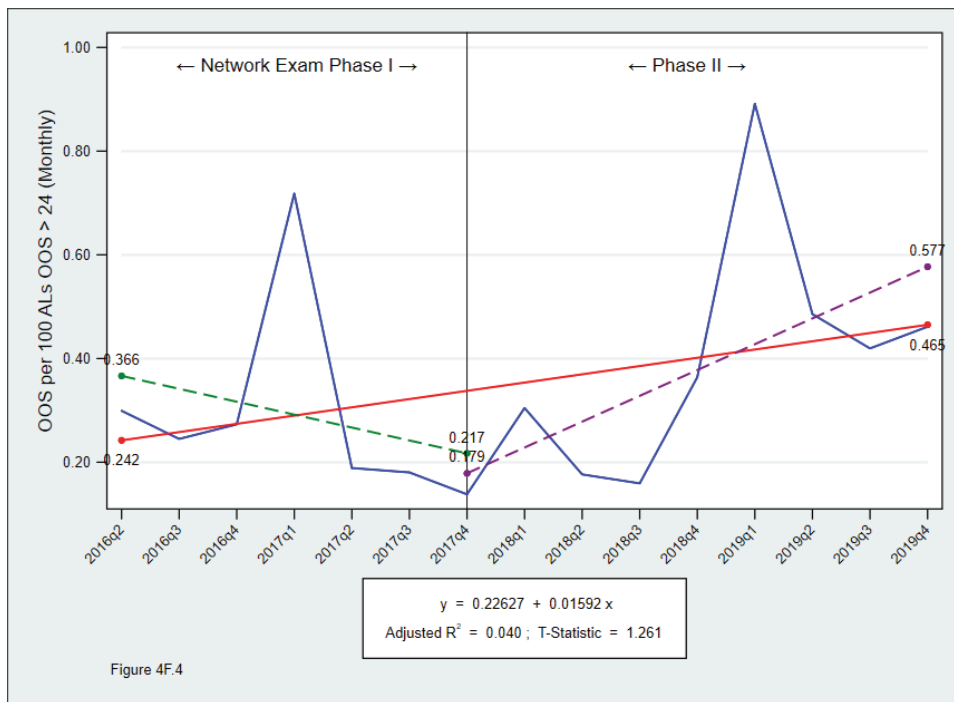


Figure 4F.4. The number of out-of-service incidents exceeding 24 hours per 100 access lines was initially decreasing under Frontier ownership, but has now been on the rise over the 2018-2019 period.

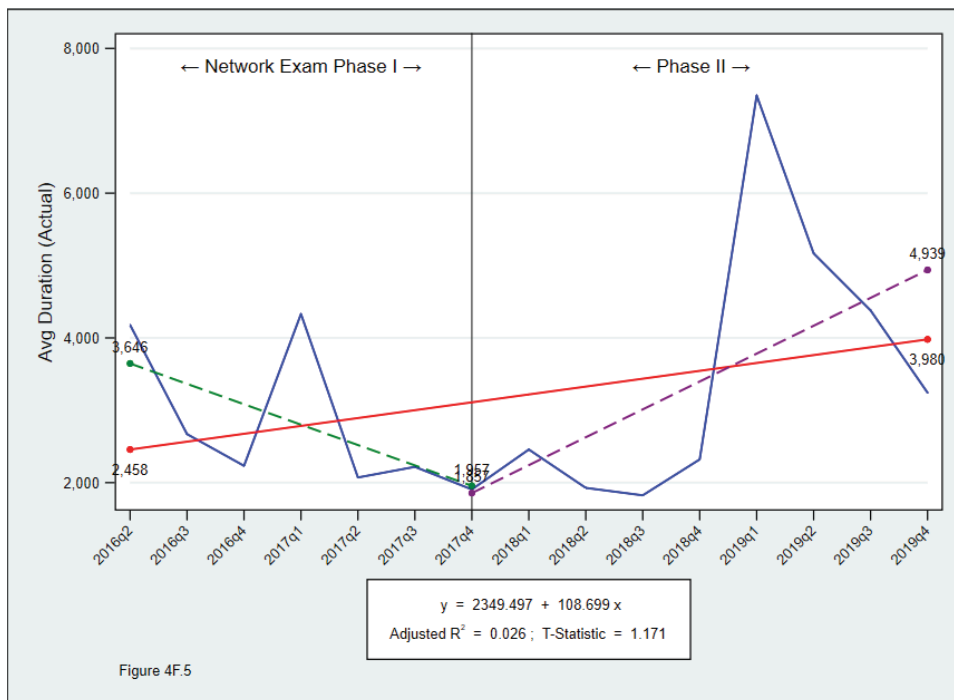


Figure 4F.5. The average duration (actual) of all out-of-service conditions had been improving during the first two years of Frontier ownership, but that trend has sharply increased over the 2018-2019 period.

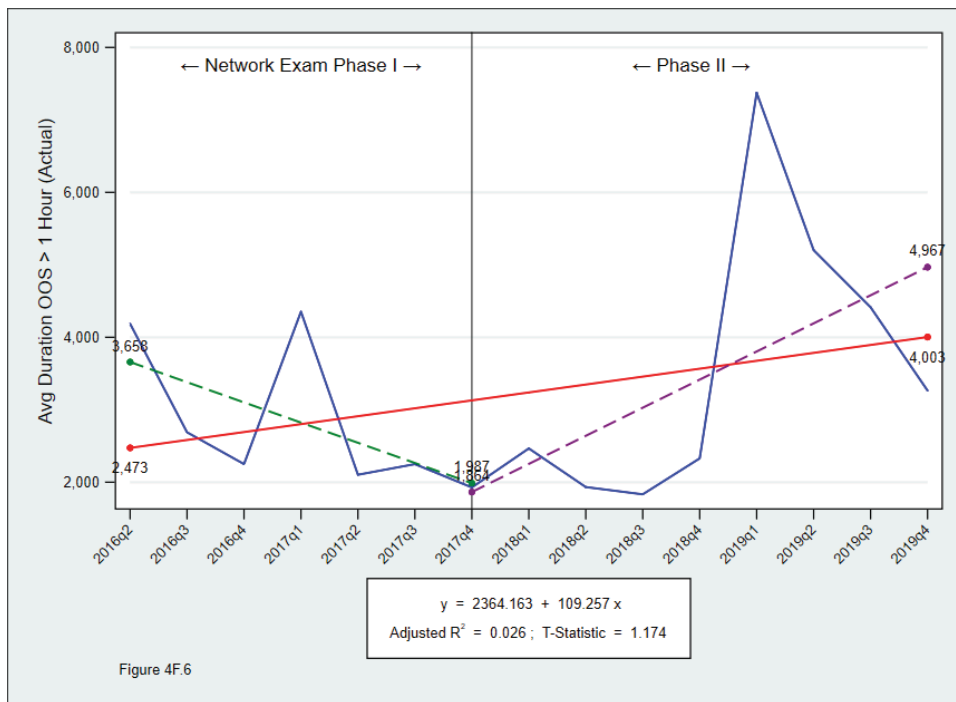


Figure 4F.6. The average duration (actual) of out-of-service conditions greater than one hour had been improving during the first two years of Frontier ownership, but that trend has sharply increased over the 2018-2019 period.

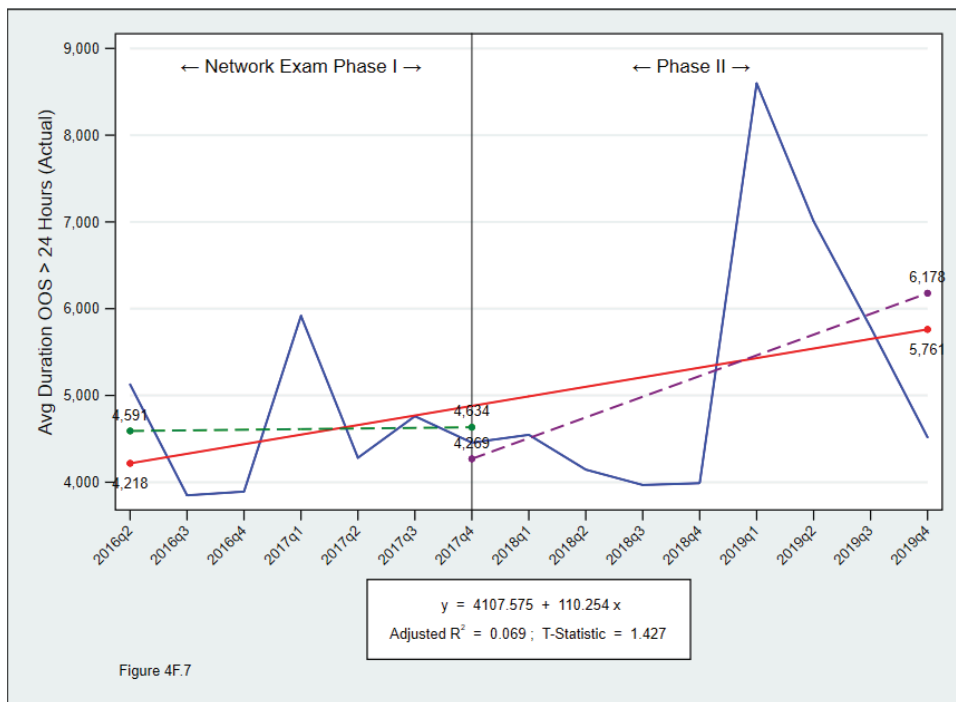


Figure 4F.7. Average actual (actual) duration of all out-of-service incidents in excess of 24 hours in duration has been trending upward over the 2018-2019 period.

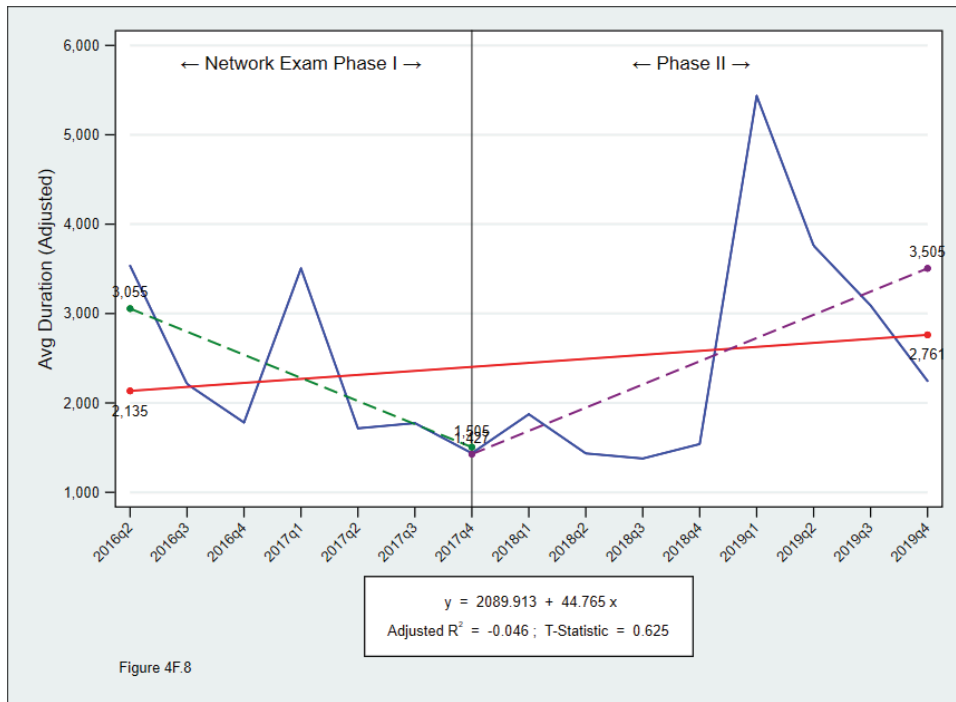


Figure 4F.8. Average duration of all out-of-service incidents adjusted for Sundays and holidays had been improving during the first two years of Frontier ownership, but that trend has sharply increased over the 2018-2019 period.

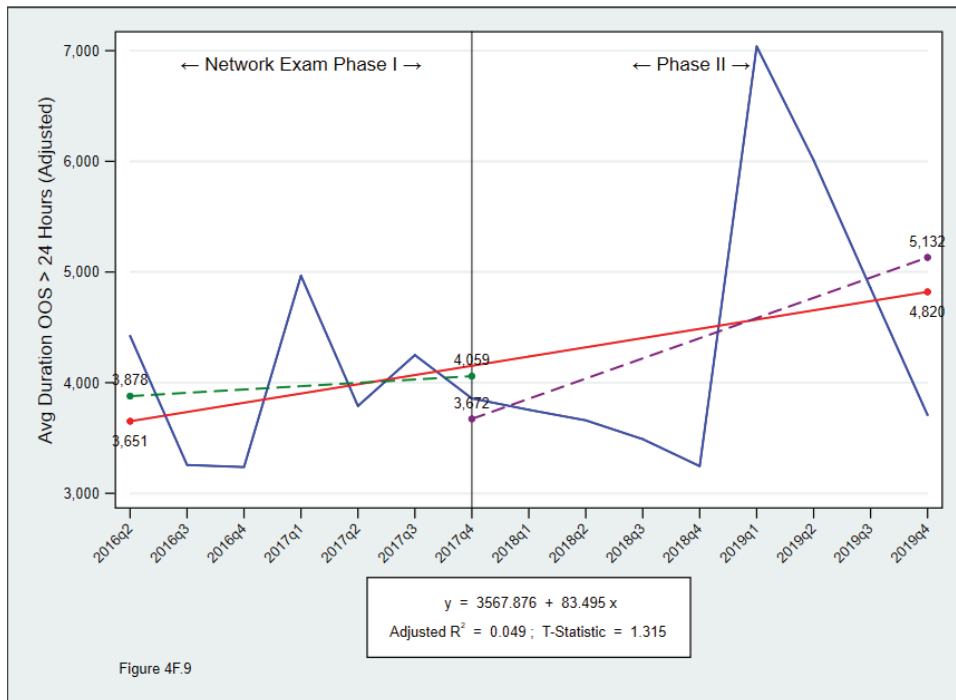


Figure 4F.9. Average duration of all out-of-service incidents in excess of 24 hours adjusted for Sundays and holidays has been trending upward over the 2018-2019 period.

Out-of-service conditions cleared within 24 hours

GO 133-C/D §3.4(c)'s "Minimum Standard Reporting Level" requires that "90% of all out of service trouble reports [be cleared] within 24 hours [as] the set minimum standard." As Table 4F.7 demonstrates, over the 45-month period under Frontier management, Frontier California has never come even remotely close to meeting this 90% requirement. Figures 4F.10 and 4F.11 plot these percentages and trends graphically for actual and adjusted OOS durations, respectively. There were improvements immediately following the Frontier acquisition, but these gains were not sustained in 2018-2019.

Table 4F.7				
FRONTIER CALIFORNIA				
PERCENTAGES OF ACTUAL AND ADJUSTED ("CPUC") OUT-OF-SERVICE CONDITIONS CLEARED WITHIN 24 HOURS AND DAYS REQUIRED TO CLEAR 90%				
	Actual		Adjusted	
	Pct. Cleared within 24 hours	Days Required to Clear 90%	Pct. Cleared within 24 hours	Days Required to Clear 90%
2Q2016	22.0%	5.70	28.0%	4.72
3Q2016	38.8%	3.95	44.5%	3.01
4Q2016	53.7%	3.75	60.6%	2.77
1Q2017	31.1%	6.23	36.8%	5.08
2Q2017	63.1%	3.04	70.0%	2.14
3Q2017	63.6%	3.06	72.2%	2.15
4Q2017	69.0%	2.69	78.6%	1.77
1Q2018	56.3%	3.27	66.3%	2.30
2Q2018	65.6%	2.85	79.3%	1.78
3Q2018	66.8%	2.80	79.3%	1.74
4Q2018	52.4%	3.44	75.1%	2.06
1Q2019	16.1%	10.70	48.6%	8.17
2Q2019	29.8%	7.65	59.3%	5.39
3Q2019	28.4%	6.07	61.5%	4.68
4Q2019	35.3%	4.99	63.3%	3.11

Frontier's ability to clear OOS conditions quickly – i.e., over time, a successively smaller percentage of OOS conditions were being cleared within 24 hours – varied. On an actual basis (Figure 4F.10), Frontier had seen improvements in clearing OOS conditions within 24 hours over the April 2016 to December 2017 period, but that percentage decreased over the 2018-2019 period.. The same pattern existed when examined on an adjusted basis (Figure 4F-11). Taken over the entire 45 months under Frontier management, the percent of outages cleared within 24

hours decreased with respect to actual durations, but improved slightly with respect to adjusted durations, even though both metrics saw declines over the 2018-2019



57.85% of the roughly 112,022 out-of-service conditions (34.84% on an "adjusted" basis) remained uncleared after 24 hours by Frontier during the 2018-2019 Phase 2 period. For the 118,402 out-of-service conditions during the 4/2016-12/2017 Phase 1 period, 53.83% (47.01% on an adjusted basis) remained uncleared after 24 hours. To satisfy the GO 133-C/D §3.4(c) requirement, these percentages would need to drop to less than 10%.

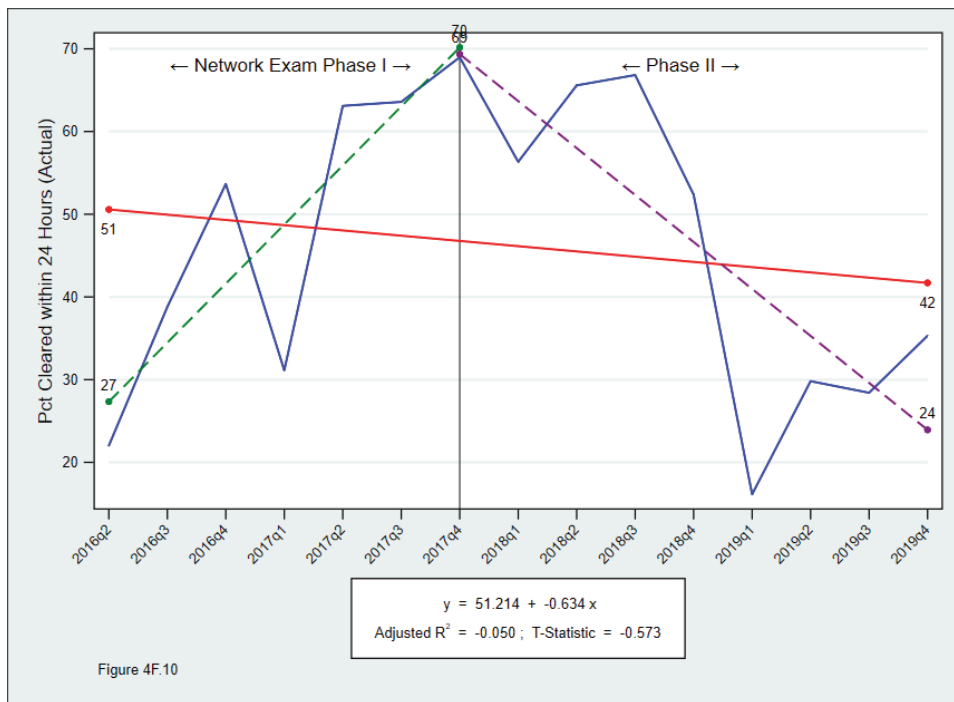


Figure 4F.10. Percentage of all out-of-service conditions cleared within the first 24 hours (actual) had been improving during the first two years of Frontier ownership, but that trend has sharply decreased over the 2018-2019 period.

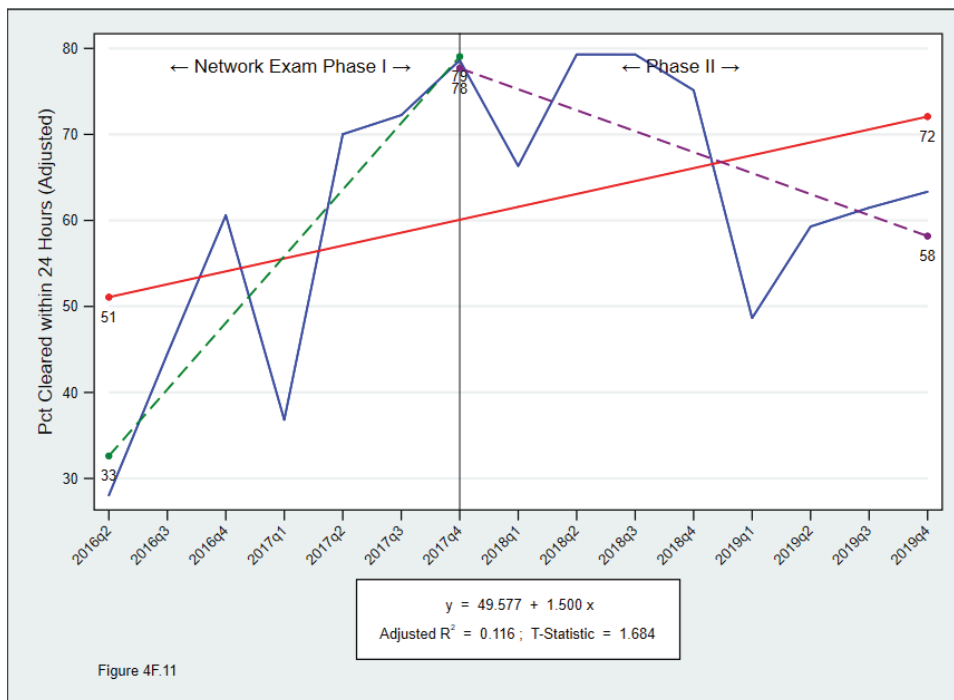


Figure 4F.11. Percentage of all out-of-service conditions cleared within the first 24 hours (adjusted for Sundays and holidays) had been improving during the first two years of Frontier ownership, but that trend has sharply decreased over the 2018-2019 period.

As with AT&T, ETI's other approach to examining this "90% cleared within 24 hours" requirement is to calculate the average length of time it took for Verizon or Frontier to reach the 90% cleared threshold. These results are also summarized on Table 4F.7 above, and are plotted on Figures 4F.12 (actual) and 4F.13 (adjusted) below. Both metrics saw improvement over the April 2016 to December 2017 period but, as with the other out-of-service metric we examined, these gains did not persist into 2018-2019.

As we noted in our Phase 1 Report (Chapter 2), there were only two months over the entire Phase 1 2010-2017 study period where Verizon California or Frontier California had succeeded in meeting the GO 133-C/D §3.4(c) "90% cleared within 24 hours" requirement. This was in February and March 2016, the final two months under Verizon ownership. In D.15-12-005, the decision approving the transfer of the company from Verizon to Frontier, the Commission had imposed such pre-transaction compliance as a condition for approval of the transfer.³³ Verizon did, in fact, meet the "90% cleared within 24 hours" requirement in the two months immediately preceding the transfer, but once Frontier took over the company it has been unable to come even close to satisfying this condition at any point under its ownership. In fact, under Frontier ownership, the number of days required for Frontier California to meet the 90% objective has increased.

33. D.15-12-005, *Decision Granting Application Subject to Conditions and Approving Related Settlements*, December 9, 2015, at 67.

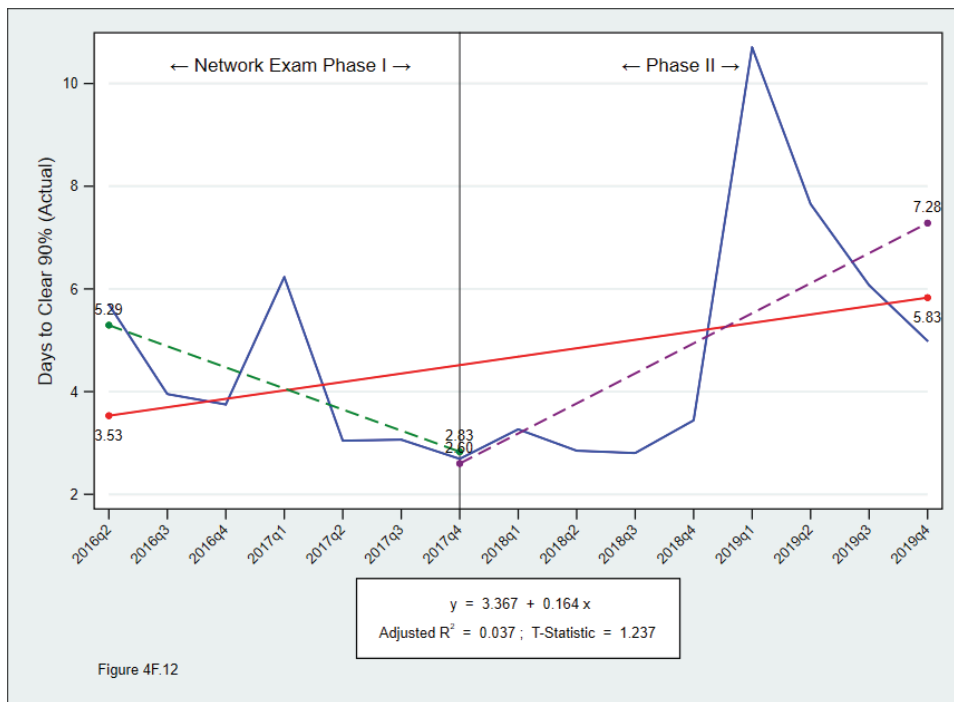


Figure 4F.12. Days required to clear 90% of all out-of-service conditions (actual) had been dropping during the first two years of Frontier ownership, but that trend has been getting longer over the 2018-2019 period.

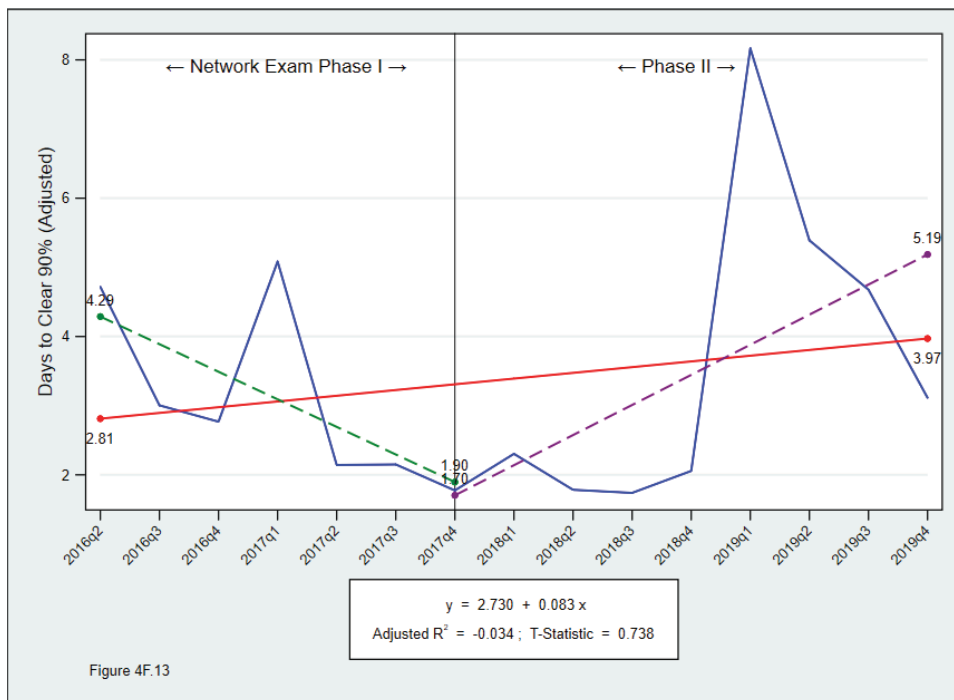


Figure 4F.13. Days required to clear 90% of all out-of-service conditions (adjusted for Sundays and holidays) had been dropping during the first two years of Frontier ownership, but that trend has been getting longer over the 2018-2019 period.

Table 4F.8(a) and (b) provide the results of linear regression trend line calculations for the GO 133-C/D §3.4(c) “minimum standard” of “90% of all out of service trouble reports within 24 hours” for each of the Frontier California Reporting Units. Table 4F.8(a) covers the full 45 month period of Frontier ownership; Table 4F.8(b) is limited to the Phase 2 2018-2019 period. As with AT&T, there was considerable variation across all of Frontier’s 201 Reporting Units both in terms of percent of out-of-service trouble tickets cleared within 24 hours and the number of days required to clear 90% of all out-of-service conditions. The tables also provide similar trend line calculations for the number of days required to clear 90% of all out-of-service conditions, the number of out-of-service reports per 100 access lines, and the average out-of-service duration. The individual wire center regression calculations shown on Tables 4F.8(a) and (b) were prepared using quarterly time-series data. The tables provide the starting and ending predicted values for the variable being examined (e.g., the starting and ending predicted values for the percentage of out-of-service tickets cleared within 24 hours) and the mean value over the full 45-month period (Table 4F.8(a)) or the 2-year Phase 2 period (Table 4F.8(b)).

The values shown for the trend lines are the coefficients of the independent variable in each case – i.e., the quarterly time period – which when applied to the time variable produced the predicted value for the percent cleared within 24 hours, or the number of days required to clear 90%. The coefficient would appear graphically as the slope of a plotted trend line. For the “percentage cleared within 24 hours” metric, a positive value of the coefficient indicates improvement over time (i.e., an upward sloping trend line); a negative value indicates that over time the ILEC’s record of meeting this standard has been deteriorating. For “days required to clear 90%,” a negative value of the slope of the trend line indicates that, over time, it is taking less time for the ILEC to meet the 90% completion objective – thus, an improvement in performance. Positive values for the coefficient of “days required to clear 90%” indicates that it is taking longer for the Company to reach the target 90% cleared threshold.

We have sorted these tables by the coefficient of Percent Cleared within 24 Hours, from lowest (i.e., most negative, or worst result) to highest (most positive, or best result). The “Coefficients” shown for each of the four metrics on this table represent the slope of the estimated trend line based upon the actual out-of-service incidents experienced in the wire center over the full 45-month period (Table 4F-8(a)) and for the 2-year 2018-2019 period (Table 4F-8(b)). A positive value for the coefficient indicates an upward trend – i.e., that if plotted on a graph the trend line would go from the lower left to the upper right of the chart. The higher the positive value of a coefficient, the greater the rate of increase over time.

Table 4F-4(B) (continued) showing OOS Ratio (actual) and Coef. for various Wire Center Names. Columns include Wire Center Name, CLLI, Mean Val, Coef, OOS Ratio (actual), Coef, and various performance metrics like Days to Clear and Mean Val.

Wire Center Name	GLLI	Mean Val	Coef	OOS Ratio (actual)		Z016 Val	Q019 Val	Q016 Val	Q016 Val	Q016 Val	Z016 Val	Sorted by Coefficient Of Pct Cleared within 24 hours				Days to Clear 90% (actual)				Z016 Val	Q019 Val	Q016 Val	Q016 Val																
				t-stat	Conf.							t-stat	Conf.	t-stat	Conf.	t-stat	Conf.	t-stat	Conf.					t-stat	Conf.	t-stat	Conf.	t-stat	Conf.	t-stat	Conf.								
LAGUNA BEACH/SOUTH LAGUNA BE	(GBR/CAXF)	0.74	0.0457	2.6123	98.5%	0.28	0.92	334	5316	40.10	-2.8749	-1.3880	79.2%	68.85	28.60	6.18	0.5974	0.8622	64.1%	0.8222	64.1%	0.8222	64.1%	0.8222	64.1%	0.8222	64.1%	0.8222	64.1%	0.8222	64.1%	0.8222	64.1%	0.8222	64.1%	0.8222	64.1%		
LAGUNA BEACH/STADIUM (LAKEWOOD)	(LAK/CAF)	0.85	0.0623	3.0198	97.3%	0.42	0.88	191	3095	30.74	-2.7649	-1.1011	69.3%	55.39	19.68	8.01	1.5741	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%		
LAKEVIEW	(LAKE/CAF)	0.93	0.0691	3.1787	98.8%	0.46	1.01	142	2462	30.74	-2.7649	-1.1011	69.3%	55.39	19.68	8.01	1.5741	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%
LAKEVIEW	(LAKE/CAF)	0.93	0.0691	3.1787	98.8%	0.46	1.01	142	2462	30.74	-2.7649	-1.1011	69.3%	55.39	19.68	8.01	1.5741	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%
LAKEVIEW	(LAKE/CAF)	0.93	0.0691	3.1787	98.8%	0.46	1.01	142	2462	30.74	-2.7649	-1.1011	69.3%	55.39	19.68	8.01	1.5741	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%
LAKEVIEW	(LAKE/CAF)	0.93	0.0691	3.1787	98.8%	0.46	1.01	142	2462	30.74	-2.7649	-1.1011	69.3%	55.39	19.68	8.01	1.5741	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%	2.0300	92.8%



The regression coefficient represents the change, up or down, in the trend on a per-quarter basis. For example, the following values are shown for Frontier’s San Bernardino wire center (SNBRCAKK) over the 2016-2019 period with respect to the Percent Cleared within 24 Hours metric. We selected San Bernardino for this example because of the significant change in service quality performance that occurred after 2017:

San Bernardino – Percent out-of-service cleared within 24 hours – 2Q2016–4Q2019					
Mean Value (Mean Val)	Regression Coefficient (Coef)	<i>t</i> -statistic (<i>t</i> -stat)	Confidence Interval (Conf.)	Starting value - 2nd Quarter 2016 (2Q16 Value)	Ending value - 4th Quarter 2019 (4Q19 Value)
43.10%	-1.1805	-0.9379	63.5%	51.36%	34.83%

From this, we learn that the mean (average) percentage of out-of-service conditions cleared by Frontier within 24 hours was 43.10% over the full 45-month period. At the beginning of the period (second quarter 2016), the predicted regression trend line indicated that Frontier was clearing 51.36% within 24 hours; by the end of the period (fourth quarter of 2019), that performance indicator had dropped to only 34.83%. These are not the actual clearance percentages for either of the two quarters; they are the predicted rate of OOS clearances based upon the linear regression calculation. The “regression coefficient” of -1.1805 is interpreted as the rate of change in the predicted trend per quarter – *i.e.*, as each quarter went by, the percent cleared within 24 hours was *decreasing* by approximately 1.1805%. The *t*-statistic is a measure of the statistical significance of the estimated coefficient, specifically, the confidence that the regression coefficient is significantly different from zero. In general, a *t*-statistic with an absolute value in excess of roughly 2.0 denotes statistical significance at the 95% confidence level. Here, a *t*-value of -0.9379 corresponds to a confidence level of 63.5%. The confidence level corresponding with the *t*-values are also provided on the tables. In this instance, the performance of the San Bernardino wire center with respect to the “percent cleared within 24 hours” metric is, in and of itself, not statistically significant over the full 45-month time frame. However, as we discuss below, our analysis does not end with this determination.

If we then compare the results for the San Bernardino wire center over the full 2016-2019 period with the corresponding results for just the 2018-2019 Phase 2 study period from Table 4A.8(b), we observe a dramatic shift in performance:

San Bernardino – Percent out-of-service cleared within 24 hours						
Period	Mean Value (Mean Val)	Regression Coefficient (Coef)	<i>t</i> -statistic (<i>t</i> -stat)	Confidence Interval (Conf.)	Starting value - 2nd Quarter 2016 (2Q16 Value)	Ending value - 4th Quarter 2019 (4Q19 Value)
2Q16-4Q19	43.10%	-1.1805	-0.9379	63.5%	51.36%	34.83%
1Q18-4Q19	41.60%	-6.3893	-4.1174	99.6%	105.49%	16.04%

The regression coefficient for the 2018-2019 period has become highly negative, at -6.3893 , indicating a highly pronounced downward trend. The high value for the t -statistic, at -4.1174 , reflecting a confidence level of 99.6%, further confirms the statistical significance of this drop-off in performance.

Although the t -statistics for many of the individual wire centers on both Tables 4F.8(a) and 4F.8(b) are relatively low, it would be incorrect to dismiss the regression results as lacking in statistical significance. Both tables have been sorted in order of the regression coefficient, from most negative to most positive.

Regression analyses covering all Frontier wire centers over time using a “Fixed Effects Panel Model.”

The individual wire center regression results in Table 4F.8(a) show that the Percent of OOS Cleared Within 24 Hours had been steadily decreasing over the 2Q2016-4Q2019 period for the majority of Frontier wire centers. The results in Table 4F.8(b) show that the Percent of OOS Cleared Within 24 Hours was decreasing at an even greater rate during the Phase 2 study period 1Q2018-4Q2019. Several key observations can be drawn from an examination of the individual wire center regression results in these two Tables:

- (1) The t -statistics on the regression coefficient for many individual wire centers, particularly when viewed over the full 2Q2016-4Q2019 period, is relatively low, possibly raising questions as to the statistical significance of these results.
- (2) However, for the vast majority of individual wire centers, the regression coefficient taken over the entire 2Q2016-4Q2019 period is negative, indicating a downward slope of the trend line.
- (3) The slope of the Phase 2 (1Q2018-4Q2019) trend line is in almost every instance considerably more negative than for the entire 2Q2016-4Q2019 period, irrespective of the confidence level indicated by the t -statistic for any particular wire center.

There are several possible explanations for the relatively low t values for many of these individual wire center regressions. First, we are dealing with a very limited number of observations – 15 quarters over the full period under Frontier management, and only 8 quarters within the Phase 2 study period. Second, for many individual wire centers, there appear to be large variations from one period to the next. On the other hand, and as noted above, the trend lines for most wire centers follow a similar pattern irrespective of the nominal statistical significance of the individual regression results. In order to further corroborate these seemingly consistent patterns indicated by the individual wire center regression calculations, we utilized a technique known as a “Panel Model” that combines both the temporal and cross-sectional (across all Frontier wire centers) variation in the trouble report data so as to determine the average performance across all Frontier wire centers over time. This is accomplished by formulating several “fixed effects regression models” using quarterly data for the complete set of Frontier wire centers. A “fixed

effects regression” or “panel data model” allows us to estimate the average time trend over all Frontier wire centers while controlling for any time-invariant factors that might affect wire center performance, such as geography, transmission technology, or any other wire center-specific attributes that are fixed over time). By pooling data from all wire centers together, the fixed effects model generates an estimate of the average time trend across all wire centers (the slope coefficient). This is far more precise than any individual wire center regression result because the model includes many more observations. Like the individual wire center regressions, the fixed effects model estimates an equation of the form,

$$y_{it} = \beta_0 + \beta_1 x_{it}$$

where y_{it} is the dependent variable (e.g. percent cleared within 24 hours), x_{it} is the independent variable (in this case, time), and the subscripts i and t denote the wire center and quarter, respectively. Similar to the individual wire center regressions, β_0 essentially represents the average intercept across all wire centers, and β_1 , the regression coefficient, represents the average time trend across all wire centers. Also, like the individual wire center regressions, the fixed effect model produces summary statistics such as t -statistics, an F-statistic, and an R-squared, all of which can be used to evaluate the precision and fit of the model's results.

The tables below display the results of three fixed effects regressions for three distinct time periods, 2Q2016–4Q2019, 2Q2016–4Q2017 (Phase 1), and 4Q2017–4Q2019 (Phase 2). Table 4F.9 provides the regression statistics for the Percent Cleared within 24 hours (Actual) metric. Tables 4F.10 through 4F.12 provide regression statistics for the Out of Service per 100 Access Lines-Monthly, Average Out-of-Service Duration, and Days Required to Clear 90% (Actual). Table 4F.9 shows that, over the period 2Q2016–4Q2019 and across all Frontier California wire centers, on average the Percent of OOS Cleared Within 24 Hours decreased by 0.875% each quarter. Estimating separate trends for Phase 1 and Phase 2 of the Network Examination, we can determine how Frontier's performance changed over time. During Phase 1, the Percent of OOS Cleared Within 24 Hours taken across all Frontier wire centers increased, on average, by 5.173% each quarter, while in Phase 2, that same metric taken across all Frontier wire centers *decreased*, on average, by 5.335% each quarter. Each of these trends is statistically significant at the 99% confidence level.

Table 4F.9

**FRONTIER CALIFORNIA
FIXED EFFECTS REGRESSION RESULTS
Dependent Variable - Percent Cleared within 24 hours (Actual)**

Regression Statistic	2Q2016–4Q2019	2Q2016–4Q2017	4Q2017–4Q2019
Slope Coefficient	-0.91038	5.091216	-5.2068
t-statistic	-8.49642	13.49695	-22.6517
Intercept	48.99126	24.68729	98.57107
t-statistic	57.15331	16.36167	38.98408
R-squared	0.029841	0.238543	0.332473
F-statistic	72.1892	182.1676	513.1009
No. of Observations	2850	1330	1710

Table 4F.10

**FRONTIER CALIFORNIA
FIXED EFFECTS REGRESSION RESULTS
Dependent Variable - Days Required to Clear 90% (Actual)**

Regression Statistic	2Q2016–4Q2019	2Q2016–4Q2017	4Q2017–4Q2019
Slope Coefficient	0.219131	-0.12265	0.531863
t-statistic	10.49139	-1.48148	8.108135
Intercept	3.374997	4.844577	-0.26069
t-statistic	20.19822	14.62879	-0.36129
R-squared	0.035189	0.003495	0.058317
F-statistic	110.0694	2.194788	65.74185
No. of Observations	2850	1330	1710

Table 4F.11

FRONTIER CALIFORNIA
FIXED EFFECTS REGRESSION RESULTS
Dependent Variable - Out of Service per 100 Access Lines-Monthly

Regression Statistic	2Q2016–4Q2019	2Q2016–4Q2017	4Q2017–4Q2019
Slope Coefficient	-0.02394	-0.20901	0.082792
t-statistic	-0.33715	-0.93629	6.343029
Intercept	1.543705	2.258593	0.320859
t-statistic	2.717106	2.529421	2.234764
R-squared	0.000256	0.002701	0.04804
F-statistic	0.113671	0.876633	40.23402
No. of Observations	2850	1330	1710

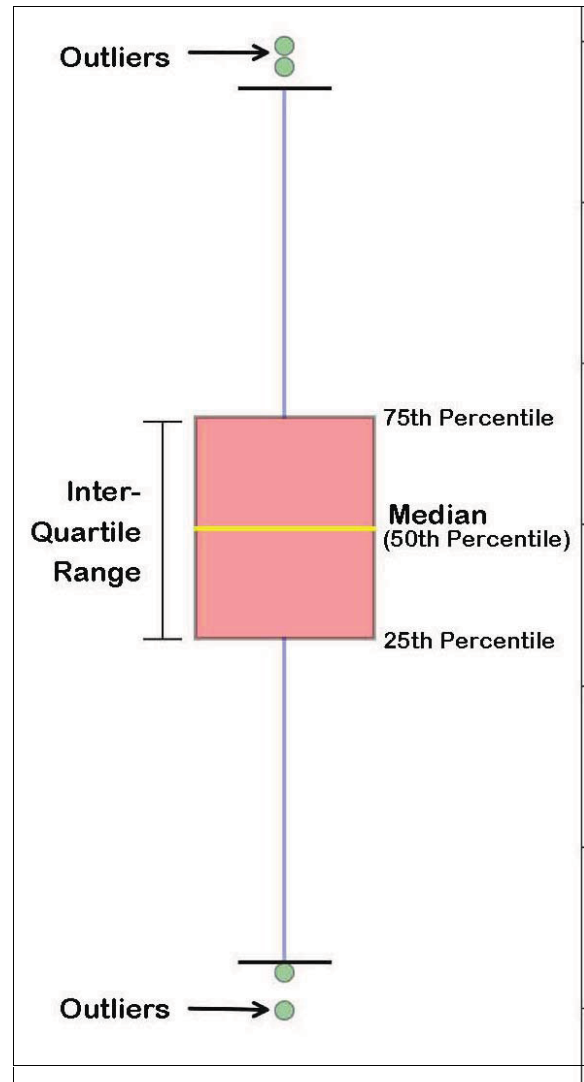
Table 4F.12

FRONTIER CALIFORNIA
FIXED EFFECTS REGRESSION RESULTS
Dependent Variable - Average Out-of-Service Duration

Regression Statistic	2Q2016–4Q2019	2Q2016–4Q2017	4Q2017–4Q2019
Slope Coefficient	148.8772	49.79737	298.8095
t-statistic	8.728219	0.764724	6.315532
Intercept	3753.054	4263.884	1997.771
t-statistic	27.50378	16.36981	3.838563
R-squared	0.033573	0.001025	0.040151
F-statistic	76.18181	0.584803	39.88594
No. of Observations	2850	1330	1710

We have plotted the results of these four sets of panel models separately on Figures 4F.3(p), 4F.5(p), 4F.10(p) and 4F.12(p) below, which correspond to Figures 4F.3, 4F.5, 4F.10 and 4F.12 above. These charts utilize a graphics format known as a “Box Diagram.” In addition to plotting the individual period trend lines based upon the regression results for each of the three time periods, the box diagrams also show, in a “box” for each time period, the range of individual wire center results that fall within the second and third quartiles – i.e., between the 25th and 75th percentile. The diagram to the right illustrates the components of the Box Diagram.

The charts provide panel model regression results for Out of Service per 100 Access Lines-Monthly (Figure 4F.3(p)); Average Out-of-Service Duration (Figure 4F.5(p)); Percent Cleared Within 24 Hours (Figure 4F.10(p)); and Days Required to Clear 90% (Figure 4F.12(p)). Two versions of each of these box diagrams are provided. The chart at the top of each page omits outliers; the one at the bottom includes them. For some of these, the outliers are so distant from the “box” depicting the second and third quartiles that the scaling of the chart requires that they be squeezed together at the bottom. By providing both versions, it is easier to appreciate both the trend and the extent of variation of individual wire center performance.



A clear pattern emerges for all four of these metrics: Improvement over the initial period of Frontier ownership, followed by a significant reversal over the 2018-2019 Phase 2 period.

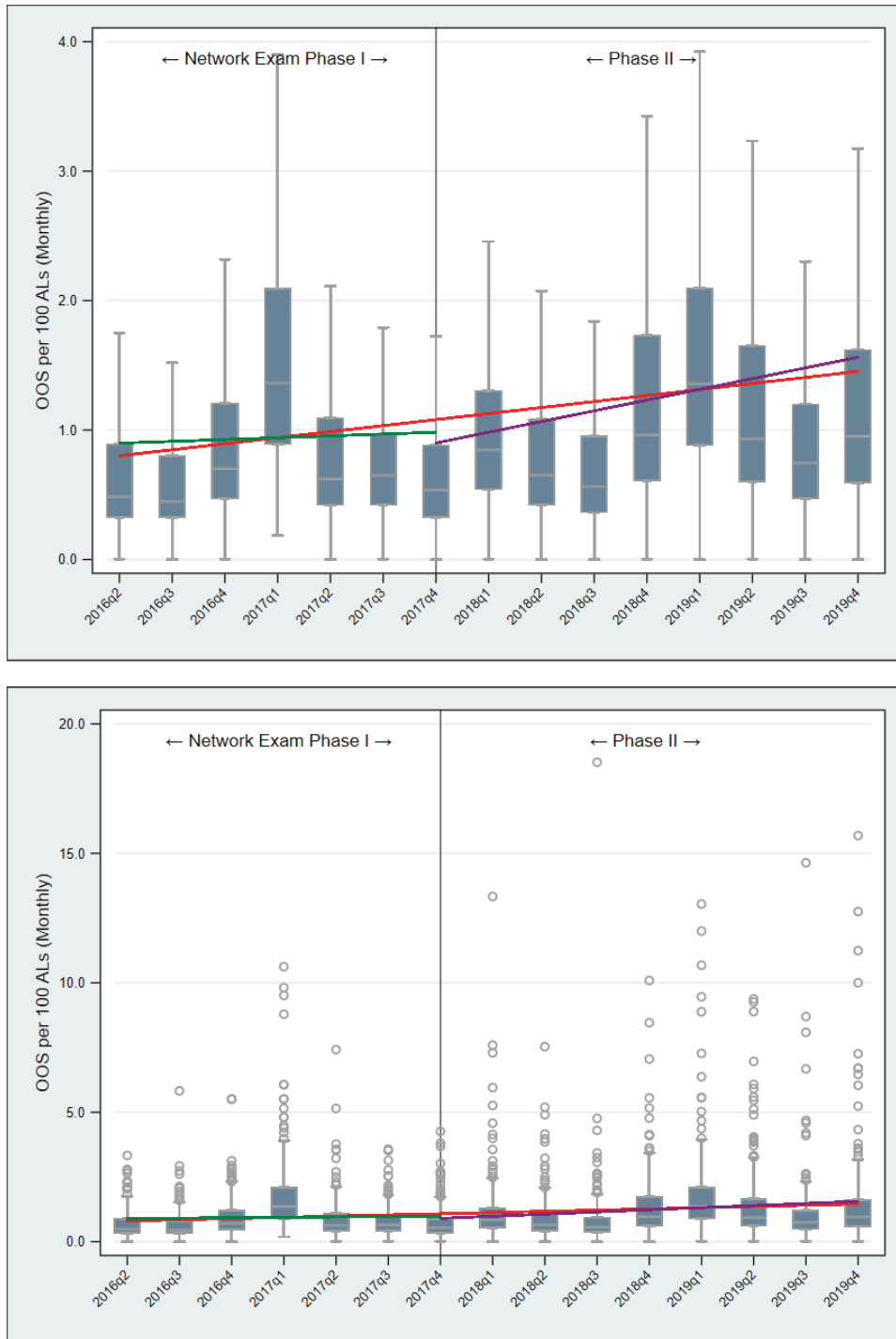


Figure 4F.3(p): Panel Model Box Diagram: Out-of-Service per 100 Access Lines - Monthly.

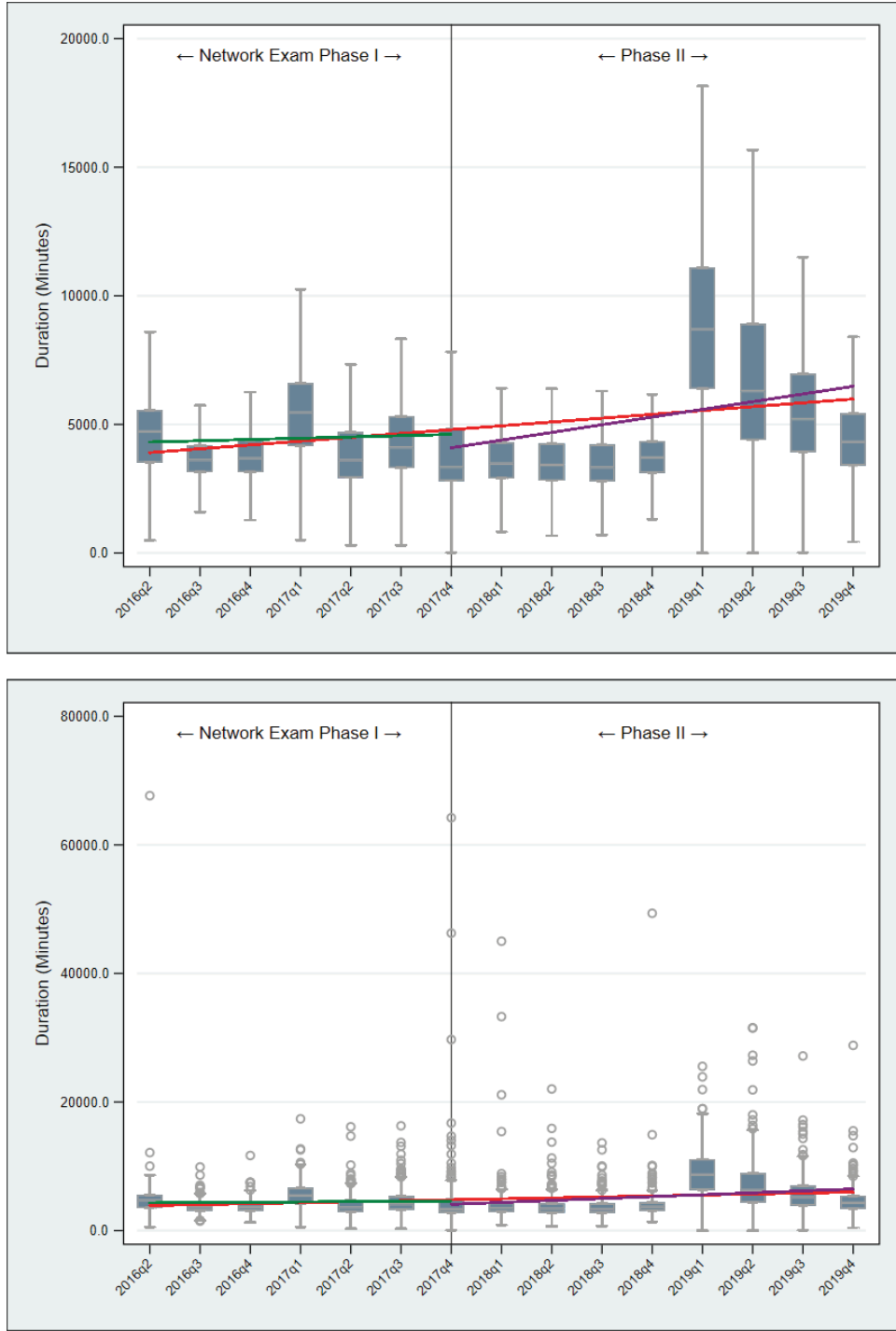


Figure 4F.5(p): Panel Model Box Diagram: Average Out-of-Service Duration (Actual).

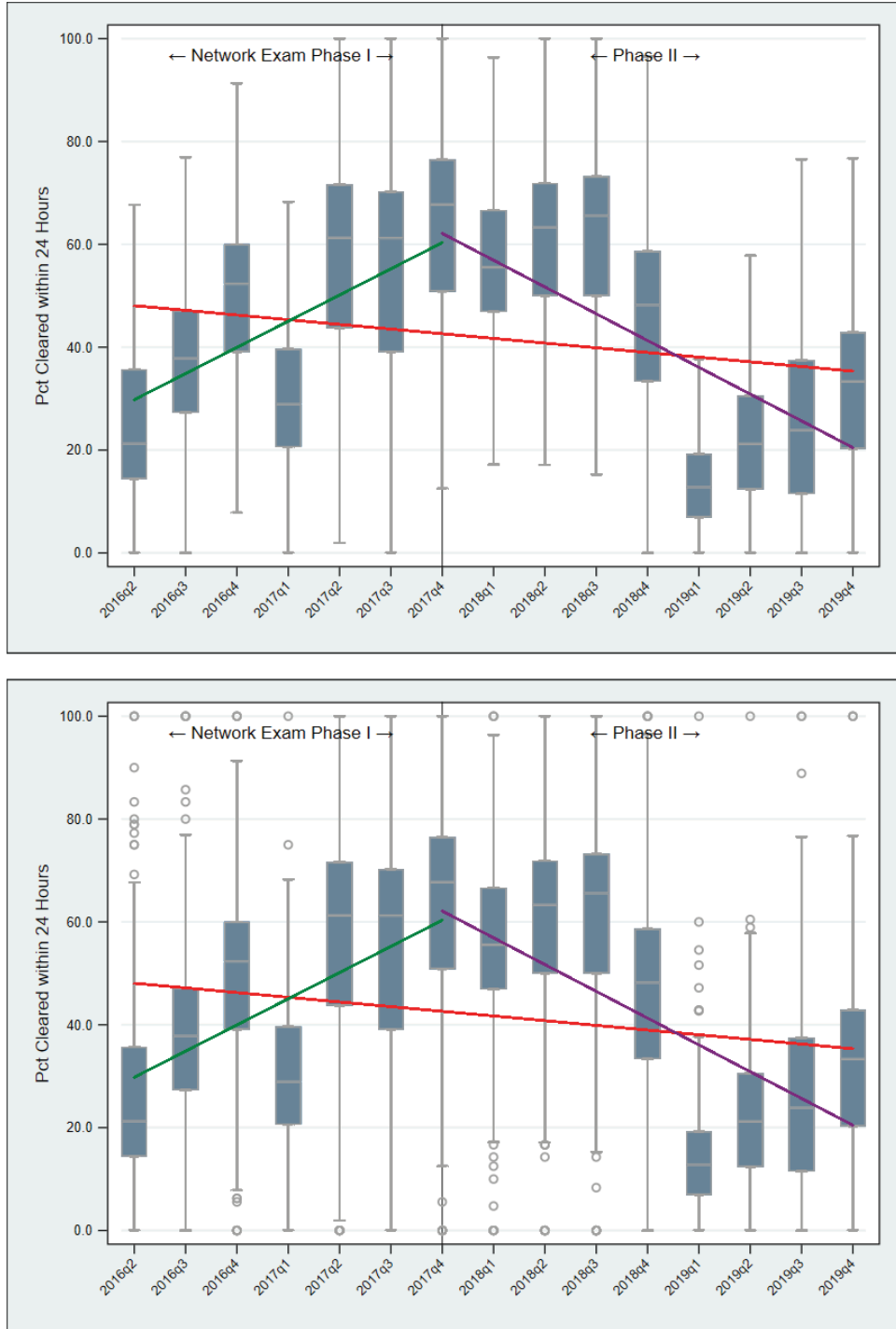


Figure 4F.10(p): Panel Model Box Diagram: Percent Out-of-Service Cleared Within 24 Hours (Actual).

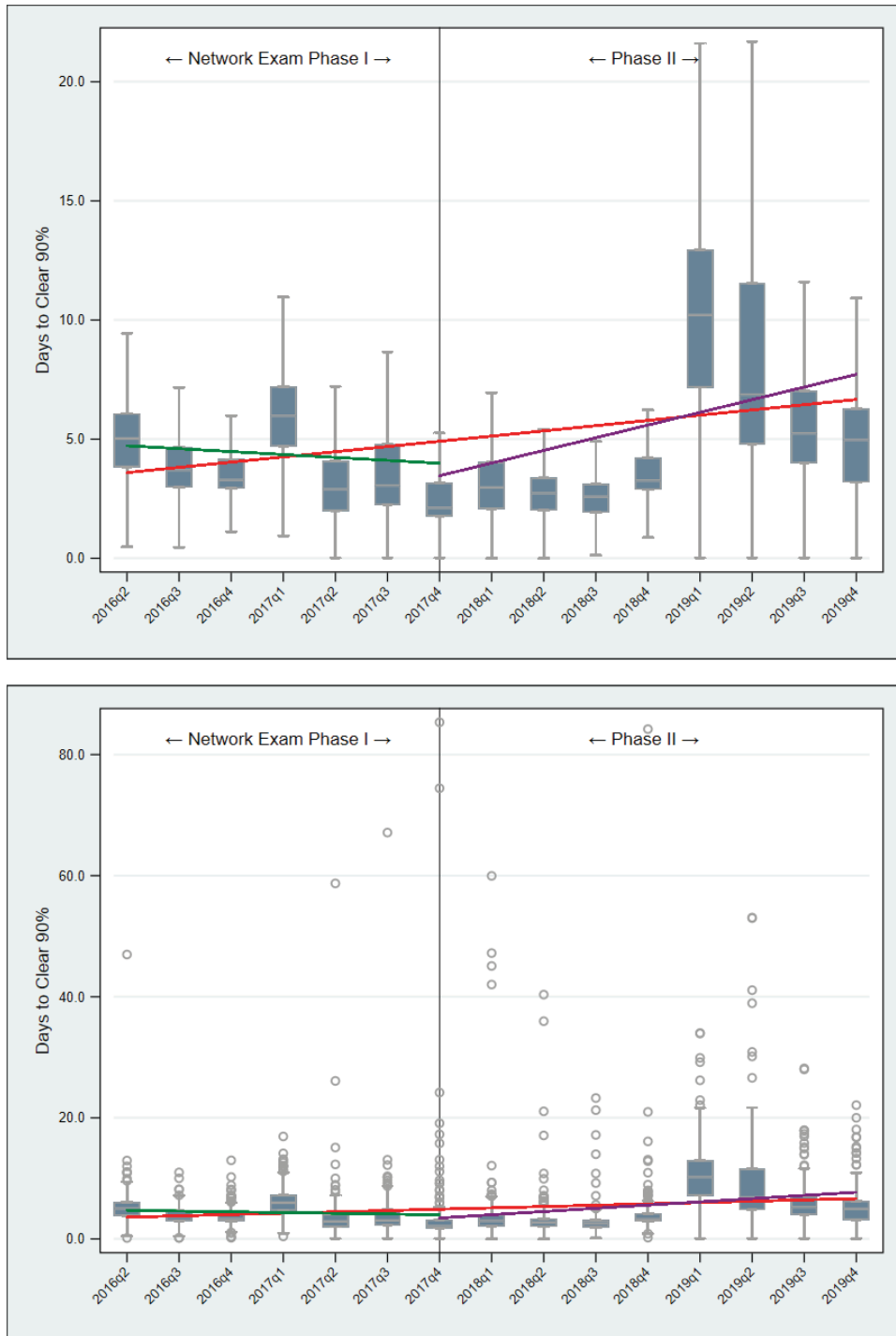


Figure 4F.12(p): Panel Model Box Diagram: Days Requires to Clear 90% of Out-of-Service Conditions (Actual).

Effects of geographic and other wire center attributes upon performance results

While examinations of individual wire centers is essential to isolating specific problem areas and sources of concern, it is also instructive to create groups of individual wire centers having similar geographic or other attributes. In that regard, ETI has constructed five different attribute dimensions – (1) the presence of *FiOS* broadband availability; (2) wire center size (number of access lines); (3) the percentage decrease (loss) in the number of access lines in service to competing providers and/or to competing services over the study period; (4) the population density of the area served by the wire center (households per square mile); and (5) the Frontier Operating Area to which the wire center has been assigned. For each of these five attribute dimensions, ETI has defined a set of categories whose potential effect upon service quality was then individually examined. These are summarized in Table 4F.13 below. As we did with respect to AT&T, ETI applied five similar attribute dimensions to the Frontier data and, for each, we developed summary tabulations of pertinent performance data. In Table 4F.14, we show, for each of these five attribute dimensions, the category in which each individual Frontier wire center has been classified.

For example, the Apple Valley wire center in San Bernardino County (APVYCAXF) has been assigned to the “Yes” category with respect to *FiOS* availability, to the “Large Urban” category with respect to Wire Center Size; to the 60%-80% category with respect to Access Line Loss, to the “54-380 per Square Mile” Density category, and to the Desert Operating Area.

Table 4F.13	
FRONTIER CALIFORNIA WIRE CENTER ATTRIBUTE DIMENSIONS AND CATEGORIES	
Attribute Dimension	Categories
<i>FiOS</i> Broadband Availability	<i>FiOS</i> services available <i>FiOS</i> services not available
Wire Center Size	Fewer than 1000 lines 1,000-2,999 lines 3,000-10,000 lines 10,001-20,000 lines Over 20,000 lines
Access Line Loss	Lowest 20% 21%-40% 48%-60% 61%-80% Highest 20%
Density (Households per square mile)	0-16 per Sq. Mile 6-54 per Sq. Mile 54-380 per Sq. Mile 380-1700 per Sq. Mile 1700 + per Sq. Mile
Frontier Operating Area	Beach Cities Costal Desert Inland Northern

Table 4F.14

VERIZON/FRONTIER CALIFORNIA
WIRE CENTER ATTRIBUTE CLASSIFICATIONS

CLLJ	Reporting Units (Phase II)	Reporting Unit (Phase I)	County	Operating Area	Density Category	Wire Center Size	FOTP / FIOS	FTR Line Loss Category	Income Category	Race Category
ADLNCAXF	ADELANTO	ADELANTO	SAN BERNARDINO	Desert	6-54	Large Metro	Y	80%-100%	\$43,000-\$54,999	40%-60%
ALPGCAXF	ALPAUGH	ALPAUGH	TULARE	Northern	0-6	Small	N	20%-40%	\$0-\$42,999	40%-60%
ALPNCAXF	ALDERPOINT	ALDERPOINT	HUMBOLDT	Northern	0-6	Small	N	20%-40%	\$0-\$42,999	80%-100%
ANZACAXF	ANZA	ANZA	RIVERSIDE	Inland	6-54	Medium	N	-	\$43,000-\$54,999	60%-80%
APVYXAF/DSKNCAXF	APPLE VALLEY	APPLE VALLEY	SAN BERNARDINO	Desert	54<-380	Large Urban	Y	60%-80%	\$55,000-\$66,999	60%-80%
ARHDCAXF	ARROWHEAD	ARROWHEAD	SAN BERNARDINO	Desert	54<-380	Large Metro	Y	40%-60%	\$55,000-\$66,999	80%-100%
AZUSGAXF/GLNDCAXF	AZUSA	AZUSA	LOS ANGELES	Coastal	>1700	Large Urban	Y	0%-20%	\$55,000-\$66,999	40%-60%
BBCYCAXF	BIG BEAR CITY	BIG BEAR CITY	SAN BERNARDINO	Desert	54<-380	Large Metro	N	40%-60%	\$43,000-\$54,999	80%-100%
BLBKAXF	BIG BEAR LAKE	BIG BEAR LAKE	SAN BERNARDINO	Desert	54<-380	Large Metro	N	80%-100%	\$55,000-\$66,999	80%-100%
BDRGRAXF	BADGER	BADGER	TULARE	Northern	0-6	Small	N	0%-20%	\$67,000-\$87,999	80%-100%
BELRCAAXF	BEL AIR (SOMIS)	BEL AIR (SOMIS)	LOS ANGELES	Beach Cities	380<1700	Very Large	N	20%-40%	\$88,000 +	80%-100%
BGPICAXF	BIG PINE	BIG PINE	INYO	Gateway	6-54	Small	N	20%-40%	\$55,000-\$66,999	80%-100%
BLFLCAXF	BELFLOWER	BELFLOWER	LOS ANGELES	Coastal	>1700	Very Large	Y	40%-60%	\$67,000-\$87,999	40%-60%
BLPKCAXF	BALDWIN PARK	BALDWIN PARK	LOS ANGELES	Coastal	>1700	Very Large	Y	80%-100%	\$67,000-\$87,999	40%-60%
BNNGCAXF/BUIMTCAAXF	BANNING	BANNING	RIVERSIDE	Desert	54<-380	Large Metro	Y	-	\$43,000-\$54,999	60%-80%
BNTNCAAXF	BENTON	BENTON	MONO	Gateway	0-6	Small	N	20%-40%	\$55,000-\$66,999	80%-100%
BORNCAAXF/NEWCAXF	BORON	BORON	KERN	Gateway	6-54	Small	N	80%-100%	\$0-\$42,999	80%-100%
BRMSCAXF	BERRENDA MESA	BERRENDA MESA	KERN	Northern	0-6	Small	N	0%-20%	\$43,000-\$54,999	40%-60%
BRTPCAXF	BRIDGEPORT	BRIDGEPORT	MONO	Gateway	0-6	Small	N	20%-40%	\$43,000-\$54,999	60%-100%
BRWCAXH/IBRSWCAXJ	BARSTOW	BARSTOW	SAN BERNARDINO	Desert	54<-380	Large Metro	N	80%-100%	\$43,000-\$54,999	60%-80%
BSHPCAXG	BISHOP	BISHOP	INYO	Gateway	6-54	Large Metro	N	0%-20%	\$55,000-\$66,999	60%-80%
BTNWCAXF	BUTTONWILLOW	BUTTONWILLOW	KERN	Northern	6-54	Small	N	20%-40%	\$0-\$42,999	40%-60%
CCHLCAAXF	COACHELLA (EAGLE MTN)	COACHELLA (EAGLE MTN)	RIVERSIDE	Desert	6-54	Large Metro	Y	80%-100%	\$43,000-\$54,999	40%-60%
CCMNCAXF	CUCAMONGA (SAGE)	CUCAMONGA (SAGE)	SAN BERNARDINO	Inland	>1700	Very Large	Y	80%-100%	\$67,000-\$87,999	60%-80%
CFCYCAXF	CALIFORNIA CITY	CALIFORNIA CITY	KERN	Gateway	6-54	Large Metro	N	0%-20%	\$43,000-\$54,999	60%-80%
CHLKCAXF	CHINA LAKE	CHINA LAKE	KERN	Gateway	6-54	Large Metro	Y	20%-40%	\$55,000-\$66,999	80%-100%
CHNOCAXF/ILSSRCAXF	CHINO	CHINO	SAN BERNARDINO	Gateway	380<1700	Very Large	Y	80%-100%	\$67,000-\$87,999	40%-60%
CHSPCAXF	CALIFORNIA HOT SPRINGS	CALIF HOT SPRINGS	TULARE	Northern	0-6	Small	N	20%-40%	\$0-\$42,999	60%-80%
CLCYCAXG	LOS ANGELES (MARS VISTA)	MAR VISTA	LOS ANGELES	Beach Cities	>1700	Very Large	Y	-	\$67,000-\$87,999	40%-60%
CLEMCAAXF	CLEMENTS	CLEMENTS	SAN JOAQUIN	Northern	0-6	Small	N	-	\$67,000-\$87,999	60%-80%
CLFXCAXF	COLFAX	COLFAX	PLACER	Northern	6-54	Medium	N	40%-60%	\$67,000-\$87,999	80%-100%
CLMSCAXF	CALIMESA	CALIMESA	RIVERSIDE	Desert	54<-380	Large Metro	Y	-	\$67,000-\$87,999	60%-80%
CLMTCAXF/LVRNCAAXF/SNDMCAXF	CLAREMONT	CLAREMONT	LOS ANGELES	Coastal	>1700	Very Large	Y	60%-80%	\$67,000-\$87,999	40%-60%
CMRLCAXF	CAMARILLO	CAMARILLO	VENTURA	Gateway	380<1700	Very Large	Y	80%-100%	\$88,000 +	60%-80%
CNGKCAXF	CANTUA CREEK	CANTUA CREEK	FRESNO	Northern	0-6	Small	Y	80%-100%	\$0-\$42,999	40%-60%
COVNCAXF	COVINA	COVINA	LOS ANGELES	Coastal	>1700	Very Large	Y	40%-60%	\$67,000-\$87,999	40%-60%
CRCRCAXF	CORCORAN	CORCORAN	KINGS	Northern	6-54	Large Metro	N	80%-100%	\$0-\$42,999	40%-60%
CRLLCAXF	CROWLEY LAKE	CROWLEY LAKE	MONO	Gateway	6-54	Small	N	60%-80%	\$55,000-\$66,999	80%-100%
CRNLCAXF	CRESTLINE	CRESTLINE	SAN BERNARDINO	Desert	380<1700	Large Metro	N	-	\$55,000-\$66,999	80%-100%
CRPRCAXF	CARPINTERIA	CARPINTERIA	SANTA BARBARA	Gateway	54<-380	Large Metro	N	80%-100%	\$67,000-\$87,999	60%-80%
CUYMCAAXF	CUYAMA	CUYAMA	SANTA BARBARA	Northern	0-6	Small	N	-	\$67,000-\$87,999	80%-100%
CVELCAXF	COVELO	COVELO	MENDOCINO	Northern	0-6	Small	N	0%-20%	\$67,000-\$87,999	80%-100%
CZDRCAXG	CAZADERO	CAZADERO	SONOMA	Northern	6-54	Small	N	80%-100%	\$55,000-\$66,999	80%-100%
DHSRCAAXF	DESERT HOT SPRINGS	DESERT HOT SPRINGS	RIVERSIDE	Desert	54<-380	Large Metro	Y	60%-100%	\$0-\$42,999	40%-60%
DMONCAXF	DIAMOND BAR	DIAMOND BAR	LOS ANGELES	Coastal	380<1700	Large Urban	Y	80%-100%	\$88,000 +	20%-40%
DNLPCAXF	DUNLAP	DUNLAP	FRESNO	Northern	6-54	Small	N	0%-20%	\$67,000-\$87,999	60%-80%
DSCTCAXG	DESERT CENTER	DESERT CENTER	RIVERSIDE	Desert	6-54	Small	N	80%-100%	\$0-\$42,999	60%-80%
DSPLCAXF/ORMACAXF	DOS PALOS/LOMA	DOS PALOS	MERCED	Northern	6-54	Medium	N	60%-80%	\$43,000-\$54,999	60%-80%
DSHSCAXF	DESERT SHORES	DESERT SHORES	IMPERIAL	Desert	54<-380	Small	N	0%-20%	\$0-\$42,999	60%-80%
DWNYCAXF/DWNYCAXG/BLGR	DOWNEY	DOWNEY	LOS ANGELES	Coastal	>1700	Very Large	N	0%-20%	\$67,000-\$87,999	40%-60%
ELMGCAXF	EL MIRAGE	EL MIRAGE	SAN BERNARDINO	Desert	0-6	Small	N	20%-40%	\$0-\$42,999	40%-60%

Table 4F.14: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

CLLJ	Reporting Units (Phase II)	Reporting Unit (Phase I)	County	Operating Area	Density Category	Wire Center Size	FIPS	FTTP / FIOS	FTR Line Loss Category	Income Category	Race Category
ELRICAXF	EL RIO	EL RIO	VENTURA	Gateway	380<1700	Large Urban	Y	Y	-	\$67,000-\$87,999	40%-60%
ELSNORE	ELSNORE	ELSNORE GRAND	RIVERSIDE	Inland	54<380	Large Metro	Y	Y	60%-80%	\$67,000-\$87,999	60%-80%
ELSNOCXG	GRANDE/ELSNORE MAIN	ELWOOD	SANTA BARBARA	Gateway	6<54	Large Metro	Y	Y	-	\$67,000-\$87,999	60%-80%
ELWDCAXF	ELLWOOD (GAVIOTA)	ETIWANDA	SANTA BARBARA	Inland	380<1700	Large Metro	N	N	-	\$88,000 +	40%-60%
ETWNCAXF	ETIWANDA	EXETER	TULARE	Northern	54<380	Large Urban	N	N	-	\$67,000-\$87,999	60%-80%
FRTRNCAXF	FARMINGTON	FARMINGTON	STANISLAUS	Northern	6<54	Large Metro	N	N	0%-20%	\$67,000-\$87,999	80%-100%
FRVLCAXF	FARMERSVILLE	FARMERSVILLE	TULARE	Northern	54<380	Small	N	N	-	\$0-\$42,999	40%-60%
FTIRCAXF	FORT IRWIN	FORT IRWIN	SAN BERNARDINO	Desert	0<6	Medium	N	N	80%-100%	\$43,000-\$54,999	60%-80%
FVLRRCAXF	FOWLER	FOWLER	FRESNO	Northern	54<380	Large Metro	N	N	40%-60%	\$43,000-\$54,999	40%-60%
GDPLCAXG	GUADALUPE	GUADALUPE	SANTA BARBARA	Gateway	6<54	Medium	Y	Y	-	\$67,000-\$87,999	60%-80%
GGVGCAXF	GRANT GROVE VILLAGE	GRANT GROVE	FRESNO	Northern	0<6	Small	Y	Y	-	\$67,000-\$87,999	80%-100%
GLRYCAXF	GILROY	GILROY	SANTA CLARA	Northern	54<380	Very Large	N	N	60%-80%	\$88,000 +	60%-80%
GRHLCAXF	GLENNVILLE	GLENNVILLE	KERN	Northern	0<6	Small	N	N	0%-20%	\$43,000-\$54,999	80%-100%
GRVLCAXF	GRANADA HILLS	GRANADA HILLS	LOS ANGELES	Gateway	380<1700	Very Large	Y	Y	20%-40%	\$88,000 +	60%-80%
GRVLCAXF	GARBERVILLE	GARBERVILLE	HUMBOLDT	Northern	6<54	Medium	N	N	0%-20%	\$43,000-\$54,999	80%-100%
HEMTCASF	HEMET/VALLE VISTA	HEMET	RIVERSIDE	Inland	54<380	Very Large	N	N	40%-60%	\$43,000-\$54,999	60%-80%
HMLDCAFX	HOMELAND	HOMELAND	RIVERSIDE	Inland	54<380	Large Metro	Y	Y	40%-60%	\$67,000-\$87,999	60%-80%
HMYCAXF	HOMESTEAD VALLEY	HOMESTEAD VALLEY	SAN BERNARDINO	Desert	0<6	Medium	N	N	40%-60%	\$0-\$42,999	80%-100%
HNBHCAXG	HUNTINGTON BEACH	HUNTINGTON BEACH	ORANGE	Beach Cities	>1700	Large Urban	Y	Y	60%-80%	\$88,000 +	80%-100%
HOPACAXF	HOOPA	HOOPA	HUMBOLDT	Northern	6<54	Medium	Y	Y	40%-60%	\$0-\$42,999	0%-20%
HRBHCAXA	HERMOSA BEACH	REDONDO	LOS ANGELES	Beach Cities	>1700	Very Large	N	N	-	\$88,000 +	60%-80%
HSPRCAXF	HESPERIA	HESPERIA	SAN BERNARDINO	Desert	380<1700	Very Large	Y	Y	20%-40%	\$55,000-\$66,999	60%-80%
HYFKCAXF	HAYFORK	HAYFORK	TRINITY	Northern	0<6	Medium	Y	Y	20%-40%	\$0-\$42,999	80%-100%
IDYLLCAXF	IDYLLWILD	IDYLLWILD	RIVERSIDE	Inland	6<54	Large Metro	N	N	20%-40%	\$55,000-\$66,999	80%-100%
INDICXG/LAQNCA	INDIO/LA	INDIO	RIVERSIDE	Desert	380<1700	Large Urban	Y	Y	60%-80%	\$55,000-\$66,999	60%-80%
INDICXG/LAQNCA	INDIO/LA	INDIO	RIVERSIDE	Desert	380<1700	Large Urban	Y	Y	60%-80%	\$55,000-\$66,999	60%-80%
INDPCAXF	INDEPENDENCE	INDEPENDENCE	INYO	Gateway	0<6	Small	N	N	0%-20%	\$43,000-\$54,999	60%-80%
INYKCAFX	INYOKERN	INYOKERN	KERN	Gateway	6<54	Medium	N	N	20%-40%	\$43,000-\$54,999	80%-100%
JNLKCAFX	JUNE LAKE	JUNE LAKE	MONO	Gateway	0<6	Small	N	N	20%-40%	\$55,000-\$66,999	80%-100%
JSTRCAFX	JOSHUA TREE	JOSHUA TREE	SAN BERNARDINO	Desert	6<54	Large Metro	N	N	20%-40%	\$0-\$42,999	80%-100%
KNWDCAXF	KNIGHTS LANDING	KNIGHTS LANDING	YOLO	Northern	0<6	Small	N	N	-	\$43,000-\$54,999	60%-100%
KNWDCAXF	KNIGHTS LANDING	KNIGHTS LANDING	YOLO	Northern	0<6	Small	N	N	-	\$67,000-\$87,999	80%-100%
KRVLCAXF	KERNVILLE	KERNVILLE	KERN	Gateway	6<54	Medium	N	N	20%-40%	\$0-\$42,999	80%-100%
LAHBCAXF	LA HABRA	LA HABRA	LOS ANGELES	Coastal	380<1700	Large Urban	N	N	40%-60%	\$88,000 +	40%-60%
LAPNCAXG	LACERNE VALLEY	LACERNE VALLEY	LOS ANGELES	Coastal	>1700	Very Large	Y	Y	-	\$67,000-\$87,999	40%-60%
LCVYCAFX	LACERNE VALLEY	LACERNE VALLEY	SAN BERNARDINO	Desert	6<54	Medium	N	N	-	\$43,000-\$54,999	80%-100%
LGBHCAXF	LAGUNA BEACH	LAGUNA BEACH	ORANGE	Beach Cities	380<1700	Large Metro	N	N	-	\$88,000 +	60%-80%
LGSTCAFX	LAGUNA BEACH	LAGUNA BEACH	MENDOCINO	Northern	0<6	Small	N	N	-	\$0-\$42,999	60%-80%
LKHGCAXF	LAKE HUGHES	LAKE HUGHES	LOS ANGELES	Gateway	6<54	Medium	N	N	-	\$67,000-\$87,999	60%-80%
LKISCAXF	LAKE ISABELLA	LAKE ISABELLA	KERN	Gateway	6<54	Large Metro	N	N	20%-40%	\$0-\$42,999	80%-100%
LMCVCAFX	LEMON COVE	LEMON COVE	TULARE	Northern	6<54	Small	N	N	20%-40%	\$55,000-\$66,999	60%-80%
LNHCAXF	LONG BEACH	LONG BEACH MAIN	LOS ANGELES	Beach Cities	>1700	Very Large	Y	Y	-	\$43,000-\$54,999	40%-60%
LNCSAXF	LANCASTER ANTELOPE (HI VISTA)	ANTELOPE	LOS ANGELES	Gateway	6<54	Very Large	Y	Y	-	\$43,000-\$54,999	40%-60%
LNCSAXG/QZHL	LANCASTER QUARTZ HILL	LANCASTER	LOS ANGELES	Gateway	380<1700	Large Metro	Y	Y	80%-100%	\$43,000-\$54,999	40%-60%
LNDCAXF	LINDEN	LINDEN	SAN JOAQUIN	Northern	6<54	Medium	N	N	40%-60%	\$67,000-\$87,999	60%-80%
LNDCAXF/STMP	LINDSAY/STRATHMORE	LINDSAY	TULARE	Northern	54<380	Large Metro	N	N	-	\$0-\$42,999	60%-80%
LNPNCAFX	LONE PINE	LONE PINE	INYO	Desert	0<6	Medium	N	N	80%-100%	\$0-\$42,999	60%-80%
LNWDCAXF	LENWOOD	LENWOOD	SAN BERNARDINO	Gateway	6<54	Medium	N	N	-	\$43,000-\$54,999	60%-80%
LSALCAXF	LOS ALAMOS	LOS ALAMOS	SANTA BARBARA	Gateway	0<6	Small	N	N	-	\$67,000-\$87,999	80%-100%
LSANCAIK	LOS ANGELES DA 04, CA	LOS ALAMOS	SANTA BARBARA	Gateway	0<6	Small	Y	Y	-	\$88,000 +	80%-100%
LSANCAIO	LOS ANGELES DA 07, CA	LOS ALAMOS	SANTA BARBARA	Gateway	0<6	Small	Y	Y	-	\$88,000 +	80%-100%
LSGTCAXA	LOS GATOS	BLOSSOM HILL	SANTA CLARA	Northern	380<1700	Large Metro	N	N	40%-60%	\$88,000 +	80%-100%
LSHLCAFX	LOST HILLS	LOST HILLS	KERN	Northern	0<6	Small	N	N	-	\$0-\$42,999	20%-40%
LVNCGAXF	LEE VINING	LEE VINING	MONO	Gateway	0<6	Small	N	N	60%-80%	\$55,000-\$66,999	80%-100%
LYVLCAXF	LAYTONVILLE	LAYTONVILLE	MENDOCINO	Northern	0<6	Medium	N	N	0%-20%	\$43,000-\$54,999	80%-100%
MALBCAXG	MALIBU	MALIBU	LOS ANGELES	Coastal	54<380	Large Metro	Y	Y	-	\$88,000 +	80%-100%

Table 4F.14: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

CLLJ	Reporting Units (Phase II)	Reporting Unit (Phase I)	County	Operating Area	Density Category	Wire Center Size	FTTP / FIOS	FTR Line Loss Category	Income Category	Race Category
MCFAFAXF	MCFARLAND	MCFARLAND	KERN	Northern	6-54	Medium	N	0%-20%	\$0-\$42,999	20%-40%
MCKTCAXF	MCKITTRICK	MCKITTRICK	KERN	Northern	0-6	Small	N	0%-20%	\$67,000-\$87,999	80%-100%
MDRVCAXF	MAD RIVER	MAD RIVER	TRINITY	Northern	0-6	Small	N	0%-20%	\$0-\$42,999	80%-100%
MENTONCAXF	MENTONE	MENTONE	SAN BERNARDINO	Desert	54-380	Large Metro	Y	40%-60%	\$67,000-\$87,999	60%-80%
MMLKCAXF	MAMMOTH LAKES	MAMMOTH LAKES	MONO	Gateway	0-6	Large Metro	Y	-	\$55,000-\$66,999	80%-100%
MNRVCAXG	MONROVIA	MONROVIA	LOS ANGELES	Coastal	380<1700	Very Large	N	60%-80%	\$67,000-\$87,999	40%-60%
MNTCCAGXGLTHPCAXF	MANTECALATHROP	MANTECA	SAN JOAQUIN	Northern	380<1700	Large Urban	N	60%-80%	\$67,000-\$87,999	60%-80%
MRLHCAXF	MORGAN HILL	MORGAN HILL	SANTA CLARA	Northern	54-380	Large Urban	N	60%-80%	\$88,000 +	60%-80%
MRWNCASF	MIRANTPHST	MIRANTPHST	SAN BERNARDINO	Desert	6-54	Medium	N	40%-60%	\$43,000-\$54,999	60%-100%
MRYVCAXF	MORONGO VALLEY	MORONGO VALLEY	VENTURA	Gateway	54-380	Large Metro	Y	0%-20%	\$67,000-\$87,999	40%-60%
MURGUCAXF	POINT MUGU	MURRIETA	RIVERSIDE	Inland	380<1700	Very Large	Y	-	\$67,000-\$87,999	60%-80%
MURRIETACAXF	MURRIETA	MURRIETA	MARIN	Northern	54-380	Large Urban	N	-	\$88,000 +	60%-80%
NOVTCAXF	NOVATO	NOVATO	LOS ANGELES	Coastal	>1700	Very Large	Y	0%-20%	\$67,000-\$87,999	40%-60%
NRWLCAXFNRWLCAFXG	ALONDRA	NORWALK	VENTURA	Gateway	380<1700	Very Large	Y	0%-20%	\$88,000 +	60%-80%
OLNCCAXF	NEWBERRY	NEWBURY PARK	INYO	Gateway	0-6	Small	N	60%-80%	\$43,000-\$54,999	60%-80%
OLNCHCA (OJA)	OLANCHA	OLANCHA	INYO	Gateway	0-6	Small	N	60%-80%	\$55,000-\$66,999	40%-60%
ONTNRCAXF	ONTARIO	ONTARIO MAIN	SAN BERNARDINO	Inland	>1700	Very Large	Y	40%-60%	\$0-\$42,999	60%-80%
ORLNCAXF	ORLEANS	ORLEANS	HUMBOLDT	Northern	0-6	Small	N	0%-20%	\$55,000-\$66,999	40%-60%
OXNRCAXF	OXNARD	OXNARD	VENTURA	Gateway	>1700	Large Urban	Y	40%-60%	\$55,000-\$66,999	40%-60%
PACMCAXF	PACOMA	PACOMA	LOS ANGELES	Gateway	54-380	Very Large	Y	40%-60%	\$55,000-\$66,999	40%-60%
PCPLCAXF	PACIFIC PALISADES	PACIFIC PALISADES	LOS ANGELES	Beach Cities	380<1700	Large Urban	N	-	\$88,000 +	80%-100%
PDRYCAXF	PLAYA DEL REY	DEL REY	LOS ANGELES	Beach Cities	>1700	Large Urban	N	60%-80%	\$88,000 +	40%-60%
PERSCAXF	PERRIS	PERRIS	RIVERSIDE	Inland	54-380	Very Large	Y	-	\$55,000-\$66,999	60%-80%
PHLNCAXF	PHELAN	PHELAN	SAN BERNARDINO	Desert	54-380	Large Metro	N	40%-60%	\$43,000-\$54,999	60%-80%
PIRCAXF	PIERCY	PIERCY	MENDOCINO	Northern	0-6	Small	N	40%-60%	\$43,000-\$54,999	80%-100%
PLDSCAXF/THPLCAXF	PALM DESERT/THOUSAND PALMS	PALM DESERT	RIVERSIDE	Desert	380<1700	Very Large	N	-	\$55,000-\$66,999	80%-100%
PLSPCAXFGRNMGCAXF	PALM SPRINGS/RANCHO MIRAGE	PALM SPRINGS EAST	RIVERSIDE	Desert	54-380	Very Large	Y	80%-100%	\$43,000-\$54,999	60%-80%
PNCCKAXF	PINE CREEK	PINECREEK	INYO	Gateway	0-6	Small	N	20%-40%	\$67,000-\$87,999	80%-100%
PNYNCAXF	PINYON	PINYON	RIVERSIDE	Desert	0-6	Small	N	-	\$55,000-\$66,999	60%-80%
POMNCAXF	POMONA	POMONA	LOS ANGELES	Coastal	>1700	Very Large	Y	-	\$55,000-\$66,999	40%-60%
PRFDCAXF	PARKFIELD	PARKFIELD	MONTEREY	Gateway	0-6	Very Large	Y	20%-40%	\$67,000-\$87,999	80%-100%
RBNSCAXG	ROBBINS	ROBBINS	SUTTER	Northern	0-6	Small	N	0%-20%	\$43,000-\$54,999	60%-80%
REDONDO/HERMOSA	REDONDO/HERMOSA	REDONDO/HERMOSA	LOS ANGELES	Beach Cities	>1700	Very Large	Y	60%-80%	\$88,000 +	40%-60%
RBBHCAXF/HRBHCAXAMNBHC	BEACH/MANHATTAN	BEACH/PALOS VERDES	LOS ANGELES	Beach Cities	6-54	Large Metro	Y	40%-60%	\$43,000-\$54,999	80%-100%
AXF/RHLCAXF/TRNCCAXF/TR	ESTATES/TORRANCE/TORRANCE	ANCE PALOS VERDES	SAN BERNARDINO	Desert	380<1700	Large Metro	Y	80%-100%	\$67,000-\$87,999	60%-80%
NCCAXG	ANCE PALOS VERDES	ANCE PALOS VERDES	FRESNO	Northern	54-380	Large Metro	N	0%-20%	\$43,000-\$54,999	40%-60%
RDCGCAFXG	RIDGECREST	RIDGECREST	KERN	Gateway	6-54	Large Metro	Y	60%-80%	\$88,000 +	40%-60%
RDLDCAXF/LMLNCAXF	REDLANDS/LOMA LINDA	REDLANDS	SAN BERNARDINO	Desert	380<1700	Large Metro	Y	80%-100%	\$67,000-\$87,999	60%-80%
RDLYCAXF	REEDLEY	REEDLEY	FRESNO	Desert	54-380	Large Metro	N	0%-20%	\$43,000-\$54,999	40%-60%
RIPNCAXF	RIPON	RIPON	SAN JOAQUIN	Northern	54-380	Large Metro	N	0%-20%	\$67,000-\$87,999	60%-80%
RNBGCAXF	RANDBURG	RANDBURG	KERN	Gateway	0-6	Small	N	40%-60%	\$55,000-\$66,999	80%-100%
RNSPCAXF	RUNNING SPRINGS	RUNNING SPRINGS	SAN BERNARDINO	Desert	54-380	Medium	N	20%-40%	\$67,000-\$87,999	60%-80%
SENCAXG	SEA RANCH	SEA RANCH	SONOMA	Northern	54-380	Medium	N	0%-20%	\$55,000-\$66,999	60%-100%
SLBHCAXF	SEAL BEACH (ALAMITOS)	ALAMITOS	ORANGE	Beach Cities	380<1700	Very Large	N	-	\$88,000 +	60%-80%
SLVYCAXF	SALTON CITY	SALTON CITY	IMPERIAL	Desert	6-54	Small	N	60%-80%	\$0-\$42,999	60%-80%
SLVNCAXG	SOLVANG (SANTA YNEZ)	SANTA YNEZ	SANTA BARBARA	Gateway	6-54	Large Urban	N	-	\$67,000-\$87,999	80%-100%
SNBBCAXF/SNBBCAXG/GOLTC	SANTA BARBARA	SANTA BARBARA	SANTA BARBARA	Gateway	6-54	Large Urban	N	-	\$67,000-\$87,999	80%-100%
AXE/INTTCAXF	GOLET/MONTECITO	SANTA BARBARA	SANTA BARBARA	Gateway	>1700	Very Large	N	60%-80%	\$67,000-\$87,999	60%-80%
SNBRCAHXHMSCYCAXF	MARSHALL/MUSCOY	MARSHALL	SAN BERNARDINO	Desert	380<1700	Large Urban	N	60%-80%	\$43,000-\$54,999	40%-60%
SNBRCAHX	SAN BERNARDINO	SAN BERNARDINO	SAN BERNARDINO	Desert	>1700	Very Large	N	-	\$0-\$42,999	40%-60%
SNYCAXF/QUVYCAXF	SUN CITY/QUAIL VALLEY	SUN CITY	RIVERSIDE	Inland	380<1700	Very Large	Y	-	\$67,000-\$87,999	60%-80%
SNFNCAXG	SNFN	SAN FERNANDO	LOS ANGELES	Gateway	>1700	Large Urban	N	40%-60%	\$55,000-\$66,999	40%-60%
SNRCAXF	SANGER	SANGER	FRESNO	Northern	54-380	Large Metro	N	20%-40%	\$67,000-\$87,999	60%-80%
SNJCCAXG	SAN JACINTO	SAN JACINTO	RIVERSIDE	Inland	54-380	Large Urban	Y	80%-100%	\$43,000-\$54,999	60%-80%

Table 4F.14: WIRE CENTER ATTRIBUTE CLASSIFICATIONS (continued)

CLLJ	Reporting Units (Phase II)	Reporting Unit (Phase I)	County	Operating Area	Density Category	Wire Center Size	FTTP / FIOS	FTR Line Loss Category	Income Category	Race Category
SNJQCXFF/FRNQCXAF	SAN JOAQUIN	SAN JOAQUIN	FRESNO	Northern	6-54	Small	N	40%-60%	\$0-\$42,999	40%-60%
SNLDCXAF	TRANQUILITY	SUNLAND/TUJUNGA	LOS ANGELES	Gateway	380<1700	Large Urban	N	80%-100%	\$67,000-\$87,999	60%-80%
SNMGCXAF	SUNLD TJNG	SAN MIGUEL	MONTEREY	Gateway	0<6	Medium	N	40%-60%	\$67,000-\$87,999	80%-100%
SNMNCXAG	SAN MIGUEL	SANTA MONICA	LOS ANGELES	Beach Cities	>1700	Very Large	Y	-	\$88,000 +	80%-100%
SNMGCXAG	SANTA MONICA	SNELLING	MERCED	Northern	0<6	Small	N	20%-40%	\$43,000-\$54,999	60%-80%
SNPLCAXF	SANTA PAULA	SANTA PAULA	VENTURA	Gateway	54<380	Large Metro	N	20%-40%	\$55,000-\$66,999	60%-80%
SNMTCAXF	SANTA MARIA	SANTA MARIA	SANTA BARBARA	Gateway	380<1700	Very Large	Y	40%-60%	\$55,000-\$66,999	40%-60%
LNCSXAF/FEDMTXAF/SNY/MC	MORENO/EDGEMONT/SUNN									
AXF	YMEAD	SUNNYMEAD	RIVERSIDE	Inland	380<1700	Very Large	N	20%-40%	\$67,000-\$87,999	40%-60%
SPLVLCXAF	SEFULVEDA	SEFULVEDA	LOS ANGELES	Gateway	>1700	Very Large	N	80%-100%	\$67,000-\$87,999	40%-60%
SPLVLCXAF1	SEFULVEDA 1								\$88,000 +	
SPLVLCXAF2	SEFULVEDA 2								\$88,000 +	
SPLVLCXAF3	SEFULVEDA 3								\$88,000 +	
SRMDCXAF/PSDNCXAF	SIERRA MADRE/PASADENA	SIERRA MADRE	LOS ANGELES	Coastal	>1700	Large Metro	N	-	\$88,000 +	60%-80%
SYVFCXAF	SQUAW VALLEY	SQUAW VALLEY	FRESNO	Northern	6-54	Small	N	0%-20%	\$67,000-\$87,999	80%-100%
SYLMLCAXF	SYLMAR	SYLMAR	LOS ANGELES	Gateway	380<1700	Large Urban	N	80%-100%	\$67,000-\$87,999	40%-60%
TAFTCAXF/FLWSCAXF/MRCP	TAFT	TAFT	KERN	Northern	6-54	Large Metro	N	0%-20%	\$55,000-\$66,999	60%-80%
AXF	THOUSAND OAKS	THOUSAND OAKS 2	VENTURA	Gateway	380<1700	Very Large	Y	80%-100%	\$88,000 +	80%-100%
THOKCAXF	THOUSAND OAKS									
THOKCAXH	THOUSAND OAKS(CONEJO)	CONEJO	VENTURA	Gateway	380<1700	Large Urban	Y	20%-40%	\$88,000 +	80%-100%
TMCLCAXG/IRNCACAXF	TEMECULA/RANCHO	TEMECULA	RIVERSIDE	Inland	380<1700	Large Metro	Y	-	\$67,000-\$87,999	60%-80%
TMVCXAXH	CALIFORNIA	TIMBER COVE	SONOMA	Northern	0<6	Small	N	40%-60%	\$55,000-\$66,999	80%-100%
TPNGCAXF	TIMBER COVE	TOPANGA	LOS ANGELES	Gateway	54<380	Medium	N	0%-20%	\$88,000 +	80%-100%
TRONCAXF	TOPANGA	TRONA	SAN BERNARDINO	Gateway	0<6	Small	N	-	\$43,000-\$54,999	60%-80%
TVVYCXAF	TRONA	TIVY VALLEY	FRESNO	Northern	6-54	Medium	N	-	\$67,000-\$87,999	60%-80%
TVVYCXAF	TIVY VALLEY									
TWENTYNINE	TWENTYNINE									
TPWLCXAF/TWPLCAXG/DSHG	PALMS/MARINE	UPLAND	SAN BERNARDINO	Desert	6-54	Large Metro	N	60%-80%	\$0-\$42,999	60%-80%
CAXF	BASE/DESERT HEIGHTS	UPLAND	SAN BERNARDINO	Inland	380<1700	Very Large	Y	0%-20%	\$67,000-\$87,999	60%-80%
UPLDCAXF	UPLAND									
VTVLCAXH/HNDLCAXF	VICTORVILLE/HELENDALE-	VICTORVILLE	SAN BERNARDINO	Desert	54<380	Very Large	Y	-	\$55,000-\$66,999	40%-60%
WEMRCAXF	SILVER LAKES	WEIMAR	PLACER	Northern	54<380	Medium	N	20%-40%	\$55,000-\$66,999	80%-100%
WHTNRCAXF	WEIMAR	WHITEHORN	HUMBOLDT	Northern	0<6	Medium	N	0%-20%	\$43,000-\$54,999	80%-100%
WHTRCAXF	WHITEHORN	WHITTIER SOUTH	LOS ANGELES	Coastal	>1700	Very Large	Y	-	\$67,000-\$87,999	40%-60%
WHTRCAXJ	WHITTIER	PICO	LOS ANGELES	Coastal	380<1700	Large Urban	Y	40%-60%	\$67,000-\$87,999	40%-60%
WLANCAXF	PICO RIVERA	WEST LOS ANGELES	LOS ANGELES	Beach Cities	>1700	Large Urban	N	-	\$67,000-\$87,999	60%-80%
WLDNRCAXF	WEST LOS ANGELES	SUMMIT VLY	KERN	Gateway	0<6	Medium	N	-	\$43,000-\$54,999	80%-100%
WLNTCAXF	SUMMIT VLY	WALNUT	LOS ANGELES	Coastal	380<1700	Very Large	Y	40%-60%	\$88,000 +	20%-40%
WMNSCAXF	WALNUT	WESTMINSTER	ORANGE	Coastal	>1700	Very Large	Y	-	\$67,000-\$87,999	40%-60%
WRWDCAXF	WESTMINSTER	WRIGHTWOOD	SAN BERNARDINO	Beach Cities	6-54	Medium	N	-	\$55,000-\$66,999	80%-100%
WVVLXAG	WRIGHTWOOD	WEAVERVILLE	TRINITY	Desert	6-54	Medium	N	0%-20%	\$0-\$42,999	80%-100%
WWVLCXAG	WEAVERVILLE	WILLOW CRK	HUMBOLDT	Northern	6-54	Large Metro	N	-	\$0-\$42,999	80%-100%
WWVLCXAG	WILLOW CRK	YUCCA VALLEY	SAN BERNARDINO	Northern	0<6	Medium	N	-	\$0-\$42,999	40%-60%
WVVCXAG	YUCCA VALLEY	YUCCA VALLEY	SAN BERNARDINO	Desert	54<380	Large Metro	N	20%-40%	\$0-\$42,999	80%-100%
YERM/CAXF	BRSW YERM/YERMO	YERMO	SAN BERNARDINO	Desert	0<6	Small	N	-	\$55,000-\$66,999	60%-80%

We have prepared a set of four (4) graphs for each of the five category dimensions that correspond to Frontier Companywide graphs provided above. Table 4F.15 below provides an index to the figures provided for each set of attributes.

Table 4F.15						
SUMMARY OF FRONTIER ATTRIBUTE DIMENSION GRAPHS						
	Company wide	Broadband	Wire Center Size	POTS Line Loss	Density	OPA
OOS per 100 Access Lines	Fig. 4F.3	Fig. 4F.14	Fig. 4F.18	Fig. 4F.22	Fig. 4F.26	Fig. 4F.30
Avg OOS>24 hrs Duration	Fig. 4F.7, 9	Fig. 4F.15	Fig. 4F.19	Fig. 4F.23	Fig. 4F.27	Fig. 4F.31
Pct OOS cleared in 24 hrs	Fig. 4F.10, 11	Fig. 4F.16	Fig. 4F.20	Fig. 4F.24	Fig. 4F.28	Fig. 4F.32
Days required to clear 90%	Fig. 4F.12, 13	Fig. 4F.17	Fig. 4F.21	Fig. 4F.25	Fig. 4F.29	Fig. 4F.33

Wire Centers that had been upgraded to FTTP

Although this study and GO-133-C/D are primarily focused upon traditional circuit-switched POTS services, the fact that a particular wire center has been upgraded with a Fiber-to-the-Premises (“FTTP”) distribution infrastructure enabling it to support *FiOS* broadband services is an indication that, prior to its sale of the company to Frontier, Verizon had undertaken to invest in and to upgrade the central office and outside plant facilities therein. Following the transfer, Frontier has also upgraded some non-*FiOS* wire centers for broadband services, albeit on a limited basis. *FiOS* branded services include high-speed Internet access, digital IPTV, and VoIP telephone services. These services require the replacement of the copper loop and drop segments with fiber.³⁴

In Chapter 3 of our Phase 1 Report, we noted that the overwhelming majority of the central office switches that provide POTS services are quite old, in some cases twenty to thirty years old. These switches have, for the most part, remained in service and continue to provide legacy circuit-switched voice telephone service. The switch upgrades that have occurred in the 2010-2017 time frame were primarily aimed at supporting or expanding the scope of packet-switched services such as VoIP and high-speed Internet access in the residential/small business market or advanced high-capacity services to enterprise and government customers. Recent outside plant upgrades made primarily to support advanced services will often confer a direct service quality benefit to legacy POTS customers as these customers are migrated to the new distribution architecture. But however these new plant upgrades and acquisitions are being utilized, there is a reasonable expectation that some overall improvement in POTS service quality should result. To test this hypothesis, ETI deemed the presence of *FiOS*-capable FTTP plant in a given wire center as an indicator that the ILEC had upgraded its central office and/or outside plant facilities overall.

34. See, e.g., Verizon, “Verizon FiOS – See the Light,” available at <http://thevillagecondos.com/Projects/VerizonFIOS/MDUPortfolio.pdf> (accessed 1/24/19).

As of the April 1, 2016 acquisition date, and as summarized on Table 4F.16 below, just under two-thirds of Frontier California's POTS customers were being served out of wire centers that had been upgraded to offer *FiOS*.³⁵

Table 4F.16			
FRONTIER CALIFORNIA			
CLASSIFICATIONS OF WIRE CENTERS AND REPORTING UNITS WITH AND WITHOUT FTTP UPGRADES AS OF APRIL 2016			
FTTP	Frontier Reporting Units	Frontier Access Lines	Pct of Access Lines
Yes	66	786,817	64.66%
No	123	430,012	34.34%
TOTAL	189	1,216,829	100.00%
NOTE: Access line counts are as of the April 1, 2016 acquisition date and are approximate			

Using FTTP availability as a surrogate for specific data on capital investment in each wire center, we determined that, as with AT&T, the presence of *FiOS* availability in any given wire center has had a positive impact upon POTS service quality being furnished out of that same building – specifically, on the incidence of OOS situations, their duration, and the extent to which the 90% cleared within 24 hours standard had been achieved. This examination has now been updated to include Frontier service quality data through December 2019 as well as to reclassify any additional wire centers that have been upgraded with FTTP facilities since the Phase 1 Study was completed. These results are shown in updated Figures 4F.14, 4F.15, 4F.16 and 4F.17 below. In general, wire centers that were upgraded to FTTP performed noticeably better on all OOS metrics than those for which no such upgrade investment had been made. In upgraded wire centers, the number of POTS out-of-service incidents per 100 lines in service was lower; their average duration was decidedly shorter, and the percentage of outages cleared within 24 hours was decidedly higher than in offices without broadband.

The superior service quality performance of fiber-equipped wire centers has persisted under Frontier ownership. In the immediate post-transfer time period (2Q2016 to 4Q2017), Frontier fiber-equipped wire centers showed improvements in the duration-related metrics -- in particular, the percent cleared within 24 hours and the days required to clear 90% showed noticeable improvement. However, after 2017, all of the performance metrics deteriorated, but locations with fiber continued to out-perform those where no such upgrades had taken place.

35. Frontier response to DR05-F-5, "DR 5 Attachment 4_Confidential.xlsx"; Frontier response to DR 13-F-2, "Att. 13-F-2 16-17 Line Count 11-F-7 format [CONFIDENTIAL].xlsx"



Wire centers upgraded with Fiber-to-the-Premises (“FTTP”) capable of providing *FiOS* broadband services have continued to achieve better service quality performance scores in virtually every category than those without such upgrades. But Frontier lost ground in all of these metrics both in upgraded and non-upgraded wire centers over the 2018-2019 period.

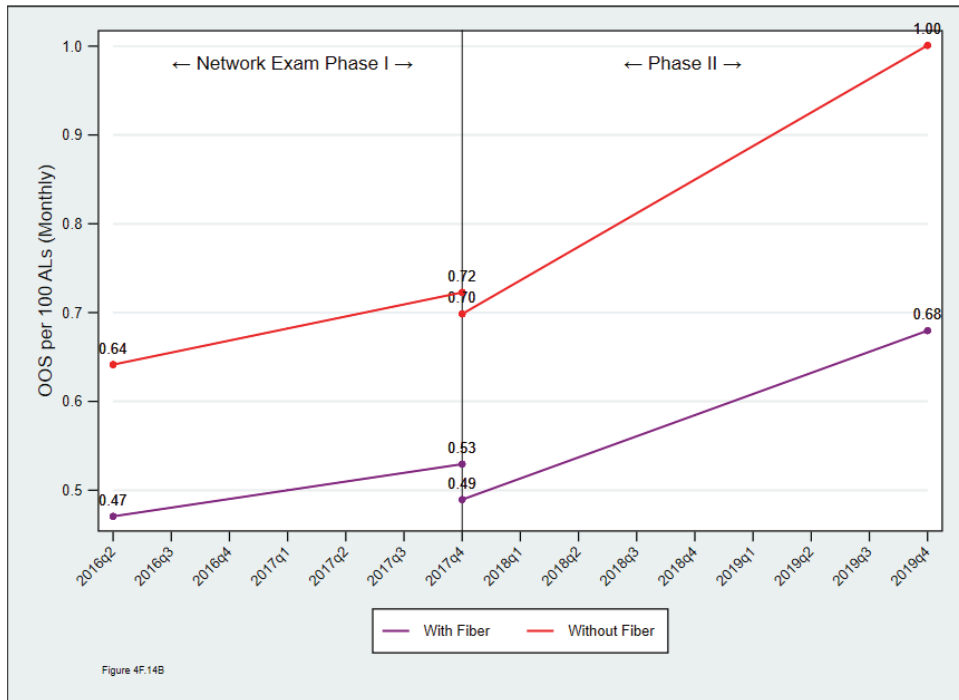
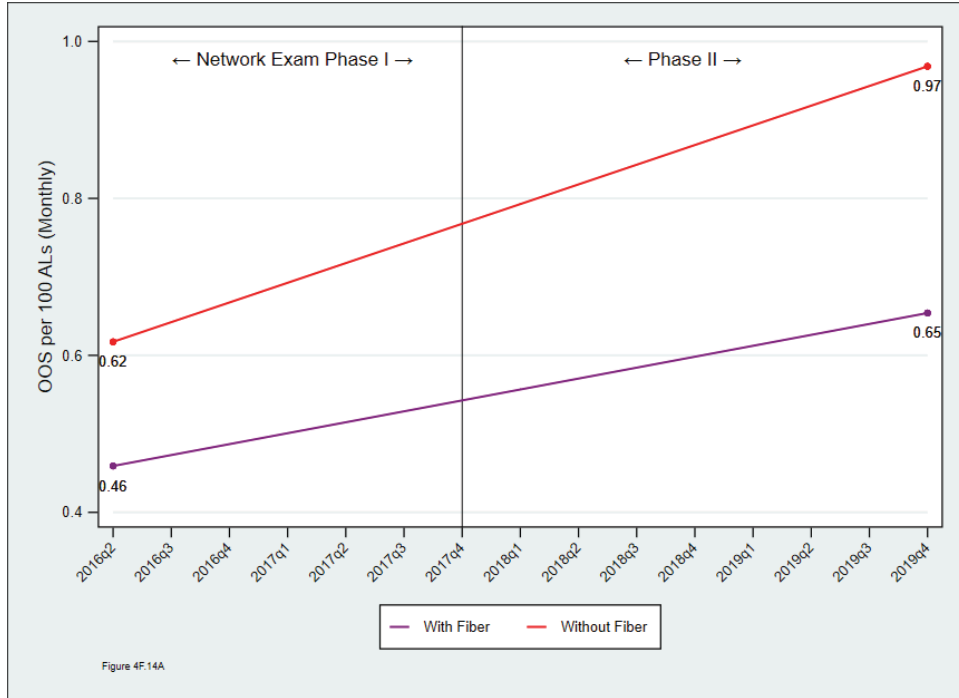


Figure 4F.14. There have been fewer out-of-service conditions per 100 access lines in wire centers with FTTP upgrades, but both categories have seen increases in OOS rates over the 2018-2019 period.

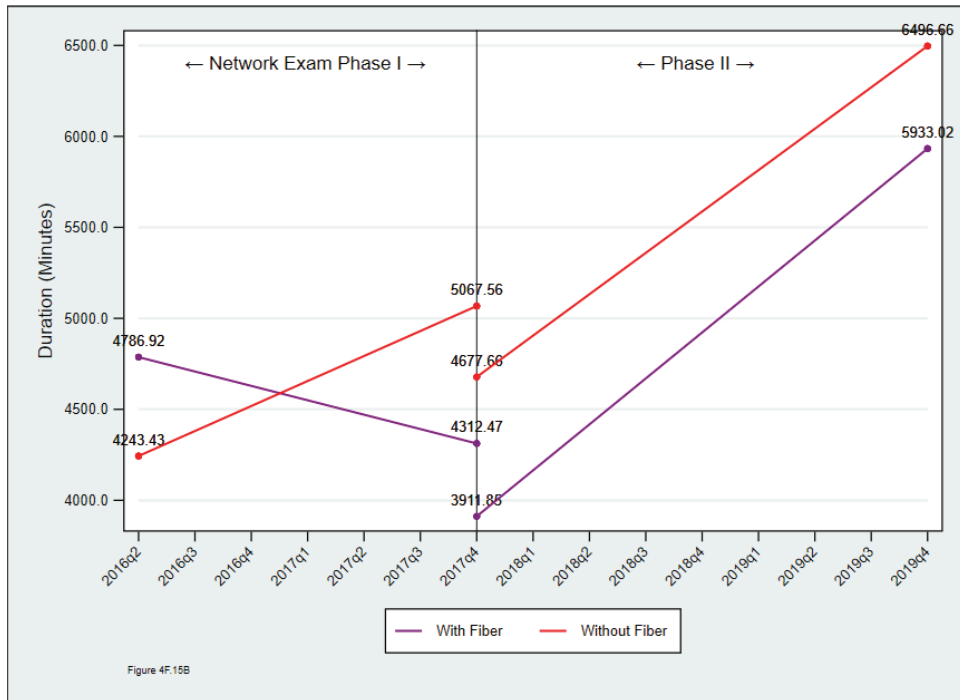
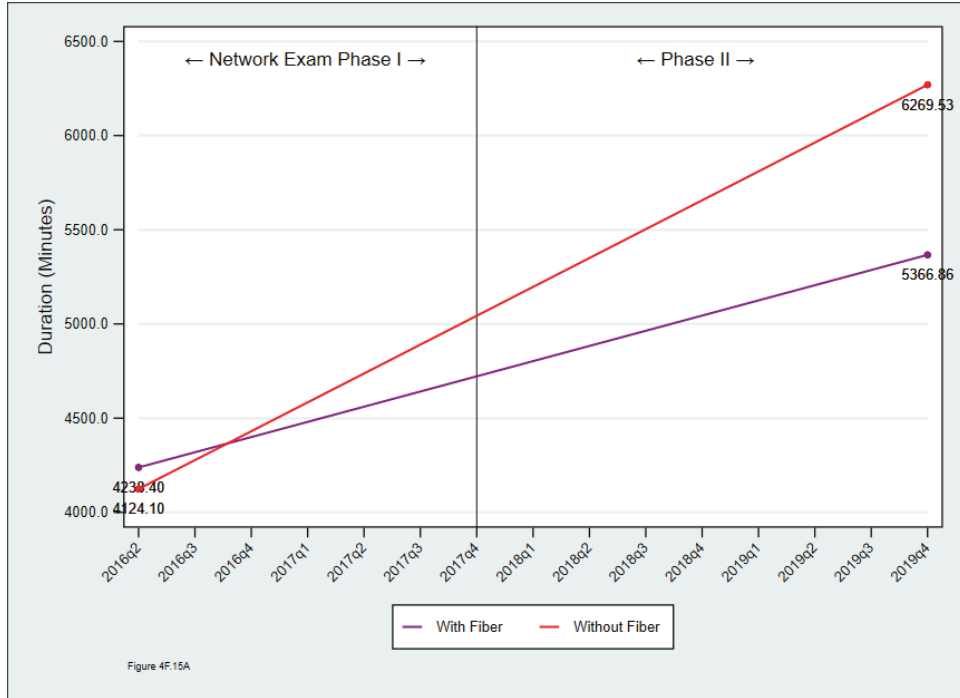


Figure 4F.15. Service outages are shorter in wire centers that have received FTTP upgrades, but following some improvement in FTTP offices following Frontier’s takeover, durations have been on the rise in both categories over the 2018-2019 period.

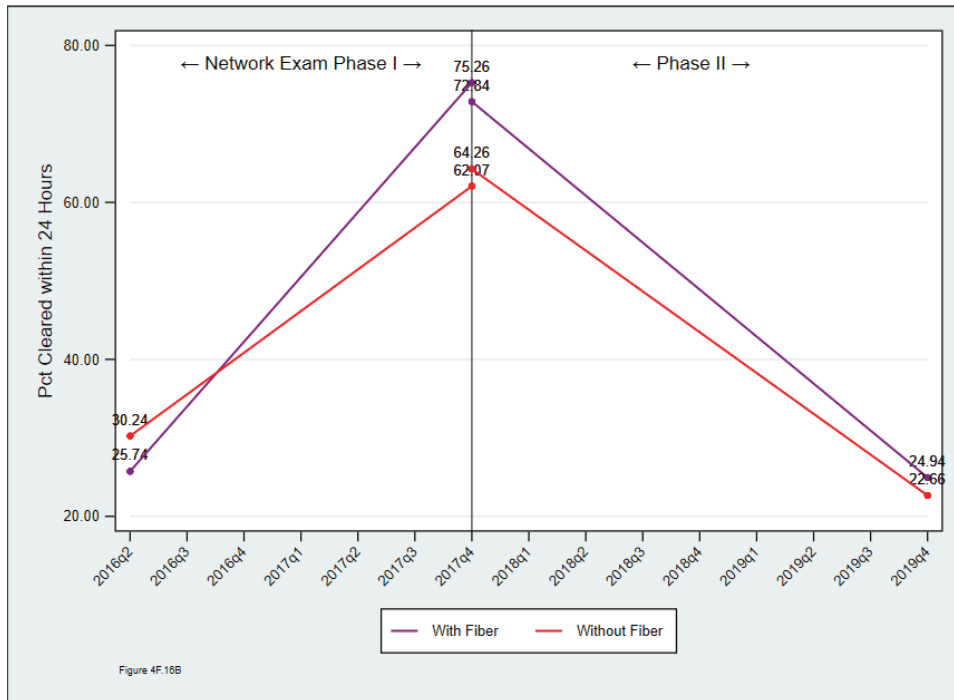
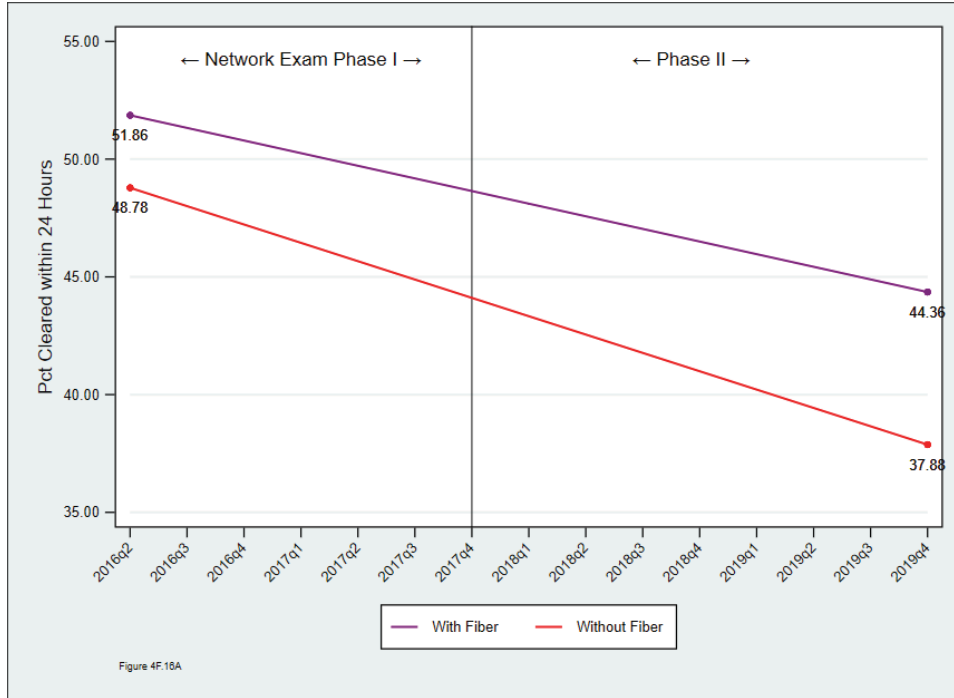


Figure 4F.16. FTTP-upgraded wire centers clear a higher percentage of out-of-service conditions within 24 hours, but following improvement in both categories following Frontier’s takeover, the percent cleared within 24 hours has been falling in both categories over the 2018-2019 period.

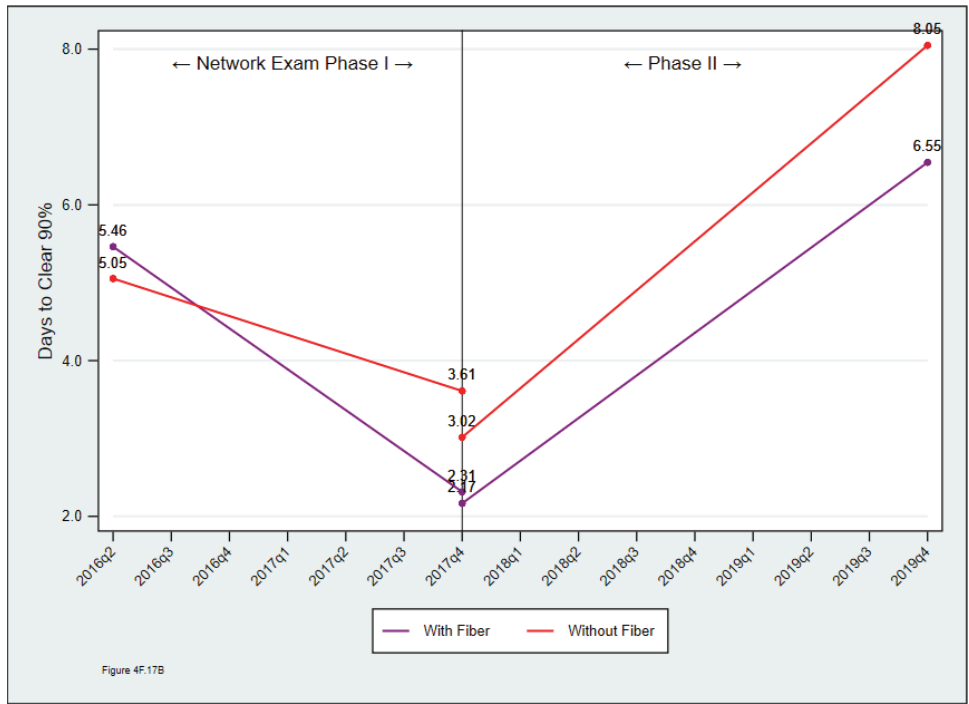
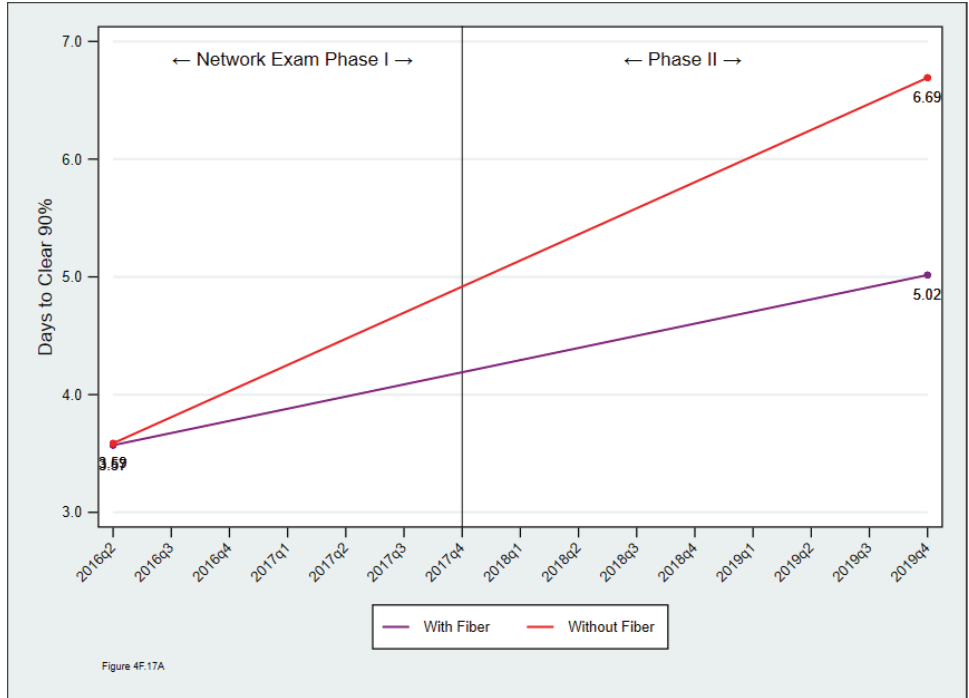


Figure 4F.17. The number of days needed to clear 90% of service outages in shorter in FTTP-upgraded wire centers, but following improvement in both categories following Frontier’s takeover, the days needed to clear 90% has been increasing in both categories over the 2018-2019 period.

Wire Center Size

As with our analysis of the AT&T data, we expanded the list of wire center size categories from the three specified in GO 133-C/D (Small (1000 or fewer POTS lines), Medium (1001-2999 lines), and Large (3000 or more lines)³⁶) to the same five categories that we used for AT&T, splitting Large into Large Metro, Large Urban, and Very Large. Table 4F.17 below indicates the number of Frontier wire center reporting units falling in each of these five size categories as of April 1, 2016, when ownership was transferred to Frontier.

POTS Line range	Category	Frontier Reporting Units	Frontier Access lines
1,000 or fewer	Small	81	30,422
1,001 - 2,999	Medium	29	51,011
3,000 - 9,999	Large	45	269,117
10,000 - 19,999	Large Urban	27	378,236
20,000 and above	Large Metro	16	472,432
TOTAL		198	1,201,218

Wire centers in all five size ranges generally lost ground in all of the performance metrics over the combined Phase 1/2 study period. Gains that had occurred in the immediate post-acquisition time frame were reversed in 2018-2019. Although the ranking is not precise, in general the larger wire centers experienced the fewest service outages per 100 access lines and, for those outages that did occur, the shortest durations and highest clearance within 24 hours percentages overall.



The strong relationship between the number of POTS lines in a wire center and the quality of service provided that we had identified in Phase 1 has generally persisted into Phase 2.

36. GO 133-C/D, at §3.3(c).

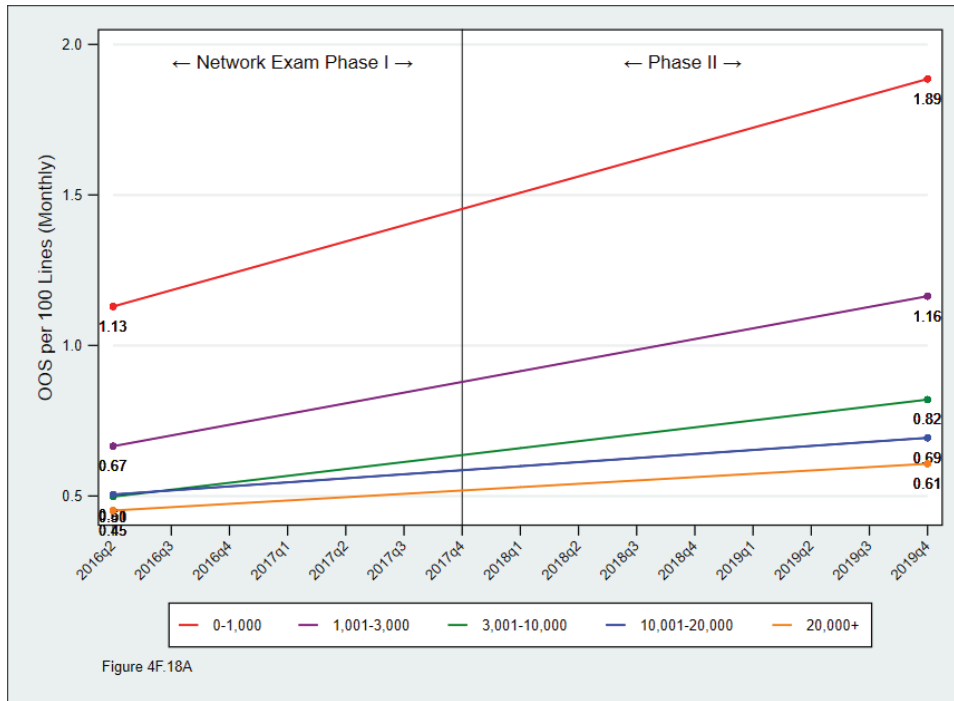


Figure 4F.18A

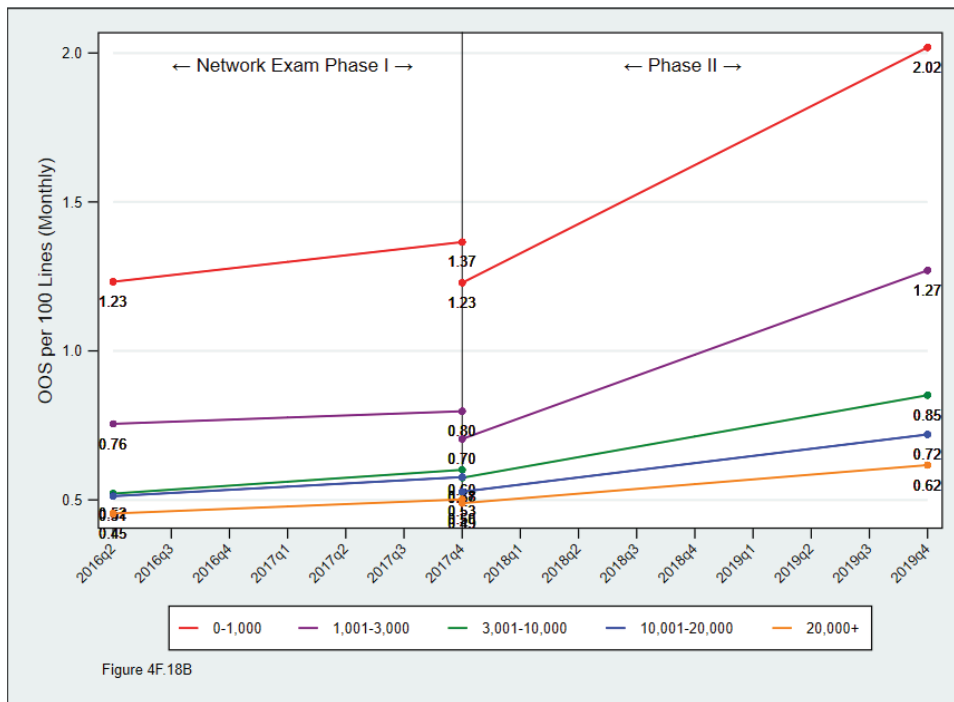


Figure 4F.18B

Figure 4F.18. The largest wire centers exhibit the fewest number of out-of-service conditions per 100 access lines, but wire centers in all size categories have seen increases in OOS rates over the 2018-2019 period.

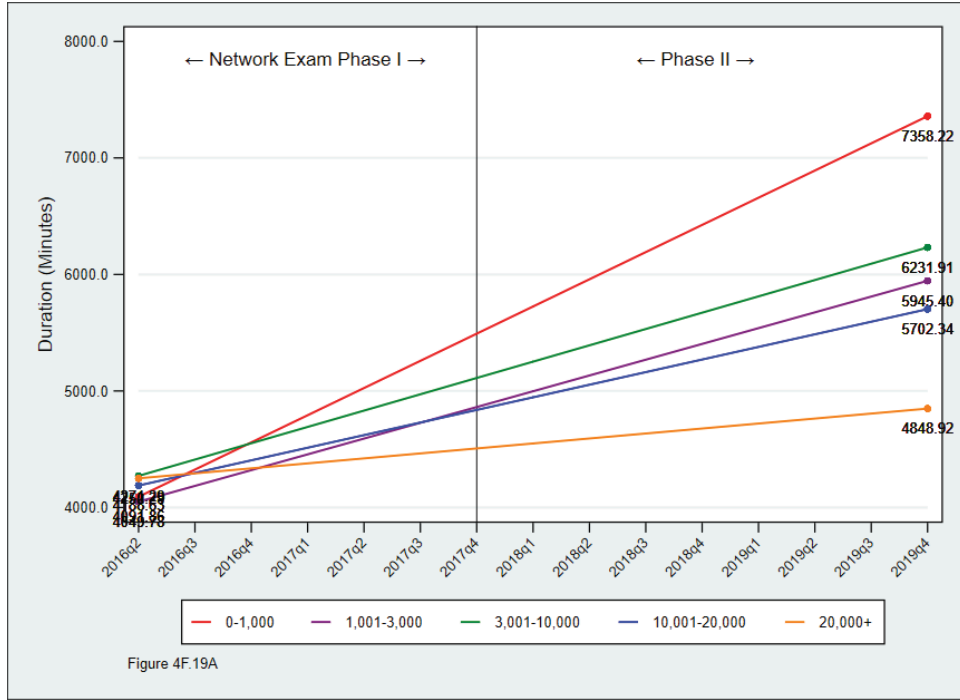


Figure 4F.19A

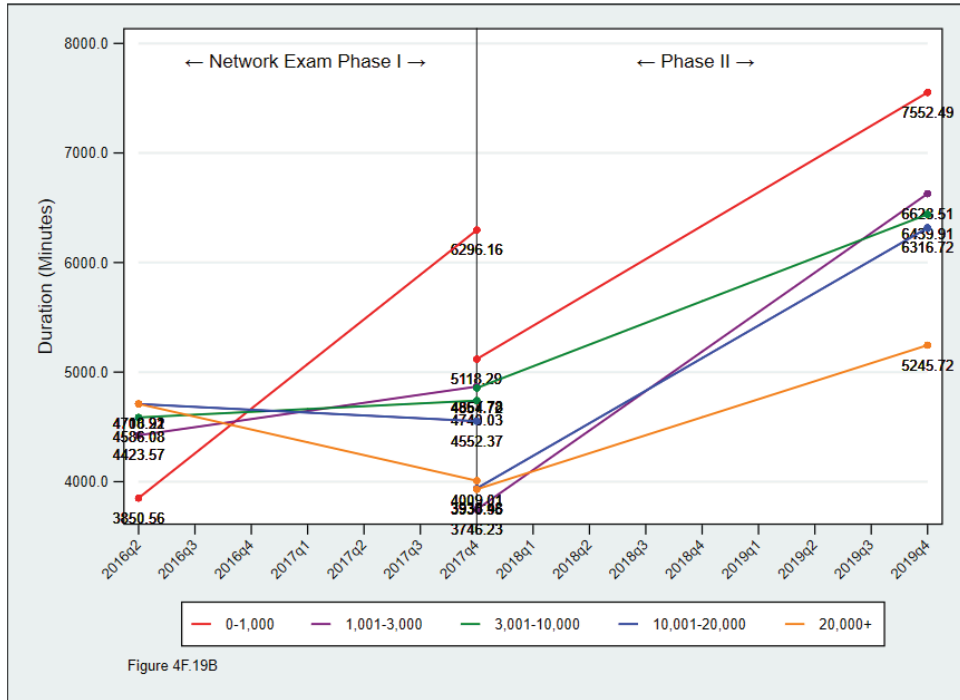


Figure 4F.19B

Figure 4F.19. Service outages continued to have shorter durations in larger wire centers following Frontier’s takeover, but wire centers in all size categories have taken longer to clear over the 2018-2019 period.

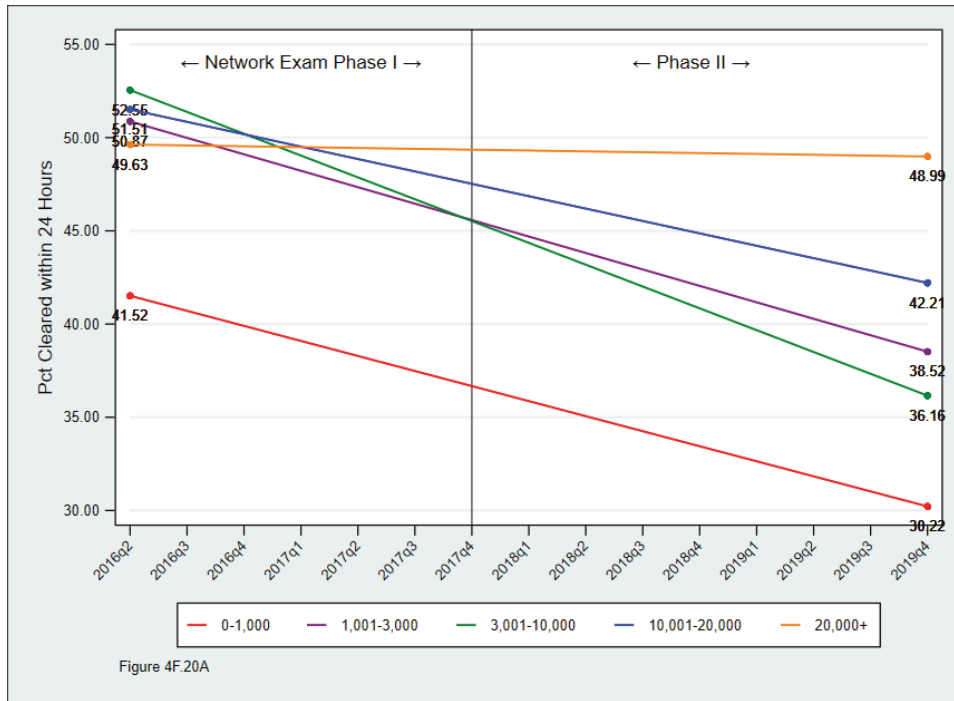


Figure 4F.20A

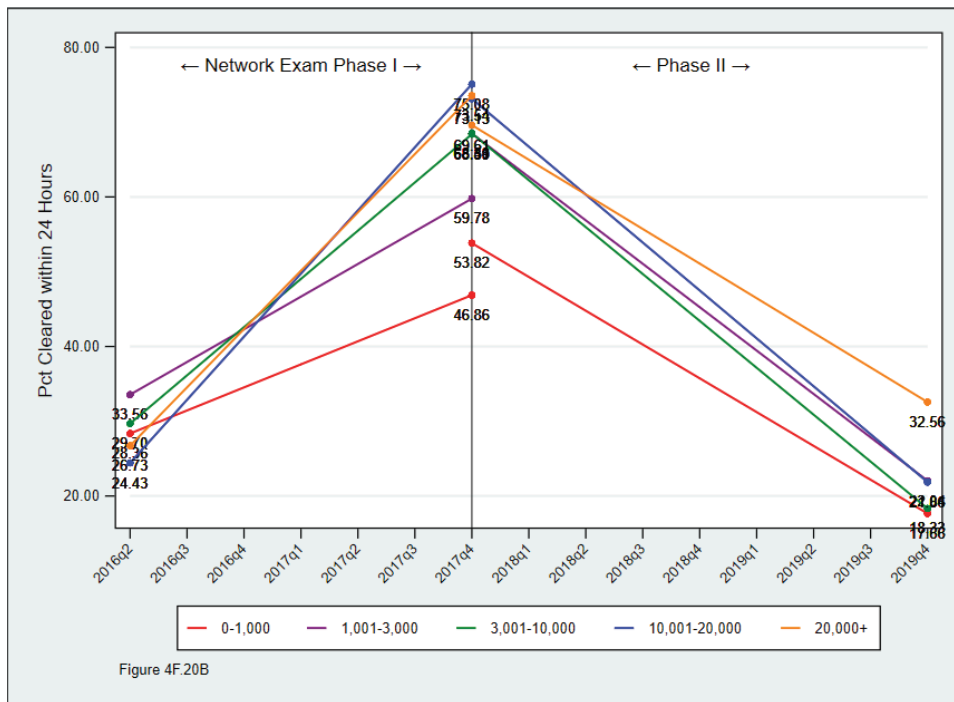


Figure 4F.20B

Figure 4F.20. The largest wire centers tended to clear a higher percentage of out-of-service conditions within 24 hours, but following improvement in all size categories following Frontier’s takeover, the percent cleared within 24 hours has been falling in all size categories over the 2018-2019 period.

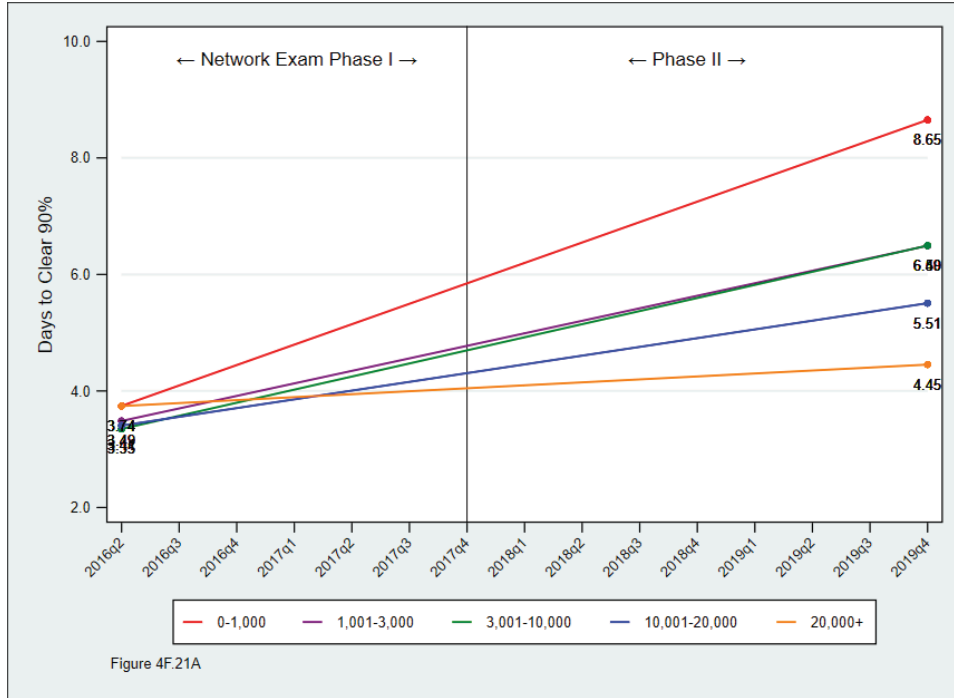


Figure 4F.21A

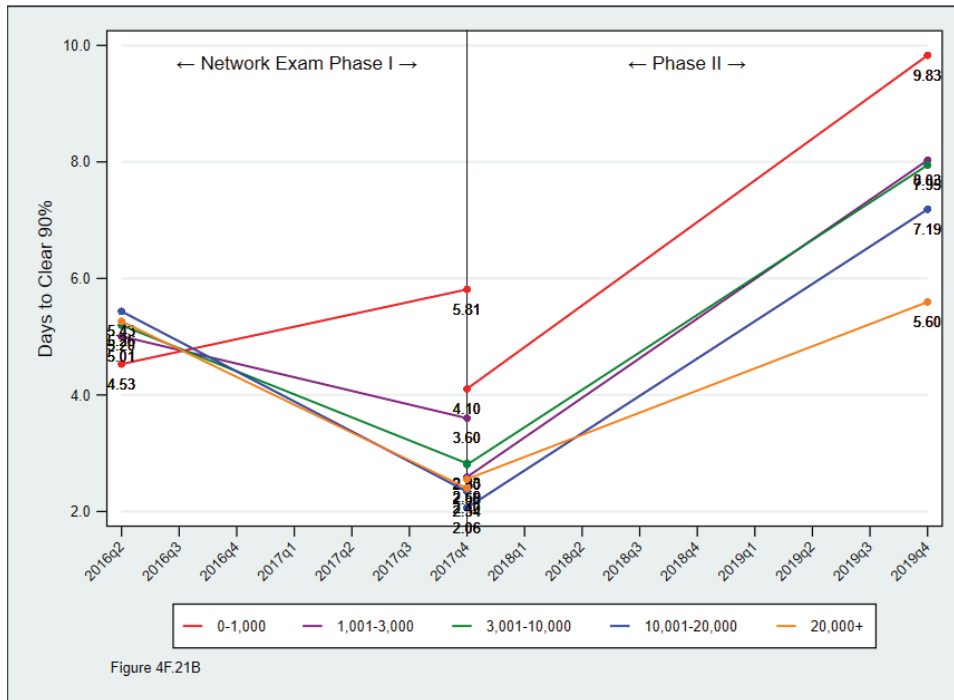


Figure 4F.21B

Figure 4F.21. The number of days needed to clear 90% of service outages is shortest in the largest wire centers and had been improving in all but the two smallest size categories following the Frontier takeover, but has been increasing in all size categories over the 2018-2019 period.

Access Line Loss

Table 4F.1 and Figure 4F.1, above, trace Frontier California POTS lines in service over the full 2Q2016-4Q2019 period of Frontier ownership. Companywide, Frontier California experienced a net loss of 628,243 of its POTS access lines, going from 1,201,218 on April 1, 2016 to only 572,975 as of December 2019, a 52.3% drop-off. These POTS losses were offset to some extent by the growth in interconnected VoIP access lines. According to Frontier's August 7, 2020 Response to CD Data Request 13-F-3, Frontier California had [REDACTED] residential VoIP lines in service as of the April 1, 2016 acquisition date; by December 31, 2019, that number had been cut in half, to only [REDACTED].³⁷ However, as shown in Chapter 4 Figure 4.4 for all wireline carriers statewide, the gain in VoIP lines, while offsetting to some extent the ILECs' POTS losses, certainly did not come even close to fully replace the drop in POTS demand.

In Table 4F.18 below, we have assigned each Frontier wire center reporting unit into one of five (5) Access Line Loss categories over the period 2Q2016 through 4Q2019.

Table 4F.18		
FRONTIER CALIFORNIA		
CLASSIFICATIONS OF WIRE CENTERS BY POTS LINE LOSS PERCENTAGE (quintiles)		
Quintile	POTS Loss range	Frontier Reporting Units
< 20%	< 42%	40
21%-40%	42% - 48%	39
41%-60%	48% - 52%	40
61%-80%	52% - 56%	39
> 80%	> 56%	40
TOTAL		198

Those wire centers and reporting units exhibiting the greatest percentage loss of POTS lines over the study period – exceeding 56% for Frontier – experienced some improvement both in the number of OOS incidents and in their duration until cleared. Wire centers and reporting units experiencing the smallest losses fared far worse in terms of most metrics. One might infer that

37. Frontier California Response to CD Data Request 13-f-3, “Att. 13-F-3 VoIP Line Count (CONFIDENTIAL).xlsx”

these low-loss wire centers and reporting units serve areas with the fewest competitive alternatives (hence explaining the relatively small losses), suggesting that Verizon has devoted more of its resources and efforts to those communities most impacted by competition for traditional POTS services.

ETI has prepared a set of analyses of the various service quality performance metrics organized by wire centers and reporting units falling into each of the various categories associated with each of these five sets of classifications. Perhaps ironically, those wire centers that had experienced the largest percentage drop-off in POTS demand generally exhibited superior performance on nearly all of the service quality metrics under examination, as shown in Figures 4F.22 through 4F.25 below. As we noted in our Phase 1 Report, it would appear that the wire centers experiencing the largest line loss percentages also happen to be those with the largest number of access lines, which happen to be the ones with the best service quality performance overall.:



The largest increases in service outages occurred in wire centers with the lowest POTS drop-off rates; the incidence of service outages increased more slowly or remained almost constant in wire centers with successively larger drop-off rates.

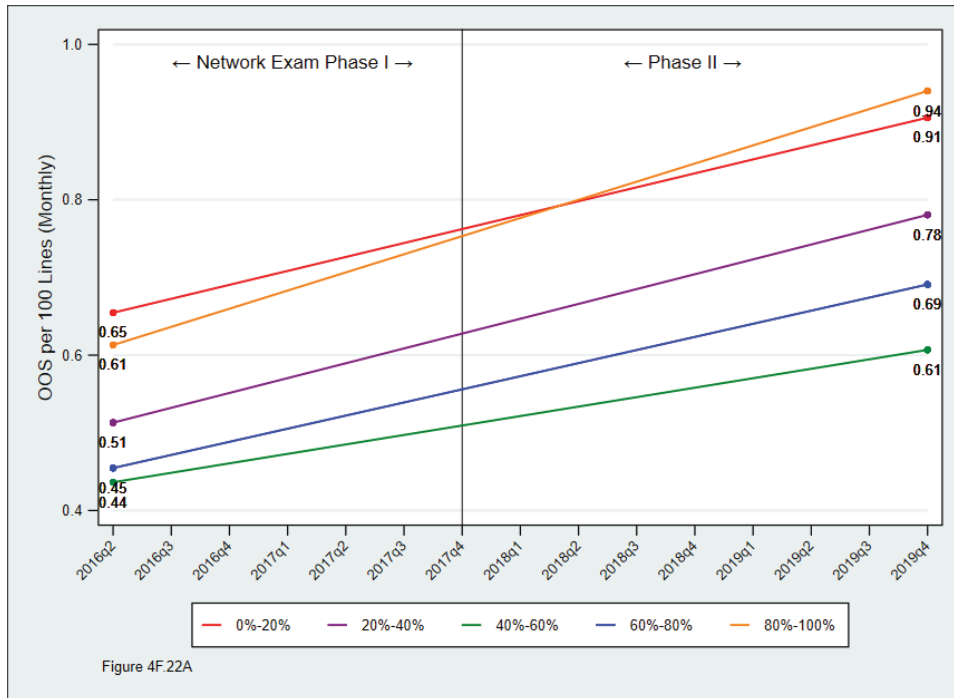


Figure 4F.22A

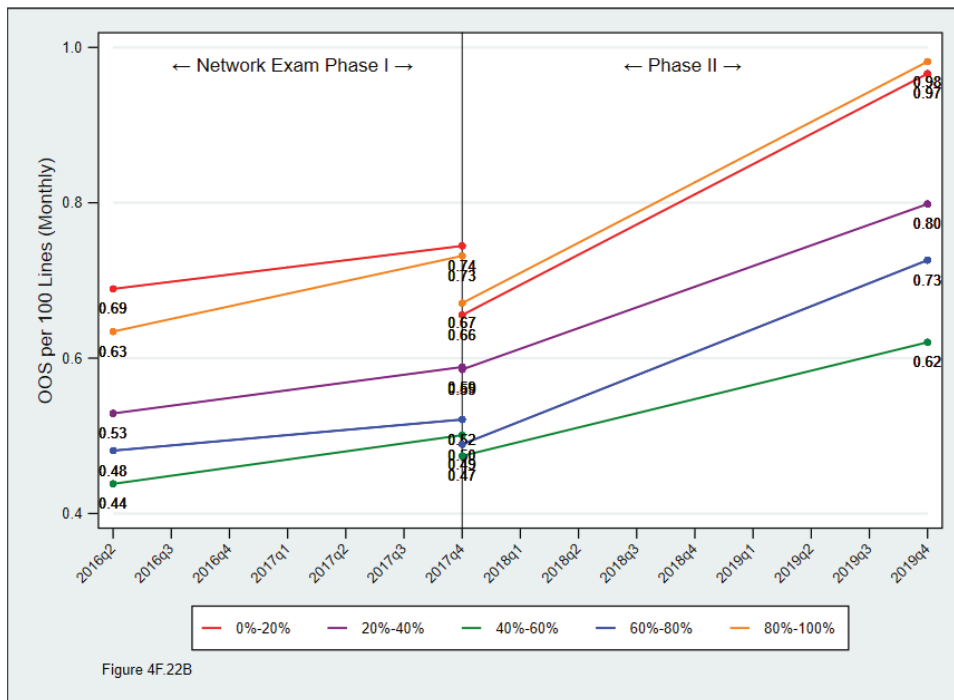


Figure 4F.22B

Figure 4F.22. Wire centers that had experienced the greatest drop-off in demand for POTS services generally exhibited the fewest number of out-of-service conditions per 100 access lines, but that number has been increasing in all line loss categories over the 2018-2019 period.

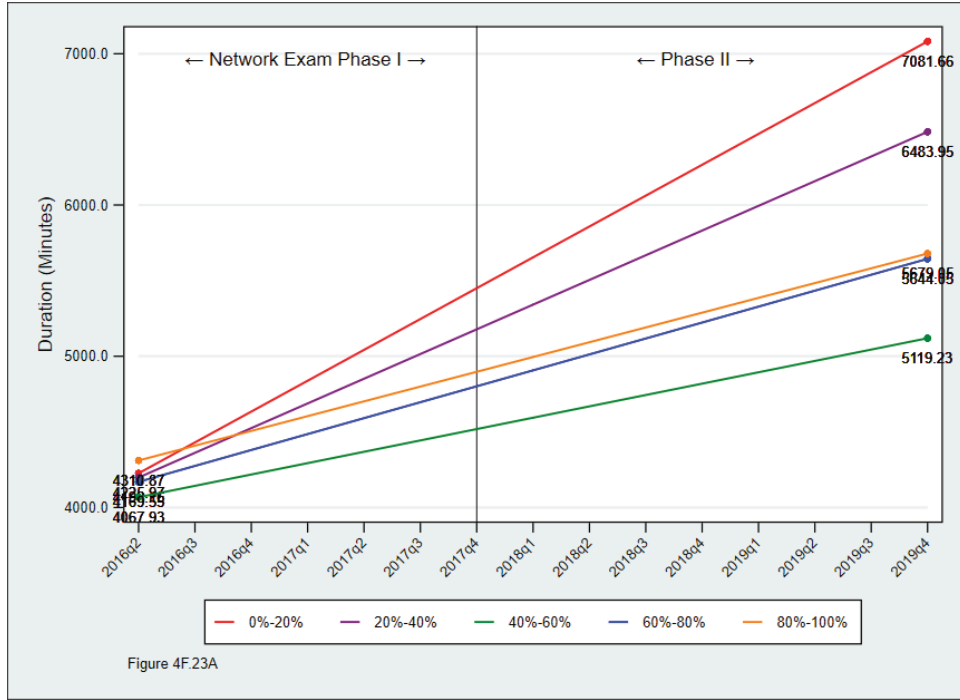


Figure 4F.23A

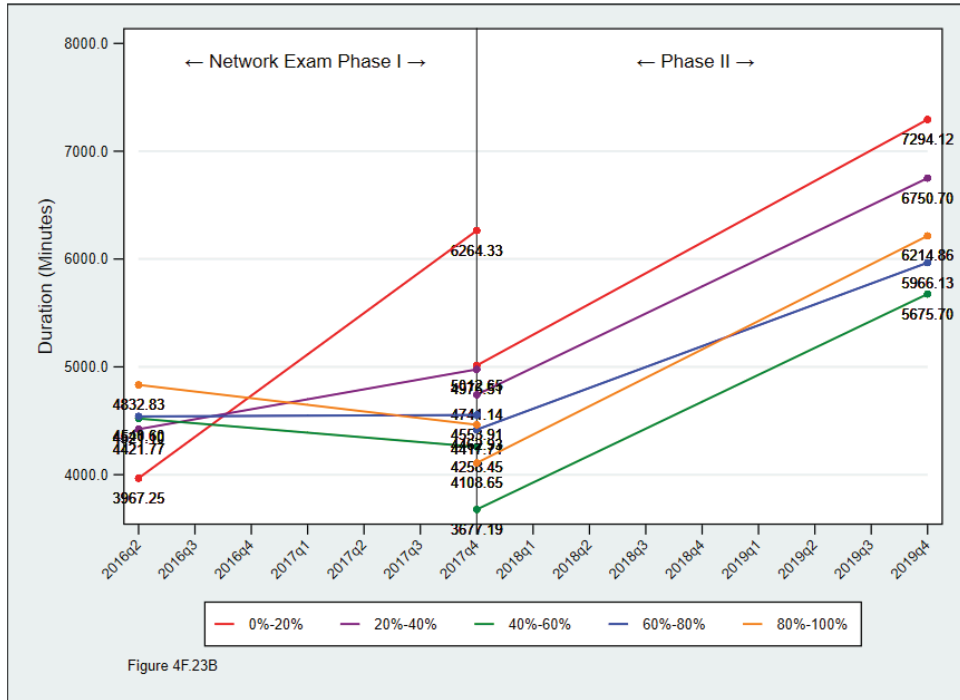


Figure 4F.23B

Figure 4F.23. Service outages tended to be shortest in wire centers that had experienced the greatest drop-off in demand for POTS, but durations have been on the rise in all line loss categories over the 2018-2019 period.

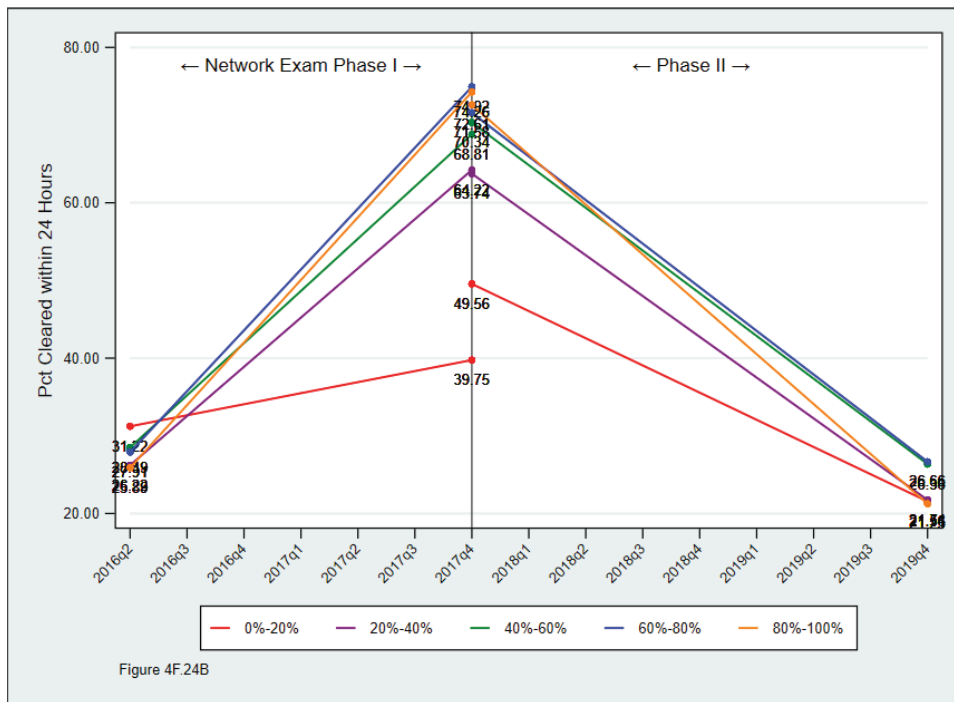
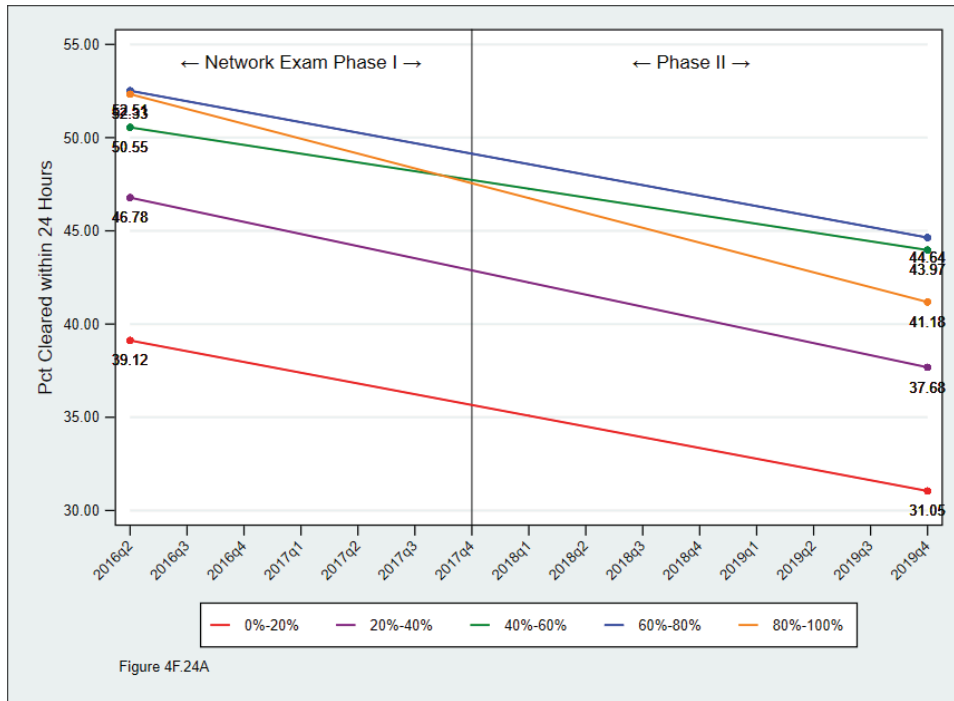


Figure 4F.24. Access line drop-off rates appear to have had little effect upon the percentage of out-of-service conditions within 24 hours, but after gains in all five categories following Frontier’s takeover in 2016, significant degradation in this metric has occurred in all loss categories over the 2018-2019 period.

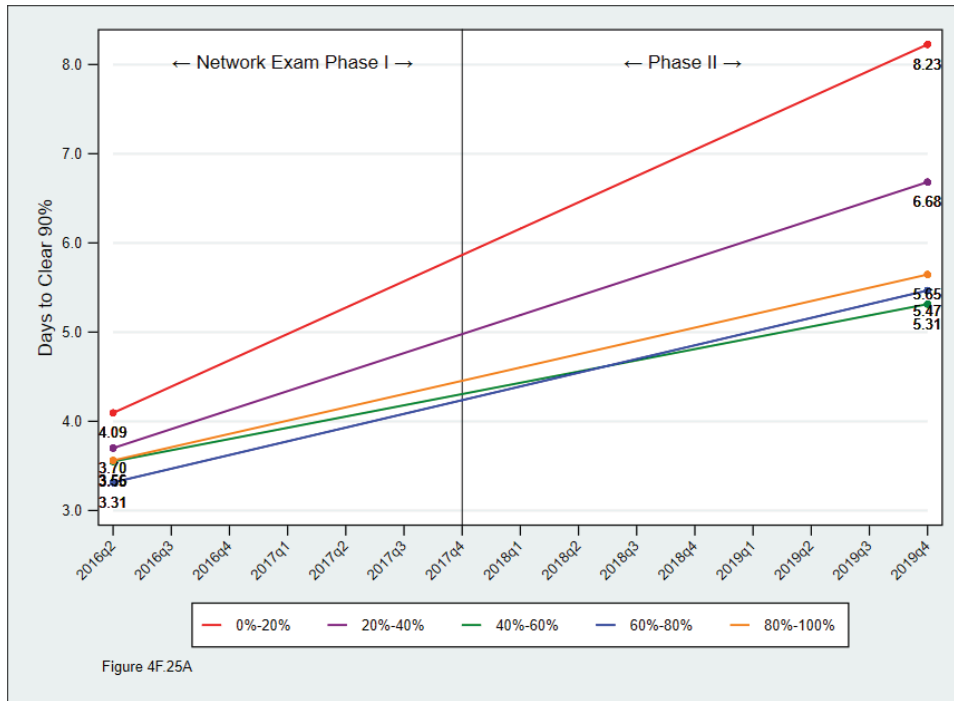


Figure 4F.25A

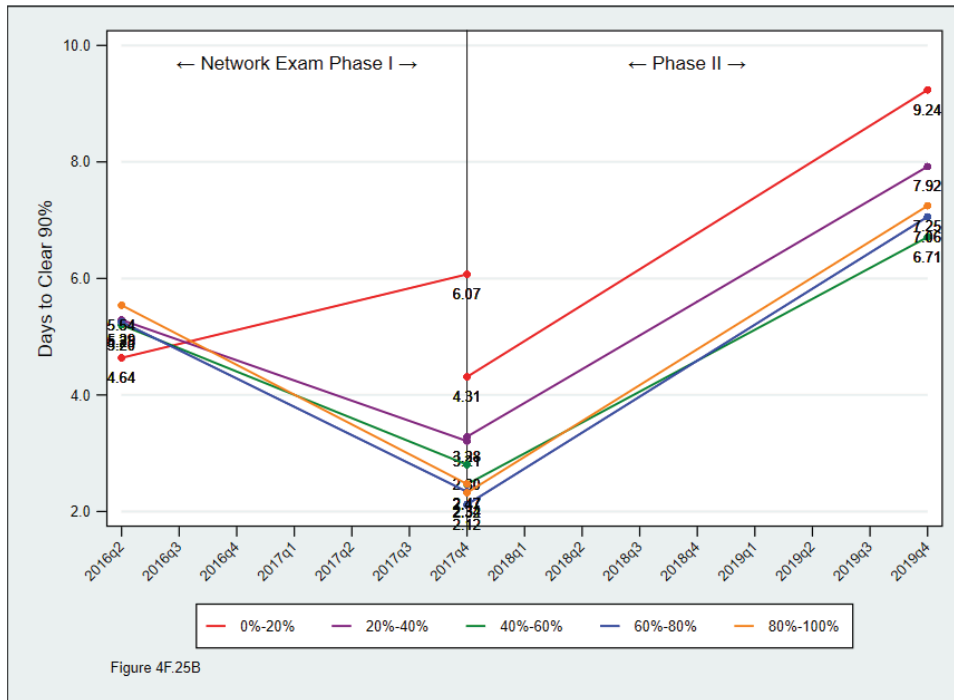


Figure 4F.25B

Figure 4F.25. Access line drop-off rates appear to have had little effect upon the number of days needed to clear 90% of service outages, but after gains in all five categories following Frontier’s takeover in 2016, significant degradation in this metric has occurred in all loss categories over the 2018-2019 period.

Urban/Suburban/Rural

As a general matter and as we observed in Phase 1, out-of-service conditions occur less frequently and are cleared more quickly in wire centers serving the highest density urban areas. Additionally, wire centers serving less dense market areas have exhibited the largest increases both in out-of-service incidents and in the time required to clear them over the 2Q2016-4Q2019 Phase 1/2 study period. Frontier saw gains in several metrics over the first seven quarters following its takeover except in the lowest density wire centers. However, from 2018 onward, these gains were generally reversed across all density. These results are plotted on updated Figures 4F.26, 4F.27, 4F.28 and 4F.29 below.



Frontier service quality metrics continue to show the best results in higher-density serving areas.



Except in those areas with the lowest population density, Frontier's response to out-of-service conditions had generally improved over the period immediately following its takeover. However, by 2018, these gains had started to reverse.

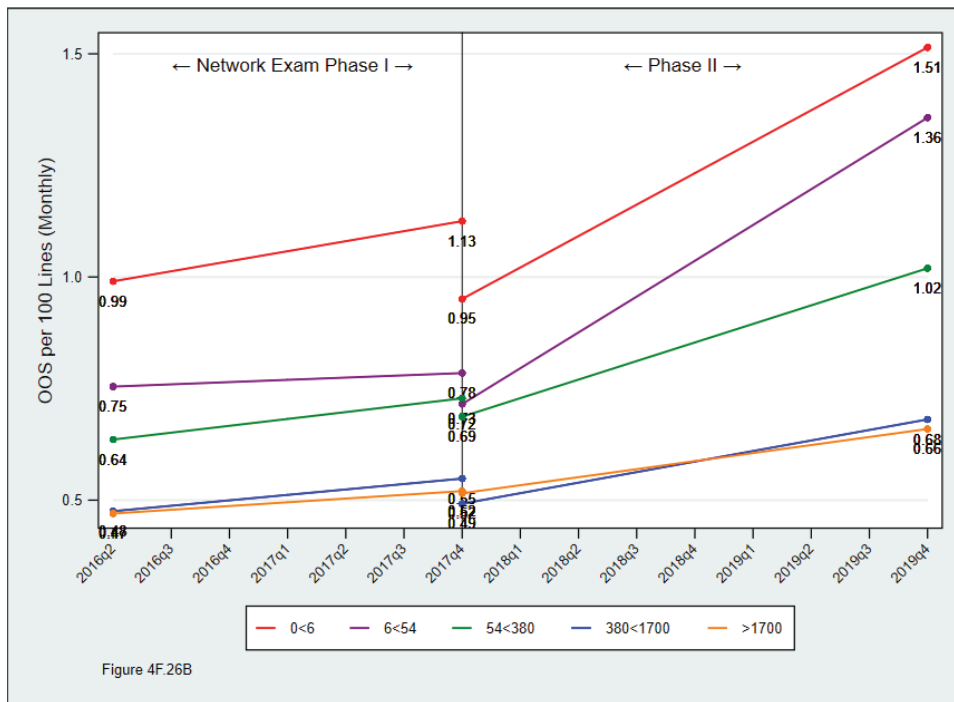
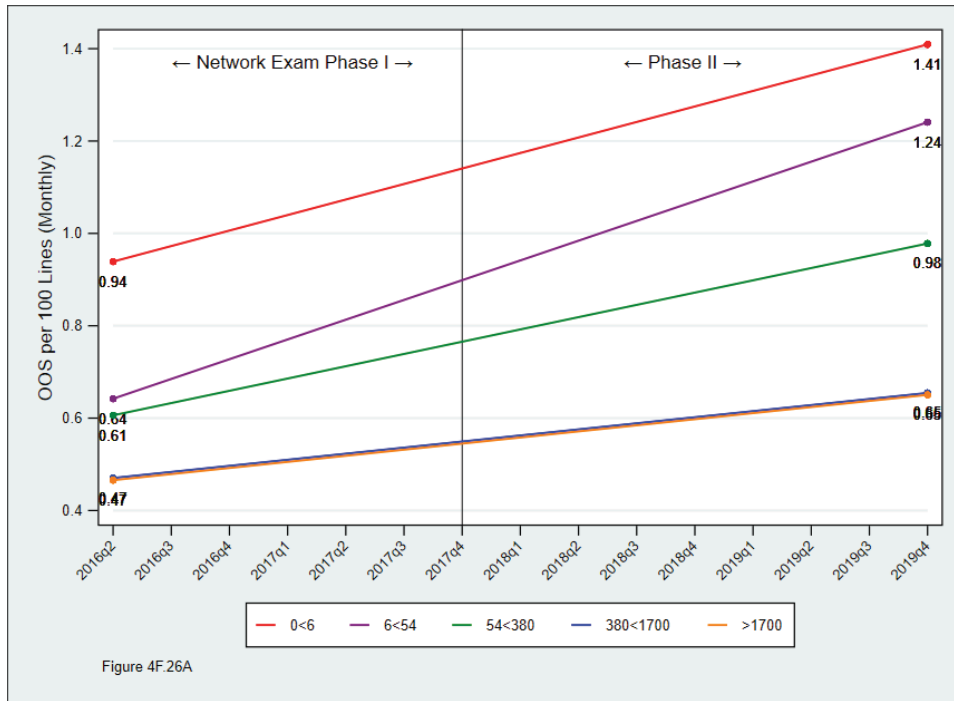


Figure 4F.26. Wire centers serving areas with the highest population density exhibit the fewest number of out-of-service conditions per 100 access lines under Frontier management, but wire centers in all density categories have seen increases in OOS rates over the 2018-2019 period.

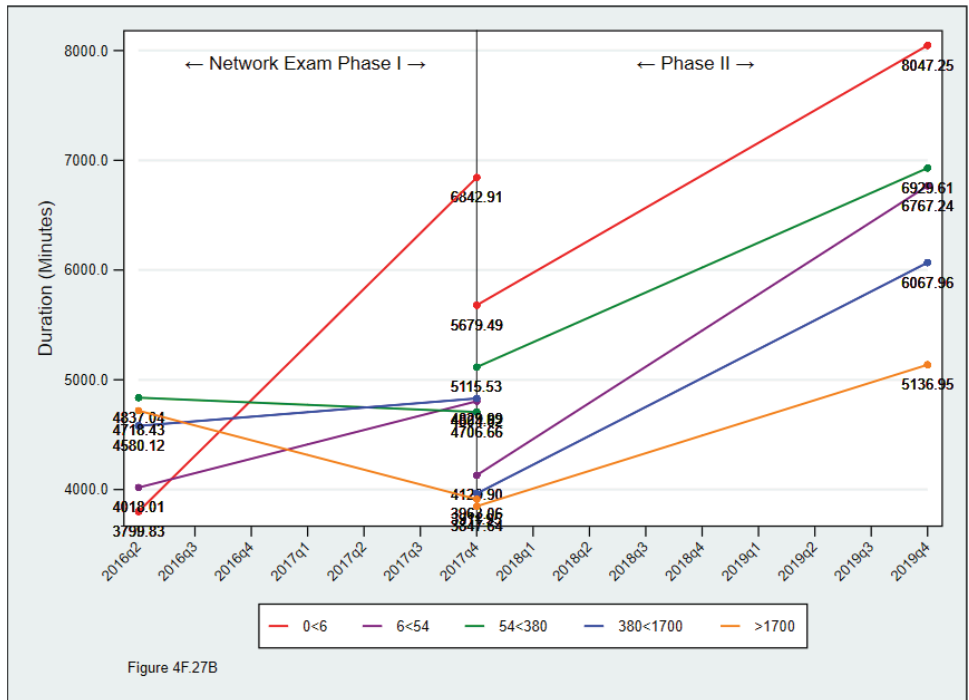
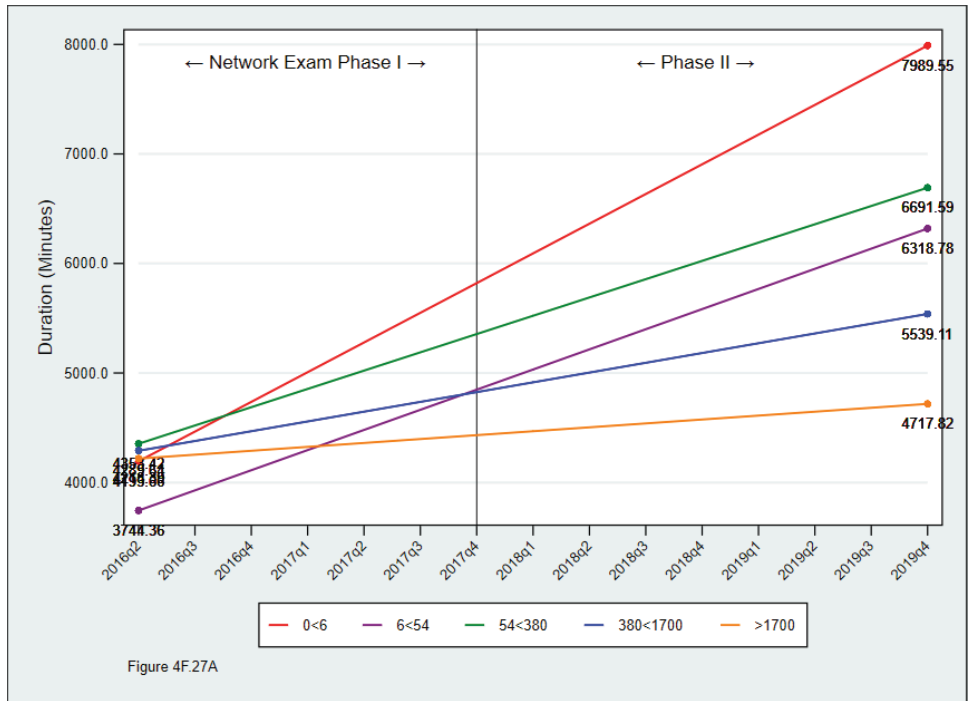


Figure 4F.27. Service outages tend to be shortest in wire centers serving the more densely populated areas, but wire centers in all density categories have seen increases in OOS duration over the 2018-2019 period.

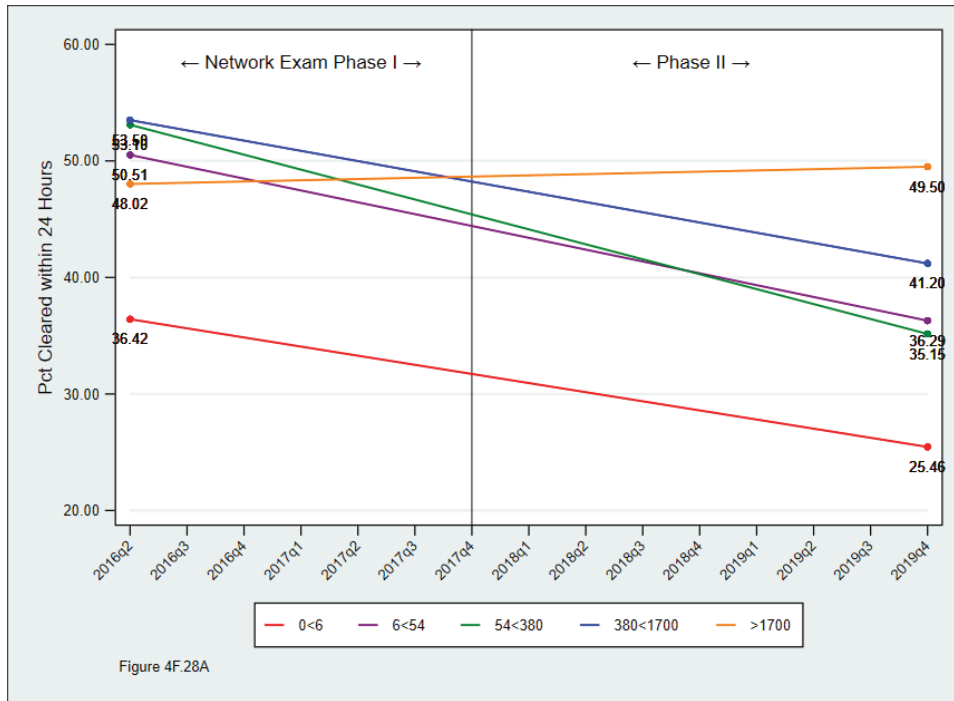


Figure 4F.28A

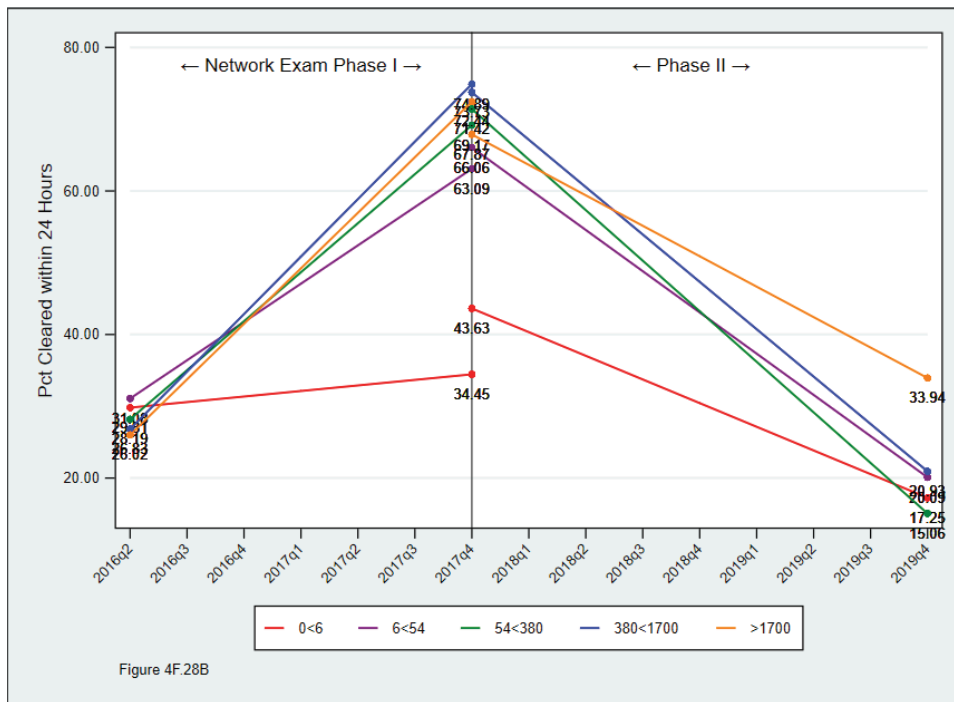


Figure 4F.28B

Figure 4F.28. Wire centers serving the more densely populated areas tended to clear a higher percentage of out-of-service conditions within 24 hours, but wire centers in all density categories have seen reductions in this metric over the 2018-2019 period.

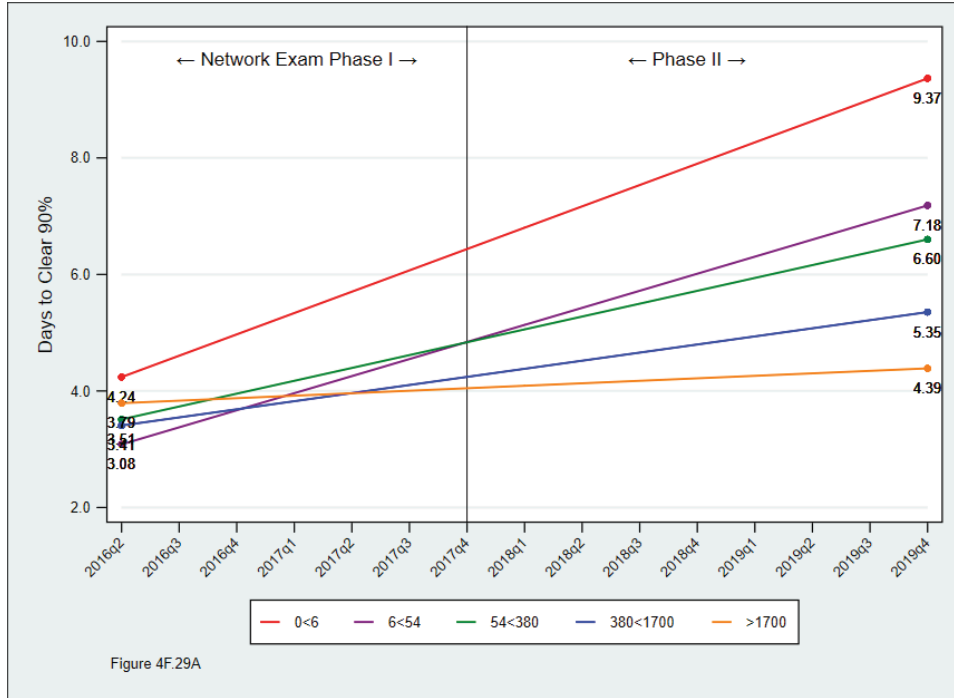


Figure 4F.29A

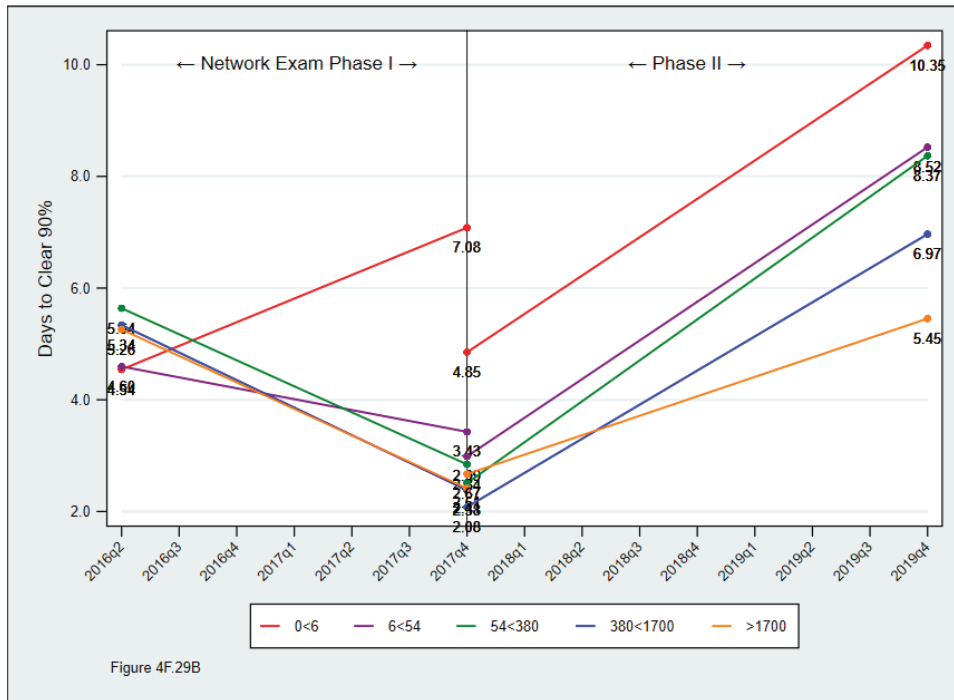


Figure 4F.29B

Figure 4F.29. The number of days needed to clear 90% of service outages is shortest for wire centers serving more densely populated areas, but wire centers in all density categories have seen increases in days-to-clear over the 2018-2019 period.

ILEC Organizational Assignment

Frontier has established six (6) “Operating Areas” (“OPAs”) that it has designated as Beach Cities, Coastal, Desert, Gateway, Inland, and Northern.³⁸ As is evident from the results presented on Figures 4F.30, 4F.31, 4F.32 and 4F.33 below, there is considerable variation in out-of-service performance across the six operating areas. However, the explanation for this may relate more to the nature of the wire centers falling within each OPA than to any inherent differences in their respective management. Table 4F.19 summarizes the principal geographic areas falling within the responsibility of each of the six OPAs.

Table 4F.19		
FRONTIER CALIFORNIA OPERATING AREAS		
Operating Area	Counties (or portions)	Sample wire centers
Beach Cities	Los Angeles, Orange	Santa Monica, West Los Angeles, Long Beach, Huntington Beach
Coastal	Los Angeles	Downey, Malibu, Pomona
Gateway	Inyo, Kern, Los Angeles, Mono, Monterey, San Bernardino, Santa Barbara, Ventura	San Fernando, Sepulveda, Chino, Los Serranos
Desert	Imperial, Riverside, San Bernardino	San Bernardino, Barstow, Big Bear Lake
Inland	Riverside, San Bernardino	Cucamonga, Ontario South
Northern	Humboldt, Kern, Kings, Marin, Mendocino, Merced, Placer, San Joaquin, Santa Barbara, Santa Clara, Sonoma, Stanislaus, Sutter, Trinity, Tulare, Yolo	China Lake, Randsburg

Source: Frontier response to DR-02F.

Table 4F.14 above shows, for each Frontier Reporting Unit, the Operating Area to which it has been assigned, its size (in terms of access lines served) and population density. As we have discussed above, the larger wire centers and those that serve the most densely populated areas

38. Frontier Response to DR-02F.

tend to exhibit superior results on all service quality metrics. There is thus a strong correlation between the overall size and population density associated with each wire center and the Operating Area to which it has been assigned. Thus, the densest portion of Los Angeles County is assigned to the “Beach Cities” OPA. Less dense portions of Los Angeles County fall within the Coastal OPA, while more rural areas are assigned to other OPAs. Not surprisingly, the results for Operating Area, WC Size, and WC Density are similar.

Service quality metrics in all six Frontier Operating Areas generally improved from the April 2016 acquisition date through the end of 2017, but this pattern reversed course starting in 2018. Out-of-service reports per 100 access lines increased slightly even in the 2016-2017 period; but saw a sharper jump beginning in 2018. Over the 2016-2017 period, out-of-service durations grew shorter in the Beach Cities, Coastal and Inland Operating Areas, held steady in the Desert OA, and increased in the Gateway and Northern OAs. However, in 2018-2019, outage durations increased in all six Operating Areas.

The percent of outages cleared within 24 hours increased in all six OAs over the 2016-2017 time frame, although only small gains occurred in the Northern Operating Area. However, that saw a significant reversal in 2018-2019 across all six Operating Areas. A similar pattern can be seen in the Days to Clear 90% metric – large gains in all OAs other than the Northern, which saw a small increase, in 2016-2017. In 2018-2019, however, Days to Clear 90% increased in all six Operating Areas.



Service quality metrics in all six Frontier Operating Areas generally improved from the April 2016 acquisition date through the end of 2017, but this pattern reversed course starting in 2018.



The Operating Areas with the largest presence of fiber upgrades continue to exhibit the lowest number of OOS incidents and the shortest outage durations for those that do occur over the full 2016-2018 period.

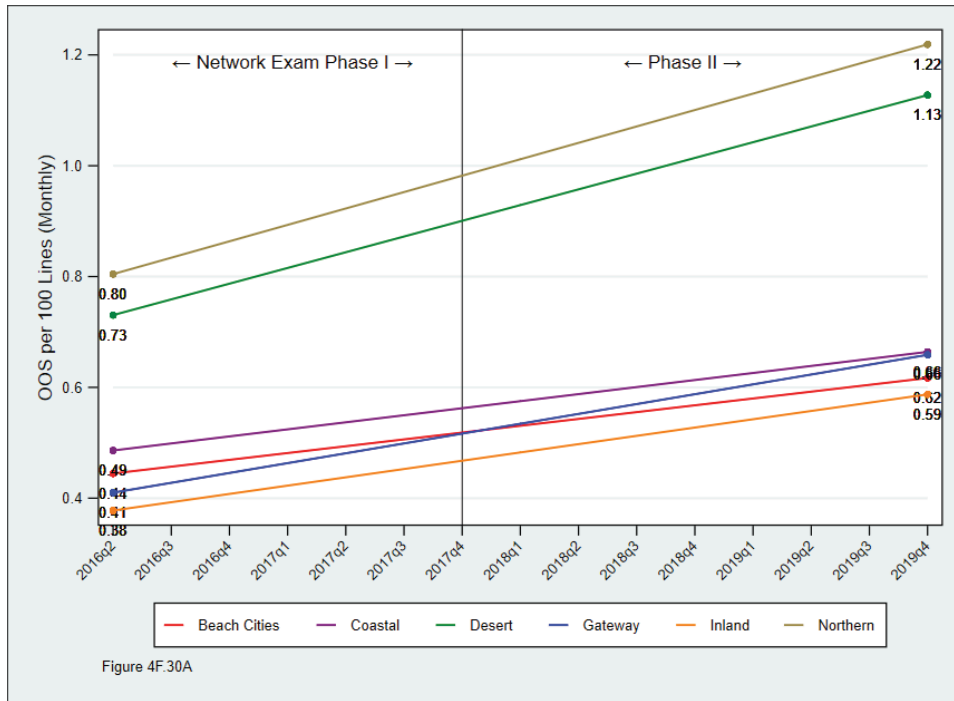


Figure 4F.30A

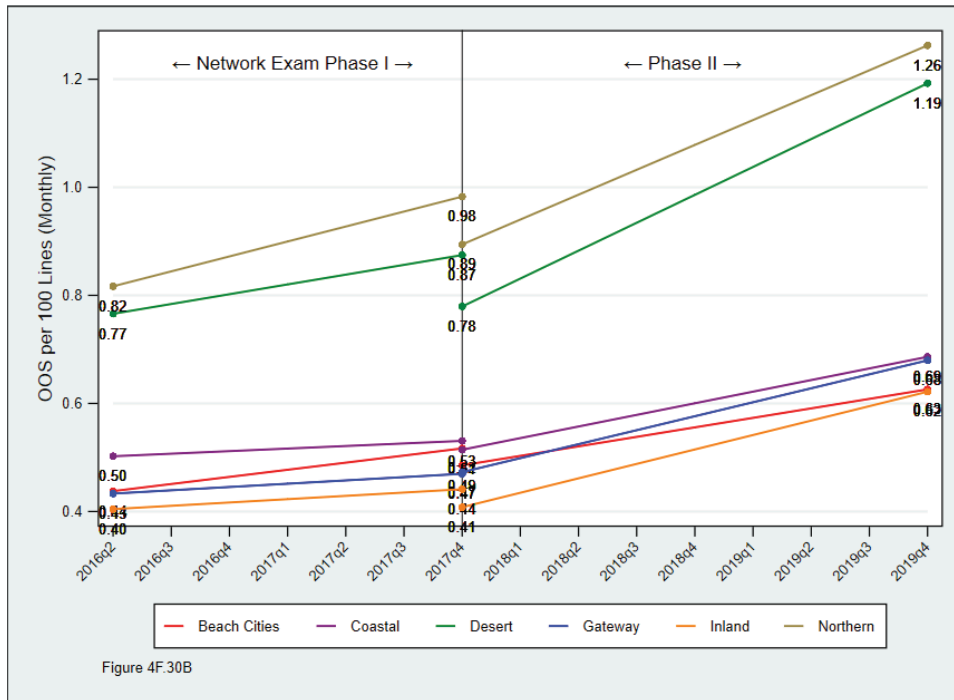


Figure 4F.30B

Figure 4F.30. Frontier’s Desert and Northern Operating Areas, which have responsibility for wire centers serving the least densely populated areas, exhibit the highest number of out-of-service conditions per 100 access lines.

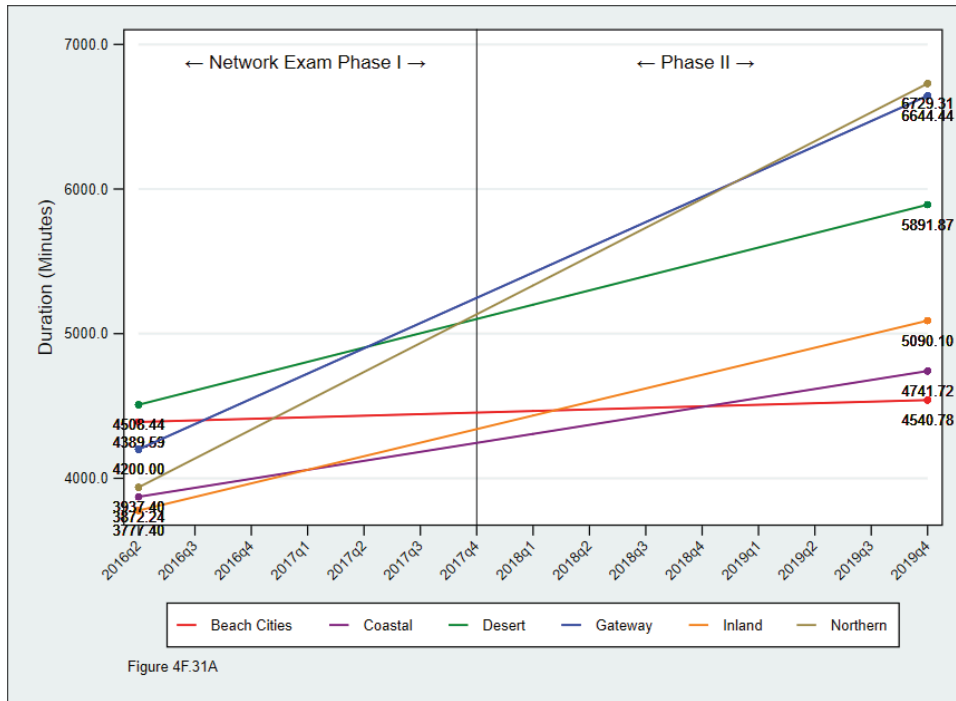


Figure 4F.31A

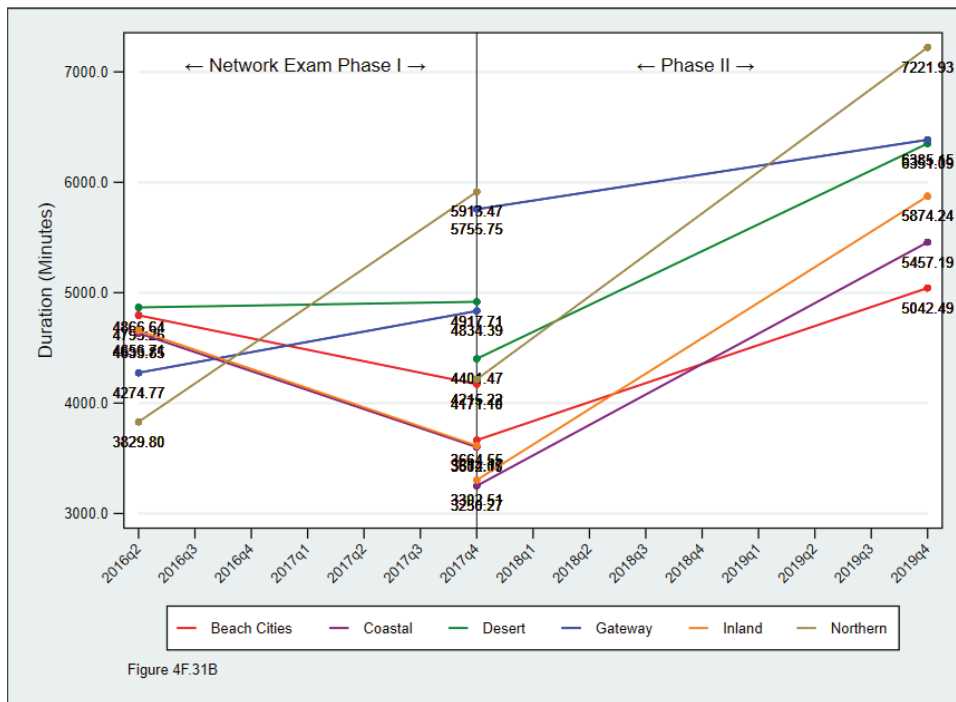


Figure 4F.31B

Figure 4F.31. Service outages tend to be shorter in those Operating Areas serving more densely populated areas.

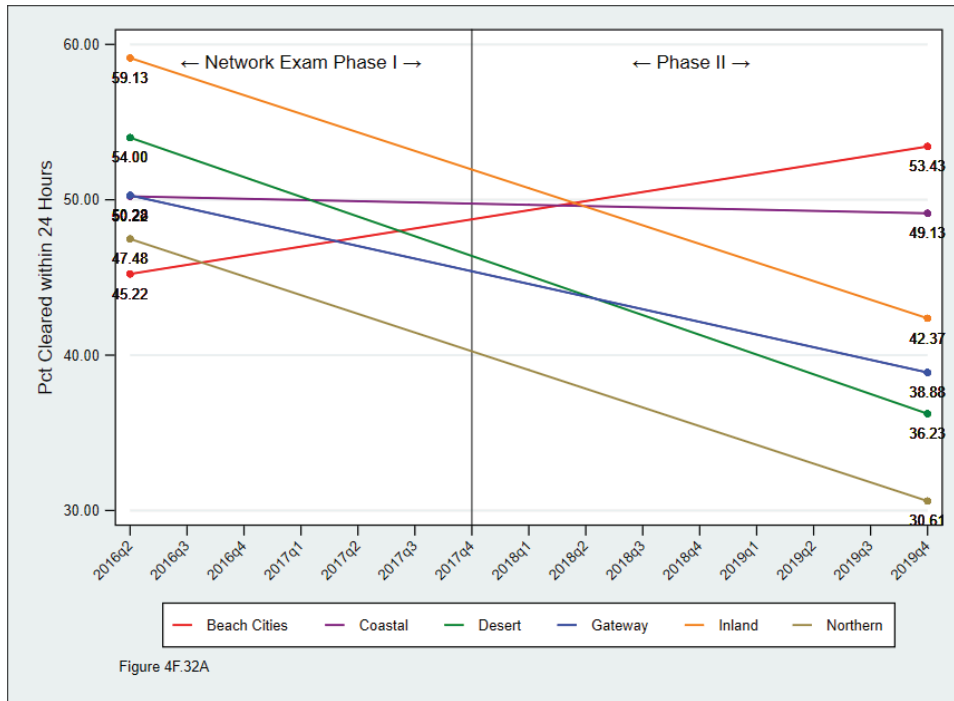


Figure 4F.32A

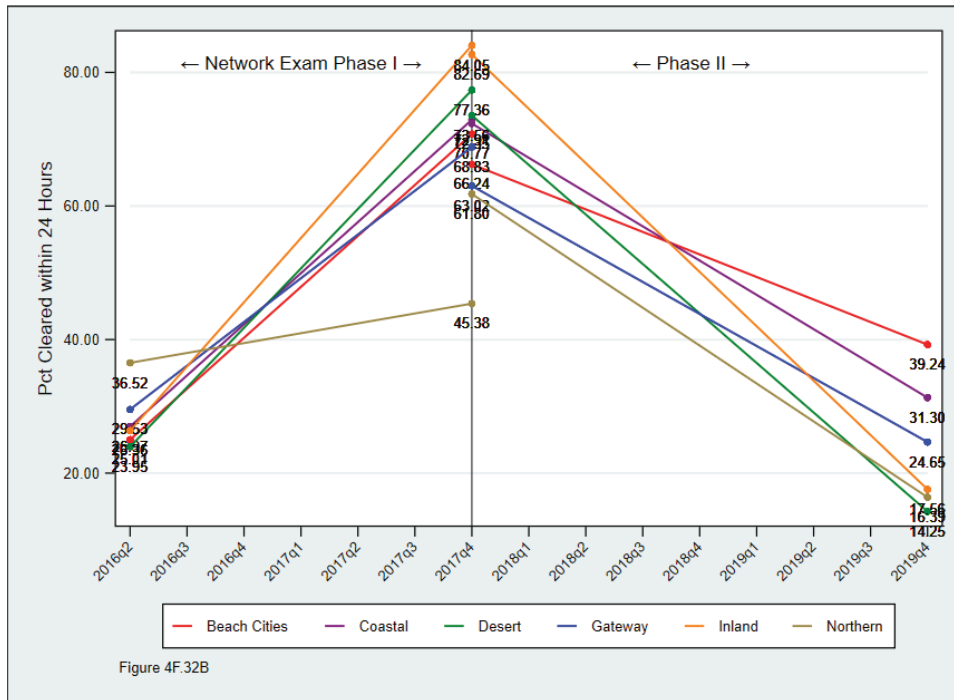


Figure 4F.32B

Figure 4F.32. Operating Areas serving the more densely populated areas have the best record of clearing a high percentage of out-of-service conditions within 24 hours, but these clearance rates experienced significant increases in all six Operating Areas in 2018-2019.

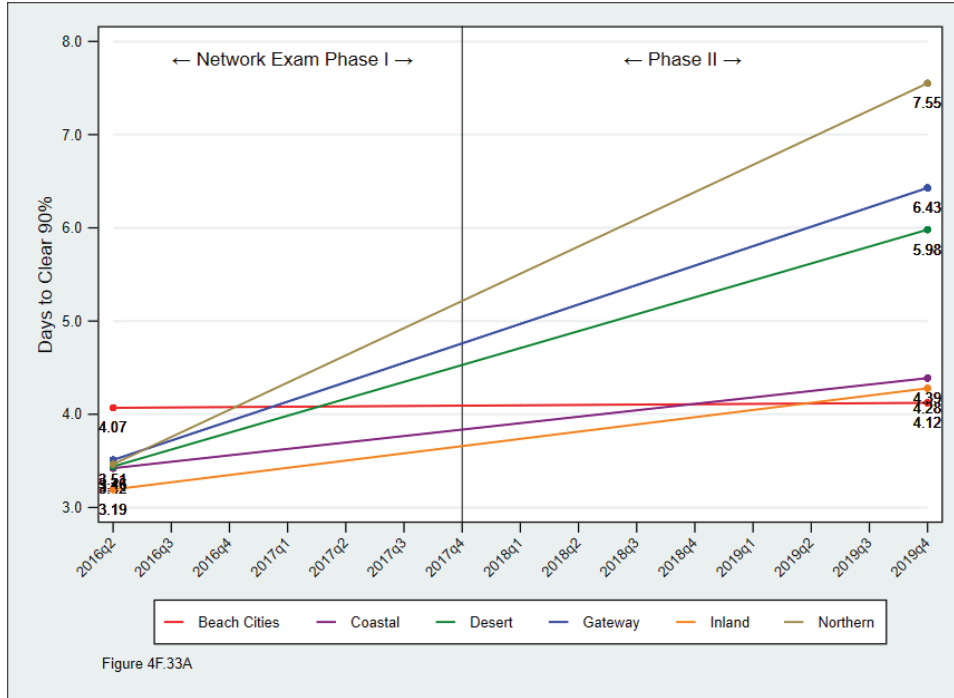


Figure 4F.33A

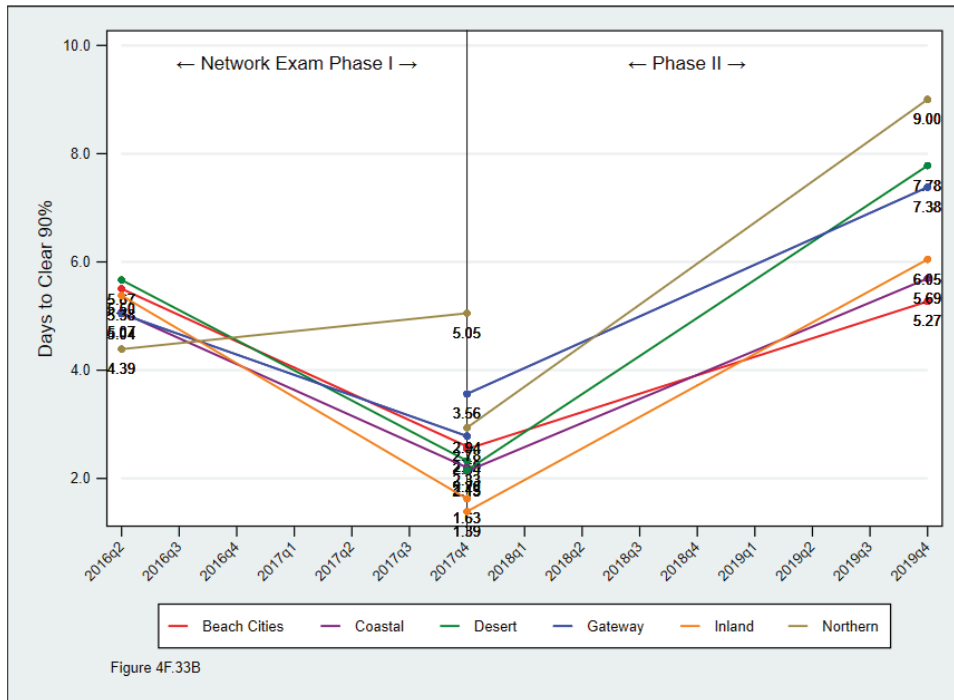


Figure 4F.33B

Figure 4F.33. The number of days needed to clear 90% of service outages had been improving in all except the Desert Operating Area following the Frontier takeover, but in 2018-2019 all Operating Areas saw significant escalations in outage durations.

Summary

Overall, ETI’s analysis of the 306,151 Frontier Trouble Report records and other pertinent Frontier service quality data indicates that the company’s service quality and its response to protracted out-of-service conditions had improved following its April 1, 2016 takeover, but those gains were short-lived. Those Frontier wire centers that have received broadband upgrades in the form of *FiOS*-capable fiber-to-the-premises (“FTTP”) distribution facilities – and hence have benefitted from an infusion of new investment – fared a lot better than those locations where little or no such upgrades had taken place. Service quality and responses to outages in the very largest wire centers – particularly those in the Los Angeles area (the “Beach Cities Operating Areas) actually showed improvements both with respect to the frequency of out-of-service incidents as well as the duration of those outages that did occur, but even here the gains were reversed after 2017.

7 | AT&T CORPORATE AND CALIFORNIA FINANCIALS AND ILEC INVESTMENT POLICIES: PHASE 2 UPDATE

Principal observations and takeaways

- AT&T senior management's interest in and attention to its legacy wireline ILEC operations continues to be subordinated to its wireless operations and the more recent satellite TV and video content acquisitions.
- Despite experiencing a 76.4% drop in legacy switched access lines from 2010 through 2019, AT&T California's gross revenues decreased by only 31.64% over the same period.
- Even when confined to only those revenue sources directly attributable to legacy switched access line services, AT&T California legacy access line-related revenues decreased by only about 53.4%, significantly below the 76.4% drop in switched access line demand, because AT&T California has raised its rates for legacy flat-rate residential service by 152.6% since the service was de-tariffed by the CPUC in 2009..
- This succession of rate increases is consistent with and in support of a "harvesting" strategy aimed at maximizing revenues from existing customers until they ultimately discontinue their service, thus allowing A&T to maintain revenues despite a massive drop-off in demand.
- AT&T California's response to the erosion of the market for legacy POTS services has been to raise prices, cut back on investment and maintenance, and instead "harvest" those customers that remain on its network for as long as they continue to take their service.

- The fact that AT&T has been able to profitably implement a succession of large annual legacy services rate increases for more than a decade since the implementation of URF raises serious questions as to the Commission's conclusion in URF that competition had developed to a point where continued regulatory protection of basic residential telephone service prices is no longer required or appropriate.
- Over the past two years (2018-19), AT&T California continued to disinvest from its network. The Company had total net after-tax income of \$3.21-billion, but paid out \$3.42-billion in dividends to its parent company, AT&T Inc -- i.e. it paid AT&T dividends that were some \$219.5-million more than the California company had earned from its ongoing operations.
- Between 2010 and 2019, AT&T California paid dividends to AT&T Inc. that exceeded its total net income over the period by roughly \$4.43-billion.
- A change in the accounting procedures that AT&T California has utilized for its ARMIS-type reports after 2017 has resulted in a roughly \$5-billion overstatement of its net Telecommunications Plant in Service for 2018 and 2019.
- Those capital investments that AT&T has been making in its California ILEC have, for the most part, not been directed at legacy basic voice services.
- AT&T's "harvesting" philosophy explains why AT&T has failed to improve service quality for its POTS services at least to the point where the GO 133-C/D standards can be achieved, because the gains it can realize by raising prices and curtailing investment and maintenance far exceed any financial penalties it might suffer from persistently poor service quality.

AT&T CORPORATE AND CALIFORNIA
ILEC INVESTMENT POLICES
PHASE 2 UPDATE

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Introduction

This chapter provides updated financial data both for Pacific Bell d/b/a AT&T California and for its corporate parent, AT&T Inc. In Chapter 7 of our Phase 1 Report, we offered the following assessment of AT&T California's financial condition and its investment policies:

- AT&T California's potential revenue from raising prices and curtailing investments in its legacy POTS services far exceed any financial penalties imposed for its failure to meet the GO 133-C/D service quality standards.
- To support its "harvesting" strategy and maintain revenues despite a massive drop-off in demand, AT&T California has raised its rates for legacy flat-rate residential service by 152.6% since the service was de-tariffed by the CPUC in 2009.
- AT&T Inc. senior management's interest in and attention to its legacy wireline ILEC operations has been largely supplanted by its wireless operations and the recent satellite TV and video content acquisitions.
- AT&T California financial statements show an incomplete assessment of the ILEC's financial condition due to the large volume of inter-affiliate transactions made at transfer prices that are not set on the basis of arm's length negotiations.
- Cumulatively, over the full 8-year Phase 1 study period, AT&T California had total net after-tax income of \$3.4-billion, but paid out \$7.6-billion to its parent company, AT&T Inc, thereby eroding the California company's capital base by roughly \$4.2-billion and impairing its ability to maintain and upgrade its aging infrastructure.
- AT&T, Inc. has also been eroding its California ILEC's capital base by investing less in its infrastructure than its annual depreciation accruals and retirements.
- AT&T's "harvesting" philosophy explains why AT&T has failed to improve service quality for its POTS services at least to the point where the GO 133-C/D standards can be achieved, because the gains it can realize by raising prices and curtailing investment and maintenance far exceed any financial penalties it might suffer from persistently poor service quality.

Our examination of the two additional years of financial results indicates that, for the most part, the various conditions and practices that we had previously identified have persisted and, in some respects, have been further escalated.

AT&T California remains the underlying provider of most retail local network services being offered under the AT&T California or other AT&T affiliate brand names

The scope of the direct retail offerings by AT&T California have continued to narrow, confined mainly to legacy circuit-switched local voice telephone access and message services. As AT&T California has expanded its broadband infrastructure, it has steadily migrated its legacy customer base to bundles of Internet access, VoIP telephone service, terrestrial and satellite video services and, since its acquisition of Time Warner in 2018, a variety of video content. Even where customers continue to be served via circuit-switched voice services, AT&T California typically bundles the local voice service with long distance telephone service furnished by AT&T's long distance affiliate. Notably, the retail customer for most of these bundles still receives only one monthly bill, issued by AT&T California on behalf of itself and whichever other AT&T affiliates are jointly furnishing the customer's bundle of services. Mechanically, and with the exception of tariffed switched and special access services, the providing affiliates will "purchase" the underlying network services and functions, including billing and collection services, from AT&T California at mutually-agreed-upon transfer prices.³⁹ Where tariffed services are involved, the affiliate will (presumably) be charged the tariff rates.

From the perspective of most residential consumers, the organizational assignment of responsibility for the individual retail offerings, while nominally disclosed on the customer's monthly bill, is of little interest or consequence: Most direct contacts between retail residential/small business customers and AT&T are accomplished via AT&T California, irrespective of which entity is nominally responsible for the retail provision of a particular service within the customer's service bundle.

Even where AT&T California is not the retail provider of a particular service or service component, its role as the underlying network provider requires that its network be capable of supporting these various affiliate-offered services. For example, AT&T California has been upgrading its network to support several types of broadband services – *U-verse* brand IPTV, *U-verse* brand Internet, and *U-verse* brand VoIP-based phone service – by extending fiber into individual neighborhoods in relatively close proximity to its end-user customers under a Fiber-to-the-Node ("FTTN") architecture.⁴⁰ As of the end of 2017, some 557 out of the total of 615 AT&T California wire centers had been upgraded to support at least one if not all three of these broadband services.⁴¹ AT&T California has confirmed that "no AT&T-CA wire centers that were not Broadband enabled as of May 11, 2018 have since been upgraded to become Broadband

39. This is undoubtedly an overly simplified description. AT&T Inc., the parent company, is the ultimate owner of several hundred domestic and foreign affiliates. Most inter-affiliate financial transactions and relationships are opaque, both as to their precise nature and their magnitude.

40. AT&T has recently dropped its use of the *U-verse* brand, and now refers to its Internet and video services as "AT&T Internet" and "AT&T TV."

41. AT&T California Response to CD Data Request 01A.

enabled.”⁴² According to its [REDACTED]

As discussed in Chapter 4, although the *motivation* behind the deployment of FTTN, FTTP and other network upgrades is the capability to offer broadband services to compete with cable MSO offerings, once installed these same facilities can and will be used to provide legacy POTS and other circuit-switched services.

The AT&T California component of parent AT&T Inc. revenues have been steadily diminishing, as has the share of the overall AT&T capital budget that is being allocated to the California ILEC.

Over the 2010-2017 period, AT&T California’s parent AT&T Inc. had experienced significant growth in its overall gross revenues, rising 29.2% from \$124.3-billion in 2010 to \$160.5-billion in 2017. By 2019, AT&T gross revenues had reached \$181.2-billion. AT&T’s market capitalization as of December 31, 2019 was approximately \$283.5-billion, although as of December 15, 2020, it had declined to about \$217.5-billion as a result of the broader COVID-19 economic impacts. The primary sources of AT&T’s revenue growth have come from wireless services, where the number of AT&T Mobility connections nationwide grew by 73.9%, from 95.4-million in 2010 to 165.9-million in 2019,⁴³ and from several key acquisitions, including DirecTV and Time Warner.



AT&T senior management’s interest in and attention to its legacy wireline ILEC operations continues to be subordinated to its wireless operations and the more recent satellite TV and video content acquisitions.

AT&T California revenues, on the other hand, have been moving in the opposite direction. As shown on Table 7.1 below, in 2010, AT&T California gross revenues were \$9.70-billion, dropping to \$8.63-billion in 2017. Between 2017 and 2019, AT&T California revenues decreased by another 23.15%, to \$6.63-billion. AT&T California’s share of total AT&T Inc. revenues has fallen by an even greater amount, from 7.80% in 2010 to 3.66% in 2019.

42. AT&T California Response to CD Data Request 12-A-10.

43. AT&T Inc. Annual Reports, 2010, 2019 .

Table 7.1										
AT&T CALIFORNIA AND AT&T INC.										
TOTAL OPERATING REVENUES 2010-2019										
(\$000,000)										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AT&T Inc.	124,280	126,723	127,434	128,752	132,447	146,801	163,786	160,546	170,756	181,193
AT&T CA	9,697	9,754	9,374	9,580	9,641	10,008	9,441	8,626	5,799	6,629
AT&T CA %	7.80%	7.70%	7.36%	7.44%	7.28%	6.82%	5.76%	5.37%	3.40%	3.66%

Source: AT&T Inc. Annual Reports 2010-2019; AT&T CA ARMIS 2010=2019 Forms 43-01 as filed with CPUC.

As discussed in Chapter 4A, AT&T California had experienced a precipitous drop in total legacy circuit-switched access lines over the 2010-2017 period, and that downward trend has persisted into 2018 and 2019. Nationally, AT&T Inc. had actually sustained a slightly greater access line loss than its California subsidiary, as shown in Table 7.2 below.

Table 7.2										
AT&T CALIFORNIA AND AT&T INC.										
LEGACY SWITCHED ACCESS LINES IN SERVICE 2010-2019										
(000)										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AT&T Inc.	41,883	36,734	31,887	24,639	19,896	16,670	13,986	11,753	10,002	8,487
AT&T CA	7,602	6,681	5,837	4,996	4,149	3,415	2,872	2,417	2,072	1,793
AT&T CA %	18.15%	18.19%	18.31%	20.28%	20.85%	20.49%	20.54%	20.56%	20.72%	21.12%

Source: AT&T Inc. Annual Reports 2010-2019 "Selected Subscribers and Connections"

Thus, where AT&T nationally had experienced a net legacy switched access line decrease of 71.9% over the 2010-2017 period, for California, AT&T's switched access lines had decreased by slightly less, about 68.2%. Between 2017 and 2019, however, AT&T nationally lost another 27.8%, or 3.27-million of its legacy switched access lines; AT&T California's access line losses were at a slightly lower rate, 25.8%, or 624,000. Notably, however, despite experiencing a cumulative loss of 76.4% in legacy switched access lines between 2010 and 2019, AT&T California gross revenues decreased by only 31.6% over the same period, as summarized on Table 7.3 below:

Table 7.3

**AT&T CALIFORNIA OPERATING REVENUES
DECREASED, BUT BY FAR LESS THAN THE DECREASE
IN LEGACY SWITCHED ACCESS LINES 2010-2019
(\$000,000 and 000)**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Revenues	\$ 9,697	\$ 9,754	\$ 9,374	\$ 9,580	\$ 9,641	\$10,008	\$ 9,441	\$ 8,626	\$5,799	\$6,629
% of 2010		100.59%	96.67%	98.79%	99.42%	103.21%	97.36%	88.96%	59.80%	68.36%
Switched access lines	7,602	6,681	5,837	4,996	4,149	3,415	2,872	2,417	2,072	1,793
% of 2010		87.88%	76.78%	65.72%	54.58%	44.92%	37.78%	31.79%	27.25%	23.58%

Source: AT&T CA ARMIS Form 43-01 as filed with CPUC; POTS lines in service derived from GO 133-C § 3.3 and 3.4 Trouble Reports per 100 Lines (TRPH) quarterly filings, 2010-2019. Switched access lines are average over each year.

Clearly, a significant portion of AT&T California operating revenues come from the ongoing succession of POTS rate increases and from services other than legacy POTS lines. It is thus instructive to compare the decrease in switched access lines more directly with the principal revenue sources associated with these services. Fortunately, more detailed revenue data is provided in the annual financial reports, ARMIS Forms 43-01, 43-02 and 43-03, filed by AT&T California with the CPUC:



Despite experiencing a 76.4% drop in legacy switched access lines from 2010 through 2019, AT&T California's gross revenues decreased by only 31.64% over the same period.

As shown in Table 7.4 below, when confined to only those revenue sources directly attributable to legacy switched access line services – specifically, USOA Account 5001 (Basic Area Revenue),⁴⁴ USOA Account 5081 (End User Common Line revenue),⁴⁵ and USOA

44. 47 CFR §32.5001 defines “Basic Area Revenues” to “include revenue derived from the provision of the following: (1) Basic area message services such as flat rate services and measured services. Included is revenue derived from non-optional extended area services. Also included is revenue derived from the billed or guaranteed portion of semi-public services. (2) Optional extended area service. (3) Cellular mobile telecommunications systems connected to the public switched network placed between mobile units and other stations within the mobile service area. (4) General radio telecommunications systems connected to the public switched network placed between mobile units and other stations within the mobile service area, as well as revenue from mobile radio paging, mobile dispatching, and signaling services. (b) Revenue derived from charges for nonpublished number or additional and boldfaced listings in the alphabetical section of the company’s telephone directories shall be included in account 5230, Directory revenue. (c) Revenue from private mobile telephone services which do not have access to the public switched network shall be included in Account 5200, Miscellaneous revenue.

45. 47 CFR § 32.5081 End user revenue: (a) This account shall contain federally and state tariffed monthly flat rate charge assessed upon end users. (b) Subsidiary record categories shall be maintained in order that the company may separately report amounts related to federal and state tariffed charges.

Account 5082 (Switched Access revenue),⁴⁶ AT&T California legacy access line-related revenues decreased by only about 53.4%, significantly below the 76.4% drop in switched access line demand. Significantly, Account 5082 Switched Access Revenues – revenues from charges that AT&T California collects when its legacy access line customers originate or receive calls to or from a long distance carrier (including AT&T’s long distance affiliate) – decreased by almost as much as the number of legacy switched access lines –70.5% vs. 76.4%. Switched access rates, which remain subject to tariff at both the state and federal levels, had remained unchanged over the 2010-2017 period.

Table 7.4

**AT&T CALIFORNIA LEGACY SWITCHED ACCESS LINE
REVENUES HAVE DECREASED BY A GREATER PERCENTAGE THAN FOR
TOTAL OPERATING REVENUES GENERALLY, BUT STILL BY FAR LESS
THAN THE DECREASE IN LEGACY SWITCHED ACCESS LINES 2010-2019
(\$000 and 000)**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
USOA Acct 5001 Basic Area Rev	\$2,118,017	\$ 2,121,000	\$ 1,966,000	\$ 1,882,000	\$ 1,729,553	\$ 1,579,000	\$ 1,448,000	\$ 1,258,000	\$1,120,148	\$1,059,109
USOA Acct 5081 EUCL Revenue	\$ 627,273	\$ 538,000	\$ 492,000	\$ 452,000	\$ 404,625	\$ 363,000	\$ 333,000	\$ 300,000	\$224,585	\$223,304
USOA Acct 5082 Switched Access	\$ 320,356	\$ 278,617	\$ 282,585	\$ 262,064	\$ 260,174	\$ 220,886	\$ 180,913	\$ 113,694	\$82,314	\$94,500
Total switched access line rev	\$3,065,646	\$2,937,617	\$2,740,585	\$2,596,064	\$2,394,352	\$2,162,886	\$1,961,913	\$1,671,694	\$1,427,047	\$1,376,913
Percent of 2010 Switched Access Revenues		95.82%	89.40%	84.68%	78.10%	70.55%	64.00%	54.53%	46.55%	46.55%
Switched access lines (000)	7,602	6,681	5,837	4,996	4,149	3,415	2,872	2,417	2,072	1,793
Percent of 2010 Switched Access Lines		87.88%	76.78%	65.72%	54.57%	44.92%	37.78%	31.79%	27.25%	23.58%
\$ per Switched access line	\$403.27	\$439.70	\$469.52	\$519.63	\$577.09	\$633.35	\$683.12	\$691.64	\$688.74	\$768.02

Source: AT&T CA ARMIS Form 43-01 as filed with CPUC; POTS lines in service derived from GO 133-C § 3.3 and 3.4 Trouble Reports per 100 Lines (TRPH) quarterly filings, 2010-2019. Switched access lines are average over each year.

46. 47 CFR § 32.5082 Switched access revenue. (a) This account shall consist of federally and state tariffed charges assessed to interexchange carriers for access to local exchange facilities. (b) Subsidiary record categories shall be maintained in order that the company may separately report the amounts contained herein that relate to limited pay telephone, carrier common line, line termination, local switching, intercept, information, common transport and dedicated transport. The subsidiary records shall also separately show the federal and state tariffed charges. Such subsidiary record categories shall be reported as required by part 43 of this chapter.



Even when confined to only those revenue sources directly attributable to legacy switched access line services, AT&T California legacy access line-related revenues decreased by only about 53.4%, significantly below the 76.4% drop in switched access line demand.

AT&T California’s response to the rapidly eroding demand for legacy POTS services has not been to cut prices to retard such “cord-cutting,” but instead to implement large rate increases so as to “harvest” as much revenue from the remaining POTS customers as long as they continue to retain their service.

The 2006 URF decision allowed California’s large ILECs to *detariff* most of their retail services.⁴⁷ As we discussed in Chapter 4A, as soon as detariffing of residential rates took effect in January 2009, AT&T implemented a 26.3% rate increase for flat-rate residential service and a 27.7% increase for measured residential service. A succession of rate increases has continued ever since, and by the end of 2017 AT&T California’s rates for flat-rate and measured residential POTS access lines had risen to 152.6% and 325.4% of their pre-URF levels, respectively. This succession of rate increases for legacy POTS services is summarized in Chapter 4A, at Table 4A.10.



This succession of rate increases is consistent with and in support of a “harvesting” strategy aimed at maximizing revenues from existing customers until they ultimately discontinue their service, thus allowing A&T to maintain revenues despite a massive drop-off in demand.

These regular and ongoing increases in legacy circuit-switched POTS access line rates are entirely consistent with the type of “harvesting strategy” discussed in Chapter 4. While putatively “subject to competition,” these legacy services have been on the decline over the entire 2010-2017 period as customers replace them with AT&T *U-verse* digital service bundles of voice, Internet access and video, or with competitor-provided wireline services, or with wireless. A “harvesting strategy” can be pursued where it is determined that, while some customers will discontinue their service in response to the steadily increasing prices, there are still a sufficient number of customers who confront few if any actual competitive alternatives and/or who simply retain their AT&T legacy POTS service due to inertia – they simply haven’t gotten around to seeking out any alternatives.

47. PU Code § 871.5(a) caps LifeLine rates at one-half of the 1FR rate for flat-rate basic residential service.



AT&T California's response to the erosion of the market for legacy POTS services has been to raise prices, cut back on investment and maintenance, and instead "harvest" those customers that remain on its network for as long as they continue to take their service.

A company will raise its prices only where such an action will result in an increase in profit overall, where the price elasticity of demand is sufficiently low such that, even though some small percentage of customers will discontinue their service, that loss of business will be less than the additional revenues that result from the price increase being paid by customers who remain. AT&T's conduct with respect to these legacy POTS-type services demonstrates that the Company does not perceive them as being subject to so much competition that it must maintain its prices at competitive levels.

Additionally, even where some POTS customers are induced to seek an alternative service in response to a price increase, many will end up purchasing the substitute service from the same provider, AT&T California and/or its wireless affiliate, AT&T Mobility in this case. Indeed, one effect of raising the price of the legacy service is to reduce the *differential in price* between that service and the higher-priced digital service bundles, thus accelerating the migration of customers away from POTS. A companion strategy is to reduce the price of the substitute service – the AT&T Internet + Phone bundle in this case – while simultaneously raising the price of the legacy service. AT&T California has been doing just that, to the point where the price of its Internet + Phone bundles is often *lower* than the price of POTS, particularly when certain optional features and long distance services are included. Coupled with the deteriorating service quality associated with POTS services as discussed in Chapter 4A, the fact that AT&T has been able to profitably implement this succession of annual rate increases for more than a decade since the implementation of *URF* raises serious questions as to the Commission's conclusion in *URF* that competition had developed to a point where continued regulatory protection of basic residential telephone service prices is no longer required or appropriate.



The fact that AT&T has been able to profitably implement a succession of large annual legacy services rate increases for more than a decade since the implementation of *URF* raises serious questions as to the Commission's conclusion in *URF* that competition had developed to a point where continued regulatory protection of basic residential telephone service prices is no longer required or appropriate.

AT&T California has continued its practice of *disinvesting* in its California local network infrastructure.

Because AT&T California is a wholly-owned subsidiary of AT&T Inc., it is the parent AT&T Inc. that determines the amount of capital investment funds that will be available for local

infrastructure investment by its individual operating companies. AT&T California dividends out some portion of, all or, as has been the case in seven of the last ten years, more than all of its net operating income to its parent. Table 7.5 below summarizes AT&T California net income and dividend payments to its sole shareholder over the 2010-2019 period:

Table 7.5											
AT&T CALIFORNIA											
NET INCOME AND DIVIDEND PAYMENTS TO PARENT AT&T INC.											
2010-2019											
(\$000)											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
AT&T-CA Net Income	(2,318,705)	(833,514)	(213,584)	1,531,443	608,020	1,921,482	1,493,479	1,210,137	2,191,808	1,021,129	6,611,695
Dividend paid to AT&T	1,355,722	0	0	0	1,354,158	1,527,615	1,861,782	1,507,216	2,149,652	1,282,762	11,038,907
Change in Retained Earnings	-3,674,407	-833,514	-213,584	+1,531,443	-746,138	+393,867	-368,303	-297,079	+42,156	-261,633	-4,427,212

Source: AT&T CA ARMIS Forms 43-02 as filed annually with CPUC.

Cumulatively, over the full 10-year period, AT&T California had total net after-tax income of \$6.1-billion, but paid out \$11.0-billion in dividends to its parent company, AT&T Inc, thereby eroding the California company's capital base by roughly \$4.4-billion and impairing its ability to maintain and upgrade its aging infrastructure.



Over the past two years (2018-19), AT&T California continued to disinvest from its network. The Company had total net after-tax income of \$3.21-billion, but paid out \$3.42-billion in dividends to its parent company, AT&T Inc -- i.e. it paid AT&T dividends that were some \$219.5-million more than the California company had earned from its ongoing operations.

Thus, rather than reinvesting a portion of its net income back into its network, AT&T California has been consistently *disinvesting* by paying out more in dividends to its sole stockholder than it generated as profits from its operations.



Between 2010 and 2019, AT&T California paid dividends to AT&T Inc. that exceeded its total net income over the period by roughly \$4.43-billion.

And this is not the only indication of a *disinvestment* policy on the part of AT&T, as is further demonstrated in Table 7.6 below, AT&T California has also been eroding its capital base by investing less in its infrastructure than its annual depreciation accruals and retirements:

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
BOY Gross Telecom Plant in Service (TPIS)	38,012,545	38,820,045	41,239,852	41,885,833	41,171,577	40,334,511	40,592,685	40,459,982	36,561,579	37,037,552
Gross Plant Additions	1,294,281	2,823,661	1,026,656	1,349,988	1,003,950	692,124	840,929	1,126,575	1,163,824	1,147,067
Retirements	(469,928)	(371,653)	(459,523)	(2,041,895)	(1,833,538)	(440,952)	(951,050)	(4,979,833)	(624,554)	(1,384,449)
Adjustments	(16,853)	(32,201)	70,848	(22,349)	(7,478)	7,002	(45,145)	(45,145)	(63,297)	(112,230)
EOY Gross Telecom Plant in Service	38,820,045	41,239,852	41,885,833	41,171,577	40,334,511	40,592,685	40,459,982	36,561,579	37,037,552	36,687,940
Annual TPIS depreciation accruals (acct 6561)	2,269,324	2,317,862	2,263,393	1,635,691	1,179,213	980,435	894,384	948,481	766,007	765,580
Cumulative depreciation reserve	30,725,620	33,919,953	35,789,894	35,483,033	35,212,622	35,737,860	35,667,638	31,669,055	26,815,887	26,286,667
Net EOY TPIS	8,210,895	7,428,989	6,220,114	5,811,622	5,179,915	4,921,048	4,856,389	4,973,372	10,321,702	10,438,665

Source: AT&T CA ARMIS 43-02 Reports, Table B-1, as filed annually with the CPUC

Over the four-year period from 2016 through 2019, AT&T California recorded \$7.94-billion in total retirements, negative \$265.8-million in Transfers/Adjustments, and \$3.37-billion of depreciation accruals. Gross Plant Additions made over that same 4-year period were only \$4.28-billion, resulting in a plant erosion totaling at least \$7.3-billion. Gross Telecommunications Plant in Service carried on AT&T California's USOA books decreased by roughly \$3.9-billion from the beginning of 2016 through the end of 2019. Notably, *net plant* over that same period appears to have increased by \$5.5-billion, from \$4.9-billion to \$10.4-billion.

In order to explore this seemingly anomalous condition, CD submitted the following data request to AT&T California:

The amounts shown for Net EOY TPIS appear to show a substantial (\$5.3-billion) increase between 2017 and 2018, and an amount for 2019 that is similar in magnitude to that for 2018. Please provide the detailed accounting entries that produced this result, and provide a narrative explanation as to how Net TPIS could have increased by more than \$5-billion in a year when Gross Plant Additions were only \$1.6-billion, Retirements and Adjustments combined were slightly under \$700-million, and Depreciation Accruals were approximately \$766-million.

AT&T California provided the following explanation in response:

For 2018 data and beyond, per the FCC’s Decision 17-15, AT&T eliminated MR accounting (used for regulatory purposes) in favor of GAAP accounting (used for financial reporting). ... In computing net investment (gross investment less accumulated depreciation reserve), the primary difference between MR and GAAP is associated with the accumulated depreciation reserve. The MR accumulated depreciation reserves were significantly higher than the GAAP accumulated depreciation reserves due the difference in depreciation rates and depreciation calculation methodology.⁴⁸

AT&T California’s ARMIS Reports had, through 2017, been prepared in accordance with the FCC’s Uniform System of Accounts (USOA) as specified in Part 32 of the FCC’s Rules (47 CFR §32). (In its response AT&T refers to this as “MR.”) Although the CPUC has continued to require Price Cap ILECs (AT&T California and Frontier California and its predecessors) to continue to submit annual ARMIS-type reports even though this requirement had been discontinued by the FCC after 2007, AT&T California has apparently interpreted the FCC Decision 17-15 referenced in its response as permitting it to substitute Generally Accepted Accounting Principles (“GAAP”) for USOA accounting in the ARMIS-type reports submitted to the CPUC for 2018 and beyond. ETI does not offer an opinion as to the validity of AT&T’s interpretation. We would, however, make the following observations: It is customary practice for firms to identify any changes in accounting method(s) in notes to financial reports. The only reference to the use of GAAP accounting in AT&T California’s 2018 ARMIS filing appears in a footnote to the table entitled “Pole and Conduit Rental Calculation Information” that is included in the 2018 ARMIS Report 43-01, a location that would indicate that the change applies only to this specific Table. The footnote states that “Financial values reported on a GAAP basis beginning with 2018 data (per FCC decision 17-15).” We have been unable to find any similar notation as to the accounting change anywhere else in any of the Company’s 2018 Reports including, in particular, the 43-02 Report that was the subject of the above-reference data request. No notation of the accounting change appears anywhere in the 2019 AT&T California ARMIS Reports, not even in the counterpart of the Pole and Conduit Rental Table.

As AT&T California explains in its Response, “the primary difference between MR [USOA] and GAAP is associated with the accumulated depreciation reserve. The MR [USOA] accumulated depreciation reserves were significantly higher than the GAAP accumulated depreciation reserves due the difference in depreciation rates and depreciation calculation methodology.” What AT&T California appears to have done is to, in effect, back-cast the accumulated depreciation reserves for 2018 and 2019 *as if GAAP depreciation rules had been in effect prior to the 2018 accounting change.*

48. AT&T California Reponse to CD Data Request 12-A-4 dated August 7, 2020. The FCC Decision 17-15 to which AT&T refers is the February 24, 2017 *Report and Order* in WC Docket No. 14-130 (“*Comprehensive Review of the Part 32 Uniform System of Accounts*”) and CC Docket No. 80-286 (“*Jurisdictional Separations and Referral to the Federal-State Joint Board*”).

We reach this conclusion based upon the following analysis: The Accumulated Depreciation Reserves for 2016 was \$35.67-billion, dropping to \$31.69-billion a year later (2017), roughly a \$4-billion decrease. In 2017, AT&T California retired some \$4.98-billion in plant. Retirements *reduce* the accumulated depreciation reserve, in that case, by just under \$5-billion. In that same year, AT&T California took depreciation accruals of \$948-million, which would have *increased* the accumulated depreciation reserve by that amount. The net of these two items – plant retirements and annual depreciation accruals, roughly corresponds to the \$4-billion decrease in year-over-year depreciation reserve between 2016 and 2017.

However, if we now look at the figures for 2017 and 2018, we see an entirely different situation. The accumulated depreciation reserve for 2018, per the AT&T California ARMIS Report 43-02, was \$26.8-billion, a decrease of \$4.85-billion from the 2017 level. However, in 2018, AT&T California retired only \$624-million in plant retirements and \$766-million in annual depreciation accruals. But for the change from USOA to GAAP accounting, the net effect of these two items should have resulted in an *increase* in accumulated depreciation reserves of \$142-million, *not a decrease of \$4.85-billion*.



A change in the accounting procedures that AT&T California has utilized for its ARMIS-type reports after 2017 has resulted in a roughly \$5-billion overstatement of its net Telecommunications Plant in Service for 2018 and 2019.

Table 7.6A below presents approximate results for 2018 and 2019 on a *pro forma* basis as if USOA accounting continued to be utilized in 2018 and 2019. These results are approximate, and almost certainly *overstate* net Telecommunications Plant in Service for both of those years. Depreciation rates (and hence annual depreciation accruals) under GAAP tend to be lower than those applicable under USOA. Thus, had USOA accounting rules continued to be utilized in 2018 and 2019, the annual depreciation accruals for those years would almost certainly have been higher, resulting in lower end-of-year Net TPIS for both years.

Table 7.6A

**AT&T CALIFORNIA
PATTERN OF INVESTMENT 2010-2019
APPROXIMATE PRO FORMA ADJUSTMENTS
AS IF USOA ACCOUNTING RULES WERE STILL BEING USED
FOR 2018 AND 2019
(\$000)**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
BOY Gross Telecom Plant in Service (TPIS)	38,012,545	38,820,045	41,239,852	41,885,833	41,171,577	40,334,511	40,592,685	40,459,982	36,561,579	37,037,552
Gross Plant Additions	1,294,281	2,823,661	1,026,656	1,349,988	1,003,950	692,124	840,929	1,126,575	1,163,824	1,147,067
Retirements	(469,928)	(371,653)	(459,523)	(2,041,895)	(1,833,538)	(440,952)	(951,050)	(4,979,833)	(624,554)	(1,384,449)
Adjustments	(16,853)	(32,201)	70,848	(22,349)	(7,478)	7,002	(45,145)	(45,145)	(63,297)	(112,230)
EOY Gross Telecom Plant in Service	38,820,045	41,239,852	41,885,833	41,171,577	40,334,511	40,592,685	40,459,982	36,561,579	37,037,552	36,687,940
Annual TPIS depreciation accruals (acct 6561)	2,269,324	2,317,862	2,263,393	1,635,691	1,179,213	980,435	894,384	948,481	766,007	765,580
Cumulative depreciation reserve	30,725,620	33,919,953	35,789,894	35,483,033	35,212,622	35,737,860	35,667,638	31,669,055	31,810,508	31,191,639
Net EOY TPIS	8,210,895	7,428,989	6,220,114	5,811,622	5,179,915	4,921,048	4,856,389	4,973,372	5,227,044	5,496,301
Source: AT&T CA ARMIS 43-02 Reports, Table B-1, as filed annually with the CPUC, as adjusted to conform to USOA accounting rules,										

As noted, these adjusted USOA-type Net TPIS values for 2018 and 2019 likely overstate the amounts that would exist under strict USOA accounting. We do not have the means for estimating the 2018 and 2019 depreciation accruals that would have applied under USOA, so these approximations are as close as we can get with the information available. AT&T California did make Gross Plant Additions for 2018 and 2019 totaling some \$2.13-billion net of adjustments. However, only a small fraction of that spending appears to have been directed to legacy POTS services.

Inter-affiliate transactions at non-arm's length transfer prices also contribute to the parent company's pattern of disinvestment in AT&T California operations.

But even AT&T California's nominally reported revenues, expenses and net income cannot by themselves provide a complete or accurate picture of the ILEC entity's financial performance. This is because of the extensive nature and amount of inter-affiliate transactions that take place on an ongoing basis between the AT&T California ILEC entity and numerous other affiliates that are themselves, directly or indirectly, wholly owned by the parent company AT&T Inc. These transactions involve both *purchases* made by the ILEC from other AT&T affiliates as well as *sales* made by the ILEC to other AT&T affiliates. Table 7.7 below provides a summary of

these transactions and their relationship to AT&T California’s overall revenues, operating expenses, and net income.



AT&T California financial statements show an incomplete assessment of the ILEC’s financial condition due to the large volume of inter-affiliate transactions made at transfer prices that are not set on the basis of arm’s length negotiations.

AT&T’s ILECs are organized into a number of mostly state-level operating subsidiaries, although some of the AT&T ILEC entities provide service in several states. Other AT&T “service company” entities provide a range of centralized services to the ILECs as well as to other non-ILEC AT&T operations. The use of centralized services has a long history in the telecommunications industry, dating back to AT&T Bell System days, when the AT&T General Department provided a broad range of back-office services and Bell Laboratories provided centralized research and development for the entire AT&T corporate family. In theory, the use of centralized services should produce scale and scope efficiencies that would then benefit all of the affiliates that utilize these services. In practice, this is not always the case. AT&T, Verizon and their predecessors, in particular, have a long history of employing the use of centralized services organizations to extract profits from their operating telephone companies. In 2018 and 2019 alone, total AT&T California operating expenses (excluding depreciation and amortization) were \$7.16-billion. 58% of these, some \$4.15-billion, were spent on services purchased from other AT&T affiliates. In those same two years, AT&T California’s total operating revenues were \$12.43-billion, 16.17% of which, some \$2.01-billion were realized from sales to various other AT&T affiliates.

With the exception of tariffed switched and special access services that are being purchased from AT&T California by various other AT&T affiliates, the specific *transfer prices* at which these transactions are recorded can hardly be viewed as being set on the basis of arm’s length negotiations. Since both the seller and buyer in each instance are wholly-owned by the same parent company, the nominal transfer price has little or no effect upon the parent company’s bottom line. However, if it is the parent company’s goal to extract cash from the ILEC entity, setting an inflated transfer price for services the ILEC purchases from other AT&T affiliates, or heavily discounting the prices that the ILEC charges for whatever (non-tariffed) services it sells to other AT&T affiliates, can accomplish this as effectively as making a dividend payment to the parent, but with far less exposure as to the precise purpose of the policy. As Table 7.7 demonstrates, in six out of the last seven years, *more than 50% of AT&T California total operating expenses net of depreciation and amortization were paid over to other AT&T affiliates for services rendered*. Over the full 2010-2019 period, \$26.0-billion of the 58.3-billion of total AT&T California operating expenses (excluding depreciation and amortization) were spent on purchases of services from other AT&T affiliates.

Table 7.7

AT&T CALIFORNIA
AFFILIATE TRANSACTIONS WITH OTHER UNITS OF AT&T INC.
2010-2019
(\$000)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AT&T-California operating revenue	9,696,777	9,754,246	9,373,754	9,580,095	9,641,220	10,007,776	9,440,692	8,626,042	\$5,799,249	\$6,628,969
Sales to other AT&T affiliate	2,978,741	2,942,621	1,566,044	1,700,570	1,645,297	1,864,210	1,967,601	1,681,965	977,436	1,032,465
Pct from sales to affiliates	30.72%	30.17%	16.71%	17.75%	17.07%	18.63%	20.84%	19.50%	16.85%	15.58%
AT&T CA pre-tax OpEx excl depr/amort ⁴⁹	10,715,929	5,688,139	6,899,881	4,736,569	7,025,256	5,241,041	5,575,240	5,267,556	3,319,424	3,836,668
Services Purchased from AT&T affiliates	2,122,027	2,458,684	2,712,380	2,657,560	2,884,788	3,185,779	3,135,299	2,762,898	1,891,939	2,260,675
Pct of total OpEx paid to affiliates	19.80%	43.22%	39.31%	56.11%	41.06%	60.79%	56.24%	52.45%	57.00%	58.92%
AT&T-CA Net Income	(2,318,705)	(833,514)	(213,584)	1,531,443	608,020	1,921,482	1,493,479	1,210,137	2,191,808	1,021,129

Source: AT&T CA ARMIS Form 43-02, Table I-2, Form 43-03, as filed annually with CPUC.

As we noted in our Phase 1 Report, that this type of manipulation may have occurred is hardly idle speculation. AT&T and its post-1984 RBOC offspring have a long history of such transactions. In pre-NRF general rate cases, the CPUC would routinely include an examination of affiliate transactions between AT&T California and other affiliates, and would in some cases adjust inter-affiliate transfer prices for regulatory purposes.⁵⁰ The fact that the CPUC continues

49. Amounts shown are calculated as Total Operating Expenses (Form 43-03 Line 720) – Depreciation/Amortization expenses (Form 43-03 Line 6560), which represents current cash operating expenses. The source data for this calculation is as follows:

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Pre-tax OpEx	13,010,515	8,006,001	9,163,274	6,356,472	8,216,812	6,212,753	6,469,624	6,206,258	4,085,431	4,602,248
Deprec/Amort of TPIS	2,294,586	2,317,862	2,263,393	1,619,903	1,191,556	971,712	894,384	938,702	766,007	765,580
Pre-tax OpEx excl depr/amort	10,715,929	5,688,139	6,899,881	4,736,569	7,025,256	5,241,041	5,575,240	5,267,556	3,319,424	3,836,668

50. As far back as 1968, for example, the CPUC had initiated an investigation into the prices being charged by Western Electric, then the AT&T manufacturing affiliate, for telecommunications equipment being purchased by (then) Pacific Telephone and Telegraph Company (PT&T). *Investigation into Practices and Contracts of PT&T Co.*, Case No. 8858, Decision No. 76726, January 27, 1970, 1970Cal. PUC LEXIS 86, 70 CPUC 644.

to collect information on, and monitor, both sales to and purchases from affiliates on an ongoing basis underscores the legitimacy of this concern.

Persistent disinvestment, extensive affiliate transactions at self-serving transfer prices, extraordinarily large rate increases, and deteriorating service quality all point to “harvesting” as AT&T California’s overarching strategy for its legacy services and customers.

These extensive affiliate transactions, the directly measurable indicators of disinvestment – depreciation accruals that exceed gross additions, payments of dividends to the parent company that exceed the nominally reported net income, and the persistent erosion of AT&T California’s Net Plant – and the deteriorating service quality overall – together compel certain conclusions as to AT&T California’s overall financial condition and investment policies:

- (1) The succession of annual rate increases applicable to AT&T California’s legacy POTS services were not in any sense cost-driven or cost-based, and instead appear to have been driven by the company’s pursuit of a harvesting strategy with respect to these services.
- (2) Earnings of this magnitude confirm that AT&T California’s harvesting strategy is achieving the intended increases in profitability without the need for the infusion of large amounts of new capital investment in the company’s local network infrastructure.
- (3) Persistent *disinvestment* in the AT&T California local network has been the principal source of the erosion in the net book value of the company’s Telecommunications Plant in Service and the resulting escalation of the result of return on its remaining net investment.
- (4) Persistent disinvestment, deterioration in service quality, and escalating prices for AT&T California’s basic residential services are not consistent with the level of competition that has been portrayed by AT&T California and that the Commission has accepted as a basis for its adoption and continuation of the Uniform Regulatory Framework.

AT&T California investment in wireline circuit-switched voice services has continued to diminish over the 2018-2019 period.

Under the FCC’s Uniform System of Accounts and associated financial reporting rules, large ILECs had been required to maintain a set of regulatory accounting records in a form established by the FCC, and to report various aspects of their capital investments among a number of functional categories.⁵¹ They had also been required to report, by category (USOA account),

51. To facilitate its regulatory mission, the FCC in 1935 established a “Uniform System of Accounts” (“USOA”) as detailed in Part 31 of its Rules (47 CFR § 31). In 1986, the USOA was revised and expanded, and Part 31 was superseded entirely by a new Part 32 (47 CFR § 32). The FCC also adopted a reporting protocol known as the

annual Gross Additions, Retirements, annual and cumulative Depreciation Accruals, and gross and net telecommunications plant in service (“TPIS”). Much of this information was also being maintained at the individual wire center level. AT&T California’s ARMIS type submissions to the CPUC, specifically its Forms 43-02, indicate that, over the 2010 through 2017 period, AT&T California made Gross Additions to its TPIS that were slightly over \$10-billion.⁵²

In 2017, the FCC determined that “price cap ILECs” – those large carriers that are subject to FCC price cap rather than rate-of-return regulation – will no longer be required to maintain separate USOA accounting records after 2017.⁵³ This study has benefitted greatly from the availability of ARMIS-type reporting by the two ILECs that are under examination here. Although the FCC no longer requires that AT&T California and Frontier California maintain accounting records pursuant to the USOA as it had existed prior to the 2017 ruling, the FCC Order explicitly provides that “[n]othing in this Order precludes a state or regulatory agency, or another party as part of a contractual requirement, from requiring a carrier to maintain the Class A accounts or otherwise maintain the USOA. See, e.g., 17 CFR § 1770.11 (requiring Rural Utility Service borrowers to maintain Class A accounts).”⁵⁴ And in her *Statement Approving in Part and Concurring in Part*, FCC Commissioner Mignon L. Clyburn remarked, “So to those carriers who advocate for decreased regulatory burdens, let me assure you: I am with you. However, the next time this Commission or a state commission asks for cost data, to support a rulemaking, investigate a complaint, or bring an enforcement action, I hope we do not hear protestations that the request is too burdensome because the data is not kept in the format that the FCC or state commission needs.”

One of our specific Phase I Recommendations was that the important role that the Part 32 accounting data has played in this study makes a compelling case that this and the associated ARMIS-type annual reporting be maintained in California. AT&T California has continued to submit annual ARMIS-type financial reports to this Commission based upon FCC Part 32 USOA

“Automated Reporting Management Information System” (“ARMIS”). In 2007 the FCC decided that it would forbear from requiring ARMIS reporting by ILECs after 2007. *Petition of AT&T Inc. for Forbearance Under 47 U.S.C. § 160(c) From Enforcement of Certain of the Commission’s ARMIS Reporting Requirements; Petition of Qwest Corporation for Forbearance from Enforcement of the Commission’s ARMIS and 492A Reporting Requirements Pursuant to 47 U.S.C. § 160(c)*, WC Docket No. 07-139 *et al. Memorandum Opinion and Order and Notice of Proposed Rulemaking*, Rel. September 6, 2008, FCC 08-203: However, Part 32 USOA requirements remained in effect, and state commissions were not precluded from continuing to require such reporting. The CPUC has required that URF ILECs, including AT&T California and Verizon (now Frontier) California continue to submit ARMIS-type reports on an annual basis. See, GO 104-A, D. 93-02-019.

52. AT&T California Forms 43-02 as submitted to the CPUC for 2010-2017.

53. *I/M/O Comprehensive Review of the Part 32 Uniform System of Accounts*, WC Docket No. 14-130; *Jurisdictional Separations and Referral to the Federal-State Joint Board*, CC Docket No. 80-286, *Report and Order*, FCC 17-15, Rel. February 24, 2017.

54. *Id.*, at 7, fn. 51.

accounting records although, as discussed above, the Company has apparently substituted GAAP reporting for Part 32 at least with respect to its balance sheet accounts..

Table 7.8 below provides a comparison of the distribution of gross plant additions among the various USOA account categories over the 2010-2017 Phase 1 period with those made during 2018-2019. AT&T California Gross Telecommunications Plant in Service (“TPIS”) Additions amounted to some \$10.16-billion over the Phase 1 2010-2017 study period. \$4.21-billion, about 41.5%, of these gross plant additions were directed toward central office switching and circuit equipment (“COE”); roughly the same amount (\$3.92-billion, about 38.6%) was spent on Cable and Wire Assets – i.e., outside plant. However, that pattern saw a major shift over the Phase 2 2018-2019 study period. Total Gross Plant Additions for both years combined were only \$2.3-billion. Only \$201-million (8.7%) was directed toward COE, whereas the outside plant Cable & Wire component represented some 77.6% of total Gross Additions, some \$1.79-billion.

Over the 2010-2017 period, the two largest areas of investment were in Account 2212 – Digital Electronic Switching (\$1.48-billion) and in Account 2232 – Circuit Equipment \$2.69-billion). Account 2212 is further broken down into two subaccounts – Account 2212.1 – Circuit Switching, and Account 2212.2 – Packet Switching. The majority of new Digital Switching investment over the 2010-2017 period was for Packet Switches, although in 2018-2019 the Company spent more on circuit switching equipment than on packet switching. Notably, Packet Switches, which are used to support VoIP, Internet access and various other advanced services, are *not* used in the provision of basic local POTS services. Account 2232 (Circuit Equipment) is defined as including, principally, “equipment which is used to reduce the number of physical pairs otherwise required to serve a given number of subscribers by utilizing carrier systems, concentration stages or combinations of both. It shall include equipment that provides for simultaneous use of a number of interoffice channels on a single transmission path. ...

Account 2232 is also broken down into two subaccounts – subaccount 2232.1 includes Electronic Circuit Equipment; Subaccount 2232.2 includes Optical Circuit Equipment. Although the data suggest that the bulk of AT&T’s investment in circuit equipment has been on the electronic, rather than optical, side as noted in Table 7.8, that is not likely the case. 47 CFR §32.2232(d) provides that “Circuit equipment that converts electronic signals to optical signals or optical signals to electronic signals shall be categorized as electronic – shall be assigned to subaccount 2232.1–Electronic Circuit Equipment.” Given that AT&T has been engaged in a major fiber optic upgrade both in feeder and in many distribution routes, it is highly likely that the bulk of Subaccount 2232.2 gross additions have involved circuit equipment that converts between electronic and optical signals. And although this equipment is undoubtedly being used by AT&T to provide circuit-switched legacy POTS-type services, the drivers for these upgrades has clearly been the company’s pursuit of nonregulated broadband and other advanced services markets.

Table 7.8

**AT&T CALIFORNIA
DISTRIBUTION OF GROSS PLANT ADDITIONS
2010-2017 COMPARED WITH 2018-2019**

Account	Account description	2010-2017		2018-2019	
		Gross Adds	Pct of Total	Gross Adds	Pct of Total
TPIS - General Support Assets					
		-		-	
2111	Land	171	0.00%	800	0.03%
2112	Motor vehicles	240,745	2.37%	4,289	0.19%
2113	Aircraft	-	0.00%	-	0.00%
2114	Tools and other work equipment	93,597	0.92%	13,662	0.59%
2121	Buildings	594,211	5.85%	129,266	5.59%
2122	Furniture	443	0.00%	-	0.00%
2123	Office equipment	1,745	0.02%	34	0.00%
2124	General purpose computers	43,434	0.43%	133	0.01%
	TOTALS -- General Support Assets	974,346	9.59%	148,184	6.41%
-	-	-		-	
TPIS - Central Office Assets					
		-		-	
2211	Non-digital switching	214	0.00%	9	0.00%
2212.1	Circuit Switching	148,894	1.47%	49,935	2.16%
2212.2	Packet Switching	1,335,116	13.14%	35,826	1.55%
2220	Operator Systems	1	0.00%	-	0.00%
2231	Radio systems	31,664	0.31%	13,149	0.57%
2232.1	Electronic circuit	2,695,654	26.54%	102,072	4.42%
2232.2	Optical circuit	1,024	0.01%	99	0.00%
	TOTALS -- Central Office Equipment	4,212,567	41.47%	201,090	8.70%
-	-	-		-	
TPIS - Information Origination/Termination Assets					
		-		-	
2311	Station apparatus	-	0.00%	-	0.00%
2321	Customer premises wiring	-	0.00%	-	0.00%
2341	Large private branch exchanges	9,406	0.09%	-	0.00%
2351	Public telephone terminal equipment	53	0.00%	-	0.00%
2362	Other terminal equipment	893,336	8.79%	154,561	6.69%
	TOTALS -- Information Orig/Termination Assets	902,795	8.89%	154,561	6.69%
-	-	-		-	
TPIS - Cable and Wire Assets					
		-		-	
2411	Poles	495,031	4.87%	188,569	8.16%
2421	Aerial cable	840,574	8.27%	378,053	16.36%
2422	Underground cable	1,572,375	15.48%	603,621	26.12%
2423	Buried cable	364,234	3.59%	260,928	11.29%
2424	Submarine and deep sea cable	14	0.00%	-	0.00%
2426	Intrabuilding network cable	17,397	0.17%	43,081	1.86%
2431	Aerial wire	11	0.00%	-	0.00%
2441	Conduit systems	631,674	6.22%	318,206	13.77%
	TOTALS -- Cable and Wire Assets	3,921,310	38.60%	1,792,458	77.57%
-	-	-		-	
TPIS Amortizable Assets					
		-		-	
2681	Capital leases	-	0.00%	-	0.00%
2682	Leasehold Improvements	52,439	0.52%	2,077	0.09%
2690.1	Network Software	71,203	0.70%	12,521	0.54%
2690.2	General purpose computer software	23,504	0.23%	-	0.00%
	TOTALS -- Amortizable Assets	147,146	1.45%	14,598	0.63%
-	-	-		-	
	TOTAL TPIS Gross Plant Additions	10,158,164	100.00%	2,310,891	100.00%

Source: AT&T California Responses to CD DR-03A, DR 11-A.



Those capital investments that AT&T has been making in its California ILEC have, for the most part, not been directed at legacy basic voice services.

Table 7.5 above showed that AT&T California has been steadily disinvesting in its local network. AT&T-California has been consistently paying dividends to its parent AT&T Inc. that exceed its net earnings. Between retirements and annual depreciation accruals, there are more assets being written off and depreciated than are being acquired. Depreciation is an operating expense, but since it does not involve any immediate cash outlay (as is the case for most other types of operating expenses), depreciation provides, in effect, a source of cash that can be used for plant upgrades and replacements. Here, however, AT&T California's Gross Additions are consistently falling below its ongoing depreciation accruals.

Investments at individual wire centers

AT&T was asked to, and did, provide certain investment- and asset-related data at the individual wire center level. This included Gross Additions (by account), Retirements, and Operating Expenses including annual depreciation charges. Wire centers vary in size from a few hundred to tens of thousands of access lines. In order to compare AT&T's investment practices across all of its wire centers, we used the switched access lines in service as of January 2019 for each of AT&T California's wire centers, representing the mid-point of the Phase 2 study period, which runs from January 2018 through and including December 2019. We compared total Gross Additions made over the two-year period with the January 2019 number of lines in service.

Table 7.9 below provides a summary by USOA account of total 2018-2019 Gross Additions. These figures were compiled from the account- and wire center-level data provided by AT&T California in response to CD data request 11-A-08. They do not appear to correspond precisely with the Form 43-02 ARMIS reports. The Form 43-02 submissions indicated that for 2018 and 2019 combined, AT&T California had Gross Additions of roughly \$2.3-billion. However, from the AT&T California response to CD data request 11-A-08, only about \$1.95-billion in Gross Additions (including transfers from Plant Under Construction) for the same period have been identified.

Tables 7.10 through 7.12 below provide the total and per-access line Gross Additions made over the 2018-2019 Phase 2 study period, based upon January 2019 access lines in service. Table 7.10 provides data for individual wire centers sorted alphabetically by CLLI code. Tables 7.11 and 7.12 provide the same data sorted by total Gross Additions for each wire center (Table 7.11) and by the average Gross Addition per January 2019 switched access line in service (Table 7.12). There is, as it turns out, an extraordinarily wide variation in the per-access line investment across the full scope of AT&T California's 615 wire centers, ranging from \$18.46 for the Bradley wire center (BRDLCA90) to \$51,653 in the Parkway wire center (SNRFCA11) per average access line (see Table 7.12 below). Fourteen AT&T California wire centers show

negative Gross Additions for 2018-2019, which is likely due to accounting adjustments. Many individual wire centers show negative Gross Additions for one or more USOA accounts.

AT&T CALIFORNIA GROSS PLANT ADDITIONS 2018-2019			
Account	Description	2018-2019 Gross Addition	
	2003	Telecommunications plant under construction	(49,196,524)
C O E	2211	Non-digital COE	282,463
	2212.1	COE - Circuit Switching	52,584,580
	2212.2	COE - Packet Switching	31,044,715
	2231	Radio systems	7,634,061
	2232.1	Circuit Equipment - Electronic	64,113,984
	2232.2	Circuit Equipment - Optical	1,109,626
O S P	2411	Poles	188,569,073
	2421	Aerial Cable	378,052,487
	2422	Underground Cable	603,621,152
	2423	Buried Cable	260,927,836
	2426	Intra-building Network Cable	43,080,835
	2441	Conduit Systems	318,205,818
TOTAL (incl. transfers from Plant Under Construction)			1,949,226,650
	Central Office Equipment -- Total		8.04% 156,769,449
	Outside Plant -- Total		91.96% 1,792,457,201

The AT&T accounting data upon which these tables are based provides, in addition to specific figures for each of its roughly 615 wire centers, additional amounts that are not wire center-specific. Approximately 97 entries are not associates with specific wire centers. These entries combined represent a *negative* \$156.46-million of Gross Additions.

Table 7.10 GROSS PLANT ADDITIONS BY WIRE CENTER - 2018-2019 (continued)

GLRCA11	WC No	WC Name	County	Jan 2019 ASL	\$ per AL	TOTAL	2008	2011	2012-12	2021	2022-2	2023-2	2024-2	2025	2026	2441
GLRCA11	831104	Chualar	Monterey	136	48,621	66,635	49,637	7,329	(194)	8,677	2,056	-	-	2,056	14	2441
GLRCA11	9344	China Vista Third Avenue	San Diego	8,556	7,590	9,071	3,500	(22,320)	(3,001)	(163,250)	11	-	-	11	-	2441
GLRCA11	939119	Chula Vista	San Diego	2,953	7,127	4,069	3,076	(19,562)	(1,948)	1,113	-	-	41,063	-	65	2441
GLRCA11	939119	Chula Vista	San Diego	2,953	7,127	4,069	3,076	(19,562)	(1,948)	1,113	-	-	41,063	-	65	2441
GLRCA11	939119	Chula Vista	San Diego	2,953	7,127	4,069	3,076	(19,562)	(1,948)	1,113	-	-	41,063	-	65	2441
GLRCA11	939119	Chula Vista	San Diego	2,953	7,127	4,069	3,076	(19,562)	(1,948)	1,113	-	-	41,063	-	65	2441
GLRCA11	939119	Chula Vista	San Diego	2,953	7,127	4,069	3,076	(19,562)	(1,948)	1,113	-	-	41,063	-	65	2441
GLRCA11	939119	Chula Vista	San Diego	2,953	7,127	4,069	3,076	(19,562)	(1,948)	1,113	-	-	41,063	-	65	2441
GLRCA11	939119	Chula Vista	San Diego	2,953	7,127	4,069	3,076	(19,562)	(1,948)	1,113	-	-	41,063	-	65	2441
GLRCA11	939119	Chula Vista	San Diego	2,953	7,127	4,069	3,076	(19,562)	(1,948)	1,113	-	-	41,063	-	65	2441



Table 7.10 GROSS PLANT ADDITIONS BY WIRE CENTER - 2018-2019 (continued)

Table with columns: WCC, County, Jan 2019 ALs, \$ per AL, TOTAL, 2011, 2012-12, 2021, 2022-12, U.S.O.A. Plant Account, 2021, 2022, 2023, 2026, 2441. Rows include wire centers like MTRVCA01, MTRVCA02, MTRVCA03, etc., across various counties and regions.

Table 7.10 GROSS PLANT ADDITIONS BY WIRE CENTER -- 2018-2019 (continued)

CLL	WC No.	WC Name	County	Jan 2019 ALs	\$ per AL	TOTAL	2009	2211	2212.1	2212.2	2221	2232.1	2232.2	U S O A Plant Account	2421	2422	2423	2426	2441		
RMGCAN	<<Location not specified or not Wire Center specifi>>			1,807		1,807															
RSVCAZ	<<Location not specified or not Wire Center specifi>>			11,113		11,113															
RSVCAZ	<<Location not specified or not Wire Center specifi>>			2,133		2,133															
SFSPCAM	<<Location not specified or not Wire Center specifi>>			1,492		1,492						456									
SHOKCA2	<<Location not specified or not Wire Center specifi>>			(1,390,792)		(1,390,792)			(435,115)			(689,532)									
SHOKCA4	<<Location not specified or not Wire Center specifi>>			3,182		3,182															
SKTCCANZ	<<Location not specified or not Wire Center specifi>>			2,730		2,730															
SLBHCANZ	<<Location not specified or not Wire Center specifi>>			6,207		6,207															
SMBHCANZ	<<Location not specified or not Wire Center specifi>>			38,942		38,942		280				25,332		209							
SNDKCAF	<<Location not specified or not Wire Center specifi>>			5,043		5,043															
SNDKCAF	<<Location not specified or not Wire Center specifi>>			7,252		7,252			247			1,982									
SNFKCAF5	<<Location not specified or not Wire Center specifi>>			23,011		23,011															
SNLNCA27	<<Location not specified or not Wire Center specifi>>			33,436		33,436															
SNNKCAJ1	<<Location not specified or not Wire Center specifi>>			372		372						9,945									
SNNKCAJ1	<<Location not specified or not Wire Center specifi>>			168		168						131									
SNNKCAJ1	<<Location not specified or not Wire Center specifi>>			37		37															
SZZZCAZ	<<Location not specified or not Wire Center specifi>>			136,514,396		(2,018,620,893)	90,207	16,777,593	91,980,739	2,578,937	94,135,732	81,178	187,212,568	477,860,140	697,104,062	226,904,091	46,011,182	313,298,321			
THKCAH	<<Location not specified or not Wire Center specifi>>			6,613		6,613					848										
THKCAH	<<Location not specified or not Wire Center specifi>>			39		39															
WHTRCAF	<<Location not specified or not Wire Center specifi>>			148		148															
WHTRCAF	<<Location not specified or not Wire Center specifi>>			1,792		1,792															
WHTRCAH	<<Location not specified or not Wire Center specifi>>			488		488															
WHTRCAH	<<Location not specified or not Wire Center specifi>>			3,978		3,978															
WLANKCAF	<<Location not specified or not Wire Center specifi>>			1,654		1,654					75										
WLANKCAF	<<Location not specified or not Wire Center specifi>>			4,443		4,443															
WLNTCAF	<<Location not specified or not Wire Center specifi>>			973		973															
WLNTCAF	<<Location not specified or not Wire Center specifi>>			4,951		4,951					2,332										
WVNSCAF	<<Location not specified or not Wire Center specifi>>			26,496,846		(291,727,880)		31,863,314	(65,146,110)	(5,640,164)	(93,348,938)			(104,198,734)	(968,73,057)	(7,418,685)				(3,605,347)	
WVNSCAF	<<Location not specified or not Wire Center specifi>>			1,315,181		(13,917,203)		(2,621,122)	(347,762)		(353,317)										
WVNSCAF	<<Location not specified or not Wire Center specifi>>			396		396															
WVNSCAF	<<Location not specified or not Wire Center specifi>>			(1,296)		(1,296)															
WVNSCAF	<<Location not specified or not Wire Center specifi>>			1		1															
WVNSCAF	<<Location not specified or not Wire Center specifi>>			36,238		36,238			3,906			29,501		4,831							
WVNSCAF	<<Location not specified or not Wire Center specifi>>			(1,185)		(1,185)						(1,185)									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			(211)		(211)						(211)									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			(747)		(747)						(747)									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			(218)		(218)						(218)									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			1,481		1,481						1,481									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			2		2						2									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			(148)		(148)						(148)									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			(107)		(107)						(107)									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			1,944		1,944						1,944									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			(482)		(482)						(482)									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			(277)		(277)						(277)									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			305		305						305									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			(2,793)		(2,793)						(2,793)									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			3,329		3,329						3,329									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			(526)		(526)						(526)									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			(23,569)		(23,569)						(23,569)									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			110		110						110									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			14		14						14									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			404		404						404									
WVNSCAF	<<Location not specified or not Wire Center specifi>>			5,841		5,841						5,841									
TOTALS				1,900,005,105		(48,196,524)	282,483	52,864,560	31,044,715	7,653,061	64,113,984	1,109,626	188,560,073	378,052,467	603,621,152	260,927,836	45,090,035	316,205,616			

Sources: AT&T-CA Response to DR 11-A-8.

7 | AT&T Corporate and California Financials and ILEC Investment Policies: Update

Table 7.11 GROSS PLANT ADDITIONS BY WIRE CENTER - 2018-2019 (continued)		US O&A Plant Account		Sorted by Total Wire Center Gross Plant Additions - Largest to smallest	
WIRE CENTER	2018-2019	2017-2018	2018-2019	2017-2018	2018-2019
MSBSCA03	26590	1,567,659	11	145	8,871
BLKCA14	1,658,88	2,128,359	130,511	682,459	7,614
BLKCA11	8,707,41	4,329	4,853	147,078	5,534
BLKCA12	1,206,68	737,678	1,235	31,254	55,107
IRVNCAT1	1,984,215	2,585	1,406	264	14,956
IRVNCAT2	1,979,294	2,133,550	1,086	14,006	7,486
DELNCA1	3,339,817	3,376	1,884,181	6,330	5,222
DELNCA2	1,075,320	1,838,917	2	33,881	25
DELNCA3	2,002,808	1,131,4	680	1,015	1,425
BKFDCA19	1,914,820	1,752,291	10,748	121,695	83,239
BKFDCA18	1,897,995	2,006,878	17,291	467,843	1,290
VLTCAT1	1,889,300	1,129,464	138	259,470	1,200
VLTCAT2	1,889,300	1,129,464	138	259,470	1,200
VLTCAT3	1,889,300	1,129,464	138	259,470	1,200
VLTCAT4	1,889,300	1,129,464	138	259,470	1,200
VLTCAT5	1,889,300	1,129,464	138	259,470	1,200
VLTCAT6	1,889,300	1,129,464	138	259,470	1,200
VLTCAT7	1,889,300	1,129,464	138	259,470	1,200
VLTCAT8	1,889,300	1,129,464	138	259,470	1,200
VLTCAT9	1,889,300	1,129,464	138	259,470	1,200
VLTCAT10	1,889,300	1,129,464	138	259,470	1,200
VLTCAT11	1,889,300	1,129,464	138	259,470	1,200
VLTCAT12	1,889,300	1,129,464	138	259,470	1,200
VLTCAT13	1,889,300	1,129,464	138	259,470	1,200
VLTCAT14	1,889,300	1,129,464	138	259,470	1,200
VLTCAT15	1,889,300	1,129,464	138	259,470	1,200
VLTCAT16	1,889,300	1,129,464	138	259,470	1,200
VLTCAT17	1,889,300	1,129,464	138	259,470	1,200
VLTCAT18	1,889,300	1,129,464	138	259,470	1,200
VLTCAT19	1,889,300	1,129,464	138	259,470	1,200
VLTCAT20	1,889,300	1,129,464	138	259,470	1,200
VLTCAT21	1,889,300	1,129,464	138	259,470	1,200
VLTCAT22	1,889,300	1,129,464	138	259,470	1,200
VLTCAT23	1,889,300	1,129,464	138	259,470	1,200
VLTCAT24	1,889,300	1,129,464	138	259,470	1,200
VLTCAT25	1,889,300	1,129,464	138	259,470	1,200
VLTCAT26	1,889,300	1,129,464	138	259,470	1,200
VLTCAT27	1,889,300	1,129,464	138	259,470	1,200
VLTCAT28	1,889,300	1,129,464	138	259,470	1,200
VLTCAT29	1,889,300	1,129,464	138	259,470	1,200
VLTCAT30	1,889,300	1,129,464	138	259,470	1,200
VLTCAT31	1,889,300	1,129,464	138	259,470	1,200
VLTCAT32	1,889,300	1,129,464	138	259,470	1,200
VLTCAT33	1,889,300	1,129,464	138	259,470	1,200
VLTCAT34	1,889,300	1,129,464	138	259,470	1,200
VLTCAT35	1,889,300	1,129,464	138	259,470	1,200
VLTCAT36	1,889,300	1,129,464	138	259,470	1,200
VLTCAT37	1,889,300	1,129,464	138	259,470	1,200
VLTCAT38	1,889,300	1,129,464	138	259,470	1,200
VLTCAT39	1,889,300	1,129,464	138	259,470	1,200
VLTCAT40	1,889,300	1,129,464	138	259,470	1,200
VLTCAT41	1,889,300	1,129,464	138	259,470	1,200
VLTCAT42	1,889,300	1,129,464	138	259,470	1,200
VLTCAT43	1,889,300	1,129,464	138	259,470	1,200
VLTCAT44	1,889,300	1,129,464	138	259,470	1,200
VLTCAT45	1,889,300	1,129,464	138	259,470	1,200
VLTCAT46	1,889,300	1,129,464	138	259,470	1,200
VLTCAT47	1,889,300	1,129,464	138	259,470	1,200
VLTCAT48	1,889,300	1,129,464	138	259,470	1,200
VLTCAT49	1,889,300	1,129,464	138	259,470	1,200
VLTCAT50	1,889,300	1,129,464	138	259,470	1,200
VLTCAT51	1,889,300	1,129,464	138	259,470	1,200
VLTCAT52	1,889,300	1,129,464	138	259,470	1,200
VLTCAT53	1,889,300	1,129,464	138	259,470	1,200
VLTCAT54	1,889,300	1,129,464	138	259,470	1,200
VLTCAT55	1,889,300	1,129,464	138	259,470	1,200
VLTCAT56	1,889,300	1,129,464	138	259,470	1,200
VLTCAT57	1,889,300	1,129,464	138	259,470	1,200
VLTCAT58	1,889,300	1,129,464	138	259,470	1,200
VLTCAT59	1,889,300	1,129,464	138	259,470	1,200
VLTCAT60	1,889,300	1,129,464	138	259,470	1,200
VLTCAT61	1,889,300	1,129,464	138	259,470	1,200
VLTCAT62	1,889,300	1,129,464	138	259,470	1,200
VLTCAT63	1,889,300	1,129,464	138	259,470	1,200
VLTCAT64	1,889,300	1,129,464	138	259,470	1,200
VLTCAT65	1,889,300	1,129,464	138	259,470	1,200
VLTCAT66	1,889,300	1,129,464	138	259,470	1,200
VLTCAT67	1,889,300	1,129,464	138	259,470	1,200
VLTCAT68	1,889,300	1,129,464	138	259,470	1,200
VLTCAT69	1,889,300	1,129,464	138	259,470	1,200
VLTCAT70	1,889,300	1,129,464	138	259,470	1,200
VLTCAT71	1,889,300	1,129,464	138	259,470	1,200
VLTCAT72	1,889,300	1,129,464	138	259,470	1,200
VLTCAT73	1,889,300	1,129,464	138	259,470	1,200
VLTCAT74	1,889,300	1,129,464	138	259,470	1,200
VLTCAT75	1,889,300	1,129,464	138	259,470	1,200
VLTCAT76	1,889,300	1,129,464	138	259,470	1,200
VLTCAT77	1,889,300	1,129,464	138	259,470	1,200
VLTCAT78	1,889,300	1,129,464	138	259,470	1,200
VLTCAT79	1,889,300	1,129,464	138	259,470	1,200
VLTCAT80	1,889,300	1,129,464	138	259,470	1,200
VLTCAT81	1,889,300	1,129,464	138	259,470	1,200
VLTCAT82	1,889,300	1,129,464	138	259,470	1,200
VLTCAT83	1,889,300	1,129,464	138	259,470	1,200
VLTCAT84	1,889,300	1,129,464	138	259,470	1,200
VLTCAT85	1,889,300	1,129,464	138	259,470	1,200
VLTCAT86	1,889,300	1,129,464	138	259,470	1,200
VLTCAT87	1,889,300	1,129,464	138	259,470	1,200
VLTCAT88	1,889,300	1,129,464	138	259,470	1,200
VLTCAT89	1,889,300	1,129,464	138	259,470	1,200
VLTCAT90	1,889,300	1,129,464	138	259,470	1,200
VLTCAT91	1,889,300	1,129,464	138	259,470	1,200
VLTCAT92	1,889,300	1,129,464	138	259,470	1,200
VLTCAT93	1,889,300	1,129,464	138	259,470	1,200
VLTCAT94	1,889,300	1,129,464	138	259,470	1,200
VLTCAT95	1,889,300	1,129,464	138	259,470	1,200
VLTCAT96	1,889,300	1,129,464	138	259,470	1,200
VLTCAT97	1,889,300	1,129,464	138	259,470	1,200
VLTCAT98	1,889,300	1,129,464	138	259,470	1,200
VLTCAT99	1,889,300	1,129,464	138	259,470	1,200
VLTCAT100	1,889,300	1,129,464	138	259,470	1,200



Table 7.11 GROSS PLANT ADDITIONS BY WIRE CENTER - 2018-2019 (continued)		US O&A Plant Account		Sorted by Total Wire Center Gross Plant Additions - Largest to smallest		
WIRE CENTER	2018-2019	2018-2019	2018-2019	2018-2019	2018-2019	
PLACATA1	San Diego	458,033	(6,887)	(6,887)	464,920	72
SUDACA11	Puma Valley	453,811	4,978	4,978	458,789	1,007
SUDCA12	Sacramento	433,171	(6,329)	(6,329)	439,500	3
WNSPCA12	San Diego	433,131	(6,329)	(6,329)	439,460	310
WNSPCA11	Winnemuccia	433,059	18,105	18,105	451,164	6,152
TUMLCA11	Tulare	431,706	(88)	(88)	431,794	3,066
PNKYCA11	Pine Valley	429,915	(6,329)	(6,329)	436,244	1,584
FRNCA11	Fresno	420,915	(6,329)	(6,329)	427,244	821
STACCA11	Starkville	416,650	6,002	6,002	422,652	0
STACCA12	South Tahoe	416,650	6,002	6,002	422,652	0
STACCA13	Starkville	416,650	6,002	6,002	422,652	0
STACCA14	Starkville	416,650	6,002	6,002	422,652	0
STACCA15	Starkville	416,650	6,002	6,002	422,652	0
STACCA16	Starkville	416,650	6,002	6,002	422,652	0
STACCA17	Starkville	416,650	6,002	6,002	422,652	0
STACCA18	Starkville	416,650	6,002	6,002	422,652	0
STACCA19	Starkville	416,650	6,002	6,002	422,652	0
STACCA20	Starkville	416,650	6,002	6,002	422,652	0
STACCA21	Starkville	416,650	6,002	6,002	422,652	0
STACCA22	Starkville	416,650	6,002	6,002	422,652	0
STACCA23	Starkville	416,650	6,002	6,002	422,652	0
STACCA24	Starkville	416,650	6,002	6,002	422,652	0
STACCA25	Starkville	416,650	6,002	6,002	422,652	0
STACCA26	Starkville	416,650	6,002	6,002	422,652	0
STACCA27	Starkville	416,650	6,002	6,002	422,652	0
STACCA28	Starkville	416,650	6,002	6,002	422,652	0
STACCA29	Starkville	416,650	6,002	6,002	422,652	0
STACCA30	Starkville	416,650	6,002	6,002	422,652	0
STACCA31	Starkville	416,650	6,002	6,002	422,652	0
STACCA32	Starkville	416,650	6,002	6,002	422,652	0
STACCA33	Starkville	416,650	6,002	6,002	422,652	0
STACCA34	Starkville	416,650	6,002	6,002	422,652	0
STACCA35	Starkville	416,650	6,002	6,002	422,652	0
STACCA36	Starkville	416,650	6,002	6,002	422,652	0
STACCA37	Starkville	416,650	6,002	6,002	422,652	0
STACCA38	Starkville	416,650	6,002	6,002	422,652	0
STACCA39	Starkville	416,650	6,002	6,002	422,652	0
STACCA40	Starkville	416,650	6,002	6,002	422,652	0
STACCA41	Starkville	416,650	6,002	6,002	422,652	0
STACCA42	Starkville	416,650	6,002	6,002	422,652	0
STACCA43	Starkville	416,650	6,002	6,002	422,652	0
STACCA44	Starkville	416,650	6,002	6,002	422,652	0
STACCA45	Starkville	416,650	6,002	6,002	422,652	0
STACCA46	Starkville	416,650	6,002	6,002	422,652	0
STACCA47	Starkville	416,650	6,002	6,002	422,652	0
STACCA48	Starkville	416,650	6,002	6,002	422,652	0
STACCA49	Starkville	416,650	6,002	6,002	422,652	0
STACCA50	Starkville	416,650	6,002	6,002	422,652	0
STACCA51	Starkville	416,650	6,002	6,002	422,652	0
STACCA52	Starkville	416,650	6,002	6,002	422,652	0
STACCA53	Starkville	416,650	6,002	6,002	422,652	0
STACCA54	Starkville	416,650	6,002	6,002	422,652	0
STACCA55	Starkville	416,650	6,002	6,002	422,652	0
STACCA56	Starkville	416,650	6,002	6,002	422,652	0
STACCA57	Starkville	416,650	6,002	6,002	422,652	0
STACCA58	Starkville	416,650	6,002	6,002	422,652	0
STACCA59	Starkville	416,650	6,002	6,002	422,652	0
STACCA60	Starkville	416,650	6,002	6,002	422,652	0
STACCA61	Starkville	416,650	6,002	6,002	422,652	0
STACCA62	Starkville	416,650	6,002	6,002	422,652	0
STACCA63	Starkville	416,650	6,002	6,002	422,652	0
STACCA64	Starkville	416,650	6,002	6,002	422,652	0
STACCA65	Starkville	416,650	6,002	6,002	422,652	0
STACCA66	Starkville	416,650	6,002	6,002	422,652	0
STACCA67	Starkville	416,650	6,002	6,002	422,652	0
STACCA68	Starkville	416,650	6,002	6,002	422,652	0
STACCA69	Starkville	416,650	6,002	6,002	422,652	0
STACCA70	Starkville	416,650	6,002	6,002	422,652	0
STACCA71	Starkville	416,650	6,002	6,002	422,652	0
STACCA72	Starkville	416,650	6,002	6,002	422,652	0
STACCA73	Starkville	416,650	6,002	6,002	422,652	0
STACCA74	Starkville	416,650	6,002	6,002	422,652	0
STACCA75	Starkville	416,650	6,002	6,002	422,652	0
STACCA76	Starkville	416,650	6,002	6,002	422,652	0
STACCA77	Starkville	416,650	6,002	6,002	422,652	0
STACCA78	Starkville	416,650	6,002	6,002	422,652	0
STACCA79	Starkville	416,650	6,002	6,002	422,652	0
STACCA80	Starkville	416,650	6,002	6,002	422,652	0
STACCA81	Starkville	416,650	6,002	6,002	422,652	0
STACCA82	Starkville	416,650	6,002	6,002	422,652	0
STACCA83	Starkville	416,650	6,002	6,002	422,652	0
STACCA84	Starkville	416,650	6,002	6,002	422,652	0
STACCA85	Starkville	416,650	6,002	6,002	422,652	0
STACCA86	Starkville	416,650	6,002	6,002	422,652	0
STACCA87	Starkville	416,650	6,002	6,002	422,652	0
STACCA88	Starkville	416,650	6,002	6,002	422,652	0
STACCA89	Starkville	416,650	6,002	6,002	422,652	0
STACCA90	Starkville	416,650	6,002	6,002	422,652	0
STACCA91	Starkville	416,650	6,002	6,002	422,652	0
STACCA92	Starkville	416,650	6,002	6,002	422,652	0
STACCA93	Starkville	416,650	6,002	6,002	422,652	0
STACCA94	Starkville	416,650	6,002	6,002	422,652	0
STACCA95	Starkville	416,650	6,002	6,002	422,652	0
STACCA96	Starkville	416,650	6,002	6,002	422,652	0
STACCA97	Starkville	416,650	6,002	6,002	422,652	0
STACCA98	Starkville	416,650	6,002	6,002	422,652	0
STACCA99	Starkville	416,650	6,002	6,002	422,652	0
STACCA100	Starkville	416,650	6,002	6,002	422,652	0



Table 7.11 GROSS PLANT ADDITIONS BY WIRE CENTER - 2018-2019 (Continued) (Sorted by Total Wire Center Gross Plant Additions - Largest to smallest)

Wire Center	Plant	155,620	(1,978)	(15)	(8,236)	(15)	336	(8,972)	(6,936)	(0)	99	(4,127)
RVSCA13	Plant	155,620	15,317									
RVSCA14	Plant	155,620	15,317									
RVSCA15	Plant	155,620	15,317									
RVSCA16	Plant	155,620	15,317									
RVSCA17	Plant	155,620	15,317									
RVSCA18	Plant	155,620	15,317									
RVSCA19	Plant	155,620	15,317									
RVSCA20	Plant	155,620	15,317									
RVSCA21	Plant	155,620	15,317									
RVSCA22	Plant	155,620	15,317									
RVSCA23	Plant	155,620	15,317									
RVSCA24	Plant	155,620	15,317									
RVSCA25	Plant	155,620	15,317									
RVSCA26	Plant	155,620	15,317									
RVSCA27	Plant	155,620	15,317									
RVSCA28	Plant	155,620	15,317									
RVSCA29	Plant	155,620	15,317									
RVSCA30	Plant	155,620	15,317									
RVSCA31	Plant	155,620	15,317									
RVSCA32	Plant	155,620	15,317									
RVSCA33	Plant	155,620	15,317									
RVSCA34	Plant	155,620	15,317									
RVSCA35	Plant	155,620	15,317									
RVSCA36	Plant	155,620	15,317									
RVSCA37	Plant	155,620	15,317									
RVSCA38	Plant	155,620	15,317									
RVSCA39	Plant	155,620	15,317									
RVSCA40	Plant	155,620	15,317									
RVSCA41	Plant	155,620	15,317									
RVSCA42	Plant	155,620	15,317									
RVSCA43	Plant	155,620	15,317									
RVSCA44	Plant	155,620	15,317									
RVSCA45	Plant	155,620	15,317									
RVSCA46	Plant	155,620	15,317									
RVSCA47	Plant	155,620	15,317									
RVSCA48	Plant	155,620	15,317									
RVSCA49	Plant	155,620	15,317									
RVSCA50	Plant	155,620	15,317									
RVSCA51	Plant	155,620	15,317									
RVSCA52	Plant	155,620	15,317									
RVSCA53	Plant	155,620	15,317									
RVSCA54	Plant	155,620	15,317									
RVSCA55	Plant	155,620	15,317									
RVSCA56	Plant	155,620	15,317									
RVSCA57	Plant	155,620	15,317									
RVSCA58	Plant	155,620	15,317									
RVSCA59	Plant	155,620	15,317									
RVSCA60	Plant	155,620	15,317									
RVSCA61	Plant	155,620	15,317									
RVSCA62	Plant	155,620	15,317									
RVSCA63	Plant	155,620	15,317									
RVSCA64	Plant	155,620	15,317									
RVSCA65	Plant	155,620	15,317									
RVSCA66	Plant	155,620	15,317									
RVSCA67	Plant	155,620	15,317									
RVSCA68	Plant	155,620	15,317									
RVSCA69	Plant	155,620	15,317									
RVSCA70	Plant	155,620	15,317									
RVSCA71	Plant	155,620	15,317									
RVSCA72	Plant	155,620	15,317									
RVSCA73	Plant	155,620	15,317									
RVSCA74	Plant	155,620	15,317									
RVSCA75	Plant	155,620	15,317									
RVSCA76	Plant	155,620	15,317									
RVSCA77	Plant	155,620	15,317									
RVSCA78	Plant	155,620	15,317									
RVSCA79	Plant	155,620	15,317									
RVSCA80	Plant	155,620	15,317									
RVSCA81	Plant	155,620	15,317									
RVSCA82	Plant	155,620	15,317									
RVSCA83	Plant	155,620	15,317									
RVSCA84	Plant	155,620	15,317									
RVSCA85	Plant	155,620	15,317									
RVSCA86	Plant	155,620	15,317									
RVSCA87	Plant	155,620	15,317									
RVSCA88	Plant	155,620	15,317									
RVSCA89	Plant	155,620	15,317									
RVSCA90	Plant	155,620	15,317									
RVSCA91	Plant	155,620	15,317									
RVSCA92	Plant	155,620	15,317									
RVSCA93	Plant	155,620	15,317									
RVSCA94	Plant	155,620	15,317									
RVSCA95	Plant	155,620	15,317									
RVSCA96	Plant	155,620	15,317									
RVSCA97	Plant	155,620	15,317									
RVSCA98	Plant	155,620	15,317									
RVSCA99	Plant	155,620	15,317									
RVSCA100	Plant	155,620	15,317									



Table 7.11 GROSS PLANT ADDITIONS BY WIRE CENTER - 2018-2019 (continued)		US O&A Plant Account			Total Wire Center Gross Plant Additions - Largest to smallest			US O&A Plant Account		
FWCNAME	Location not specified or not Wire Center specific<>>	6,618	5,635	846	6,618	5,635	846	6,618	5,635	846
AT&TCAFF	<>>	6,618	5,635	846	6,618	5,635	846	6,618	5,635	846
ALBCCABU	<>>	6,452	6,207	-	6,452	6,207	-	6,452	6,207	-
SLBCCAF	<>>	6,207	6,207	-	6,207	6,207	-	6,207	6,207	-
WNNWSCAF	<>>	5,841	5,841	-	5,841	5,841	-	5,841	5,841	-
WNNWSCAF (Eink.2)	<>>	4,951	4,951	-	4,951	4,951	-	4,951	4,951	-
CNCSOAB	<>>	4,885	4,885	-	4,885	4,885	-	4,885	4,885	-
WNNWSCAF	<>>	4,197	4,197	-	4,197	4,197	-	4,197	4,197	-
ETWNCXF	<>>	3,978	3,978	-	3,978	3,978	-	3,978	3,978	-
WLWNCXF	<>>	3,810	3,810	-	3,810	3,810	-	3,810	3,810	-
WNCWCF	<>>	3,793	3,793	-	3,793	3,793	-	3,793	3,793	-
IGNDCXU	<>>	3,753	3,753	-	3,753	3,753	-	3,753	3,753	-
WNNWSCAF	<>>	3,326	3,326	-	3,326	3,326	-	3,326	3,326	-
WNNWSCAF	<>>	3,329	3,329	-	3,329	3,329	-	3,329	3,329	-
WNNWSCAF	<>>	3,182	3,182	-	3,182	3,182	-	3,182	3,182	-
WNNWSCAF	<>>	2,835	2,835	-	2,835	2,835	-	2,835	2,835	-
COVNCXF	<>>	2,730	2,730	-	2,730	2,730	-	2,730	2,730	-
SFKCCAZ	<>>	2,730	2,730	-	2,730	2,730	-	2,730	2,730	-
SKTCANZ	<>>	2,224	2,224	-	2,224	2,224	-	2,224	2,224	-
WNNWSCAF	<>>	2,094	2,094	-	2,094	2,094	-	2,094	2,094	-
WNNWSCAF	<>>	1,944	1,944	-	1,944	1,944	-	1,944	1,944	-
WNNWSCAF	<>>	1,807	1,807	-	1,807	1,807	-	1,807	1,807	-
WNNWSCAF	<>>	1,782	1,782	-	1,782	1,782	-	1,782	1,782	-
WNNWSCAF	<>>	1,702	1,702	-	1,702	1,702	-	1,702	1,702	-
WNNWSCAF	<>>	1,654	1,654	-	1,654	1,654	-	1,654	1,654	-
WNNWSCAF	<>>	1,481	1,481	-	1,481	1,481	-	1,481	1,481	-
WNNWSCAF	<>>	1,449	1,449	-	1,449	1,449	-	1,449	1,449	-
WNNWSCAF	<>>	1,280	1,280	-	1,280	1,280	-	1,280	1,280	-
WNNWSCAF	<>>	786	786	-	786	786	-	786	786	-
WNNWSCAF	<>>	767	767	-	767	767	-	767	767	-
WNNWSCAF	<>>	674	674	-	674	674	-	674	674	-
WNNWSCAF	<>>	485	485	-	485	485	-	485	485	-
WNNWSCAF	<>>	458	458	-	458	458	-	458	458	-
WNNWSCAF	<>>	396	396	-	396	396	-	396	396	-
WNNWSCAF	<>>	372	372	-	372	372	-	372	372	-
WNNWSCAF	<>>	366	366	-	366	366	-	366	366	-
WNNWSCAF	<>>	305	305	-	305	305	-	305	305	-
WNNWSCAF	<>>	298	298	-	298	298	-	298	298	-
WNNWSCAF	<>>	285	285	-	285	285	-	285	285	-
WNNWSCAF	<>>	213	213	-	213	213	-	213	213	-
WNNWSCAF	<>>	190	190	-	190	190	-	190	190	-
WNNWSCAF	<>>	168	168	-	168	168	-	168	168	-
WNNWSCAF	<>>	148	148	-	148	148	-	148	148	-
WNNWSCAF	<>>	39	39	-	39	39	-	39	39	-
WNNWSCAF	<>>	14	14	-	14	14	-	14	14	-
WNNWSCAF	<>>	4	4	-	4	4	-	4	4	-
WNNWSCAF	<>>	2	2	-	2	2	-	2	2	-
WNNWSCAF	<>>	1	1	-	1	1	-	1	1	-
WNNWSCAF	<>>	107	107	-	107	107	-	107	107	-
WNNWSCAF	<>>	118	118	-	118	118	-	118	118	-
WNNWSCAF	<>>	148	148	-	148	148	-	148	148	-
WNNWSCAF	<>>	211	211	-	211	211	-	211	211	-
WNNWSCAF	<>>	277	277	-	277	277	-	277	277	-
WNNWSCAF	<>>	482	482	-	482	482	-	482	482	-
WNNWSCAF	<>>	526	526	-	526	526	-	526	526	-
WNNWSCAF	<>>	747	747	-	747	747	-	747	747	-
WNNWSCAF	<>>	1,165	1,165	-	1,165	1,165	-	1,165	1,165	-
WNNWSCAF	<>>	1,492	1,492	-	1,492	1,492	-	1,492	1,492	-
WNNWSCAF	<>>	1,492	1,492	-	1,492	1,492	-	1,492	1,492	-
WNNWSCAF	<>>	6,809	6,809	-	6,809	6,809	-	6,809	6,809	-
WNNWSCAF	<>>	6,383	6,383	-	6,383	6,383	-	6,383	6,383	-
WNNWSCAF	<>>	4,088	4,088	-	4,088	4,088	-	4,088	4,088	-
WNNWSCAF	<>>	1,138	1,138	-	1,138	1,138	-	1,138	1,138	-
WNNWSCAF	<>>	8,860	8,860	-	8,860	8,860	-	8,860	8,860	-
WNNWSCAF	<>>	23,385	23,385	-	23,385	23,385	-	23,385	23,385	-
WNNWSCAF	<>>	42,668	42,668	-	42,668	42,668	-	42,668	42,668	-
WNNWSCAF	<>>	71,042	71,042	-	71,042	71,042	-	71,042	71,042	-
WNNWSCAF	<>>	75,862	75,862	-	75,862	75,862	-	75,862	75,862	-
WNNWSCAF	<>>	115,774	115,774	-	115,774	115,774	-	115,774	115,774	-
WNNWSCAF	<>>	124,546	124,546	-	124,546	124,546	-	124,546	124,546	-
WNNWSCAF	<>>	232,239	232,239	-	232,239	232,239	-	232,239	232,239	-
WNNWSCAF	<>>	1,458,359	1,458,359	-	1,458,359	1,458,359	-	1,458,359	1,458,359	-
WNNWSCAF	<>>	1,055,263	1,055,263	-	1,055,263	1,055,263	-	1,055,263	1,055,263	-
WNNWSCAF	<>>	237,351	237,351	-	237,351	237,351	-	237,351	237,351	-
WNNWSCAF	<>>	1,350,792	1,350,792	-	1,350,792	1,350,792	-	1,350,792	1,350,792	-
WNNWSCAF	<>>	360,700	360,700	-	360,700	360,700	-	360,700	360,700	-
WNNWSCAF	<>>	3,491,332	3,491,332	-	3,491,332	3,491,332	-	3,491,332	3,491,332	-
WNNWSCAF	<>>	2,858,264	2,858,264	-	2,858,264	2,858,264	-	2,858,264	2,858,264	-
WNNWSCAF	<>>	429,886	429,886	-	429,886	429,886	-	429,886	429,886	-
WNNWSCAF	<>>	1,900,030.05	1,900,030.05	-	1,900,030.05	1,900,030.05	-	1,900,030.05	1,900,030.05	-
WNNWSCAF	<>>	48,196,524	48,196,524	-	48,196,524	48,196,524	-	48,196,524	48,196,524	-
WNNWSCAF	<>>	282,463	282,463	-	282,463	282,463	-	282,463	282,463	-
WNNWSCAF	<>>	52,584,580	52,584,580	-	52,584,580	52,584,580	-	52,584,580	52,584,580	-
WNNWSCAF	<>>	31,044,715	31,044,715	-	31,044,715	31,044,715	-	31,044,715	31,044,715	-
WNNWSCAF	<>>	64,113,984	64,113,984	-	64,113,984	64,113,984	-	64,113,984	64,113,984	-
WNNWSCAF	<>>	1,109,626	1,109,626	-	1,109,626	1,109,626	-	1,109,626	1,109,626	-
WNNWSCAF	<>>	188,569,073	188,569,073	-	188,569,073	188,569,073	-	188,569,073	188,569,073	-
WNNWSCAF	<>>	603,621,152	603,621,152	-	603,621,152	603,621,152	-	603,621,152	603,621,152	-
WNNWSCAF	<>>	280,027,836	280,027,836	-	280,027,836	280,027,836	-	280,027,836	280,027,836	-
WNNWSCAF	<>>	43,980,535	43,980,535	-	43,980,535	43,980,535	-	43,980,535	43,980,535	-
WNNWSCAF	<>>	318,205,818	318,205,818	-	318,205,818	318,205,818	-	318,205,818	318,205,818	-

Source: AT&T-CA Response to DR 11-4-B



Table 7.1.D GROSS PLANT ADDITIONS BY WIRE CENTER - 2016-2019 (Continued) (Sorted by Average Gross Addition expenditure per switched access line - Largest to smallest)

GLU	WG No.	WG Name	County	Jan 2019 AUs	\$ Avg AL	2019-20	2019-21	2019-22	2020-21	2021-22	2022-23	2023	2024	2025	2026	2027	
YRANGA12	619786	Red Bluff	Orange	431,461	1,590.41	320,077	448	213,146	66,831	56,551	60,342	-	3,766	-	-	238	244
YRANGA21	714889	Gypsum Canyon	Orange	97,082	1,702.99	67,823	846	15,230	3,642	3,766	50,342	0	56,107	-	0	-	63
YRANGA22	592108	Plaley	Tulare	1,680.04	496.650	1,966,970	1,263	2,885	431	431	3,125	2,228	160,740	5,089	-	-	-
YRANGA23	592109	Lemore Main	Kings	1,681.13	496.654	3,950,988	3,508	3,003	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA24	592110	Redford	Orange	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA25	925600	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA26	925601	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA27	925602	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA28	925603	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA29	925604	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA30	925605	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA31	925606	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA32	925607	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA33	925608	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA34	925609	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA35	925610	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA36	925611	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA37	925612	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA38	925613	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA39	925614	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA40	925615	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA41	925616	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA42	925617	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA43	925618	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA44	925619	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA45	925620	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA46	925621	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA47	925622	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA48	925623	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA49	925624	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA50	925625	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA51	925626	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA52	925627	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA53	925628	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA54	925629	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA55	925630	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA56	925631	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA57	925632	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA58	925633	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA59	925634	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526
YRANGA60	925635	Phishing Bay Point Willow	Contra Costa	1,681.13	496.654	1,986,398	1,070	3,238	1,985	1,985	3,186	897	486	2,054	-	-	526



Table 7.1.0 GROSS PLANT ADDITIONS BY WIRE CENTER - 2018-2019 (Continued) (Sorted by Average Gross Addition expenditure per switched access line - Largest to smallest)

GLU	WG VCS	WG VCS	Jun 2019 A/S	\$ P U	2018-19	2017-18	2016-17	2015-16	2014-15	2013-14	2012-13	2011-12	2010-11	2009-10	2008-09	2007-08	2006-07	2005-06	2004-05	2003-04	2002-03	2001-02	2000-01
HNPCAA01	71485	71485	71485	6,751	1,134,422	1,142,162	1,134,422	1,134,422	1,134,422	1,134,422	1,134,422	1,134,422	1,134,422	1,134,422	1,134,422	1,134,422	1,134,422	1,134,422	1,134,422	1,134,422	1,134,422	1,134,422	1,134,422
HNPCAA01	32617	32617	Huntington Park	Los Angeles	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033	8,667,033
HNPCAA01	19450	19450	Contra Costa	Los Angeles	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940	1,194,940
HNPCAA01	2727	2727	Lafayette	Contra Costa	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857	2,727,857
HNPCAA01	74811	74811	ANHN Hills	Orange	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500	1,916,500
HNPCAA01	68134	68134	Solano	Los Angeles	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700	1,189,700
HNPCAA01	65905	65905	San Bruno	Los Angeles	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022	1,189,022
HNPCAA01	31015	31015	Stardford	Los Angeles	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627	1,176,627
HNPCAA01	20913	20913	Los Blancos	Kings	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000	1,008,000
HNPCAA01	15627	15627	Los Blancos	Merced	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755
HNPCAA01	15627	15627	Los Blancos	Merced	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755
HNPCAA01	15627	15627	Los Blancos	Merced	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755
HNPCAA01	15627	15627	Los Blancos	Merced	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755
HNPCAA01	15627	15627	Los Blancos	Merced	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755
HNPCAA01	15627	15627	Los Blancos	Merced	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755
HNPCAA01	15627	15627	Los Blancos	Merced	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755
HNPCAA01	15627	15627	Los Blancos	Merced	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755
HNPCAA01	15627	15627	Los Blancos	Merced	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755
HNPCAA01	15627	15627	Los Blancos	Merced	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755
HNPCAA01	15627	15627	Los Blancos	Merced	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755	2,483,755

7 | AT&T Corporate and California Financials and ILEC Investment Financials: Update

GLU	WG No.	WG Name	Country	Jan 2019 AUs	5/31/19	6/30/19	2019-2	2019-1	2019-2	2019-1	2019-2	2019-1	2019-2	2019-1	2019-2	2019-1	2019-2
ARNCA01	53029	La Costa	California	8,577,824	8,627,814	9,014,765	103,163	103,163	103,163	103,163	103,163	103,163	103,163	103,163	103,163	103,163	103,163
TNRCA01	31091	Torrance	California	4,260	4,088,914	4,004,826	(184,300)	(840,300)	11,245	12,807	834,341	13,373	10,628	834,341	13,373	10,628	834,341
ALBNA01	53028	Alhambra Main	California	5,789	5,642,931	5,251,945	(2,540)	(2,540)	(228,650)	12,807	408,274	(2,540)	(2,540)	408,274	(2,540)	(2,540)	408,274
ELBNA01	66136	Elgin	California	4,004	3,152,214	2,973,320	(178,894)	(32,740)	11,760	32,288	1,174	3,288	2,860	1,174	3,288	2,860	1,174
ELBNA02	61929	Elgin	California	4,004	3,176,321	3,064,976	(111,345)	(111,345)	4,128	(54,086)	4,128	3,811	1,401	4,128	3,811	1,401	4,128
ELBNA03	61930	Elgin	California	4,004	3,176,321	3,064,976	(111,345)	(111,345)	4,128	(54,086)	4,128	3,811	1,401	4,128	3,811	1,401	4,128
ELBNA04	61931	Elgin	California	4,004	3,176,321	3,064,976	(111,345)	(111,345)	4,128	(54,086)	4,128	3,811	1,401	4,128	3,811	1,401	4,128
ELBNA05	61932	Elgin	California	4,004	3,176,321	3,064,976	(111,345)	(111,345)	4,128	(54,086)	4,128	3,811	1,401	4,128	3,811	1,401	4,128
FRMCA01	51005	Fremont Adams Oliver 12	California	6,839	6,418,634	6,019,587	(409,047)	(91,944)	(91,944)	6,019,587	6,418,634	(409,047)	(91,944)	6,019,587	6,418,634	(409,047)	(91,944)
FRMCA02	81847	Fremont Magnolia	California	12,672	11,833,439	9,400,442	(2,433,000)	(30,816)	(30,816)	(2,433,000)	9,400,442	(2,433,000)	(30,816)	(2,433,000)	9,400,442	(2,433,000)	(30,816)
FRMCA03	53046	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA04	53047	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA05	53048	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA06	53049	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA07	53050	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA08	53051	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA09	53052	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA10	53053	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA11	53054	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA12	53055	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA13	53056	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA14	53057	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA15	53058	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA16	53059	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA17	53060	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA18	53061	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA19	53062	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA20	53063	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA21	53064	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA22	53065	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA23	53066	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA24	53067	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA25	53068	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA26	53069	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA27	53070	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA28	53071	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA29	53072	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA30	53073	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA31	53074	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA32	53075	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA33	53076	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA34	53077	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA35	53078	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA36	53079	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA37	53080	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA38	53081	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA39	53082	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA40	53083	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA41	53084	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA42	53085	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA43	53086	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA44	53087	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA45	53088	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA46	53089	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA47	53090	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA48	53091	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA49	53092	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA50	53093	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA51	53094	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA52	53095	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA53	53096	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA54	53097	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA55	53098	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)	850
FRMCA56	53099	Bulte	California	107	99,396	96,864	(2,532)	(2,532)	850	(648)	850	2,730	(648)	850	2,730	(648)</	

7 | AT&T Corporate and California Financials and ILEC Investment Policies: Update

GLU	WC No.	WC Name	County	Jan 2019 AUs	§ 162-6L	Table 7.12 GROSS PLANT ADDITIONS BY WIRE CENTER - 2018-2019 (Continued) (Sorted by Average Gross Addition expenditure per switched Access Line - Largest to smallest)													2444				
						2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443		2444			
CHIVCA11	709798	Chowchilla	San Joaquin	883	722,807	103,133	1,452	6,582	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HONECA11	209179	Shoshone	Madison	963	750,561	140,387	6,562	(8,562)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993	
HONECA12	209178	Shoshone	Madison	874	750,561	140,387	6,562	(8,562)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993	
HONECA13	209177	Shoshone	Madison	530	750,561	140,387	6,562	(8,562)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993	
HONGCA11	209176	Shoshone	Madison	531	749,900	140,387	6,562	(8,562)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993	
HONGCA12	209175	Shoshone	Madison	2,807	749,900	140,387	6,562	(8,562)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993	
HWYCA11	925025	Lawton	Alameda	6,279	745,211	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA12	925024	Lawton	Alameda	7,656	743,900	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA13	925023	Lawton	Alameda	1,837	740,090	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA14	925022	Lawton	Alameda	4,227	733,522	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA15	925021	Lawton	Alameda	1,803	733,522	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA16	925020	Lawton	Alameda	2,669	729,955	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA17	925019	Lawton	Alameda	69	729,955	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA18	925018	Lawton	Alameda	7,959	715,642	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA19	925017	Lawton	Alameda	2,489	714,450	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA20	925016	Lawton	Alameda	3,861	713,741	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA21	925015	Lawton	Alameda	4,571	712,977	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA22	925014	Lawton	Alameda	10,186	710,950	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA23	925013	Lawton	Alameda	11,153	707,271	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA24	925012	Lawton	Alameda	5,760	705,145	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA25	925011	Lawton	Alameda	3,091	700,945	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA26	925010	Lawton	Alameda	3,662	698,335	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA27	925009	Lawton	Alameda	1,946	698,335	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA28	925008	Lawton	Alameda	2,372	698,335	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA29	925007	Lawton	Alameda	5,400	687,869	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA30	925006	Lawton	Alameda	143	682,280	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA31	925005	Lawton	Alameda	5,609	681,960	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA32	925004	Lawton	Alameda	1,179	678,519	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA33	925003	Lawton	Alameda	4,088	672,966	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA34	925002	Lawton	Alameda	678	671,366	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA35	925001	Lawton	Alameda	4,226	669,590	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA36	925000	Lawton	Alameda	4,125	665,841	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA37	924999	Lawton	Alameda	497	661,377	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA38	924998	Lawton	Alameda	3,475	656,566	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA39	924997	Lawton	Alameda	2,206	654,003	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA40	924996	Lawton	Alameda	1,100	653,916	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA41	924995	Lawton	Alameda	2,388	651,310	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA42	924994	Lawton	Alameda	1,388	651,310	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA43	924993	Lawton	Alameda	1,026	650,671	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA44	924992	Lawton	Alameda	2,365	645,640	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA45	924991	Lawton	Alameda	645	644,400	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA46	924990	Lawton	Alameda	3,403	643,220	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA47	924989	Lawton	Alameda	643	643,220	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993
HWYCA48	924988	Lawton	Alameda	4,178	642,177	136,014	21,467	5,200	(49,749)	(29,963)	15,322	306	6,993	34,888	29,963	15,322	306	6,993	34,888	29,963	15,322	306	6,993

7 | AT&T Corporate and California Financials and ILEC Investment Policies: Update

Table 7.1-D. GROSS PLANT ADDITIONS BY WIRE CENTER - 2018-2019 (Continued) (Sorted by Average Gross Addition expenditure per switched access line - Largest to smallest)

GLI	WG No.	WG Name	County	City	2018	2019	2018-2019	U S O A Plant Account								
								2232.2	2411	2421	2422	2423	2426	2441		
HLVCA11	539432	Caruthers	Fresno		45,343	(6,500)	(51,843)	38	38	-	403	-	-	-	-	-
HRTHCA11	591857	Caruthers	Fresno		262,119	(241)	(262,360)	1,807	1,807	81	3,662	-	-	-	-	-
NSUNCA11	530480	North San Juan	Nevada		586,14	281,430	867,570	(6,000)	(6,000)	-	(77)	-	-	-	-	-
TNTNCA11	603390	Templeton	San Luis Obispo		585,86	478,825	1,064,685	(5,000)	(5,000)	57	(677)	-	-	-	-	-
BRBKCA13	816695	Burbank Thomson	Los Angeles		585,01	448,972	1,033,982	5,862	5,862	51	34,632	-	-	-	-	-
BRBKCA13	816695	Burbank Thomson	Los Angeles		585,01	448,972	1,033,982	5,862	5,862	51	34,632	-	-	-	-	-
SDADCA11	209216	San Andreas	Calaveras		577,79	732,982	1,310,771	7,743	7,743	8,915	6,220	-	-	-	-	-
PTVYCA11	707316	Polita Valley	Mendocino		575,43	303,825	879,255	1,403	1,403	821	(994)	-	-	-	-	-
BRNKCA10	925062	Blanco Ranch	Contra Costa		573,65	798,995	1,372,645	5,771	5,771	22,987	(552)	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-	-	-	-
LSANCA15	326396	LSAN Amintier	El Dorado		573,59	4,599,223	5,172,812	3,772	3,772	124,283	203	-	-			

Table 7.12 GROSS PLANT ADDITIONS BY WIRE CENTER -- 2018-2019 (Continued) (Sorted by Average Gross Addition expenditure per switched access line - Largest to smallest)

GLI	WS No.	WS Name	County	Jan 2019 ALS	\$ per AL	TO3AL	2033	2211	2212.1	2212.2	231	2321.2	2421	2422	2423	2426	2441
PELCAWF	<<Location not specified or not Wire Center specific>>			768		768											
SYMCAJL	<<Location not specified or not Wire Center specific>>			167		167											
BYMCAJL	<<Location not specified or not Wire Center specific>>			738		738											
WLDCAJF	<<Location not specified or not Wire Center specific>>			495		495											
ELWCAJF	<<Location not specified or not Wire Center specific>>			488		488											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			458		458											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			398		398											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			308		308											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			372		372											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			372		372											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			306		306											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			305		305											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			288		288											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			291		291											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			213		213											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			190		190											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			188		188											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			148		148											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			110		110											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			39		39											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			14		14											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			4		4											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			2		2											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			1		1											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			1		1											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			107		107											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			118		118											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			148		148											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			211		211											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			271		271											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			277		277											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			482		482											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			626		626											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			747		747											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			1188		1188											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			1482		1482											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			1482		1482											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			2793		2793											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			4809		4809											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			14321		14321											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			13355281		13355281											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			1359789		1359789											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			222		222											
WHTRCAJF	<<Location not specified or not Wire Center specific>>			28486846		28486846											
TOTALS				1390030105		1390030105		262463	52594380	31044715	7634061	64113984	378052487	609621152	260397686	438806935	315265818

Source: AT&T-CA Response to DR 11-A-8.

GO 133-D §9.7 Alternative Investments

As we discussed in our Phase 1 Report, in August 2016, the Commission issued a revised GO 133-D that imposes financial penalties upon ILECs that persistently fail to meet minimal POTS service quality standards. GO-133-D §§9.3, 9.4 and 9.5 provide for escalating daily fines where a carrier's failure to meet the required service standards persists for an extended period of time.⁵⁵ A total of \$9.1-million in fines was assessed against AT&T California since this provision became effective.⁵⁶ §9.7 allows offending carriers to submit an "Alternative Proposal for Mandatory Corrective Action" whereby carriers can avoid the fine by agreeing to invest an amount of at least double the fine if such an investment will be effective in remedying the service problem for which the fine had been imposed. This "alternative" opportunity is initiated by the carrier by submitting "a request to suspend the fine." Under this provision,

... carriers may propose, in their annual fine filing, to invest no less than twice the amount of their annual fine in a project (s) which improves service quality in a measurable way within 2 years. The proposal must demonstrate that 1) twice the amount of the fine is being spent, 2) the project (s) is an incremental expenditure with supporting financials (e.g. expenditure is in excess of the existing construction budget and/or staffing base), 3) the project (s) is designed to address a service quality deficiency and, 4) upon the project (s) completion, the carrier shall demonstrate the results for the purpose proposed.⁵⁷

Carriers can avoid fines either by meeting the GO-133-D §3 performance standards or by investing in network upgrades that will result in improved service quality overall. These investments must, however, be directed specifically at services that fall within the scope of GO 133-D, i.e., legacy circuit-switched voice lines. AT&T California has sought approval of alternative proposals for mandatory corrective action under § 9.7 in lieu of paying the assessed fines in 2017, 2018 and 2019, and the Commission has approved all of these requests. CD has been tracking the effectiveness of such "alternative investments" in improving service quality, but most of these projects have been completed so recently (or are still ongoing) that no conclusion as to their effectiveness in improving service quality can be drawn at this time.

55. D.16-08-021 (R.11-12-001), Adopted Aug. 18, 2016; Effective Aug. 18, 2016; Except Section 9 on fines, which is effective Jan. 1, 2017.

56. Resolution T-17625, issued November 8, 2018; Resolution T-17655, issued June 3, 2019; Resolution T-17721, issued December 17, 2020.

57. GO 133-D, §9.7.

Table 7.13 below provides a summary of the specific alternative investments that have been made by AT&T California during 2018-2019. A total of 100 AT&T California wire centers have been the recipients of these “alternative investments” over this two-year period. Based upon January 2019 access line counts, these wire centers served 481,441 access lines, representing 25.1% of the total 1,915,900 switched access lines that were being served by AT&T California at that time.

Table 7.14 provides the 2018-2019 GO 133-D §9.7 amounts together with 2018-2019 service quality metrics for each of the same 100 wire centers using five service quality metrics as presented earlier in Table 4A.6. The five metrics are (1) Out-of-Service per 100 Access Lines per month; (2) Out-of-Service over 24-hours per 100 Access Lines per month; (3) Percent Out-of-Service Conditions Cleared Within 24 Hours; (4) Days Required to Clear 90% of Out-of-Service Conditions; and (5) Average Out-of-Service Duration (in minutes). We have sorted the table by the Percent Out-of-Service Conditions Cleared Within 24 Hours. GO 133-D requires that 90% of all Out-of-Service conditions be cleared within 24 hours, a condition that AT&T California has never come even close to achieving.

Table 7.13

AT&T CALIFORNIA

GO 133-D \$9.7 "ALTERNATIVE PROPOSED INVESTMENTS"
2018-2019

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
408132	SNJSCA14	San Jose Foxworthy	Santa Clara	9,411	151,565	564,078	26.87%
530494	RDBLCA01	Red Bluff	Tehama	3,745	123,883	121,506	101.96%
916479	NSCRCA11	Wabash	Sacramento	7,088	95,277	412,604	23.09%
559245	FRSNCA14	Fresno West Highway City	Fresno	3,283	80,144	335,224	23.91%
530489	PLVLCA11	Placerville Main	El Dorado	7,102	78,185	445,092	17.57%
714789	SNANCA11	Bristol	Orange	9,617	73,863	264,596	27.92%
650006	BRLNCA01	Burlingame	San Mateo	7,936	72,737	106,149	68.52%
415061	SNFCCA06	SF Juniper Onondaga	San Francisco	11,364	67,367	293,567	22.95%
916502	SCRMCA13	SCRM Fruitridge	Sacramento	2,983	62,711	127,645	49.13%
559228	THRRCA11	Three Rivers	Tulare	609	59,250	99,547	59.52%
916451	FROKCA11	Fair Oaks	Sacramento	7,463	56,582	362,215	15.62%
310609	CMTNCA01	Compton	Los Angeles	9,969	51,395	1,171,795	4.39%
831102	BLCKCA11	Boulder Creek	Santa Cruz	1,051	51,244	106,508	48.11%
707292	FTBRCA02	Fort Bragg	Mendocino	3,227	49,006	571,959	8.57%
831141	WTVLCA01	Watsonville	Santa Cruz	7,582	48,755	199,766	24.41%
661367	DELNCA11	Delano	Tulare	1,939	48,637	230,364	21.11%
619700	ALPICA12	Alpine	San Diego	1,624	47,280	118,847	39.78%
530441	CTWDCA11	Cottonwood	Tehama	2,138	45,885	116,846	39.27%
650024	LSATCA11	Los Altos	Santa Clara	4,386	45,785	236,071	19.39%
530457	GRTWCA11	Georgetown	El Dorado	1,339	40,908	100,410	40.74%
650010	COLACA01	Colima Daly City	San Mateo	5,878	39,715	159,553	24.89%
916482	ORVACA11	Orangevale	Sacramento	2,287	39,700	90,970	43.64%
916536	FLSMCA14	Folsom Blue Ravine	Sacramento	1,768	39,374	49,751	79.14%
818648	NORGCA11	Northridge	Los Angeles	10,424	37,683	986,797	3.82%
650016	HMBACA12	Half Moon Bay	San Mateo	2,349	37,312	91,019	40.99%
408130	SNJSCA12	San Jose Dial Way	Santa Clara	13,069	36,755	282,004	13.03%
530504	SGSPCA11	Shingle Springs	El Dorado	3,431	34,518	268,615	12.85%
831126	SNCZCA11	Santa Cruz Capitola	Santa Cruz	4,979	32,778	126,850	25.84%
707321	SBSTCA11	Sebastapoli	Sonoma	2,794	32,610	351,030	9.29%

Table 7.13 GO 133-D \$9.7 "ALTERNATIVE PROPOSED INVESTMENTS" 2018-2019 (continued)

WC	CLLI	WC Name	County	GO 133-D \$9.7		Pct GO 133-D \$0.7
				Jan 2019 Access Lines	"Alternative Investments"	
707290	FRFDCA01	Fairfield	Solano	5,082	32,398	9.38%
916478	NHLDCA11	Edgewood N Highl	Sacramento	4,053	31,539	8.56%
916499	SCRMCA03	SCRM Garden	Sacramento	8,642	31,091	6.38%
530475	NVCYCA11	Nevada City	Nevada	3,415	29,760	16.96%
619752	LAMSCA01	La Mesa	San Diego	5,791	29,460	8.71%
530459	GRVYCA01	Grass Valley	Nevada	7,879	28,787	10.10%
707304	LWLKCA11	Lower Lake	Lake	1,965	27,689	8.99%
951765	PDLYCA11	Pedley	Riverside	2,466	27,450	6.30%
707315	PNARCA11	Point Arena	Mendocino	597	26,725	32.01%
916453	FLSMCA12	Folsom Nimbus	Sacramento	1,844	26,554	23.19%
530528	CNVYCA11	Central Valley	Shasta	1,528	23,261	48.84%
209236	WLLCCA11	Wallace	Calaveras	400	23,151	51.56%
925079	WNCKCA11	Wainut Creek	Contra Costa	11,153	22,950	4.53%
530469	LSMLCA11	Los Molinos	Tehama	355	21,947	47.10%
559194	MADRCA11	Madera Main	Madera	3,987	21,845	3.19%
510001	ALBYCA11	Albany Solano	Alameda	6,236	21,550	23.31%
408129	SNJSCA11	San Jose White Rd	Santa Clara	8,051	21,239	6.80%
661402	WASCCA01	Wasco	Kern	774	20,085	30.31%
818652	RESDCA01	Reseda	Los Angeles	10,038	19,900	3.30%
559159	CLVSCA11	Clovis	Fresno	8,311	19,168	2.17%
626658	SNGBCA01	San Gabriel	Los Angeles	4,610	19,071	8.10%
707317	RIDECA11	Rio Dell	Humboldt	238	18,122	56.46%
530531	RDNGCA11	Redding Enterpr	Shasta	3,279	18,119	25.70%
661384	PLDLCA01	Palmdale	Los Angeles	4,380	17,422	4.69%
323635	LSANCA14	LSAN Adams	Los Angeles	3,816	17,409	7.98%
707328	UKIHCA01	Ukiah Main	Mendocino	3,947	17,349	5.48%
714804	SNANCA12	Santa Ana West SNAN Bolsa	Orange	2,806	16,598	22.41%
858750	LAJLCA11	La Jolla Girard	San Diego	3,647	16,281	25.45%
530522	WNTRCA11	Winters	Yolo	734	16,119	25.56%
707297	HLBGCA11	Healdsburg	Sonoma	2,672	16,075	9.89%
818610	CNPKCA01	Canoga Park	Los Angeles	13,344	16,043	1.18%
559188	LEMIRCA11	Lemore Main	Kings	1,200	15,802	10.11%
818662	VNNYCA02	Van Nuys	Los Angeles	10,196	15,266	2.88%
209234	VYSPCA11	Valley Springs	Calaveras	1,100	14,574	15.68%
949731	ELTRCA11	El Toro	Orange	10,967	14,400	8.92%
760758	OCSDCA11	Oceanside Mission	San Diego	4,352	14,021	4.24%
530535	GRVYCA12	Wildwood	Nevada	1,442	13,769	17.98%
951721	CORNCA11	Corona	Riverside	10,738	12,733	1.25%

Table 7.13 GO 133-D \$9.7 "ALTERNATIVE PROPOSED INVESTMENTS" 2018-2019 (continued)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7		Pct GO 133-D \$9.7
					"Alternative Investments"	Other Rehab Expenditures	
559213	PTVLA11	Porterville	Tulare	4,993	12,698	215,603	5.89%
619744	IMBHCA11	Imperial Beach	San Diego	2,049	12,190	99,724	12.22%
707280	BNVLA11	Boonville	Mendocino	645	12,118	121,299	9.99%
916498	SCRMCA02	SCRM Ivanhoe	Sacramento	7,391	11,948	250,936	4.76%
530485	ORVLA12	Oroville East	Butte	1,522	11,418	139,512	8.18%
707287	CTTICA12	Cotati	Sonoma	1,983	11,393	71,216	16.00%
415060	SNFCCA05	SF Mission 25th St	San Francisco	10,082	10,859	247,554	4.39%
619723	CRNDCA11	Coronado	San Diego	1,724	10,589	13,839	76.52%
707307	MKVLCA11	McKinleyville	Humboldt	1,103	9,736	46,892	20.76%
619718	CHVSCA11	Chula Vista Third Avenue	San Diego	3,894	8,957	165,333	5.42%
951774	RVSDECA01	Riverside Orange	Riverside	7,926	8,685	477,823	1.82%
559168	FRSNCA01	Fresno Main	Fresno	7,618	8,285	783,227	1.06%
323641	LSANCA34	LSAN Angeles	Los Angeles	9,593	8,133	374,465	2.17%
707288	ELK CA11	Elk	Mendocino	211	8,060	8,477	95.08%
310664	WLMGCA01	Wilmington	Los Angeles	5,429	7,678	370,114	2.07%
626611	ELMNCA01	El Monte	Los Angeles	9,210	7,436	260,083	2.86%
530438	CHICCA01	Chico Main	Butte	10,221	6,955	287,579	2.42%
805385	PSRBCA01	Paso Robles	San Luis Obispo	4,945	6,585	551,732	1.19%
831100	APTSCA12	Aptos	Santa Cruz	2,864	6,466	76,438	8.46%
805399	VNTRCA11	Ventura Main Montalvo	Ventura	4,798	6,318	295,151	2.14%
408138	SNVACA01	Carrol Sunnyvale	Santa Clara	7,759	6,195	147,584	4.20%
619719	CHVSCA12	Chula Vista Apache	San Diego	2,258	5,956	44,012	13.53%
530490	PLVLA12	Placerville Niagara	El Dorado	2,240	5,875	220,920	2.66%
415059	SNFCCA04	SF Market McCoppin	San Francisco	10,962	5,814	499,757	1.16%
323626	LSANCA05	LSAN Pleasant	Los Angeles	6,868	5,382	232,270	2.32%
805391	SATCCA12	Saticoy	Ventura	1,946	5,363	121,595	4.41%
510002	ALMDCA11	Alameda Central	Alameda	6,355	5,120	185,433	2.76%
209184	KNFYCA11	Knights Ferry	Stanislaus	141	4,871	7,234	67.33%
530466	LSTNCA11	Lewiston	Trinity	508	4,855	14,930	32.52%
619729	ELGJCA11	El Cajon	San Diego	4,004	4,702	326,642	1.44%
831105	CRMLCA11	Carmel Main	Monterey	4,592	4,577	406,060	1.13%
760730	ELCNCA01	El Centro	Imperial	3,848	2,151	156,017	1.38%
760792	SNMCCA11	San Marcos	San Diego	4,889	1,511	419,648	0.36%
TOTALS 2018-2019				481,441	2,725,499	27,587,249	9.88%

Table 7.14

AT&T CALIFORNIA

2018-2019 SERVICE QUALITY METRICS IN WIRE CENTERS RECEIVING
GO 133-D \$9.7 "ALTERNATIVE PROPOSED INVESTMENTS"
(Sorted by Percent Cleared within 24 Hours)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	# days to clear 90% OOS (unadj)	Avg OOS Duratin (mins)
707315	PNARCA11	Point Arena	Mendocino	597	26,725	83,477	1.980	1.647	16.84%	12.384	7611
707288	ELK CA11	Elk	Mendocino	211	8,060	8,477	2.919	2.387	18.24%	11.566	6991
530466	LSTNCA11	Lewiston	Trinity	508	4,855	14,930	2.125	1.713	19.38%	11.266	6539
707280	BNVLC A11	Boonville	Mendocino	645	12,118	121,299	3.165	2.401	24.14%	11.625	6784
530490	PLVLC A12	Placerville Niagara	El Dorado	2,240	5,875	220,920	3.597	2.726	24.20%	14.327	8389
530485	ORVLC A12	Oroville East	Butte	1,522	11,418	139,512	4.615	3.473	24.73%	7.371	5200
530457	GRTWCA11	Georgetown	El Dorado	1,339	40,908	100,410	3.634	2.695	25.83%	10.774	6103
530528	CNVYCA11	Central Valley	Shasta	1,528	23,261	47,627	3.063	2.188	28.55%	11.247	6530
530441	CTWDCA11	Cottonwood	Tehama	2,138	45,885	116,846	4.168	2.899	30.43%	10.798	6043
707297	HLBGCA11	Healdsburg	Sonoma	2,672	16,075	162,508	2.146	1.487	30.70%	12.027	6738
530489	PLVLC A11	Placerville Main	El Dorado	7,102	78,185	445,092	3.304	2.255	31.75%	11.220	6008
530475	NVCYCA11	Nevada City	Nevada	3,415	29,760	175,423	2.253	1.533	31.94%	10.568	6208
209184	KNFYCA11	Knights Ferry	Stanislaus	141	4,871	7,234	1.307	0.881	32.56%	11.337	5356
619700	ALPICA12	Alpine	San Diego	1,624	47,280	118,847	2.653	1.780	32.88%	8.889	4594
619744	IMBHCA11	Imperial Beach	San Diego	2,049	12,190	99,724	1.205	0.808	32.89%	8.658	4835
530504	SGSPCA11	Shingle Springs	El Dorado	3,431	34,518	268,615	2.457	1.643	33.15%	9.754	5323
559213	PTVLC A11	Porterville	Tulare	4,993	12,698	215,603	1.704	1.129	33.72%	5.636	3738
707287	CTTICA12	Cotati	Sonoma	1,983	11,393	71,216	0.934	0.615	34.15%	10.814	6074
619723	CRNDCA11	Coronado	San Diego	1,724	10,589	13,839	0.632	0.415	34.34%	8.908	4732
707292	FTBRCA02	Fort Bragg	Mendocino	3,227	49,006	571,959	1.683	1.104	34.38%	10.582	5569
626658	SNGBCA01	San Gabriel	Los Angeles	4,610	19,071	235,554	1.066	0.698	34.53%	7.009	4213
858750	LAJLCA11	La Jolla Girard	San Diego	3,647	16,281	63,981	0.847	0.553	34.67%	8.289	4915
559228	THRRCA11	Three Rivers	Tulare	609	59,250	99,547	4.800	3.132	34.74%	4.526	3252
650024	LSATCA11	Los Altos	Santa Clara	4,386	45,785	236,071	1.791	1.165	34.95%	7.699	4780
530459	GRVYCA01	Grass Valley	Nevada	7,879	28,787	284,966	2.152	1.396	35.11%	9.388	5271
619718	CHVSCA11	Chula Vista Third Avenue	San Diego	3,894	8,957	165,333	1.307	0.840	35.75%	7.363	4346
209234	VYSPCA11	Valley Springs	Calaveras	1,100	14,574	92,954	2.855	1.826	36.04%	8.161	4479
650016	HMBACA12	Half Moon Bay	San Mateo	2,349	37,312	91,019	1.016	0.643	36.74%	8.396	4429
530531	RDNGCA11	Redding Enterpr	Shasta	3,279	18,119	70,508	1.331	0.841	36.87%	8.762	5025
530535	DLRYCA11	Wildwood	Nevada	1,442	13,769	76,597	1.920	1.211	36.92%	10.608	5521
530438	CHICCA01	Chico Main	Butte	10,221	6,955	287,579	1.386	0.874	36.92%	6.730	4497
619719	CHVSCA12	Chula Vista Apache	San Diego	2,258	5,956	44,012	0.575	0.362	36.94%	7.266	4589
408130	SNUSCA12	San Jose Dial Way	Santa Clara	13,069	36,755	282,004	1.215	0.763	37.23%	7.501	4516
626611	ELMNCA01	El Monte	Los Angeles	9,210	7,436	260,083	1.346	0.840	37.59%	7.765	4360
619752	LAMSCA01	La Mesa	San Diego	5,791	29,460	338,207	1.118	0.697	37.68%	6.954	4025
619729	ELCJCA11	El Cajon	San Diego	4,004	4,702	326,642	1.303	0.811	37.72%	6.534	3873
707317	RIDECA11	Rio Dell	Humboldt	238	18,122	32,097	0.790	0.491	37.78%	4.104	2423

Table 7.14 2018-2019 SERVICE QUALITY METRICS IN GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" WIRE CENTERS (continued)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct. Cleared w/in 24 hours (unadj)	# days to clear 90% OOS (unadj)	Avg OOS Duratin (mins)
559188	LEMRC11	Lemore Main	Kings	1,200	15,802	156,276	2,229	1,379	38.11%	6.113	3645
831102	BLCKCA11	Boulder Creek	Santa Cruz	1,051	51,244	106,508	2,189	1,332	39.18%	6.996	4119
323641	LSANCA34	LSAN Angeles	Los Angeles	9,593	8,133	374,465	1,175	0.714	39.24%	7.599	4338
707321	SBSTCA11	Sebastapol	Sonoma	2,794	32,610	351,030	2,091	1,270	39.29%	8.993	4995
530522	WNTRCA11	Winters	Yolo	734	16,119	63,060	2,438	1,465	39.91%	10.472	5081
760792	SNMCCA11	San Marcos	San Diego	4,889	1,511	419,648	0,852	0.510	40.14%	7.990	4290
408138	SNVACA01	Carrol Sunnyvale	Santa Clara	7,759	6,195	147,584	0,900	0.538	40.24%	6.985	3934
510001	ALBYCA11	Albany Solano	Alameda	6,236	21,550	92,458	1,195	0.710	40.63%	6.600	3776
408132	SNUSCA14	San Jose Foxworthy	Santa Clara	9,411	151,565	564,078	1,063	0.626	41.08%	6.903	4123
707304	LWLKCA11	Lower Lake	Lake	1,965	27,689	308,029	2,384	1,404	41.11%	12.270	5874
805385	PSRBCA01	Paso Robles	San Luis Obispo	4,945	6,585	551,732	1,331	0.783	41.15%	3.994	2574
760758	OCSDCA11	Oceanside Mission	San Diego	4,352	14,021	330,986	0,964	0.567	41.18%	6.384	4415
760730	ELNCA01	El Centro	Imperial	3,848	2,151	156,017	1,028	0.602	41.39%	6.009	3269
831141	WTVLCA01	Watsonville	Santa Cruz	7,582	48,755	199,766	1,182	0.684	42.08%	6.329	3535
323626	LSANCA05	LSAN Pleasant	Los Angeles	6,868	5,382	232,270	2,193	1,239	43.52%	5.636	3261
661402	WASCCA01	Wasco	Kern	774	20,085	66,272	2,268	1,270	44.00%	3.640	2568
661367	DELNCA11	Delano	Tulare	1,939	48,637	230,364	1,467	0.817	44.27%	3.683	2513
951774	RVSDDCA01	Riverside Orange	Riverside	7,926	8,685	477,823	1,168	0.645	45.24%	5.807	3301
805391	SATCCA12	Saticoy	Ventura	1,946	5,363	121,595	0,997	0.546	45.24%	4.686	3541
707328	UKHCA01	Ukiah Main	Mendocino	3,947	17,349	316,473	1,342	0.734	45.28%	9.117	5362
831100	APTSACA12	Aptos	Santa Cruz	2,864	6,466	76,438	1,146	0.619	45.97%	7.163	3855
559168	FRSNCA01	Fresno Main	Fresno	7,618	8,285	783,227	2,085	1.126	45.97%	4.673	2711
408129	SNUSCA11	San Jose White Rd	Santa Clara	8,051	21,239	312,421	1,345	0.726	46.00%	4.523	2789
951721	CORNCA11	Corona	Riverside	10,738	12,733	1,015,536	0,974	0.526	46.02%	4.398	2806
323635	LSANCA14	LSAN Adams	Los Angeles	3,816	17,409	218,231	1,913	1.024	46.48%	5.536	3568
415060	SNFFCA05	SF Mission 25th St	San Francisco	10,082	10,859	247,554	0,700	0.373	46.65%	4.991	2800
916536	FLSMCA14	Folsom Blue Ravine	Sacramento	1,768	39,374	49,751	1,022	0.545	46.66%	5.107	3141
949731	ELTRCA11	El Toro	Orange	10,967	14,400	161,360	0,993	0.530	46.67%	4.771	2940
310664	WLMGCA01	Wilmington	Los Angeles	5,429	7,678	370,114	1,356	0.713	47.45%	5.053	3122
415059	SNFFCA04	SF Market McCoppin	San Francisco	10,962	5,814	499,757	0,647	0.340	47.56%	4.710	2907
916499	SCRMCA03	SCRM Garden	Sacramento	8,642	31,091	487,675	1,453	0.761	47.66%	5.697	3387
661384	PLDLCA01	Palmdale	Los Angeles	4,380	17,422	371,660	0,808	0.423	47.74%	4.333	2976
530494	RDBLCA01	Red Bluff	Tehama	3,745	123,883	121,506	1,707	0.892	47.74%	6.282	3481
831105	CRMLCA11	Carmel Main	Monterey	4,592	4,577	406,060	1,106	0.578	47.77%	4.730	2775
415061	CRMLCA11	SF Juniper Onondaga	San Francisco	11,364	67,367	293,567	1,106	0.578	47.77%	4.730	2775
805399	WNTRCA11	Ventura Main Montalvo	Ventura	4,798	6,318	295,151	0,892	0.465	47.81%	7.955	4533
916482	ORVACA11	Orangevale	Sacramento	2,287	39,700	90,970	1,435	0.735	48.81%	5.487	3976
510002	ALMDCA11	Alameda Central	Alameda	6,355	5,120	185,433	0,814	0.416	48.88%	5.149	2815
818662	WNNYCA02	Van Nuys	Los Angeles	10,196	15,266	529,734	1,103	0.563	48.94%	5.352	2868
209236	WLLCCA11	Wallace	Calaveras	400	23,151	44,903	2,241	1.141	49.07%	5.581	3574
559245	FRSNCA14	Fresno West Highway City	Fresno	3,283	80,144	335,224	1,700	0.865	49.12%	5.156	2764
916498	SCRMCA02	SCRM Ivanhoe	Sacramento	7,391	11,948	250,936	1,285	0.663	49.20%	6.005	3092
530469	LSMLCA11	Los Molinos	Tehama	355	21,947	46,593	2,206	1.115	49.47%	6.771	4038
831126	SNZCA11	Santa Cruz Capitola	Santa Cruz	4,979	32,778	126,850	1,037	0.521	49.72%	6.255	3186
707307	MKVLCA11	McKinleyville	Humboldt	1,103	9,736	46,892	0,710	0.357	49.74%	4.082	2480

Table 7.14 2018-2019 SERVICE QUALITY METRICS IN GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" WIRE CENTERS (continued)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct. Cleared w/in 24 hours (unadj)	# days to clear 90% OOS (unadj)	Avg OOS Duratin (mins)
818610	CNPKCA01	Canoga Park	Los Angeles	13,344	16,043	1,356,631	1,298	0.652	49.80%	4.005	2417
707290	FRFDCA01	Fairfield	Solano	5,082	32,398	345,379	1,076	0.532	50.56%	6.728	4089
916502	SCRMCA13	SCRM Fruitridge	Sacramento	2,983	62,711	127,645	1,268	0.625	50.71%	5.569	3405
714789	SNANCA11	Bristol	Orange	9,617	73,863	264,596	0,959	0.469	51.06%	5.261	2948
650006	BRLNCA01	Burlingame	San Mateo	7,936	72,737	106,149	0,805	0.394	51.13%	4.366	2530
818652	RESDCA01	Reseda	Los Angeles	10,038	19,900	602,866	1,295	0.631	51.23%	4.016	2306
916451	FROKCA11	Fair Oaks	Sacramento	7,463	56,582	362,215	1,057	0.506	52.09%	5.166	2829
916478	NHLDCA11	Edgewood N Highl	Sacramento	4,053	31,539	368,641	1,418	0.673	52.51%	5.064	3054
916479	NSCRCA11	Wabash	Sacramento	7,088	95,277	412,604	1,031	0.485	52.97%	5.407	2948
818648	NORCA11	Northridge	Los Angeles	10,424	37,683	986,797	1,143	0.537	53.04%	3.974	3626
310609	CMTNCA01	Compton	Los Angeles	9,969	51,395	1,171,795	1,777	0.835	53.04%	4.165	3058
559159	CLVSCA11	Clovis	Fresno	8,311	19,168	881,838	1,562	0.728	53.42%	3.901	2445
559194	MADRCOA11	Madera Main	Madera	3,987	21,845	685,245	1,886	0.853	54.76%	4.001	2458
916453	FLSMCA12	Folsom Nimbus	Sacramento	1,844	26,554	114,499	0,471	0.191	59.43%	4.804	2560
925079	WNCKCA11	Walnut Creek	Contra Costa	11,153	22,950	506,532	0,831	0.333	59.92%	4.318	2161
951765	PDLYCA11	Pedley	Riverside	2,466	27,450	435,505	1,187	0.460	61.29%	3.190	1861
650010	COLACA01	Colma Daly City	San Mateo	5,878	39,715	159,553	0,997	0.372	62.68%	2.861	1989
714804	SNANCA12	Santa Ana West SNAN Bolsa	Orange	2,806	16,598	74,071					

It is useful to put these expenditures in context. Table 7.15 below summarizes three categories of AT&T California expenditures during the 2018-2019 period.

Table 7.15		
AT&T CALIFORNIA		
COMPARISON AMONG PLANT INVESTMENT CATEGORIES		
2018-2019		
Expenditure category	2018-2019 Amount	Percent of Total Gross Plant Additions
Total Gross Plant Additions (per Form 43-02)	2,310,891,000	100.000%
Rehabilitation expenditures (per AT&T-CA Response to DR 11-A-17/18)	107,211,728	4.553%
GO 133-D §9.7 "Alternative Investments" in lieu of fines	2,725,499	0.118%

As is apparent, the amounts that AT&T California has committed to spend on GO 133-D §9.7 "Alternative Investments" in lieu of paying fines represents a *de minimis* fraction of the Company's total gross infrastructure investments – slightly over one-tenth of one percent. Of perhaps greater importance, the minuscule extent of such "alternative" investment outlays when compared with even the identified plant rehabilitation costs begs the question as to whether these expenditures would have been made anyway, irrespective of the GO 133-D §9.7 opportunity to make investments in legacy service infrastructure *that would ostensibly not have been made in the absence of the GO 133-D §9.7 offer*.

Table 7.16 provides a summary of AT&T California "rehabilitation" expenditures for all of its wire centers over the 2018-2019 period as provided in response to DRs 11-A-17/18. Over this two-year period, AT&T California expended some \$107.2-million across four categories of plant rehabilitation – AT&T Field Operations (AFO) maintenance projects (\$28.0-million), Construction & Engineering (C&E) capital projects (\$2.0-million), Outside Plant (OSP) rehabilitation (\$20.4-million), and other Plant rehabilitation (\$56.7-million).

Inasmuch as AT&T California has consistently and persistently failed to meet the minimum GO 133-C/D service quality standards, it is not entirely clear how the specific wire centers for

which the Company has elected to make an investment in lieu of a fine were selected. Table 7.17 below compares the amounts expended specifically on GO 133-D §9.7 “alternative investments” with the corresponding amounts expended for each wire centers on the 2018-2019 “rehabilitation” projects. Table 7.18 presents the same data as in Table 7.17, sorted by total rehabilitation expenditures for each wire center, from largest to smallest. several key service quality performance metrics for each AT&T wire center. Finally, Table 7.19 provides the same rehabilitation expenditures by wire center as in Table 7.14, but includes all AT&T California wire centers, not just those for which GO 133-D §9.7 “Alternative Investments” had been committed.

Table 7.16
AT&T CALIFORNIA
REHABILITATION EXPENDITURES BY WIRE CENTER
2018-2019

WC	CLI	WC Name	County	Jan 2018 Access Lines	TFS	Type of Expenditure			Total	\$ per AL
						C&E	OSP Rehab	Plant Rehab		
661410	ACTNCA11	Action	Los Angeles	743	35,978	-	5,421	81,442	122,841	165.33
661351	AGDLCA11	Agua Dulce	Los Angeles	456	17,635	-	184,297	109,238	311,170	682.39
818600	AGORCA11	Agoura	Los Angeles	4858	82,369	-	128,299	740,559	951,226	195.81
510001	ALBYCA11	Albany Solano	Alameda	6236	4,033	21,550	6,135	60,739	92,458	14.83
530425	ALGHCA11	Allegheaney	Sierra	47	-	-	-	15,482	15,482	329.40
626601	ALHBCA01	Alhambra	Los Angeles	8889	108,120	-	8,087	116,599	232,806	26.19
510002	ALMDCA11	Alameda Central	Alameda	6355	49,533	-	55,779	80,121	185,433	29.18
619700	ALPICA12	Alpine	San Diego	1624	7,951	55,324	14,160	41,412	118,847	73.18
209150	ANCMCA01	Angels Camp	Calaveras	809	6,757	-	3,703	90,068	100,528	124.26
707275	ANGWCA11	Angwin	Napa	591	-	-	1,455	34,586	36,041	60.98
714701	ANHMCA01	Anaheim Lemon	Orange	7849	204,314	-	30,655	86,798	321,767	40.99
714702	ANHMCA11	Anaheim Cypress	Orange	7886	266,700	-	131,634	321,131	719,465	93.61
714703	ANHMCA12	Anaheim La Palma	Orange	1791	56,048	3,405	106,754	27,871	194,078	108.36
714811	ANHMCA17	ANHM Hills	Orange	848	37,705	-	1,413	13,002	52,121	61.46
707322	ANNPCA11	Annapolis	Sonoma	71	-	-	12,067	12,067	12,067	169.95
925003	ANTCCA11	Antioch	Contra Costa	5049	122,434	-	145,321	115,285	383,040	75.86
831100	APTSCA12	Aptos	Santa Cruz	2864	29,435	-	47,002	47,002	76,438	26.69
626602	ARCDDCA11	Arcadia	Los Angeles	4800	75,644	-	-	93,126	168,770	35.16
707276	ARCTCA11	Arcata	Humboldt	1835	9,015	-	5,732	74,706	89,453	48.75
805352	ARGRCA12	Arroyo Grande	San Luis Obispo	3827	128,197	-	-	261,396	389,592	101.80
831144	ARMSCA11	Aromas	San Benito	446	16,428	-	-	36,467	52,895	118.60
209151	ARNLCA11	Arnold	Calaveras	1936	29,593	-	18,263	149,738	197,594	102.06
530427	ARSNCA11	Anderson	Shasta	1747	-	-	3,921	75,213	79,134	45.30
951704	ARTNCA11	Arlington	Riverside	5896	198,128	-	9,651	289,311	477,090	80.92
661353	ARVNCA11	Arvin	Kern	736	75,020	-	-	71,014	146,034	198.42
559152	ASMTCA11	Asocio Ash Mtn	Fresno	82	-	-	-	54,554	54,554	665.29
805354	ATSCCA11	Atascadero	San Luis Obispo	2312	27,053	-	-	142,306	169,359	73.25
209153	ATWRCA12	Atwater	Merced	1837	51,329	-	91,056	114,874	257,259	140.04
530428	AUBNCA01	Auburn Main	Placer	5789	-	-	12,378	160,220	172,598	29.81
530429	AUBNCA11	Auburn Placer Hills	Placer	1530	-	-	19,859	36,902	56,761	37.10
805355	AVBHCA11	Avila Beach	San Luis Obispo	337	4,343	-	-	14,723	19,066	56.58
559154	AVNLCA12	Avenal	Kings	434	4,583	-	-	48,098	52,681	121.38
760705	BAKRCA11	Baker	San Bernardino	114	-	-	-	1,308	1,308	11.47
949706	BALBCA01	Balboa	Orange	2703	4,477	-	-	46,964	51,441	19.03
530434	BCWYCA11	Brockway	Placer	924	-	-	1,371	22,600	23,972	25.94
707279	BBBACA11	Bodega Bay	Sonoma	336	19,664	-	4,960	58,721	83,346	248.05
530431	BEALCA11	Beale	Yuba	78	1,536	-	-	4,622	5,925	75.25
530432	BELCA11	Bell	Los Angeles	2449	62,494	-	78,872	73,545	214,911	87.75
530432	BGGSCA11	Biggs	Butte	249	3,505	-	-	29,858	33,362	133.99
831101	BGSRCA11	Big Sur	Monterey	389	23,979	-	-	98,218	122,197	314.13
707281	BGVLCA11	Bridgeville	Humboldt	173	19,288	-	-	25,146	89,077	514.90
661356	BKFDCA11	Bakersfield Empire	Kern	1142	60,507	-	44,643	188,365	501,216	438.89
661357	BKFDCA12	Bakersfield Main Fairview	Kern	1142	170,104	-	252,344	500,372	1,338,241	217.32
661358	BKFDCA13	Bakersfield Columbus	Kern	2365	87,306	-	667,765	310,175	439,850	185.98
661359	BKFDCA14	Bakersfield Temple	Kern	6893	271,094	-	207,458	1,199,929	1,678,481	250.78

Table 7.16 REHABILITATION EXPENDITURES BY WIRE CENTER 2018-2019 (continued)

WC	CLLI	WC Name	County	Jan 2018 Access Lines	TFS	Type of Expenditure C&E	OSP Rehab	Plant Rehab	Total	\$ per AL
661360	BKFDCA15	Bakersfield Mettler	Kern	299	9,870	-	1,854	76,484	88,208	295.01
661361	BKFDCA17	Bakersfield West Rosedale	Kern	3311	80,587	-	290	226,962	307,839	92.97
661409	BKFDCA19	Bakersfield Nomad	Kern	1972	9,529	-	3,882	109,681	123,092	62.42
510004	BKLYCA01	Berkeley Bancroft	Alameda	8600	50,040	-	-	48,818	98,859	11.50
831102	BLCKCA11	Boulder Creek	Santa Cruz	1051	27,044	51,244	4,970	23,250	106,508	101.34
707278	BLKCA11	Blue Lake	Humboldt	236	-	-	27,824	30,195	58,019	245.84
530433	BLRSCA12	Blairsden	Plumas	901	15,561	-	-	33,503	49,064	54.45
707277	BNCJCA11	Benicia	Solano	1943	24,770	-	-	160,261	185,031	95.23
530430	BNGRCA11	Bangor	Butte	335	23,710	-	3,876	9,844	13,720	40.95
831103	BNLMCA11	Ben Lomond	Santa Cruz	579	23,210	-	-	33,465	57,800	57.80
714710	BNPKCA11	Buena Park	Orange	4388	104,082	-	19,839	216,700	340,621	77.63
707280	BNVLC A11	Boonville	Mendocino	645	32,398	23,288	10,735	54,879	121,299	188.06
818605	BRBNCA11	Burbank Palm	Los Angeles	9668	271,161	-	39,446	361,190	671,797	68.08
818606	BRBNCA13	Burbank Thornton	Los Angeles	755	-	-	1,596	4,497	6,093	8.07
805363	BRDLCA90	Bradley	Monterey	495	-	-	-	42,059	42,059	84.97
714709	BREA CA12	Brea	Orange	2998	200,691	-	-	103,268	326,264	108.83
650006	BRLNCA01	Burlingame	San Mateo	7936	66,164	-	22,308	22,296	106,149	13.38
760707	BRSPCA11	Borrego Springs	San Diego	698	10,172	-	3,212	19,565	32,948	47.20
925007	BRWDCA12	Brentwood	Contra Costa	3696	81,491	-	24,717	23,749	129,956	35.16
760708	BRWLCA11	Brawley	Imperial	1759	48,929	-	21,626	37,954	108,509	61.69
925082	ESRNCA70	Bishop Ranch	Contra Costa	1443	-	-	-	20,613	20,613	14.28
530435	BTCYCA11	Butte City	Glenn	109	-	-	-	423	423	3.88
925008	BTISCA11	Bethel Island	Contra Costa	265	12,280	-	-	9,635	21,915	82.70
559242	BURLCA11	Burrell	Fresno	88	10,071	-	-	30,064	40,135	456.08
310607	BVHLC A01	Beverly Hills	Los Angeles	16372	226,627	-	18,338	75,384	320,349	19.57
209155	BVLYCA11	Bear Valley	Calaveras	436	-	-	-	40,343	40,343	92.53
661403	BVSPCA11	Bear Vly Spring	Kern	334	15,075	-	-	59,918	74,992	224.53
805362	BYPKCA11	Baywood Park	San Luis Obispo	920	19,818	-	1,768	129,976	151,562	164.74
619715	CAMPCA11	Campo	San Diego	474	3,384	-	24,660	28,238	56,282	118.74
707285	CBMTCA11	Cobb Mountain	Lake	317	3,426	-	20,158	53,551	77,134	243.33
530438	CHICCA01	Chico Main	Butte	10221	45,720	6,955	-	217,345	287,579	28.14
530437	CHLNCA11	Challange	Yuba	1149	-	-	10,669	12,013	22,682	19.74
831104	CHLRCA11	Chualar	Monterey	136	10,550	-	906	17,393	28,848	212.12
619718	CHVSCA11	Chula Vista Third Avenue	San Diego	3894	29,568	8,957	90,033	36,775	165,333	42.46
619719	CHVSCA12	Chula Vista Apache	San Diego	2258	6,792	-	21,654	15,566	44,012	19.49
559158	CHWCCA11	Chowchilla	Madera	963	60,158	-	37,633	68,398	166,189	172.57
818666	CLBSCA11	Calabasas Park Sorrento	Los Angeles	3840	34,810	-	11,917	254,065	300,793	78.33
818665	CLBSCA50	Calabasas Los Virgenes	Los Angeles	1058	13,009	-	-	10,274	23,283	22.01
310608	CLCYCA11	Culver City	Los Angeles	7964	271,881	-	-	3,347	277,935	34.90
559160	CLNGCA01	Coalinga	Fresno	817	-	-	2,707	121,754	128,060	156.74
707283	CLOKCA11	Clear Lake Oaks	Lake	536	-	-	6,307	16,408	22,715	35.86
760713	CLPTCA11	Calpatnia	Imperial	259	9,587	-	2,813	19,221	28,477	109.95
707282	CLSTCA11	Calistoga	Napa	1111	-	-	109,903	36,881	146,784	132.12
559159	CLVSCA11	Clovis	Fresno	8311	108,269	-	285,090	488,479	881,838	106.10
760712	CLXCCA12	Calxico	Imperial	1886	21,757	-	-	18,269	40,026	21.22
805364	CMBACA11	Cambria	San Luis Obispo	1435	39,488	-	15,350	116,114	170,952	119.13
559156	CMNLCA11	Camp Nelson	Tulare	680	-	-	-	11,900	11,900	17.50
760714	CMPDCA01	Camp Pendleton	San Diego	107	-	-	-	5,250	5,250	49.07
530436	CMPVCA11	Camptonville	Yuba	216	5,862	-	1,083	12,704	19,650	90.97
310609	CMNTCA01	Compton	Los Angeles	9969	425,745	51,395	117,343	577,312	1,171,795	117.54
925009	CNCRCA01	Concord	Contra Costa	8980	82,868	-	105,552	144,030	332,450	37.02
818610	CNPKCA01	Canoga Park	Los Angeles	13344	382,691	11,710	108,997	853,234	1,356,631	101.67

Table 7.16 REHABILITATION EXPENDITURES BY WIRE CENTER 2018-2019 (continued)

WC	CLLI	WC Name	Access Lines	Jan 2018	TFS	Type of Expenditure	OSP Rehab	Plant Rehab	Total	\$ per AL
		County				C&E				
530528	CNVYCA11	Central Valley	1528	-	-	-	6,836	40,791	47,627	31.17
707284	CODLCA11	Cloverdale	832	33,571	-	-	1,973	95,418	130,963	157.41
650010	COLACA01	Colima Daly City	5878	59,027	-	39,715	18,707	42,104	159,553	27.14
707286	CORDCA12	Cordelia	1340	13,018	-	-	-	38,359	51,378	38.34
951721	CORNCA11	Corona	10738	466,331	-	3,991	44,705	500,509	1,015,536	94.57
909720	COTNCA11	Colton	3205	19,986	-	-	32,279	252,466	304,731	95.08
510011	CRCOCA02	Crockett	289	-	-	-	-	1,666	1,666	5.76
949722	CRDMCA11	Corona Del Mar	6350	95,675	-	-	385	36,820	132,880	20.93
760716	ORLSCA11	Carlsbad Harding	2206	19,279	-	-	-	78,729	98,008	44.43
760717	CRLSCA12	Carlsbad La Costa	3662	4,202	-	-	8,091	62,771	17,114	17.14
831105	CRMLCA11	Carmel Main	4592	6,650	-	-	12,620	386,790	406,060	88.43
619723	CRNDCA11	Coronado	1724	-	-	10,589	-	3,250	13,839	8.03
530440	CRNGCA12	Corning	1179	10,530	-	-	-	89,716	76,099	76.09
559157	CRTHCA11	Caruthers	383	-	-	-	-	29,715	29,715	77.59
831106	CRVYCA11	Carmel Valley	1039	14,390	-	-	4,718	42,364	61,473	59.17
949725	CSMSCA11	Costa Mesa	5737	99,849	-	-	-	178,369	31,099	31.09
661408	CSTCCA11	Castaic	3431	60,539	-	-	-	140,554	201,094	58.61
831107	CSVLC A11	Castroville	1012	15,190	-	-	2,332	7,324	24,845	24.55
209161	CTVLCA11	Colati	1983	9,439	-	11,393	10,692	39,692	71,216	35.91
530441	CTWDC A11	Coltonwood	663	13,400	-	11,263	16,996	45,009	75,405	113.73
209162	CWLDCA12	Crows Landing	2138	-	-	-	1,144	105,583	116,846	54.65
805366	CYSCA11	Cayucos	91	28,876	-	-	-	8,669	9,812	80.83
925081	CYTNCA11	Clayton	1502	15,582	-	-	40,714	39,759	130,448	130.48
760726	CYWLCA11	Coyote Wells	46	-	-	-	-	1,680	1,680	36.52
925012	DAVLCA12	Danville Main 12	5110	89,386	-	-	37,979	175,867	303,232	59.34
925085	DAVLCA13	Danville Tassajara 13	2391	3,731	-	-	-	49,300	53,030	22.18
530442	DAVSCA11	Davis	4191	-	-	48,637	-	113,384	143,752	34.30
661367	DELNCA11	Delano	1352	36,334	-	-	30,368	128,109	230,364	118.81
559164	DINBCA01	Dinuba	1345	13,437	-	-	2,552	62,101	78,090	57.76
707443	DIXNCA11	Dixon	1345	11,998	-	-	21,335	77,354	110,688	82.30
858727	DLMRCA12	Del Mar	5494	6,310	-	-	5,147	28,955	40,412	7.36
559163	DLRYCA11	Del Rey	143	3,070	-	-	-	18,635	21,705	151.78
619728	DLZRC A11	Duizura	504	17,457	-	-	5,693	5,228	28,378	56.31
530445	DNGNCA12	Dunnigan	113	-	-	-	3,516	15,002	18,518	163.88
530446	DNSMCA11	Dunsmuir	413	-	-	-	2,052	19,473	19,473	47.15
530447	DTFLCA11	Alta Dutch Flats	538	-	-	-	-	8,963	43,835	81.48
530444	DWNVCA11	Downieville	239	-	-	-	-	8,963	8,963	37.50
661369	EDWRC A01	Edwards	137	-	-	-	-	6,702	6,702	48.92
530448	EKCKCA11	Elk Creek	100	13,889	-	-	-	1,029	14,917	149.17
619729	ELCJCA11	El Cajon	4004	46,348	-	-	109,087	171,208	326,642	81.58
760730	ELNCA01	El Centro	3848	96,540	-	1	-	59,476	156,017	40.54
707288	ELK CA11	Elk	211	-	-	-	-	-	8,477	40.18
626611	ELMNCA01	El Monte	9210	70,679	-	-	8,477	152,686	260,083	28.24
510013	ELSBCA11	Rich Applan Way El Sobrante	3219	49,782	-	-	36,717	83,178	150,753	46.83
310613	ELSGCA12	El Segundo Douglas	4029	8,024	-	-	17,904	16,819	42,748	10.61
949731	ELTRCA11	El Toro	10967	90,746	-	-	1,557	69,057	161,360	14.71
760732	ENCTCA12	Encinitas	4571	46,941	-	-	3,362	184,247	234,551	51.31
661368	ERLMCA11	Earlimart	332	2,385	-	-	-	47,475	49,860	150.18
209192	ESCLCA11	Escalon	929	6,012	-	-	5,397	21,548	32,958	35.48
760733	ESCNCA01	Escondido	7483	110,814	-	-	107,162	770,335	988,311	132.07
530450	ESPRCA11	Esparto	266	5,705	-	-	2,459	21,211	29,375	110.43

Table 7.16 REHABILITATION EXPENDITURES BY WIRE CENTER 2018-2019 (continued)

WC	CLI	WC Name	County	Access Lines	Jan 2018	TFS	Type of Expenditure	OSP Rehab	Plant Rehab	Total	\$ per AL
							C&E				
707289	EURKCA01	Eureka	Humboldt	4799	30,922	-	-	9,036	87,620	127,638	26.60
831108	FETNCA11	Felton	Santa Cruz	976	2,883	-	-	-	23,370	26,254	26.90
760735	FLBKCA12	Failbrook	San Diego	3475	95,771	-	-	-	148,057	356,664	102.64
805370	FLMRCA11	Fillmore	Ventura	791	-	-	-	112,835	148,057	356,664	102.64
916453	FLSMCA12	Folsom Nimbus	Sacramento	1844	12,285	26,659	-	37,632	31,252	58,884	74.44
916454	FLSMCA13	Folsom El Dorado Hills	Sacramento	2631	37,222	-	-	36,474	39,081	114,499	62.09
916536	FLSMCA14	Folsom Blue Ravine	Sacramento	1768	4,433	-	-	84,425	50,431	172,078	65.40
909736	FNTACA11	Fontana	San Bernardino	5840	404,038	27,850	-	32,050	49,751	28,14	28.14
559166	FRBHCA11	Firebaugh	Fresno	604	36,398	-	-	3,099	365,655	829,593	142.05
760738	FRCKCA11	Furnace Creek	San Bernardino	140	-	-	-	2,282	23,750	63,246	104.71
707290	FRFDCA01	Fairfield	Solano	5082	17,557	56,398	-	49,994	3,577	5,860	41.86
530455	FRGLCA11	French Gulch	Shasta	82	-	-	-	-	21,966	21,966	267.88
510014	FRMTCA11	Fremont Main 11	Alameda	7958	15,737	12,583	-	248,269	184,798	461,388	57.98
510015	FRMTCA12	Fremont Adams Oliver 12	Alameda	6839	24,313	-	-	95,247	140,554	260,114	38.03
916451	FROKCA11	Fair Oaks	Sacramento	7463	130,424	21,718	-	76,531	133,542	362,215	48.53
559168	FRSNCA01	Fresno Main	Fresno	7618	197,259	8,285	-	246,620	331,062	783,227	102.81
559169	FRSNCA11	Fresno Baldwin	Fresno	5377	46,725	-	-	106,245	122,918	275,888	51.31
559172	FRSNCA12	Fresno Clinton	Fresno	4088	75,275	-	-	-	198,546	273,821	66.98
559170	FRSNCA13	Fresno Sierra	Fresno	106,973	-	-	-	96,335	438,293	641,601	100.44
559245	FRSNCA14	Fresno West Highway City	Fresno	3283	111,024	-	-	20,321	203,880	335,224	102.11
559247	FRSNCA15	Fresno Woodward	Fresno	1076	5,853	-	-	5,414	58,148	69,414	64.51
559165	FRVLC A11	Farmersville	Tulare	401	-	-	-	-	27,801	27,801	69.33
707291	FSVLCA11	Forestville	Sonoma	737	9,625	-	-	13,701	123,914	147,241	199.78
707292	FTBRCA02	Fort Bragg	Mendocino	3227	118,761	49,006	-	34,558	369,634	571,959	177.24
707293	FTUNCA11	Fortuna	Humboldt	1102	-	-	-	6,046	32,103	38,148	34.62
714737	FUTNCA01	Fullerton	Orange	8005	206,146	-	-	31,664	321,509	559,318	69.87
559167	FVFNCA11	Five Points	Fresno	151	-	-	-	-	22,427	22,427	148.52
661371	FZPKCA11	Frazier Park	Kern	757	53,678	-	-	59,706	142,045	255,429	337.42
209171	GALTC A11	Galt	Sacramento	1448	62,807	-	-	6,637	32,637	95,444	65.91
818614	GDLCA11	Glendale	Los Angeles	14860	249,437	-	-	69,679	325,539	644,655	43.97
831109	GNFDCA11	Green Field	Monterey	940	73,925	-	-	-	11,127	185,052	196.86
831110	GNZLCA11	Gonzales	Monterey	542	7,700	-	-	-	68,897	127,12	127.12
530458	GRBRCA11	Gerber	Tehama	182	6,484	-	-	-	14,442	20,926	114.98
530461	GRDLCA11	Gridley	Butte	797	-	-	-	3,453	40,290	43,743	54.88
310615	GRDNCA01	Gardena	Los Angeles	11967	446,303	-	-	646,696	200,391	1,293,390	108.08
714739	GRGVCA01	Euclid	Orange	6721	43,631	-	-	1,143	21,752	66,526	9.90
530460	GRNDCA13	Grenada	Siskiyou	81	-	-	-	-	3,010	3,010	37.16
530457	GRTWCA11	Georgetown	El Dorado	1339	33,075	40,908	-	1,816	24,612	100,410	74.99
530459	GRVYCA01	Grass Valley	Nevada	7879	36,311	62,162	-	7,297	179,196	284,966	36.17
530532	GRVYCA11	Lake of the Pine	Nevada	1863	6,015	32,422	-	-	25,960	25,960	13.93
530535	GRVYCA12	Wildwood	Nevada	1442	-	-	-	12,170	25,990	76,597	53.12
559246	GSHNCA11	Goshen	Tulare	730	-	-	-	2,000	24,114	26,113	35.77
707295	GULLCA11	Guatula	Mendocino	1066	10,075	-	-	6,587	80,008	96,671	90.69
209174	GUSTCA11	Gustine	Merced	604	10,111	-	-	47,790	97,971	110,16	110.16
707296	GUVLCA11	Guemville	Sonoma	691	-	-	-	6,554	83,385	89,939	130.16
209173	GVLDA11	Groveland	Tuolumne	1863	49,555	-	-	49,943	106,270	205,768	110.45
707294	GYVLC A11	Geyersville	Sonoma	295	3,816	-	-	-	28,730	32,547	110.33
530456	GZLLCA11	Gazelle	Siskiyou	44	-	-	-	-	-	-	-
209176	HERLCA11	Herald	Sacramento	273	33,126	-	-	16,208	13,443	62,776	229.95
909741	HGLDCA11	Highland	San Bernardino	2208	127,505	-	-	24,068	109,223	260,788	118.11
209177	HGSNCA11	Hughson	Stanislaus	531	22,328	-	-	202	26,926	49,456	93.14
707297	HLBGCA11	Healdsburg	Sonoma	2672	14,882	-	-	10,631	136,995	162,508	60.82

Table 7.16 REHABILITATION EXPENDITURES BY WIRE CENTER 2018-2019 (continued)

WC	CLI	WC Name	County	Jan 2018 Access Lines	TFS	Type of Expenditure C&E	OSP Rehab	Plant Rehab	Total	\$ per AL
831111	HLSUCA11	Hollister	San Benito	2923	13,177	-	584	47,192	60,953	20.85
760742	HLVLC A11	Holtville	Imperial	458	10,434	-	-	25,684	36,118	78.86
323616	HLWDCA01	Hollywood	Los Angeles	9481	276,255	15,567	-	91,889	530,927	56.00
650016	HMBACA12	Half Moon Bay	San Mateo	2349	47,254	-	147,246	33,033	91,019	38.75
530462	HMCYCA11	Hamilton City	Glenn	145	1,826	-	-	8,144	9,970	68.76
530463	HMWDCA11	Homewood	El Dorado	1117	9,683	-	2,439	41,885	37,50	37.50
559175	HNFRC A01	Hanford	Kings	3748	50,841	-	9,666	320,757	381,264	101.72
323617	HNPKCA01	Huntington Park	Los Angeles	6751	198,114	-	89,055	119,589	406,759	60.25
707298	HPLDCA12	Hopland	Mendocino	201	6,267	-	13,709	6,006	25,981	129.26
530464	HRBKCA11	Hornbrook	Siskiyou	260	-	-	4,660	28,567	33,227	127.79
510080	HRC LCA11	Hercules Pinole	Contra Costa	2622	12,951	-	-	33,016	45,967	17.53
559178	HURNCA11	Huron	Fresno	294	-	-	-	18,336	18,336	62.37
310618	HWTHCA01	Hawthorne	Los Angeles	5016	40,199	-	16,632	15,424	14,40	14.40
707299	HV LCA11	Hydesville	Humboldt	265	4,912	-	-	12,207	17,119	64.60
510017	HYWRCA01	Hayward Main	Alameda	7870	49,009	-	20,410	56,111	125,529	15.95
415019	HYWRCA11	Hayward Depot	Alameda	5286	66,267	-	35,315	41,431	143,013	27.06
310619	IGNCCA12	Ignacio	Marin	1539	-	-	2,050	15,667	17,718	11.51
310619	IGNCCA12	Ingleswood	Los Angeles	5028	45,490	-	2,413	31,425	79,328	15.78
619744	IMBHCA11	Imperial Beach	San Diego	2049	30,824	12,190	25,759	30,952	99,724	48.67
760743	IMPRCA11	Imperial	Imperial	559	3,539	-	-	16,361	19,900	35.60
415020	INVRCA11	Inverness	Marin	447	3,350	-	-	13,433	16,784	37.55
209179	IONECA11	Ione	Anador	874	16,249	-	399	95,511	112,159	128.33
949745	IRVNCA01	Irvine	Orange	4684	88,343	-	-	34,085	122,428	26.14
949807	IRVNCA11	Irvine Airport	Orange	5656	16,456	-	1,321	13,339	31,116	5.50
949810	IRVNCA12	Irvine Spectrum Irvine	Orange	1708	-	-	-	948	948	0.56
619851	JAM LCA60	Jamul	Tulare	441	79,617	-	79,655	34,024	193,296	438.31
619746	JCMBCA11	Jacumba	San Diego	322	8,287	-	8,287	4,725	13,013	40.41
209181	JCSNCA01	Jackson	San Diego	371	4,444	-	10,605	6,542	21,592	58.20
209182	JITWCA11	Jamestown	Anador	2962	2,962	-	5,363	93,870	102,215	70.44
760748	JULNCA12	Julian	Tuolumne	800	26,306	-	3,718	56,865	86,889	108.61
559183	KGBGCA11	Kingsburg	San Diego	879	9,781	-	15,004	81,596	106,381	121.02
831112	KGCYCA11	King City	Tulare	1028	10,004	-	3,352	60,914	74,271	72.25
707300	KLVLCA12	Kelseyville	Monterey	1327	57,208	-	-	155,697	212,905	160.44
209184	KNFYCA11	Knights Ferry	Lake	1095	18,700	-	22,974	64,434	106,107	96.90
530465	KYBRCA11	Kyburz	Stanislaus	141	-	-	6,621	614	7,234	51.31
818620	LACNCA11	La Canada Oak Grove	El Dorado	60	-	-	4,125	4,039	8,164	136.07
818621	LACRCA11	La Crescenta	Los Angeles	14	-	-	-	7,013	7,013	500.90
650021	LAHNCA11	La Honda	Los Angeles	6224	151,777	27,534	33,454	189,849	402,615	64.69
558750	LALCA11	La Jolla Girard	San Mateo	389	2,944	-	-	19,212	22,156	56.96
661372	LAMTCA11	La Mesa	San Diego	3647	18,306	16,281	4,859	24,535	63,981	17.54
559186	LATNCA11	Latom	San Diego	5791	23,062	-	186,455	128,690	338,207	58.40
209190	LCFRCA11	Lockeford	Kern	719	57,951	-	-	45,960	103,911	144.52
661373	LEBCCA11	Lebec	Fresno	182	-	-	1,199	12,801	14,000	76.92
661404	LEBCCA12	Pine Mountain	San Joaquin	241	17,497	-	6,238	16,942	40,677	168.79
559188	LEMRC A11	Lemore Main	Kern	386	12,689	-	3,239	58,762	74,689	193.50
559189	LEMRC A12	Lemore Wymann	Kern	678	16,406	-	-	22,636	39,041	57.58
925022	LFYTCA11	Lafayette	Kings	1200	32,550	-	10,850	112,876	156,276	130.23
949749	LGNCA12	Laguna Niguel	Contra Costa	87	-	-	-	3,883	3,883	44.64
209187	LGRDCA11	Le Grande	Orange	2283	16,859	-	9,707	12,258	38,824	17.01
209185	LGRNCA12	LaGrande D Pedro	Merced	3371	17,590	-	10,994	11,497	40,081	11.89
				178	22,838	-	-	20,482	43,320	243.37
				859	7,535	-	14,088	25,634	47,257	55.01

Table 7.16 REHABILITATION EXPENDITURES BY WIRE CENTER 2018-2019 (continued)

WC	CLLI	WC Name	County	Jan 2018 Access Lines	TFS	Type of Expenditure C&E	OSP Rehab	Plant Rehab	Total	\$ per AL
707301	LKBRC A11	Lake Berryessa	Napa	188	-	-	5,348	6,539	11,886	63.23
661405	LKLA A11	Lake Los Angeles	Los Angeles	427	3,202	-	-	40,478	43,680	102.29
707302	LKPTCA A11	Lakeport	Lake	2039	-	-	64,355	126,132	190,486	93.42
619751	LKSDCA A12	Lakeside	San Diego	1795	61,228	-	-	42,539	172,614	68.84
530471	LLTNCA A11	Loyalton	Plumas	546	-	-	5,096	10,076	15,172	27.79
916467	LNCLCA A11	Lincoln	Placer	840	-	-	9,667	76,217	85,884	102.24
661374	LNVC A11	Leona Valley	Los Angeles	322	4,327	-	84,819	66,925	156,071	484.69
209191	LODICA A01	Lodi	San Joaquin	5596	112,764	-	5,512	147,422	265,687	47.48
707303	LOLTCA A11	Lollita	Humboldt	123	1,845	-	-	7,511	9,355	76.06
916470	LOMSCA A11	Loomis	Placer	1397	37,127	-	-	78,264	115,392	82.60
310622	LOMTCA A11	Lomita	Los Angeles	5732	125,126	-	9,155	42,731	177,012	30.88
415023	LRKSCA A11	Larkspur Corte Madera	Marin	3120	6,454	-	-	22,168	28,622	9.17
213624	LSANCA A02	Madison 02 MO	Los Angeles	7967	131,401	-	74,057	86,056	291,514	36.59
213625	LSANCA A03	Madison 03 MA	Los Angeles	5572	31,531	-	-	43,968	75,499	13.55
323626	LSANCA A05	LSAN Pleasant	Los Angeles	6868	219,327	-	-	12,943	232,270	33.82
213627	LSANCA A06	Union	Los Angeles	4504	48,031	-	76,028	57,957	182,016	40.41
310628	LSANCA A07	LSAN Airport	Los Angeles	7220	3,608	-	10,045	5,468	19,121	2.65
323629	LSANCA A08	LSAN Melrose	Los Angeles	11621	226,577	-	82,052	57,278	365,907	31.49
213630	LSANCA A09	Richmond	Los Angeles	6015	199,387	-	76,822	58,822	335,031	55.70
323631	LSANCA A10	LSAN Webster	Los Angeles	9845	111,548	-	117,800	53,685	283,033	28.75
213632	LSANCA A11	Rampart	Los Angeles	10841	139,296	-	184,230	89,753	413,279	38.12
323633	LSANCA A12	Normandy	Los Angeles	9451	369,899	-	166,210	109,302	645,411	68.29
323634	LSANCA A13	LSAN Plymouth	Los Angeles	5803	196,594	-	50,900	34,519	282,014	48.60
323635	LSANCA A14	LSAN Adams	Los Angeles	3816	162,423	-	49,089	6,720	218,231	57.19
323636	LSANCA A15	LSAN Axminster	Los Angeles	7990	297,859	-	23,042	16,719	337,619	42.26
323638	LSANCA A23	LSAN Capitol	Los Angeles	7035	37,736	-	71,313	98,292	207,342	29.47
323640	LSANCA A29	LSAN Sunset	Los Angeles	5382	128,442	-	29,453	33,230	191,126	35.51
323641	LSANCA A34	LSAN Angeles	Los Angeles	9593	43,464	-	128,897	202,105	374,465	39.04
323642	LSANCA A35	LSAN Montebello	Los Angeles	7620	62,104	-	17,752	182,008	261,864	34.37
323643	LSANCA A38	LSAN Republic	Los Angeles	6084	262,945	-	-	11,028	273,973	45.03
323644	LSANCA A56	LSAN Clinton	Los Angeles	6516	83,539	-	67,124	42,048	192,710	29.57
650024	LSATCA A11	Los Altos	Santa Clara	4386	69,173	45,785	70,552	50,561	236,071	53.82
209193	LSBNCA A12	Los Banos	Merced	2068	43,297	-	41,112	72,878	157,287	76.06
530469	LSMLCA A11	Los Molinos	Tehama	355	9,917	-	967	35,709	46,593	131.25
530466	LSTNCA A11	Lewiston	Trinity	508	-	-	-	14,930	14,930	29.39
661375	LTRKCA A11	Little Rock	Los Angeles	969	-	-	207,164	88,466	326,765	337.22
925025	LVMRCA A11	Livermore	Alameda	6279	31,136	-	10,773	320,705	489,137	77.90
530468	LVOKCA A11	Live Oak	Sutter	672	2,895	-	3,151	25,114	31,160	46.37
707304	LWLKCA A11	Lower Lake	Lake	1965	18,632	58,372	26,255	204,769	308,029	156.76
559194	MADRCA A11	Madera Main	Madera	3987	283,994	-	45,112	356,139	685,245	171.87
559243	MADRCA A12	Madera Bonnadelli	Madera	369	27,307	-	-	24,976	52,283	141.69
831113	MARNCA A11	Marina	Monterey	1358	-	-	-	21,687	21,687	15.97
209199	MDSTCA A02	Modesto Main	Stanislaus	11017	41,532	-	23,827	579,236	644,595	58.51
209200	MDSTCA A03	Modesto Kellogg South Ceres	Stanislaus	2635	13,244	-	7,704	175,530	196,478	74.56
209201	MDSTCA A04	Modesto Kingswood Curtis Salida	Stanislaus	1201	-	-	-	43,279	43,279	36.04
209248	MDSTCA A05	Modesto Tully	Stanislaus	634	-	-	-	17,275	17,275	27.25
209249	MDSTCA A52	Modesto Davis	Stanislaus	18	-	-	-	1,268	1,268	70.47
707306	MDTWCA A11	Middletown	Lake	874	-	-	56,398	115,765	172,164	196.98
209202	MKHLCA A12	Mokelumne Hill	Calaveras	183	-	-	8,902	5,969	14,871	81.26
707307	MKVKCA A11	McKinleyville	Humboldt	1103	3,811	-	-	39,213	46,892	42.51
650026	MLBRCA A11	Millbrae	San Mateo	2613	29,038	-	3,868	-	38,267	14.64
408114	MLPSCA A11	Milpitas	Santa Clara	5636	61,421	-	-	66,560	127,982	22.71

Table 7.16 REHABILITATION EXPENDITURES BY WIRE CENTER 2018-2019 (continued)

WC	CLLI	WC Name	County	Jan 2018		TFS	Type of Expenditure			Total	\$ per AL
				Access Lines	C&E		OSP Rehab	Plant Rehab			
415027	MLVYCA01	Mill Valley	Marin	3821	-	16,450	-	27,286	20,057	63,792	16.70
707305	MNDCCA11	Mendocino	Mendocino	1560	-	15,718	-	2,926	136,389	155,033	99.38
559195	MNDTCA11	Mendota	Fresno	448	-	40,539	-	-	36,390	76,929	171.72
650028	MNPKCA11	Monte Park	San Mateo	4016	-	97,799	-	5,808	71,422	175,028	43.58
707309	MNRICA11	Monte Rio	Sonoma	518	-	16,071	-	26,326	54,266	96,663	188.61
661376	MOJVCA01	Mojave	Kern	581	-	20,771	-	11,496	39,341	71,609	123.25
925029	MORGCA12	Moraga	Contra Costa	1735	-	6,985	-	15,825	74,237	42,779	86.98
805378	MRBACA11	Morro Bay	San Luis Obispo	993	-	18,491	-	-	67,881	86,371	106.21
209196	MRCDCA01	Merced	Merced	5298	-	151,287	-	183,508	227,923	562,718	56.13
530473	MFRDCA11	Meridan	Humboldt	150	-	-	-	-	5,420	36,130	130.20
707308	MFRDCA11	Miranda	Humboldt	286	-	-	-	-	37,236	37,236	94.09
209203	MRPHCA11	Murphys	Calaveras	818	-	20,534	-	4,526	51,903	76,963	495.94
805377	MRPKCA12	Moorpark	Ventura	2457	-	21,712	-	1,070,026	126,784	1,218,522	80.28
925030	MRTZCA11	Martinez	Contra Costa	3554	-	40,159	-	149,262	95,897	285,317	68.13
650031	MSBHCA11	Moss Beach	San Mateo	830	-	34,542	-	8,731	13,278	56,552	2.40
949806	MSVJCAAT	Mission Viejo	Orange	1889	-	2,081	-	2,452	-	4,533	8.569
530529	MTAGCA11	Montague	Siskiyou	534	-	-	-	-	8,569	8,569	16.05
760753	MTPSCA11	Mountain Pass	San Bernardino	19	-	-	-	-	6,590	6,590	30.02
831115	MTRYCA01	Monterey	Monterey	5760	-	-	-	9,345	163,584	172,928	39.449
530474	MTSHCA12	Mount Shasta	Siskiyou	1180	-	-	-	-	39,449	39,449	11.521
650032	MTVWCA11	Mountain View	Santa Clara	7929	-	26,428	-	30,686	54,407	111,521	14.06
530472	MVICA01	Marysville	Yuba	3543	-	4,549	12,529	86,041	229,635	444,116	58.28
707310	NAPACA01	Napa	Napa	7620	-	19,302	-	156,079	268,736	444,116	266.45
530477	NCLSCA12	Nicolas	Sutter	98	-	11,902	-	-	14,210	26,112	90.96
916478	NHLDCA11	Edgewood N Highl	Sacramento	4053	-	128,456	45,534	63,006	131,582	368,641	118.09
661379	NHLLCA01	Newhall	Los Angeles	5371	-	99,183	-	221,156	313,939	634,278	621.565
818646	NHWDCA01	NHWD Lanekershim	Los Angeles	6119	-	304,145	-	17,580	299,840	621,565	297.711
818647	NHWDCA02	NHWD Magnolia	Los Angeles	12872	-	329,591	-	160,963	297,711	788,265	88.610
707311	NICECA11	Nice	Lake	465	-	-	-	3,485	85,125	88,610	11.117
415033	NICSCA11	Nicasio	Marin	250	-	3,140	-	-	7,977	11,117	14.460
760855	NILDCA11	Niland Main	Imperial	83	-	6,527	-	-	7,933	14,460	171.57
760856	NILDCA12	Niland Bombay Beach	Imperial	98	-	4,213	-	6,399	6,202	16,814	88.11
805380	NIPMCA11	Nipomo	San Luis Obispo	999	-	39,895	-	-	48,125	88,020	94.67
818648	NORGCA11	Northridge	Los Angeles	10424	-	277,108	25,140	65,830	618,720	986,797	56.21
916479	NSRCRA11	Wabash	Sacramento	7088	-	49,114	107,480	62,149	193,861	412,604	35.62
916537	NSRCRA12	North Natomas	Sacramento	2047	-	5,710	-	21,700	45,513	72,922	42.33
530480	NSUNCA11	North San Juan	Nevada	490	-	3,447	-	-	17,293	20,740	51.37
619754	NTCYCA11	National City Highland	San Diego	1415	-	9,048	-	8,002	7,692	24,742	75.62
530475	NVCYCA11	Nevada City	Nevada	3415	-	17,209	29,760	13,500	114,954	175,423	66.33
916476	NWVSCA11	Newcastle	Placer	924	-	-	-	39,490	30,382	69,872	57.84
209204	NWMNCA12	Newman	Stanislaus	549	-	20,424	-	3,997	37,512	66,330	83.42
530481	NYUBCA11	North Yuba	Yuba	515	-	-	-	16,643	13,143	29,786	30.986
707312	OCDNCA11	Ocidental	Sonoma	599	-	7,622	-	4,456	37,892	49,970	76.05
760758	OCSDCA11	Oceanside Mission	San Diego	4352	1	52,404	-	52,465	226,116	330,986	187.65
805382	OJAICA11	Ojai	Ventura	1639	-	19,034	-	94,990	193,534	307,558	83.75
209205	OKDLCA11	Oakdale	Stanislaus	2070	-	83,756	-	10,639	78,973	173,368	11.91
510036	OKLDCA03	Oakland Franklin	Alameda	12884	-	47,126	-	18,361	87,899	153,386	93.45
510037	OKLDCA04	Oakland KelloggFruitvale	Alameda	5109	-	89,550	-	312,461	75,434	477,445	88.471
510038	OKLDCA11	Oakland 45th OlympicCentral	Alameda	9172	-	28,007	-	428	60,036	88,471	9.65
510039	OKLDCA12	Oakland Holly	Alameda	7805	-	107,138	-	156,548	126,106	389,792	55.130
510040	OKLDCA13	Oakland Mountain	Alameda	4550	-	4,964	-	6,712	43,454	55,130	12.12
925041	OKLYCA11	Oakley	Contra Costa	1105	-	21,509	-	-	5,148	26,657	24.12

Table 7.16 REHABILITATION EXPENDITURES BY WIRE CENTER 2018-2019 (continued)

WC	CLLI	WC Name	County	Access Lines	Jan 2018	TFS	Type of Expenditure	OSP Rehab	Plant Rehab	Total	\$ per AL
							C&E				
805381	OKVWCA11	Oakview	Ventura	620	9,644	-	-	-	63,797	73,441	118.45
661383	OLDLCA11	Export Olddale	Kern	2977	128,265	-	-	570,062	320,891	1,019,218	342.36
559206	ORCVCA11	Orange Cove	Fresno	399	39,544	-	-	-	41,805	81,348	203.88
530483	ORLDCA11	Orland	Glenn	1400	25,593	-	-	33,053	91,937	27,680	66.67
925042	ORNDCA11	Orinda	Contra Costa	1932	15,738	-	-	-	11,941	27,680	14.33
714759	ORNGCA11	Orange Chapman	Orange	6854	125,168	-	-	6,911	309,173	441,253	64.38
714760	ORNGCA13	Orange Olive	Orange	5138	165,647	-	-	58,749	154,057	378,453	73.66
714761	ORNGCA14	Orange West	Orange	3181	34,971	-	-	-	92,757	29,166	29.16
559207	ORSICA11	Orosi	Tulare	757	26,495	-	-	16,748	91,538	134,780	178.05
916482	ORVACA11	Orangevale	Sacramento	2287	36,274	-	-	7,222	53,974	90,970	39.78
530484	ORVACA11	Oroville Main	Butte	3496	12,855	-	-	7,820	101,897	122,572	35.06
530485	ORVACA12	Oroville East	Butte	1522	60,267	-	40,316	5,761	33,167	139,512	91.66
619853	OTMSCA11	Otay Mesa	San Diego	986	9,747	-	-	7,780	26,841	27,222	27.22
760764	PALACA11	Pauma Valley	San Diego	812	33,521	-	-	14,918	43,598	92,036	113.35
588762	PCBHCA01	Garnet	San Diego	4157	35,331	-	16,450	205,652	26,977	284,411	68.42
858763	PCBHCA11	Hornblend	San Diego	548	21,747	-	-	-	2,583	24,330	44.40
650043	PCFCCA11	Pacifica	San Mateo	3023	16,695	-	-	-	32,951	49,646	16.42
951765	PDLYCA11	Pedley	Riverside	2466	188,321	-	27,450	-	217,471	435,505	176.60
805386	PIRUCA11	Piru	Ventura	145	-	-	-	2,263	6,922	15,616	107.70
650045	PLALCA02	Palo Alto Main	Santa Clara	10518	35,040	-	-	8,694	26,321	120,501	11.46
650046	PLALCA12	Palo Alto South	Santa Clara	4001	4,498	-	-	6,178	10,235	20,911	5.23
714767	PLDCA11	Placencia	Orange	5397	262,175	-	-	30,639	476,847	88,356	86.35
661384	PLDCA01	Palmdale	Los Angeles	4380	16,994	-	-	67,842	286,824	371,660	84.85
661412	PLDCA11	Palmdale East 47TH ST	Los Angeles	902	18,403	-	-	-	54,149	72,552	80.43
916491	PLGVCA12	Pleasant Grove	Placer	160	7,692	-	-	-	12,953	129,032	129.03
209212	PLMOCA11	Plymouth	Amador	1528	15,485	-	-	26,520	75,102	117,107	76.64
209211	PLNDCA11	Planada	Merced	279	23,661	-	-	-	13,890	37,551	134.59
925047	PLTNCA12	Pleasanton Main Hopyard	Alameda	4045	88,252	-	-	32,432	107,133	207,817	51.38
925083	PLTNCA13	Pleasanton Hacienda	Alameda	1621	3,639	-	-	15,943	30,109	49,692	30.65
530489	PLVLCA11	Placerville Main	El Dorado	7102	91,856	-	106,515	39,373	207,348	445,092	62.67
530490	PLVLCA12	Placerville Niagara	El Dorado	2240	96,653	-	30,366	54,266	79,635	220,920	98.63
707315	PNCARCA11	Point Arena	Mendocino	597	17,044	-	26,725	10,494	29,214	83,477	139.83
209209	PNCRCA11	Pinecrest	Tuolumne	921	7,189	-	-	-	53,783	60,972	66.20
619766	PNVYCA11	Pine Valley	San Diego	247	-	-	-	10,274	15,273	25,547	103.43
858768	POWYCA11	Poway Midland	San Diego	2729	12,105	-	-	5,121	59,230	76,457	28.02
707313	PPWDCA11	Peppenwood	Humboldt	75	-	-	-	-	6,529	6,529	87.05
530486	PRDSCA11	Paradise Main	Butte	1089	14,226	-	-	-	62,308	76,534	70.28
530487	PRDSCA12	Paradise Pines	Butte	1026	5,388	-	-	21,208	67,354	93,950	91.57
559208	PRLRCA11	Parlier	Fresno	469	9,044	-	-	-	22,706	31,750	67.70
562649	PRMCA01	Paramount	Los Angeles	4428	156,937	-	-	6,523	64,670	228,130	51.52
415048	PRSNCA11	Point Reyes	Marin	825	7,250	-	-	4,066	17,794	17,794	21.57
925049	PSBGCA01	Pittsburg Main	Contra Costa	2490	134,981	-	-	19,876	99,041	253,899	101.97
925050	PSBGCA11	Pittsburg Bay Point Willow	Contra Costa	1095	11,584	-	-	33,712	3,076	48,373	44.18
805387	PSBHCA11	Pismo Beach	San Luis Obispo	736	2,352	-	-	-	51,667	54,019	73.40
650051	PSCDCA11	Pescadero	San Mateo	565	21,757	-	-	15,711	5,625	43,093	76.27
626650	PSDNCA11	Pasadena Mt Wilson Green	Los Angeles	12284	65,919	-	-	46,551	109,903	222,373	18.10
626651	PSDNCA12	Pasadena Lake	Los Angeles	5609	80,124	-	-	18,066	66,128	164,318	29.30
530488	PSKNCA11	Paskenta	Tehama	101	-	-	-	-	2,639	2,639	26.13
805385	PSRBCA01	Paso Robles	San Luis Obispo	4945	65,568	-	-	89,876	396,298	551,732	111.57
707314	PTLMCA01	Petaluma	Sonoma	4990	45,461	-	-	8,360	173,433	227,253	45.54
530492	PTOLCA01	Portola	Plumas	982	-	-	-	-	19,236	19,236	19.59
559213	PTVLCA11	Porterville	Tulare	4993	26,280	-	-	9,840	179,483	215,603	43.18

Table 7.16 REHABILITATION EXPENDITURES BY WIRE CENTER 2018-2019 (continued)

WC	CLLI	WC Name	County	Jan 2018 Access Lines	TFS	Type of Expenditure C&E	OSP Rehab	Plant Rehab	Total	\$ per AL
707316	PTVYCA11	Potter Valley	Mendocino	528	15,304	-	31,213	225,657	272,174	515.48
559210	PXYCA11	Pixley	Tulare	273	21,084	-	5,443	16,310	42,836	156.91
530493	QNCYCA12	Quincy	Plumas	1838	4,806	-	24,311	103,745	132,862	72.29
760769	RAMNCA11	Ramona	San Diego	1878	6,943	-	26,022	115,447	148,412	79.03
858770	RBRNCA11	Rancho Bernardo	San Diego	4178	19,521	-	595	167,213	187,328	44.84
916541	RCKLCA01	Stanford Ranch	Placer	3201	12,679	-	34,845	54,948	102,471	32.01
916527	RCKLCA11	Rocklin	Placer	1244	5,530	-	19,076	30,627	55,233	44.40
510052	RCMDCA11	Richmond SF	Contra Costa	7128	112,579	-	104,863	130,936	348,378	48.87
530496	RCVACA11	Richvale	Butte	107	-	-	-	5,405	5,405	50.52
530494	RDBLCA01	Red Bluff	Tehama	3745	30,131	-	510	90,865	121,506	32.44
650053	RDCYCA01	Redwood City	San Mateo	7949	72,968	-	118,660	33,984	225,611	28.38
530495	RDNGCA02	Redding Main	Shasta	4862	1,896	-	41,193	487,922	531,011	109.22
530531	RDNGCA11	Redding Enterpr	Shasta	3279	-	-	1,348	69,160	70,508	21.50
818652	RESDCA01	Reseda	Los Angeles	10038	246,080	19,900	58,294	278,592	602,866	60.06
707317	RIDECA11	Rio Dell	Humboldt	238	3,527	18,122	-	10,447	32,097	134.86
916526	RILNCA12	Rio Linda	Sacramento	1163	10,782	-	2,649	31,816	45,247	36.91
909773	RILTCA11	Rialto	San Bernardino	3898	155,421	-	20,935	205,356	381,712	97.93
916533	RNMRC A11	Rancho Murietta	Sacramento	523	7,952	-	-	12,235	20,188	38.60
858854	RNPSCA11	Rancho Penasquitos	San Diego	1446	-	-	-	12,207	12,207	8.44
619852	RNSDCA11	Rancho San Diego	San Diego	814	2,776	10,920	-	9,356	23,052	28.32
626654	ROSMCA11	Rosemead	Los Angeles	6423	48,539	-	-	114,867	163,405	25.44
858771	RSFECA12	Rancho Santa Fe	San Diego	3255	15,964	-	-	82,339	98,303	30.20
661388	RSMDC A11	Rosamond	Kern	1123	34,642	-	-	60,079	94,721	84.35
949808	RSMGCA11	R S Margarita	Orange	2003	22,207	-	-	6,537	28,744	14.35
707337	RTPKCA11	Rohrer Park	Sonoma	2121	3,599	-	6,023	63,090	72,712	34.28
559215	RVDLCA11	Riverdale	Fresno	336	18,860	-	-	37,271	56,131	167.06
209214	RVRBCA11	Riverbank	Stanislaus	992	-	-	261	23,328	23,589	23.78
951774	RVSDCA01	Riverside Orange	Riverside	7926	235,637	-	2,608	239,578	477,823	60.29
951775	RVSDCA11	Woodcrest	Riverside	2640	109,037	-	446	95,697	205,180	77.72
661407	SAGSCA11	Saugus	Los Angeles	2528	28,624	-	17,902	198,660	245,186	96.99
619795	SANTCA01	Santee	San Diego	2186	39,146	-	20,054	75,806	135,006	61.76
805391	SATCCA12	Saticoy	Ventura	1946	17,643	5,363	-	98,588	121,595	62.48
707321	SBSTCA11	Sebastapol	Sonoma	2794	12,227	115,570	-	174,571	351,030	125.64
916497	SCRMCA01	Sacramento Mn	Sacramento	6182	-	-	48,662	22,979	75,992	12.29
916498	SCRMCA02	SCRM Ivanhoe	Sacramento	7391	80,660	11,948	53,013	22,979	167,578	22.97
916499	SCRMCA03	SCRM Garden	Sacramento	8642	130,059	21,649	90,664	67,664	250,936	33.95
916500	SCRMCA11	SCRM Gladstone	Sacramento	6152	24,123	-	107,868	228,099	487,675	56.43
916501	SCRMCA12	SCRM Empire	Sacramento	4226	75,127	-	51,134	54,596	129,853	21.11
916502	SCRMCA13	SCRM Fruitridge	Sacramento	2983	51,557	-	5,889	75,681	156,697	37.08
916497	SCRMALR	Sequoia Pacific State	Sacramento	6182	-	28,668	5,788	41,632	127,645	42.79
916538	SCRMAMZ	P Street State	Sacramento	0	-	-	-	-	-	-
916539	SCRMATE	First Ave DMV State	Sacramento	0	-	-	-	-	-	-
831116	SCVCA01	Scotts Valley	Santa Cruz	1367	6,918	-	-	18,279	25,197	18.43
530508	SDSPCA11	Soda Springs	Nevada	527	16,856	-	-	62,541	79,397	150.66
559217	SELMCA11	Selma	Fresno	1616	9,518	-	15,689	95,807	121,015	74.89
831117	SESDCA11	Seaside	Monterey	1845	5,719	-	-	48,732	54,451	29.51
323655	SGATCA01	South Gate	Los Angeles	4611	130,574	-	320,700	91,765	543,039	117.77
530504	SGSPCA11	Shingle Springs	El Dorado	3431	125,593	34,518	8,678	99,827	268,615	78.29
661392	SHFTCA11	Shafter	Kern	772	21,249	-	12,662	65,662	99,573	128.98
530503	SHLKCA01	Shasta Lake	Shasta	342	-	-	-	101,712	101,712	297.40
818656	SHOKCA01	Sherman Oaks	Los Angeles	13316	217,532	-	11,445	373,995	602,971	45.28
760796	SHSHCA11	Shoshone	San Bernardino	137	1,060	-	-	8,439	9,499	69.34

Table 7.16 REHABILITATION EXPENDITURES BY WIRE CENTER 2018-2019 (continued)

WC	CLLI	WC Name	County	Jan 2018 Access Lines	TFS	Type of Expenditure C&E	OSP Rehab	Plant Rehab	Total	\$ per AL
805393	SIMICA11	Simi	Ventura	7815	96,397	-	601,612	945,208	1,643,216	210.26
949791	SJCPCA12	S J Capistrano	Orange	4048	14,328	-	10,589	10,915	35,832	8.85
209220	SKTNGA01	Stockton Main	San Joaquin	7703	34,860	-	77,547	377,582	489,989	63.61
209221	SKTNGA11	Stockton Granite	San Joaquin	7644	87,312	14,979	55,531	477,341	635,162	83.09
209222	SKTNGA12	Stockton Ashley	San Joaquin	1196	56,779	-	19,156	58,593	134,528	112.48
209223	SKTNGA14	Stockton Redwood	San Joaquin	1471	23,505	-	18,655	60,393	102,554	69.72
661118	SLDDCA11	Soledad	Monterey	947	49,719	-	1,329	97,941	148,989	157.33
831394	SLMNCA11	Solemint	Los Angeles	3415	67,641	-	13,455	316,510	397,607	116.43
831119	SLNSCA01	Salinas Main	Monterey	5792	2,428	(105)	21,701	86,846	110,870	19.14
831120	SLNSCA11	Hickory Salinas	Monterey	2176	8,880	-	47,742	38,862	87,442	21.94
831121	SLNSCA12	Glenview	Monterey	556	4,284	-	-	4,272	8,556	15.39
831122	SLNSCA13	Hunter	Monterey	680	-	-	-	11,406	11,406	16.77
831123	SLNSCA14	Moro	Monterey	1095	24,927	-	-	23,528	48,454	44.25
714797	SLVRCA11	Silverado	Orange	191	12,059	-	-	42,157	54,216	283.85
530507	SMAVCA11	Smartsville	Yuba	318	-	-	14,436	4,857	19,293	60.67
209216	SNADCA11	San Andreas	Calaveras	1238	9,111	-	50,986	50,203	110,300	89.10
714788	SNANCA01	Bush	Orange	8268	123,494	-	24,425	34,304	182,223	22.04
714789	SNANCA11	Bristol	Orange	9617	182,751	1,506	35,696	44,643	264,596	27.51
831124	SNARCA11	Santa Ana West SNAN Bolsa	Orange	2806	36,938	16,598	473	20,062	74,071	26.40
650055	SNBUCA02	San Bruno	Monterey	119	8,941	-	-	16,170	25,111	211.02
949776	SNCLCA12	San Clemente	San Mateo	9822	43,148	-	10,419	51,208	104,775	10.67
650056	SNCRCA11	San Carlos	Orange	2802	10,729	-	12,251	22,980	22,980	8.83
831125	SNCZCA01	Santa Cruz	San Mateo	6590	31,930	-	1,852	10,372	44,154	6.70
831126	SNZCA11	Santa Cruz Capitola	Santa Cruz	6297	36,303	32,778	7,072	68,857	112,232	17.82
619777	SNDGCA01	SNDG C Street	San Diego	5627	43,418	-	138	50,516	126,850	25.48
619778	SNDGCA02	SNDG University	San Diego	5448	6,109	-	84,922	25,629	110,551	20.29
858779	SNDGCA03	SNDG Linda Vista	San Diego	8083	142,402	-	129,442	58,676	330,520	40.89
619780	SNDGCA05	SNDG Saipan	San Diego	2182	48,147	-	15,884	42,147	106,177	48.66
619781	SNDGCA06	SNDG 37th Street	San Diego	3952	-	-	22,758	31,480	54,238	13.72
619782	SNDGCA11	SNDG College	San Diego	2566	4,797	-	100,679	51,720	157,196	61.26
619783	SNDGCA12	SNDG Market Street	San Diego	2184	-	1,443	8,782	23,640	33,865	15.51
619784	SNDGCA14	SNDG Tennyson	San Diego	2848	-	-	20,879	13,817	34,696	12.18
858785	SNDGCA15	SNDG Regents	San Diego	6954	38,973	-	19,644	20,501	79,119	11.38
415058	SNFCCA01	SNDG Mira Mesa	San Diego	5310	22,686	1	3,911	43,429	70,026	13.19
415059	SNFCCA04	SF Bush Pine	San Francisco	14854	20,554	-	209,913	88,906	319,373	21.50
415060	SNFCCA05	SF Market McCoppin	San Francisco	10962	34,072	5	297,687	167,993	499,757	45.59
415061	SNFCCA06	SF Mission 25th St	San Francisco	10082	30,397	-	90,862	126,296	247,554	24.55
415067	SNFCCA12	SF Juniper Onondaga	San Francisco	11364	38,975	67,367	43,919	143,306	293,567	25.83
415064	SNFCCA13	SF Larkin Steiner	San Francisco	22366	57,711	-	210,149	183,049	450,909	20.16
415065	SNFCCA14	SF Evergreen 9th Ave	San Francisco	9186	20,088	-	88,508	59,649	191,019	20.79
415066	SNFCCA17	SF Montrose 19th	San Francisco	11765	47,230	-	52,098	133,262	232,590	19.77
415068	SNFCCA21	SF Third St	San Mateo	4510	34,422	-	60,277	75,919	170,617	37.83
415084	SNFCCA64	SF Folsom	San Francisco	7656	2,783	-	5,116	50,546	58,445	7.63
626658	SNGBCA01	San Gabriel	Los Angeles	0	-	-	453	714	1,167	-
831127	SNJNCA11	San Gerónimo	San Benito	4610	119,110	19,071	14,725	82,649	235,554	51.10
408128	SNJSCA02	San Jose Main	San Clara	461	7,090	-	-	21,479	28,570	61.97
408129	SNJSCA11	San Jose White Rd	San Clara	12910	48,007	-	-	7,077	7,077	18.43
408130	SNJSCA12	San Jose Dial Way	San Clara	8051	79,854	20,609	86,242	119,703	253,953	19.67
408131	SNJSCA13	San Jose Chynoweth	San Clara	13069	98,959	-	41,526	170,433	312,421	36.81
				7594	330,213	-	-	282,004	282,004	21.58
						-	63,147	228,393	621,753	81.87

Table 7.16 REHABILITATION EXPENDITURES BY WIRE CENTER 2018-2019 (continued)

WC	CLLI	WC Name	County	Jan 2018 Access Lines	TFS	Type of Expenditure C&E	OSP Rehab	Plant Rehab	Total	\$ per AL
408132	SNJSCA14	San Jose Foxworthy	Santa Clara	9411	35,923	-	368,922	159,233	564,078	59.94
408133	SNJSCA15	San Jose Evergreen	Santa Clara	5113	162,074	-	26,317	171,889	360,280	70.46
408134	SNJSCA18	San Jose Almaden Valley	Santa Clara	2877	62,250	-	51,863	88,855	202,967	70.55
408142	SNJSCA21	San Jose Junction	Santa Clara	6140	12,255	-	10,204	21,670	44,129	7.19
408142	SNJSCA22	San Jose Bailey	Santa Clara	149	20,076	-	1,027	4,748	25,850	173.49
831135	SNLCCA11	San Lucas	Monterey	43	2,597	-	-	18,965	21,562	501.45
510070	SNLNCA11	San Leandro	Alameda	8284	73,345	-	90,169	212,461	28,646	25.65
805389	SNLOCA01	San Luis Obispo	San Luis Obispo	4352	57,268	-	203,281	314,465	575,015	132.13
408136	SNMACA11	San Martin	Santa Clara	632	67,068	-	-	13,997	81,065	128.27
760792	SNMCCA11	San Marcos	San Diego	4889	74,626	1,511	35,906	307,606	419,648	85.84
805390	SNMICA11	Santa Margarita	San Luis Obispo	540	10,218	-	11,595	21,114	42,927	79.49
650071	SNMTC A11	San Mateo	San Mateo	7900	62,348	-	65,773	50,133	178,254	22.56
310659	SNPDCA01	San Pedro	Los Angeles	7437	234,508	-	66,102	102,926	403,536	54.26
209218	SNRACA13	Sonora	Tuolumne	4857	138,003	-	25,875	248,553	412,432	84.91
415072	SNRFA01	San Rafael Main	Marin	6998	34,428	-	67,252	71,051	172,731	24.68
415073	SNRFCA11	Parkway	Marin	2956	5,185	-	5,637	10,529	7,222	7.22
925074	SNRMCA11	San Ramon	Alameda	4197	13,149	-	-	156,382	169,531	40.39
707320	SNRSCA01	Santa Rosa Main	Sonoma	11549	49,795	-	20,522	664,086	734,403	63.59
707319	SNRSCA11	Los Alamos	Sonoma	2537	6,556	-	14,382	91,433	91,433	36.04
408143	SNRCCA01	Santa Clara Spacepark	Santa Clara	4768	15,339	-	31,045	86,502	18,14	18.14
408137	SNRCCA11	Santa Clara Bellomy	Santa Clara	8974	49,200	-	35,012	91,735	175,946	19.61
408138	SNVACA01	Carroll Sunnyvale	Santa Clara	7759	21,755	39	39,351	86,439	147,584	19.02
408139	SNVACA11	Mahinda Sunnyvale	Santa Clara	1662	-	2,338	5,274	9,961	15,573	9.37
619794	SNYSACA12	San Ysidro	San Diego	1283	36,799	-	-	15,555	52,354	40.81
707323	SONMCA12	Sonoma	Sonoma	3961	20,223	15,929	98,020	96,479	230,651	58.23
626660	SPSDCA11	Sout Pasadena Mission	Los Angeles	2834	16,373	-	2,853	9,933	29,159	10.29
559219	SPVLCA11	Springville	Tulare	751	-	-	14,980	29,158	44,138	58.77
530505	SRFYCA11	Sierra City	Sierra	430	-	-	-	10,677	10,677	24.83
559224	SRFRCA11	Stratford	Kings	85	-	-	2,416	11,991	169,49	169.49
530506	SRV LCA11	Sierraville	Sierra	162	-	-	-	4,145	4,145	25.59
415075	SSLTCA11	Sausalito Larkspur	Marin	1737	3,558	-	-	14,275	17,833	10.27
530509	STAHCA01	South Tahoe Sussex	El Dorado	2731	1,033	-	-	71,198	72,231	26.45
530511	STAHCA12	South Tahoe Tamarack	El Dorado	128	-	-	3,563	2,479	6,042	47.20
530512	STAHCA13	South Tahoe Meyers Apache	El Dorado	785	7,615	-	3,382	15,232	26,229	33.41
415076	STBHCA11	Slinson Beach	Marin	1202	10,521	-	7,883	15,235	33,640	27.99
209225	STCKCA11	Suiter Creek	Amador	697	8,077	-	1,572	34,827	44,477	63.81
530513	STFRCA11	Stonyford	Colusa	138	3,689	-	-	1,747	5,436	39.39
707318	STHNCA11	Napa	Napa	2372	20,797	-	32,261	46,813	99,871	42.10
707324	SUISCA11	Suisun City	Solano	345	-	-	-	11,330	11,330	32.84
925077	SUNLCA11	Sunol	Alameda	191	15,073	-	-	29,532	44,606	233.54
415005	TBRNCA11	Tiburon	Marin	1686	-	-	-	3,569	2,12	2.12
661395	THCHCA01	Techachapi	Kern	1787	28,977	-	-	155,210	184,186	103.07
530514	THCYCA01	Tahoe City	Placer	2438	2,419	-	-	50,579	52,998	21.74
559228	THRRCA11	Three Rivers	Tulare	609	-	59,250	3,434	36,863	99,547	163.46
209227	THNCA11	Thomton	San Joaquin	100	23,562	-	2,429	13,926	39,916	399.16
707325	TMLSCA12	Tomales	Sonoma	287	4,570	-	12,069	10,979	27,618	96.23
805396	TMTNCA11	Templeton	San Luis Obispo	643	9,364	-	-	39,990	49,354	76.76
559229	TPTNCA11	Tipton	Tulare	199	7,067	-	1,923	23,866	32,856	165.11
209230	TRACCA11	Tracy	San Joaquin	4319	-	-	13,499	376,906	390,405	90.39
559226	TRBLCA11	Terra Bella	Tulare	417	41,797	-	2,169	26,807	70,772	169.72
209232	TRLCA11	Turlock	Stanislaus	6746	78,814	-	29,773	270,775	379,362	56.24
310661	TRNCCA11	Torrance	Los Angeles	4260	171,620	-	8,134	41,232	220,986	51.87

Table 7.16 REHABILITATION EXPENDITURES BY WIRE CENTER 2018-2019 (continued)

WC	CLI	WC Name	County	Jan 2018 Access Lines	TFS	Type of Expenditure C&E	OSP Rehab	Plant Rehab	Total	\$ per AL
707326	TRNDCA11	Trinidad	Humboldt	296	11,203	3,282	-	12,744	27,229	91.99
831140	TRPSCA11	Tres Pinos	San Benito	214	-	-	-	4,801	4,801	22.44
530515	TRUCCA11	Truckee	Nevada	3351	8,313	-	39,378	69,710	117,401	35.03
530516	TRUCCA12	North Star	Placer	606	-	-	-	7,483	7,483	12.35
559231	TULRCA11	Tulare	Tulare	3875	73,954	-	15,273	278,003	367,230	94.77
714798	TUSTCA11	Tustin 11	Orange	6962	74,274	-	21,884	38,592	134,751	19.36
714805	TUSTCA70	Tustin 70	Orange	658	-	-	-	2,698	2,698	4.10
209233	TWHRCA11	Twain Harle	Tuolumne	1607	42,552	-	759	78,964	122,275	76.09
707328	UKHCA01	Ukiah Main	Mendocino	3947	10,086	53,169	52,927	200,292	316,473	80.18
707327	UKHCA12	Capella Ivanhoe	Mendocino	995	18,740	-	7,784	70,699	97,224	97.71
510078	UNCYCA11	Union City	Alameda	4821	115,403	4,587	66,082	114,341	300,413	62.31
707329	UPLKCA11	Upper Lake	Lake	388	7,481	-	11,264	64,894	83,640	215.57
707330	CVLCA12	Vacaville	Solano	5328	71,566	68,047	27,962	304,243	471,817	88.55
530517	VINACA12	Vina	Tehama	69	-	-	-	10,211	10,211	147.98
559235	VISLCA11	Visalia Main	Tulare	6971	50,321	-	44,586	546,421	641,327	92.00
760800	VISTCA12	Visia	San Diego	5720	74,500	-	14,307	304,384	393,191	66.74
760799	VLCTCA11	Valley Center	San Diego	2286	25,637	-	8,294	123,425	157,356	68.83
707331	VLLUCA01	Vallejo	Solano	6162	86,010	-	7,323	895,176	988,509	160.42
818662	VNNYCA02	Van Nuys	Los Angeles	10196	208,292	15,266	15,404	290,772	529,734	51.96
805400	VNTRCA02	Ventura Fir	Ventura	2365	15,012	-	13,364	133,426	163,802	66.26
805399	VNTRCA11	Ventura Main Montalvo	Ventura	4798	16,793	6,318	13,886	258,154	295,151	61.52
707332	VYFRCA11	Valley Ford	Sonoma	184	3,905	-	4,813	23,705	32,423	176.21
209234	VYSPCA11	Valley Springs	Calaveras	1100	22,166	14,574	904	55,310	92,954	84.50
209238	WANACA11	Wawana	Mariposa	267	-	-	-	13,352	13,352	50.01
861402	WASCCA01	Wasco	Kern	774	2,323	-	2,661	61,287	66,272	85.62
530523	WDLCA11	Woodland	Yolo	4358	3,969	-	17,966	159,196	181,131	41.56
559239	WDLKCA11	Woodlake	Tulare	533	85,799	-	-	44,379	130,178	244.24
530518	WEEDCA01	Weed	Siskiyou	847	-	-	-	13,016	13,016	15.37
707333	WEOTCA11	Weott	Humboldt	63	-	-	-	20,157	20,157	319.96
310663	WLANCA01	Century City	Los Angeles	5791	39,571	-	7,302	8,495	55,368	9.56
661401	WLBSCA11	Walker Basin	Kern	447	25,453	-	-	36,403	61,856	138.38
209236	WLLCCA11	Wallace	Calaveras	400	-	-	-	44,903	44,903	112.26
310664	WLMGCA01	Wilmington	Los Angeles	5429	171,156	-	172,764	26,194	370,114	68.17
707334	WLTSCA12	Willits	Mendocino	2049	33,490	-	94,396	174,289	302,155	147.46
530521	WMLWCA11	Willows	Glenn	989	9,907	-	8,481	34,995	53,383	53.98
925079	WNCKCA11	Walnut Creek	Contra Costa	11153	84,117	-	256,833	165,582	506,532	45.42
707335	WNDSCA11	Windsor	Sonoma	1693	10,542	-	56,570	67,370	134,483	79.43
760801	WNSPCA12	Warner Springs	San Diego	373	11,323	-	-	25,772	37,095	99.45
530522	WNTRCA11	Winters	Yolo	734	23,675	-	-	39,385	63,060	85.91
916519	WSGRCA11	Frontier	Sacramento	3690	36,830	2,552	97,909	27,276	164,566	44.60
530520	WTLRCA11	Waterford	Stanislaus	758	39,264	-	7,575	62,111	108,950	143.73
831141	WTVLCA01	Watsonville	Sutter	497	-	-	18,764	18,995	37,759	75.97
530525	YBCYCA01	Yuba City Marysville	Santa Cruz	7582	84,050	8,403	-	107,312	199,766	26.35
707336	YNVLCAL11	Yountville	Sutter	4625	-	-	23,620	106,720	130,340	28.18
530524	YREKCA11	Yreka	Napa	819	3,410	-	5,236	18,898	27,544	33.63
714802	YRLNCA11	Yorba Linda	Siskiyou	1314	-	-	-	13,848	13,848	10.54
714809	YRLNCA12	Gypsum Canyon	Orange	3299	176,263	-	-	172,512	348,775	105.72
209240	YSMTCA11	Yosemite Main	Orange	562	10,180	-	-	24,721	34,901	62.10
209241	YSMTCA11	Yosemite Main	Mariposa	529	-	-	-	79,884	79,884	151.01
209240	YSMTCA12	El Portal	Mariposa	299	-	-	12,103	32,554	44,657	149.35
TOTALS 2018-2019										
				1,915,900	28,021,812	2,060,343	20,395,286	56,734,288	107,211,728	55.96

Table 7.17

AT&T CALIFORNIA

COMPARISON OF GO 133-D \$9.7 "ALTERNATIVE PROPOSED INVESTMENTS" AND TOTAL REHAB EXPENDITURES 2018-2019

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
661410	ACTNCA11	Acton	Los Angeles	743	-	122,841	0.00%
661351	AGDLCA11	Agua Dulce	Los Angeles	456	-	311,170	0.00%
818600	AGORCA11	Agoura	Los Angeles	4858	-	951,226	0.00%
510001	ALBYCA11	Albany Solano	Alameda	6236	21,550	92,458	23.31%
530425	ALGHCA11	Alleghany	Sierra	47	-	15,482	0.00%
626601	ALHBCA01	Alhambra	Los Angeles	8889	-	232,806	0.00%
510002	ALMDCA11	Alameda Central	Alameda	6355	5,120	185,433	2.76%
619700	ALPICA12	Alpine	San Diego	1624	47,280	118,847	39.78%
209150	ANCMCA01	Angels Camp	Calaveras	809	-	100,528	0.00%
707275	ANGWCA11	Angwin	Napa	591	-	36,041	0.00%
714701	ANHMCA01	Anaheim Lemon	Orange	7849	-	321,767	0.00%
714702	ANHMCA11	Anaheim Cypress	Orange	7686	-	719,465	0.00%
714703	ANHMCA12	Anaheim La Palm: Orange	Orange	1791	-	194,078	0.00%
714811	ANHMCA17	ANHM Hills	Orange	848	-	52,121	0.00%
707322	ANNPCA11	Annapolis	Sonoma	71	-	12,067	0.00%
925003	ANTCCA11	Antioch	Contra Costa	5049	-	383,040	0.00%
831100	APTSCA12	Aptos	Santa Cruz	2864	6,466	76,438	8.46%
626602	ARCDCA11	Arcadia	Los Angeles	4800	-	168,770	0.00%
707276	ARCTCA11	Arcata	Humboldt	1835	-	89,453	0.00%
805352	ARGRCA12	Arroyo Grande	San Luis Obispo	3827	-	389,592	0.00%
831144	ARMSCA11	Aromas	San Benito	446	-	52,895	0.00%
209151	ARNLCA11	Arnold	Calaveras	1936	-	197,594	0.00%
530427	ARSNCA11	Anderson	Shasta	1747	-	79,134	0.00%
951704	ARTNCA11	Arlington	Riverside	5896	-	477,090	0.00%
661353	ARVNCA11	Arvin	Kern	736	-	146,034	0.00%
559152	ASMTCA11	Sequoia Ash Mtn	Fresno	82	-	54,554	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
805354	ATSCCA11	Atascadero	San Luis Obispo	2312	-	169,359	0.00%
209153	ATWRCA12	Atwater	Merced	1837	-	257,259	0.00%
530428	AUBNCA01	Auburn Main	Placer	5789	-	172,598	0.00%
530429	AUBNCA11	Auburn Placer Hill; Placer	Placer	1530	-	56,761	0.00%
805355	AVBHCA11	Avila Beach	San Luis Obispo	337	-	19,066	0.00%
559154	AVNLCA12	Avenal	Kings	434	-	52,681	0.00%
760705	BAKRCA11	Baker	San Bernardino	114	-	1,308	0.00%
949706	BALBCA01	Balboa	Orange	2703	-	51,441	0.00%
530434	BCWYCA11	Brockway	Placer	924	-	23,972	0.00%
707279	BDBACA11	Bodega Bay	Sonoma	336	-	83,346	0.00%
530431	BEALCA11	Beale	Yuba	78	-	4,622	0.00%
323604	BELLC A11	Bell	Los Angeles	2449	-	214,911	0.00%
530432	BGGSCA11	Biggs	Butte	249	-	33,362	0.00%
831101	BGSRCA11	Big Sur	Monterey	389	-	122,197	0.00%
707281	BGVLCA11	Bridgeville	Humboldt	173	-	89,077	0.00%
661356	BKFDCA11	Bakersfield Empir; Kern	Bakersfield	1142	-	501,216	0.00%
661357	BKFDCA12	Bakersfield Main F Kern	Bakersfield	6158	-	1,338,241	0.00%
661358	BKFDCA13	Bakersfield Colum Kern	Bakersfield	2365	-	439,850	0.00%
661359	BKFDCA14	Bakersfield Temp; Kern	Bakersfield	6693	-	1,678,481	0.00%
661360	BKFDCA15	Bakersfield Mettle; Kern	Bakersfield	299	-	88,208	0.00%
661361	BKFDCA17	Bakersfield West F Kern	Bakersfield	3311	-	307,839	0.00%
661409	BKFDCA19	Bakersfield Nomar Kern	Bakersfield	1972	-	123,092	0.00%
510004	BKLYCA01	Berkeley Bancroft Alameda	Berkeley	8600	-	98,859	0.00%
831102	BLCKCA11	Boulder Creek	Santa Cruz	1051	51,244	106,508	48.11%
707278	BLLKCA11	Blue Lake	Humboldt	236	-	58,019	0.00%
530433	BLRSCA12	Blairsden	Plumas	901	-	49,064	0.00%
707277	BNCICA11	Benicia	Solano	1943	-	185,031	0.00%
530430	BNGRCA11	Bangor	Butte	335	-	13,720	0.00%
831103	BNLMCA11	Ben Lomond	Santa Cruz	579	-	33,465	0.00%
714710	BNPKCA11	Buena Park	Orange	4388	-	340,621	0.00%
707280	BNVLCA11	Boonville	Mendocino	645	12,118	121,299	0.00%
818605	BRBNCA11	Burbank Palm	Los Angeles	9868	-	671,797	9.99%
818606	BRBNCA13	Burbank Thornton	Los Angeles	755	-	6,093	0.00%
805363	BRDLCA90	Bradley	Monterey	495	-	42,059	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
714709	BREACA12	Brea	Orange	2998	-	326,264	0.00%
650006	BRLNCA01	Burlingame	San Mateo	7936	72,737	106,149	68.52%
760707	BRSPCA11	Borrego Springs	San Diego	698	-	32,948	0.00%
925007	BRWDCA12	Brentwood	Contra Costa	3696	-	129,956	0.00%
760708	BRWLCA11	Brawley	Imperial	1759	-	108,509	0.00%
925082	BSRNCA70	Bishop Ranch	Contra Costa	1443	-	20,613	0.00%
530435	BTCYCA11	Butte City	Glenn	109	-	423	0.00%
925008	BTISCA11	Bethel Island	Contra Costa	265	-	21,915	0.00%
559242	BURLCA11	Burrell	Fresno	88	-	40,135	0.00%
310607	BVHLCA01	Beverly Hills	Los Angeles	16372	-	320,349	0.00%
209155	BVLYCA11	Bear Valley	Calaveras	436	-	40,343	0.00%
661403	BVSPCA11	Bear Villy Spring	Kern	334	-	74,992	0.00%
805362	BYPKCA11	Baywood Park	San Luis Obispo	920	-	151,562	0.00%
619715	CAMPCA11	Campo	San Diego	474	-	56,282	0.00%
707285	CBMTCA11	Cobb Mountain	Lake	317	-	77,134	0.00%
530438	CHICCA01	Chico Main	Butte	10221	6,955	287,579	2.42%
530437	CHLNCA11	Challange	Yuba	1149	-	22,682	0.00%
831104	CHLRCA11	Chualar	Monterey	136	-	28,848	0.00%
619718	CHVSCA11	Chula Vista Third / San Diego	San Diego	3894	8,957	165,333	5.42%
619719	CHVSCA12	Chula Vista Apach San Diego	San Diego	2258	5,956	44,012	13.53%
559158	CHWCCA11	Chowchilla	Madera	963	-	166,189	0.00%
818666	CLBSCA11	Calabasas Park S/ Los Angeles	Los Angeles	3840	-	300,793	0.00%
818665	CLBSCA50	Calabasas Los Vir Los Angeles	Los Angeles	1058	-	23,283	0.00%
310608	CLCYCA11	Culver City	Los Angeles	7964	-	277,935	0.00%
559160	CLNGCA01	Coalinga	Fresno	817	-	128,060	0.00%
707283	CLOKCA11	Clear Lake Oaks	Lake	536	-	19,221	0.00%
760713	CLPTCA11	Calpatria	Imperial	259	-	28,477	0.00%
707282	CLSTCA11	Calistoga	Napa	1111	-	146,784	0.00%
559159	CLVSCA11	Clovis	Fresno	8311	19,168	881,838	2.17%
760712	CLXCCA12	Calexico	Imperial	1886	-	40,026	0.00%
805364	CMBACA11	Cambria	San Luis Obispo	1435	-	170,952	0.00%
559156	CMNLCA11	Camp Nelson	Tulare	680	-	11,900	0.00%
760714	CMPDCA01	Camp Pendleton	San Diego	107	-	5,250	0.00%
530436	CMPVCA11	Camptonville	Yuba	216	-	19,650	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
310609	CMTNCA01	Compton	Los Angeles	9969	51,395	1,171,795	4.39%
925009	CNCRCA01	Concord	Contra Costa	8980	-	332,450	0.00%
818610	CNPKCA01	Canoga Park	Los Angeles	13344	16,043	1,356,631	1.18%
530528	CNVYCA11	Central Valley	Shasta	1528	23,261	47,627	48.84%
707284	CODLCA11	Cloverdale	Sonoma	832	-	130,963	0.00%
650010	COLACA01	Colma Daly City	San Mateo	5878	39,715	159,553	24.89%
707286	CORDCA12	Cordelia	Solano	1340	-	51,378	0.00%
951721	CORNCA11	Corona	Riverside	10738	12,733	1,015,536	1.25%
909720	COTNCA11	Colton	San Bernardino	3205	-	304,731	0.00%
510011	CRCTCA02	Crockett	Contra Costa	289	-	1,666	0.00%
949722	CRDMCA11	Corona Del Mar	Orange	6350	-	132,880	0.00%
760716	CRLSCA11	Carlsbad Harding	San Diego	2206	-	98,008	0.00%
760717	CRLSCA12	Carlsbad La Costa	San Diego	3662	-	62,771	0.00%
831105	CRMLCA11	Carmel Main	Monterey	4592	4,577	406,060	1.13%
619723	CRNDCA11	Coronado	San Diego	1724	10,589	13,839	76.52%
530440	CRNGCA12	Corning	Tehama	1179	-	89,716	0.00%
559157	CRTHCA11	Caruthers	Fresno	383	-	29,715	0.00%
831106	CRVYCA11	Carmel Valley	Monterey	1039	-	61,473	0.00%
949725	CSMSCA11	Costa Mesa	Orange	5737	-	178,369	0.00%
661408	CSTCCA11	Castaic	Los Angeles	3431	-	201,094	0.00%
831107	CSVLCA11	Castroville	Monterey	1012	-	24,845	0.00%
707287	CTTICA12	Cotati	Sonoma	1983	11,393	71,216	16.00%
209161	CTVLCA11	Coulterville	Mariposa	663	-	75,405	0.00%
530441	CTWDCA11	Cottonwood	Tehama	2138	45,885	116,846	39.27%
209162	CWLDCA12	Crows Landing	Stanislaus	91	-	9,812	0.00%
805366	CYCSCA11	Cayucos	San Luis Obispo	526	-	68,635	0.00%
925081	CYTNCA11	Clayton	Contra Costa	1502	-	71,233	0.00%
760726	CYWLCA11	Coyote Wells	Imperial	46	-	1,680	0.00%
925012	DAVLCA12	Danville Main 12	Contra Costa	5110	-	303,232	0.00%
925085	DAVLCA13	Danville Tassajara	Contra Costa	2391	-	53,030	0.00%
530442	DAVSCA11	Davis	Yolo	4191	-	143,752	0.00%
661367	DELNCA11	Delano	Tulare	1939	48,637	230,364	21.11%
559164	DINBCA01	Dinuba	Tulare	1352	-	78,090	0.00%
707443	DIXNCA11	Dixon	Solano	1345	-	110,688	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
858727	DLMRCA12	Del Mar	San Diego	5494	-	40,412	0.00%
559163	DLRYCA11	Del Rey	Fresno	143	-	21,705	0.00%
619728	DLZRCA11	Dulzura	San Diego	504	-	28,378	0.00%
530445	DNGNCA12	Dunnigan	Yolo	113	-	18,518	0.00%
530446	DNSMCA11	Dunsmuir	Siskiyou	413	-	19,473	0.00%
530447	DTFLCA11	Alta Dutch Flats	Placer	538	-	43,835	0.00%
530444	DWNVCA11	Downtonville	Sierra	239	-	8,963	0.00%
661369	EDWRCA01	Edwards	Kern	137	-	6,702	0.00%
530448	EKCKCA11	Elk Creek	Glenn	100	-	14,917	0.00%
619729	ELCJCA11	El Cajon	San Diego	4004	4,702	326,642	0.00%
760730	ELCNCA01	El Centro	Imperial	3848	2,151	156,017	1.44%
707288	ELK CA11	Elk	Mendocino	211	8,060	8,477	1.38%
626611	ELMNCA01	El Monte	Los Angeles	9210	7,436	260,083	95.08%
510013	ELSBCA11	Rich Appian Way Contra Costa	Los Angeles	3219	-	150,753	2.86%
310613	ELSGCA12	El Segundo Dougl	Los Angeles	4029	-	42,748	0.00%
949731	ELTRCA11	El Toro	Orange	10967	14,400	161,360	0.00%
760732	ENCTCA12	Encinitas	San Diego	4571	-	234,551	8.92%
661368	ERLMCA11	Earlimart	Tulare	332	-	49,860	0.00%
209192	ESCLCA11	Escalon	San Joaquin	929	-	32,958	0.00%
760733	ESCNCA01	Escondido	San Diego	7483	-	988,311	0.00%
530450	ESPRCA11	Esparto	Yolo	266	-	29,375	0.00%
707289	EURKCA01	Eureka	Humboldt	4799	-	127,638	0.00%
831108	FETNCA11	Felton	Santa Cruz	976	-	26,254	0.00%
760735	FLBKCA12	Fallbrook	San Diego	3475	-	356,664	0.00%
805370	FLMRCA11	Fillmore	Ventura	791	-	58,884	0.00%
916453	FLSMCA12	Folsom Nimbus	Sacramento	1844	26,554	114,499	23.19%
916454	FLSMCA13	Folsom El Dorado	Sacramento	2631	-	172,078	0.00%
916536	FLSMCA14	Folsom Blue Ravir	Sacramento	1768	39,374	49,751	79.14%
909736	FNTACA11	Fontana	San Bernardino	5840	-	829,593	0.00%
559166	FRBHCA11	Firebaugh	Fresno	604	-	63,246	0.00%
760738	FRCKCA11	Furnace Creek	San Bernardino	140	-	5,860	0.00%
707290	FRFDCA01	Fairfield	Solano	5082	32,398	345,379	0.00%
530455	FRGLCA11	French Gulch	Shasta	82	-	21,966	9.38%
510014	FRMTCA11	Fremont Main 11	Alameda	7958	-	461,388	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
510015	FRMTC12	Fremont Adams	O Alameda	6839	-	260,114	0.00%
916451	FROKCA11	Fair Oaks	Sacramento	7463	56,582	362,215	15.62%
559168	FRSNCA01	Fresno Main	Fresno	7618	8,285	783,227	1.06%
559169	FRSNCA11	Fresno Baldwin	Fresno	5377	-	275,888	0.00%
559172	FRSNCA12	Fresno Clinton	Fresno	4088	-	273,821	0.00%
559170	FRSNCA13	Fresno Sierra	Fresno	6388	-	641,601	0.00%
559245	FRSNCA14	Fresno West High	Fresno	3283	80,144	335,224	23.91%
559247	FRSNCA15	Fresno Woodward	Fresno	1076	-	69,414	0.00%
559165	FRVLC11	Farmersville	Tulare	401	-	27,801	0.00%
707291	FSVLC11	Forestville	Sonoma	737	-	147,241	0.00%
707292	FTBRCA02	Fort Bragg	Mendocino	3227	49,006	571,959	8.57%
707293	FTUNCA11	Fortuna	Humboldt	1102	-	38,148	0.00%
714737	FUTNCA01	Fullerton	Orange	8005	-	559,318	0.00%
559167	FVPNCA11	Five Points	Fresno	151	-	22,427	0.00%
661371	FZPKCA11	Frazier Park	Kern	757	-	255,429	0.00%
209171	GALTC11	Galt	Sacramento	1448	-	95,444	0.00%
818614	GLDLC11	Glendale	Los Angeles	14660	-	644,655	0.00%
831109	GNFDCA11	Green Field	Monterey	940	-	185,052	0.00%
831110	GNZLCA11	Gonzales	Monterey	542	-	68,897	0.00%
530458	GRBRCA11	Gerber	Tehama	182	-	20,926	0.00%
530461	GRDLCA11	Gridley	Butte	797	-	43,743	0.00%
310615	GRDNCA01	Gardena	Los Angeles	11967	-	1,293,390	0.00%
714739	GRGVCA01	Euclid	Orange	6721	-	66,526	0.00%
530460	GRNDCA13	Grenada	Siskiyou	81	-	3,010	0.00%
530457	GRTWCA11	Georgetown	El Dorado	1339	40,908	100,410	40.74%
530459	GRVYCA01	Grass Valley	Nevada	7879	28,787	284,966	10.10%
530532	GRVYCA11	Lake of the Pine	Nevada	1863	-	25,960	0.00%
530535	GRVYCA12	Wildwood	Nevada	1442	13,769	76,597	17.98%
559246	GSHNCA11	Goshen	Tulare	730	-	26,113	0.00%
707295	GULLCA11	Gualala	Mendocino	1066	-	96,671	0.00%
209174	GUSTCA11	Gustine	Merced	604	-	59,174	0.00%
707296	GUVLCA11	Guerneville	Sonoma	691	-	89,939	0.00%
209173	GVLDC11	Groveland	Tuolumne	1863	-	205,768	0.00%
707294	GYVLC11	Geyersville	Sonoma	295	-	32,547	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
530456	GZLLCA11	Gazelle	Siskiyou	44	-	-	#DIV/0!
209176	HERLCA11	Herald	Sacramento	273	-	62,776	0.00%
909741	HGLDCA11	Highland	San Bernardino	2208	-	260,788	0.00%
209177	HGSNCA11	Hughson	Stanislaus	531	-	49,456	0.00%
707297	HLBGCA11	Healdsburg	Sonoma	2672	16,075	162,508	9.89%
831111	HLSTCA11	Hollister	San Benito	2923	-	60,953	0.00%
760742	HLVLC A11	Holtville	Imperial	458	-	36,118	0.00%
323616	HLWDCA01	Hollywood	Los Angeles	9481	-	530,927	0.00%
650016	HMBACA12	Half Moon Bay	San Mateo	2349	37,312	91,019	40.99%
530462	HMCYCA11	Hamilton City	Glenn	145	-	9,970	0.00%
530463	HMWDCA11	Homewood	El Dorado	1117	-	41,885	0.00%
559175	HNFRC A01	Hanford	Kings	3748	-	381,264	0.00%
323617	HNPKCA01	Huntington Park	Los Angeles	6751	-	406,759	0.00%
707298	HPLDCA12	Hopland	Mendocino	201	-	25,981	0.00%
530464	HRBKCA11	Hornbrook	Siskiyou	260	-	33,227	0.00%
510080	HRCLCA11	Hercules Pinole	Contra Costa	2622	-	45,967	0.00%
559178	HURNCA11	Huron	Fresno	294	-	18,336	0.00%
310618	HWTHCA01	Hawthorne	Los Angeles	5016	-	72,255	0.00%
707299	HYVLC A11	Hydesville	Humboldt	265	-	17,119	0.00%
510017	HYWRCA01	Hayward Main	Alameda	7870	-	125,529	0.00%
510018	HYWRCA11	Hayward Depot	Alameda	5286	-	143,013	0.00%
415019	IGNCCA12	Ignacio	Marin	1539	-	17,718	0.00%
310619	IGWDCA01	Inglewood	Los Angeles	5028	-	79,328	0.00%
619744	IMBHCA11	Imperial Beach	San Diego	2049	12,190	99,724	12.22%
760743	IMPRCA11	Imperial	Imperial	559	-	19,900	0.00%
415020	INVRCA11	Inverness	Marin	447	-	16,784	0.00%
209179	IONECA11	Ione	Amador	874	-	112,159	0.00%
949745	IRVNCA01	Irvine	Orange	4684	-	122,428	0.00%
949807	IRVNCA11	Irvine Airport	Orange	5656	-	31,116	0.00%
949810	IRVNCA12	Spectrum Irvine	Orange	1708	-	948	0.00%
559180	IVNHCA11	Ivanhoe	Tulare	441	-	193,296	0.00%
619851	JAMLCA60	Jamul	San Diego	322	-	13,013	0.00%
619746	JCMBCA11	Jacumba	San Diego	371	-	21,592	0.00%
209181	JCSNCA01	Jackson	Amador	1451	-	102,215	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
209182	JMTWCA11	Jamestown	Tuolumne	800	-	86,889	0.00%
760748	JULNCA12	Julian	San Diego	879	-	106,381	0.00%
559183	KGBGCA11	Kingsburg	Tulare	1028	-	74,271	0.00%
831112	KGCYCA11	King City	Monterey	1327	-	212,905	0.00%
707300	KLVLCA12	Kelseyville	Lake	1095	-	106,107	0.00%
209184	KNFYCA11	Knights Ferry	Stanislaus	141	4,871	7,234	67.33%
530465	KYBRCA11	Kyburz	El Dorado	60	-	8,164	0.00%
818620	LACNCA11	La Canada Oak G	Los Angeles	14	-	7,013	0.00%
818621	LACRCA11	La Crescenta	Los Angeles	6224	-	402,615	0.00%
650021	LAHNCA11	La Honda	San Mateo	389	-	22,156	0.00%
858750	LAJLCA11	La Jolla Girard	San Diego	3647	16,281	63,981	25.45%
619752	LAMSCA01	La Mesa	San Diego	5791	29,460	338,207	8.71%
661372	LAMTCA11	Lamont	Kern	719	-	103,911	0.00%
559186	LATNCA11	Laton	Fresno	182	-	14,000	0.00%
209190	LCFRCA11	Lockeford	San Joaquin	241	-	40,677	0.00%
661373	LEBCCA11	Lebec	Kern	386	-	74,689	0.00%
661404	LEBCCA12	Pine Mountain	Kern	678	-	39,041	0.00%
559188	LEMCA11	Lemore Main	Kings	1200	-	156,276	10.11%
559189	LEMCA12	Lemore Wyman	Kings	87	15,802	3,883	0.00%
925022	LFYTCA11	Lafayette	Contra Costa	2283	-	38,824	0.00%
949749	LNGCA12	Laguna Niguel	Orange	3371	-	40,081	0.00%
209187	LGRDCA11	Le Grande	Merced	178	-	43,320	0.00%
209185	LGRNCA12	LaGrande D Pedr	Stanislaus	859	-	47,257	0.00%
707301	LKBRCA11	Lake Berryessa	Napa	188	-	11,886	0.00%
661405	LKLACA11	Lake Los Angeles	Los Angeles	427	-	43,680	0.00%
707302	LKPTCA02	Lakeport	Lake	2039	-	190,486	0.00%
619751	LKSDCA12	Lakeside	San Diego	1795	-	172,614	0.00%
530471	LLTNCA11	Loyalton	Plumas	546	-	15,172	0.00%
916467	LNCLCA11	Lincoln	Placer	840	-	85,884	0.00%
661374	LNVCYA11	Leona Valley	Los Angeles	322	-	156,071	0.00%
209191	LODICA01	Lodi	San Joaquin	5596	-	265,687	0.00%
707303	LOLTCA11	Lolita	Humboldt	123	-	9,355	0.00%
916470	LOMSCA11	Loomis	Placer	1397	-	115,392	0.00%
310622	LOMTCA11	Lomita	Los Angeles	5732	-	177,012	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
415023	LRKSCA11	Larkspur Corte Me	Marin	3120	-	28,622	0.00%
213624	LSANCA02	Madison 02 MO	Los Angeles	7967	-	291,514	0.00%
213625	LSANCA03	Madison 03 MA	Los Angeles	5572	-	75,499	0.00%
323626	LSANCA05	LSAN Pleasant	Los Angeles	6868	5,382	232,270	2.32%
213627	LSANCA06	Union	Los Angeles	4504	-	182,016	0.00%
310628	LSANCA07	LSAN Airport	Los Angeles	7220	-	19,121	0.00%
323629	LSANCA08	LSAN Meirose	Los Angeles	11621	-	365,907	0.00%
213630	LSANCA09	Richmond	Los Angeles	6015	-	335,031	0.00%
323631	LSANCA10	LSAN Webster	Los Angeles	9845	-	283,033	0.00%
213632	LSANCA11	Rampart	Los Angeles	10841	-	413,279	0.00%
323633	LSANCA12	Normandy	Los Angeles	9451	-	645,411	0.00%
323634	LSANCA13	LSAN Plymouth	Los Angeles	5803	-	282,014	0.00%
323635	LSANCA14	LSAN Adams	Los Angeles	3816	17,409	218,231	7.98%
323636	LSANCA15	LSAN Axminster	Los Angeles	7990	-	337,619	0.00%
323638	LSANCA23	LSAN Capitol	Los Angeles	7035	-	207,342	0.00%
323640	LSANCA29	LSAN Sunset	Los Angeles	5382	-	191,126	0.00%
323641	LSANCA34	LSAN Angeles	Los Angeles	9593	-	374,465	0.00%
323642	LSANCA35	LSAN Montebello	Los Angeles	7620	-	261,864	0.00%
323643	LSANCA38	LSAN Republic	Los Angeles	6084	-	273,973	0.00%
323644	LSANCA56	LSAN Clinton	Los Angeles	6516	-	192,710	0.00%
650024	LSATCA11	Los Altos	Santa Clara	4386	45,785	236,071	19.39%
209193	LSBNCA12	Los Banos	Merced	2068	-	157,287	0.00%
530469	LSMLCA11	Los Molinos	Tehama	355	21,947	46,593	47.10%
530466	LSTNCA11	Lewiston	Trinity	508	4,855	14,930	32.52%
661375	LTRKCA11	Little Rock	Los Angeles	969	-	326,765	0.00%
925025	LVMRCA11	Livermore	Alameda	6279	-	489,137	0.00%
530468	LVOKCA11	Live Oak	Sutter	672	-	31,160	0.00%
707304	LWLKCA11	Lower Lake	Lake	1965	27,689	308,029	8.99%
559194	MADRCA11	Madera Main	Madera	3987	21,845	685,245	3.19%
559243	MADRCA12	Madera Bonnadell	Madera	369	-	52,283	0.00%
831113	MARNCA11	Marina	Monterey	1358	-	21,687	0.00%
209199	MDSTCA02	Modesto Main	Stanislaus	11017	-	644,595	0.00%
209200	MDSTCA03	Modesto Kellogg S	Stanislaus	2635	-	196,478	0.00%
209201	MDSTCA04	Modesto Kingswor	Stanislaus	1201	-	43,279	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
209248	MDSTCA05	Modesto Tally	Stanislaus	634	-	17,275	0.00%
209249	MDSTCA52	Modesto Davis	Stanislaus	18	-	1,268	0.00%
707306	MDTWCA11	Middletown	Lake	874	-	172,164	0.00%
209202	MKHLCA12	Mokelumne Hill	Calaveras	183	-	14,871	0.00%
707307	MKVLCA11	McKinleyville	Humboldt	1103	9,736	46,892	20.76%
650026	MLBRCA11	Millbrae	San Mateo	2613	-	38,267	0.00%
408114	MLPSCA11	Milpitas	Santa Clara	5636	-	127,982	0.00%
415027	MLVYCA01	Mill Valley	Marin	3821	-	63,792	0.00%
707305	MNDCCA11	Mendocino	Mendocino	1560	-	155,033	0.00%
559195	MNDTCA11	Mendota	Fresno	448	-	76,929	0.00%
650028	MNPKCA11	Menlo Park	San Mateo	4016	-	175,028	0.00%
707309	MNRICA11	Monte Rio	Sonoma	518	-	96,663	0.00%
661376	MOJVCA01	Mojave	Kern	581	-	71,609	0.00%
925029	MORGCA12	Moraga	Contra Costa	1735	-	74,237	0.00%
805378	MRBACA11	Morro Bay	San Luis Obispo	993	-	86,371	0.00%
209196	MRCDCA01	Merced	Merced	5298	-	562,718	0.00%
530473	MRNDCA11	Meridian	Sutter	150	-	5,420	0.00%
707308	MRNDCA11	Miranda	Humboldt	286	-	37,236	0.00%
209203	MRPHCA11	Murphys	Calaveras	818	-	76,963	0.00%
805377	MRPKCA12	Moorpark	Ventura	2457	-	1,218,522	0.00%
925030	MRTZCA11	Martinez	Contra Costa	3554	-	285,317	0.00%
650031	MSBHCA11	Moss Beach	San Mateo	830	-	56,552	0.00%
949806	MSVJCAAT	Mission Viejo	Orange	1889	-	4,533	0.00%
530529	MTAGCA11	Montague	Siskiyou	534	-	8,569	0.00%
760753	MTPSCA11	Mountain Pass	San Bernardino	19	-	6,590	0.00%
831115	MTRYCA01	Monterey	Monterey	5760	-	172,928	0.00%
530474	MTSHCA12	Mount Shasta	Siskiyou	1180	-	39,449	0.00%
650032	MTVWCA11	Mountain View	Santa Clara	7929	-	111,521	0.00%
530472	MYVICA01	Marysville	Yuba	3543	-	229,635	0.00%
707310	NAPACA01	Napa	Napa	7620	-	444,116	0.00%
530477	NCLSCA12	Nicolaus	Sutter	98	-	26,112	0.00%
916478	NHLDCA11	Edgewood N High	Sacramento	4053	31,539	368,641	8.56%
661379	NHLLCA01	Newhall	Los Angeles	5371	-	634,278	0.00%
818646	NHWDCOA1	NHWD Lankershir	Los Angeles	6119	-	621,565	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
818647	NHWDCOA02	NHWD Magnolia	Los Angeles	12672	-	788,265	0.00%
707311	NICECA11	Nice	Lake	465	-	88,610	0.00%
415033	NICSCA11	Nicasio	Marin	250	-	11,117	0.00%
760855	NILDCA11	Niland Main	Imperial	83	-	14,460	0.00%
760856	NILDCA12	Ninland Bombay E	Imperial	98	-	16,814	0.00%
805380	NIPMCA11	Nipomo	San Luis Obispo	999	-	88,020	0.00%
818648	NORGCA11	Northridge	Los Angeles	10424	37,683	986,797	3.82%
916479	NSRCA11	Wabash	Sacramento	7088	95,277	412,604	23.09%
916537	NSRCA12	North Natomas	Sacramento	2047	-	72,922	0.00%
530480	NSJNCA11	North San Juan	Nevada	490	-	20,740	0.00%
619754	NTCYCA11	National City High	San Diego	1415	-	24,742	0.00%
530475	NVCYCA11	Nevada City	Nevada	3415	29,760	175,423	16.96%
916476	NWCSCA11	Newcastle	Placer	924	-	69,872	0.00%
209204	NWMNCA12	Newman	Stanislaus	549	-	37,512	0.00%
530481	NYUBCA11	North Yuba	Yuba	515	-	29,786	0.00%
707312	OCNCA11	Occidental	Sonoma	599	-	49,970	0.00%
760758	OCSDCA11	Oceanside Missior	San Diego	4352	14,021	330,986	4.24%
805382	OJAICA11	Ojai	Ventura	1639	-	307,558	0.00%
209205	OKDLCA11	Oakdale	Stanislaus	2070	-	173,368	0.00%
510036	OKLDCA03	Oakland Franklin	Alameda	12884	-	153,386	0.00%
510037	OKLDCA04	Oakland KelloggFr	Alameda	5109	-	477,445	0.00%
510038	OKLDCA11	Oakland 45th Olyr	Alameda	9172	-	88,471	0.00%
510039	OKLDCA12	Oakland Holly	Alameda	7805	-	389,792	0.00%
510040	OKLDCA13	Oakland Mountain	Alameda	4550	-	55,130	0.00%
925041	OKLYCA11	Oakley	Contra Costa	1105	-	26,657	0.00%
805381	OKVWCA11	Oakview	Ventura	620	-	73,441	0.00%
661383	OLDLCA11	Export Oildale	Kern	2977	-	1,019,218	0.00%
559206	ORCVCA11	Orange Cove	Fresno	399	-	81,348	0.00%
530483	ORLDCA11	Orland	Glenn	1400	-	91,937	0.00%
925042	ORNDCA11	Orinda	Contra Costa	1932	-	27,680	0.00%
714759	ORNGCA11	Orange Chapman	Orange	6854	-	441,253	0.00%
714760	ORNGCA13	Orange Olive	Orange	5138	-	378,453	0.00%
714761	ORNGCA14	Orange West	Orange	3181	-	92,757	0.00%
559207	ORSICA11	Orosi	Tulare	757	-	134,780	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
916482	ORVACA11	Orangevale	Sacramento	2287	39,700	90,970	43.64%
530484	ORVLA11	Oroville Main	Butte	3496	-	122,572	0.00%
530485	ORVLA12	Oroville East	Butte	1522	11,418	139,512	8.18%
619853	OTMSCA11	Otay Mesa	San Diego	986	-	26,841	0.00%
760764	PALACA11	Pauma Valley	San Diego	812	-	92,036	0.00%
858762	PCBHCA01	Garnet	San Diego	4157	-	284,411	0.00%
858763	PCBHCA11	Hornblend	San Diego	548	-	24,330	0.00%
650043	PCFCCA11	Pacifica	San Mateo	3023	-	49,646	0.00%
951765	PDLYCA11	Pedley	Riverside	2466	27,450	435,505	6.30%
805386	PIRUCA11	Piru	Ventura	145	-	15,616	0.00%
650045	PLALCA02	Palo Alto Main	Santa Clara	10518	-	120,501	0.00%
650046	PLALCA12	Palo Alto South	Santa Clara	4001	-	20,911	0.00%
714767	PLCNCA11	Placentia	Orange	5397	-	476,847	0.00%
661384	PLDLCA01	Palmdale	Los Angeles	4380	17,422	371,660	4.69%
661412	PLDLCA11	Palmdale East 47	Los Angeles	902	-	72,552	0.00%
916491	PLGVCA12	Pleasant Grove	Placer	160	-	20,645	0.00%
209212	PLMOCA11	Plymouth	Amador	1528	-	117,107	0.00%
209211	PLNDCA11	Planada	Merced	279	-	37,551	0.00%
925047	PLTNCA12	Pleasanton Main	Alameda	4045	-	207,817	0.00%
925083	PLTNCA13	Pleasanton Hacier	Alameda	1621	-	49,692	0.00%
530489	PLVLA11	Placerville Main	El Dorado	7102	78,185	445,092	17.57%
530490	PLVLA12	Placerville Niagara	El Dorado	2240	5,875	220,920	2.66%
707315	PNARCA11	Point Arena	Mendocino	597	26,725	83,477	32.01%
209209	PNCRCA11	Pinecrest	Tuolumne	921	-	60,972	0.00%
619766	PNVYCA11	Pine Valley	San Diego	247	-	25,547	0.00%
858768	POWYCA11	Poway Midland	San Diego	2729	-	76,457	0.00%
707313	PPWDCA11	Pepperwood	Humboldt	75	-	6,529	0.00%
530486	PRDSCA11	Paradise Main	Butte	1089	-	76,534	0.00%
530487	PRDSCA12	Paradise Pines	Butte	1026	-	93,950	0.00%
559208	PRLRCA11	Parlier	Fresno	469	-	31,750	0.00%
562649	PRMTCA01	Paramount	Los Angeles	4428	-	228,130	0.00%
415048	PRSNCA11	Point Reyes	Marin	825	-	17,794	0.00%
925049	PSBGCA01	Pittsburg Main	Contra Costa	2490	-	253,899	0.00%
925050	PSBGCA11	Pittsburg Bay Poin	Contra Costa	1095	-	48,373	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
805387	PSBHCA11	Pismo Beach	San Luis Obispo	736	-	54,019	0.00%
650051	PSCDCA11	Pescadero	San Mateo	565	-	43,093	0.00%
626650	PSDNCA11	Pasadena Mt Wils	Los Angeles	12284	-	222,373	0.00%
626651	PSDNCA12	Pasadena Lake	Los Angeles	5609	-	164,318	0.00%
530488	PSKNCA11	Paskenta	Tehama	101	-	2,639	0.00%
805385	PSRBCA01	Paso Robles	San Luis Obispo	4945	6,585	551,732	1.19%
707314	PTLMCA01	Petaluma	Sonoma	4990	-	227,253	0.00%
530492	PTOLCA01	Portola	Plumas	982	-	19,236	0.00%
559213	PTVLCA11	Porterville	Tulare	4993	12,698	215,603	5.89%
707316	PTVYCA11	Potter Valley	Mendocino	528	-	272,174	0.00%
559210	PXLYCA11	Pixley	Tulare	273	-	42,836	0.00%
530493	QNCYCA12	Quincy	Plumas	1838	-	132,862	0.00%
760769	RAMNCA11	Ramona	San Diego	1878	-	148,412	0.00%
858770	RBRNCA11	Rancho Bernardo	San Diego	4178	-	187,328	0.00%
916541	RCKLCA01	Stanford Ranch	Placer	3201	-	102,471	0.00%
916527	RCKLCA11	Rocklin	Placer	1244	-	55,233	0.00%
510052	RCMDCA11	Richmond SF	Contra Costa	7128	-	348,378	0.00%
530496	RCVACA11	Richvale	Butte	107	-	5,405	0.00%
530494	RDBLCA01	Red Bluff	Tehama	3745	123,883	121,506	101.96%
650053	RDCYCA01	Redwood City	San Mateo	7949	-	225,611	0.00%
530495	RDNGCA02	Redding Main	Shasta	4862	-	531,011	0.00%
530531	RDNGCA11	Redding Enterpr	Shasta	3279	18,119	70,508	25.70%
818652	RESDCA01	Reseda	Los Angeles	10038	19,900	602,866	3.30%
707317	RIDECA11	Rio Dell	Humboldt	238	18,122	32,097	56.46%
916526	RILNCA12	Rio Linda	Sacramento	1163	-	45,247	0.00%
909773	RILTCA11	Rialto	San Bernardino	3898	-	381,712	0.00%
916533	RNMRCGA11	Rancho Murietta	Sacramento	523	-	20,188	0.00%
858854	RNPSCA11	Rancho Penasquitt	San Diego	1446	-	12,207	0.00%
619852	RNSDCA11	Rancho San Diegr	San Diego	814	-	23,052	0.00%
626654	ROSMCA11	Rosemead	Los Angeles	6423	-	163,405	0.00%
858771	RSFECA12	Rancho Santa Fe	San Diego	3255	-	98,303	0.00%
661388	RSMIDCA11	Rosamond	Kern	1123	-	94,721	0.00%
949808	RSMGCA11	R S Margarita	Orange	2003	-	28,744	0.00%
707337	RTPKCA11	Rohnert Park	Sonoma	2121	-	72,712	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
559215	RVDLCA11	Riverdale	Fresno	336	-	56,131	0.00%
209214	RVRBCA11	Riverbank	Stanislaus	992	-	23,589	0.00%
951774	RVSDCA01	Riverside Orange	Riverside	7926	8,685	477,823	1.82%
951775	RVSDCA11	Woodcrest	Riverside	2640	-	205,180	0.00%
661407	SAGSCA11	Saugus	Los Angeles	2528	-	245,186	0.00%
619795	SANTCA01	Santee	San Diego	2186	-	135,006	0.00%
805391	SATCCA12	Saticoy	Ventura	1946	5,363	121,595	4.41%
707321	SBSTCA11	Sebastapol	Sonoma	2794	32,610	351,030	9.29%
916497	SCRMCA01	Sacramento Mh	Sacramento	6182	-	75,992	0.00%
916498	SCRMCA02	SCRM Ivanhoe	Sacramento	7391	11,948	250,936	4.76%
916499	SCRMCA03	SCRM Garden	Sacramento	8642	31,091	487,675	6.38%
916500	SCRMCA11	SCRM Gladstone	Sacramento	6152	-	129,853	0.00%
916501	SCRMCA12	SCRM Empire	Sacramento	4226	-	156,697	0.00%
916502	SCRMCA13	SCRM Fruitridge	Sacramento	2983	62,711	127,645	49.13%
916497	SCRMCA1R	Sequoia Pacific St	Sacramento	6182	-	-	#DIV/0!
916538	SCRMCA1Z	P Street State	Sacramento	-	-	-	#DIV/0!
916539	SCRMCA1E	First Ave DMV Sta	Sacramento	-	-	-	#DIV/0!
831116	SCVYCA01	Scotts Valley	Santa Cruz	1367	-	25,197	0.00%
530508	SDSPCA11	Soda Springs	Nevada	527	-	79,397	0.00%
559217	SELMCA11	Selma	Fresno	1616	-	121,015	0.00%
831117	SESDCA11	Seaside	Monterey	1845	-	54,451	0.00%
323655	SGATCA01	South Gate	Los Angeles	4611	-	543,039	0.00%
530504	SGSPCA11	Shingle Springs	El Dorado	3431	34,518	268,615	12.85%
661392	SHFTCA11	Shafter	Kern	772	-	99,573	0.00%
530503	SHLKCA01	Shasta Lake	Shasta	342	-	101,712	0.00%
818656	SHOKCA01	Sherman Oaks	Los Angeles	13316	-	602,971	0.00%
760796	SHSHCA11	Shoshone	San Bernardino	137	-	9,499	0.00%
805393	SIMICA11	Simi	Ventura	7815	-	1,643,216	0.00%
949791	SJCPCA12	S J Capistrano	Orange	4048	-	35,832	0.00%
209220	SKTNCA01	Stockton Main	San Joaquin	7703	-	489,989	0.00%
209221	SKTNCA11	Stockton Granite	San Joaquin	7644	-	635,162	0.00%
209222	SKTNCA12	Stockton Ashley	San Joaquin	1196	-	134,528	0.00%
209223	SKTNCA14	Stockton Redwood	San Joaquin	1471	-	102,554	0.00%
831118	SLDDCA11	Soledad	Monterey	947	-	148,989	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
661394	SLMNCA11	Solemint	Los Angeles	3415	-	397,607	0.00%
831119	SLNSCA01	Salinas Main	Monterey	5792	-	110,870	0.00%
831120	SLNSCA11	Hickory Salinas	Monterey	2176	-	47,742	0.00%
831121	SLNSCA12	Glenview	Monterey	556	-	8,556	0.00%
831122	SLNSCA13	Hunter	Monterey	680	-	11,406	0.00%
831123	SLNSCA14	Moro	Monterey	1095	-	48,454	0.00%
714797	SLVRCA11	Silverado	Orange	191	-	54,216	0.00%
530507	SMAVCA11	Smartsville	Yuba	318	-	19,293	0.00%
209216	SNADCA11	San Andreas	Calaveras	1238	-	110,300	0.00%
714788	SNANCA01	Bush	Orange	8268	-	182,223	0.00%
714789	SNANCA11	Bristol	Orange	9617	73,863	264,596	27.92%
714804	SNANCA12	Santa Ana West S Orange	Orange	2806	16,598	74,071	22.41%
831124	SNARCA11	San Ardo	Monterey	119	-	25,111	0.00%
650055	SNBUCA02	San Bruno	San Mateo	9822	-	104,775	0.00%
949776	SNCLCA12	San Clemente	Orange	2602	-	22,980	0.00%
650056	SNCRCA11	San Carlos	San Mateo	6590	-	44,154	0.00%
831125	SNCZCA01	Santa Cruz	Santa Cruz	6297	-	112,232	0.00%
831126	SNCZCA11	Santa Cruz Capito Santa Cruz	Santa Cruz	4979	32,778	126,850	25.84%
619777	SNDGCA01	SNDG C Street	San Diego	5627	-	47,102	0.00%
619778	SNDGCA02	SNDG University	San Diego	5448	-	110,551	0.00%
858779	SNDGCA03	SNDG Linda Vista	San Diego	8083	-	330,520	0.00%
619780	SNDGCA05	SNDG Saipan	San Diego	2182	-	106,177	0.00%
619781	SNDGCA06	SNDG 37th Street	San Diego	3952	-	54,238	0.00%
619782	SNDGCA11	SNDG College	San Diego	2566	-	157,196	0.00%
619783	SNDGCA12	SNDG Market Stre	San Diego	2184	-	33,865	0.00%
619784	SNDGCA14	SNDG Tennyson	San Diego	2848	-	34,696	0.00%
858785	SNDGCA15	SNDG Regents	San Diego	6954	-	79,119	0.00%
858786	SNDGCA16	SNDG Mira Mesa	San Diego	5310	-	70,026	0.00%
415058	SNFCCA01	SF Bush Pine	San Francisco	14854	-	319,373	0.00%
415059	SNFCCA04	SF Market McCop	San Francisco	10962	5,814	499,757	1.16%
415060	SNFCCA05	SF Mission 25th S	San Francisco	10082	10,859	247,554	4.39%
415061	SNFCCA06	SF Juniper Onond	San Francisco	11364	67,367	293,567	22.95%
415067	SNFCCA12	SF Larkin Steiner	San Francisco	22366	-	450,909	0.00%
415064	SNFCCA13	SF Evergreen 9th	San Francisco	9186	-	191,019	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
415065	SNFCCA14	SF Montrose 19th	San Francisco	11765	-	232,590	0.00%
415066	SNFCCA17	SF Third St	San Mateo	4510	-	170,617	0.00%
415068	SNFCCA21	SF Folsom	San Francisco	7656	-	58,445	0.00%
415084	SNFCCA64	UC Hospital	San Francisco	-	-	1,167	0.00%
626658	SNGBCA01	San Gabriel	Los Angeles	4610	19,071	235,554	8.10%
415069	SNGNCA11	San Geronimo	Marin	461	-	28,570	0.00%
831127	SNJNCA11	San Juan Bautist	San Benito	384	-	7,077	0.00%
408128	SNJSCA02	San Jose Main	Santa Clara	12910	-	253,953	0.00%
408129	SNJSCA11	San Jose White R	Santa Clara	8051	21,239	312,421	6.80%
408130	SNJSCA12	San Jose Dial Way	Santa Clara	13069	36,755	282,004	13.03%
408131	SNJSCA13	San Jose Chynow	Santa Clara	7594	-	621,753	0.00%
408132	SNJSCA14	San Jose Foxwort	Santa Clara	9411	151,565	564,078	26.87%
408133	SNJSCA15	San Jose Evergre	Santa Clara	5113	-	360,280	0.00%
408134	SNJSCA18	San Jose Almader	Santa Clara	2877	-	202,967	0.00%
408145	SNJSCA21	San Jose Junction	Santa Clara	6140	-	44,129	0.00%
408142	SNJSCA22	San Jose Bailey	Santa Clara	149	-	25,850	0.00%
831135	SNLCCA11	San Lucas	Monterey	43	-	21,562	0.00%
510070	SNLNCA11	San Leandro	Alameda	8284	-	212,461	0.00%
805389	SNLOCA01	San Luis Obispo	San Luis Obispo	4352	-	575,015	0.00%
408136	SNMACA11	San Martin	Santa Clara	632	-	81,065	0.00%
760792	SNMCCA11	San Marcos	San Diego	4889	1,511	419,648	0.36%
805390	SNMICA11	Santa Margarita	San Luis Obispo	540	-	42,927	0.00%
650071	SNMTCA11	San Mateo	San Mateo	7900	-	178,254	0.00%
310659	SNPDCA01	San Pedro	Los Angeles	7437	-	403,536	0.00%
209218	SNRACA13	Sonora	Tuolumne	4857	-	412,432	0.00%
415072	SNRFAA01	San Rafael Main	Marin	6998	-	172,731	0.00%
415073	SNRFAA11	Parkway	Marin	2956	-	21,352	0.00%
925074	SNRMCA11	San Ramon	Alameda	4197	-	169,531	0.00%
707320	SNRSCA01	Santa Rosa Main	Sonoma	11549	-	734,403	0.00%
707319	SNRSCA11	Los Alamos	Sonoma	2537	-	91,433	0.00%
408143	SNTCCA01	Santa Clara Spacc	Santa Clara	4768	-	86,502	0.00%
408137	SNTCCA11	Santa Clara Bellor	Santa Clara	8974	-	175,946	0.00%
408138	SNVACA01	Carrol Sunnyvale	Santa Clara	7759	6,195	147,584	4.20%
408139	SNVACA11	Mathilda Sunneyv	Santa Clara	1662	-	15,573	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
619794	SNYSKA12	San Ysidro	San Diego	1283	-	52,354	0.00%
707323	SONMCA12	Sonoma	Sonoma	3961	-	230,651	0.00%
626660	SPSDCA11	Sout Pasadena	Mi Los Angeles	2834	-	29,159	0.00%
559219	SPVLC A11	Springville	Tulare	751	-	44,138	0.00%
530505	SRCYCA11	Sierra City	Sierra	430	-	10,677	0.00%
559224	SRFRCA11	Stratford	Kings	85	-	14,407	0.00%
530506	SRVLC A11	Sierraville	Sierra	162	-	4,145	0.00%
415075	SSLTCA11	Sausalito Larkspur	Marin	1737	-	17,833	0.00%
530509	STAHCA01	South Tahoe Suss	El Dorado	2731	-	72,231	0.00%
530511	STAHCA12	South Tahoe Tam	El Dorado	128	-	6,042	0.00%
530512	STAHCA13	South Tahoe Meyr	El Dorado	785	-	26,229	0.00%
415076	STBHCA11	Stinson Beach	Marin	1202	-	33,640	0.00%
209225	STCKCA11	Sutter Creek	Amador	697	-	44,477	0.00%
530513	STFRCA11	Stonyford	Colusa	138	-	5,436	0.00%
707318	STHNCA11	St Helena	Napa	2372	-	99,871	0.00%
707324	SUISCA11	Suisun City	Solano	345	-	11,330	0.00%
925077	SUNLCA11	Sunol	Alameda	191	-	44,606	0.00%
415005	TBRNCA11	Tiburon	Marin	1686	-	3,569	0.00%
661395	THCHCA01	Techachapi	Kern	1787	-	184,186	0.00%
530514	THCYCA01	Tahoe City	Placer	2438	-	52,998	0.00%
559228	THRRCA11	Three Rivers	Tulare	609	59,250	99,547	59.52%
209227	THTNCA11	Thornton	San Joaquin	100	-	39,916	0.00%
707325	TMLSCA12	Tomales	Sonoma	287	-	27,618	0.00%
805396	TMTNCA11	Templeton	San Luis Obispo	643	-	49,354	0.00%
559229	TPTNCA11	Tipton	Tulare	199	-	32,856	0.00%
209230	TRACCA11	Tracy	San Joaquin	4319	-	390,405	0.00%
559226	TRBLCA11	Terra Bella	Tulare	417	-	70,772	0.00%
209232	TRLCCA11	Turlock	Stanislaus	6746	-	379,362	0.00%
310661	TRNCCA11	Torrance	Los Angeles	4260	-	220,986	0.00%
707326	TRNDCA11	Trinidad	Humboldt	296	-	27,229	0.00%
831140	TRPSCA11	Tres Pinos	San Benito	214	-	4,801	0.00%
530515	TRUCCA11	Truckee	Nevada	3351	-	117,401	0.00%
530516	TRUCCA12	North Star	Placer	606	-	7,483	0.00%
559231	TULRCA11	Tulare	Tulare	3875	-	367,230	0.00%

Table 7.17 GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$0.7
714798	TUSTCA11	Tustin 11	Orange	6962	-	134,751	0.00%
714805	TUSTCA70	Tustin 70	Orange	658	-	2,698	0.00%
209233	TWHRCA11	Twain Harte	Tuolumne	1607	-	122,275	0.00%
707328	UKIHCA01	Ukiah Main	Mendocino	3947	17,349	316,473	5.48%
707327	UKIHCA12	Capella Ivanhoe	Mendocino	995	-	97,224	0.00%
510078	UNCYCA11	Union City	Alameda	4821	-	300,413	0.00%
707329	UPLKCA11	Upper Lake	Lake	388	-	83,640	0.00%
707330	VCVLCA12	Vacaville	Solano	5328	-	471,817	0.00%
530517	VINACA12	Vina	Tehama	69	-	10,211	0.00%
559235	VISLCA11	Visalia Main	Tulare	6971	-	641,327	0.00%
760800	VISTCA12	Vista	San Diego	5720	-	393,191	0.00%
760799	VLCTCA11	Valley Center	San Diego	2286	-	157,356	0.00%
707331	VLLJCA01	Vallejo	Solano	6162	-	988,509	0.00%
818662	VNNYCA02	Van Nuys	Los Angeles	10196	15,266	529,734	2.88%
805400	VNTRCA02	Ventura Fir	Ventura	2365	-	163,802	0.00%
805399	VNTRCA11	Ventura Main	Mon Ventura	4798	6,318	295,151	2.14%
707332	VYFRCA11	Valley Ford	Sonoma	184	-	32,423	0.00%
209234	VYSPCA11	Valley Springs	Calaveras	1100	14,574	92,954	15.68%
209238	WANACA11	Wawana	Mariposa	267	-	13,352	0.00%
661402	WASCCA01	Wasco	Kern	774	20,085	66,272	30.31%
530523	WDLDC A11	Woodland	Yolo	4358	-	181,131	0.00%
559239	WDLKCA11	Woodlake	Tulare	533	-	130,178	0.00%
530518	WEEDCA01	Weed	Siskiyou	847	-	13,016	0.00%
707333	WEOTCA11	Weott	Humboldt	63	-	20,157	0.00%
310663	WLANCA01	Century City	Los Angeles	5791	-	55,368	0.00%
661401	WLBSCA11	Walker Basin	Kern	447	-	61,856	0.00%
209236	WLLCCA11	Wallace	Calaveras	400	23,151	44,903	51.56%
310664	WLMGCA01	Wilmington	Los Angeles	5429	7,678	370,114	2.07%
707334	WLTSCA12	Willits	Mendocino	2049	-	302,155	0.00%
530521	WLWSCA11	Willows	Glenn	989	-	53,383	0.00%
925079	WNCKCA11	Walnut Creek	Contra Costa	11153	22,950	506,532	4.53%
707335	WNDSCA11	Windsor	Sonoma	1693	-	134,483	0.00%
760801	WNSPCA12	Warner Springs	San Diego	373	-	37,095	0.00%
530522	WNTRCA11	Winters	Yolo	734	16,119	63,060	25.56%

Table 7.17 GO 133-D §9.7 "ALTERNATIVE INVESTMENTS" vs. REHAB EXPENDITURES (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D §9.7		Pct GO 133-D
					"Alternative Investments"	Other Rehab Expenditures	
916519	WSCRCA11	Frontier	Sacramento	3690	-	164,566	0.00%
209237	WTFRCA11	Waterford	Stanislaus	758	-	108,950	0.00%
530520	WTLDCA12	Wheatland	Sutter	497	-	37,759	0.00%
831141	WTVLCA01	Watsonville	Santa Cruz	7582	48,755	199,766	24.41%
530525	YBCYCA01	Yuba City Marysvi	Sutter	4625	-	130,340	0.00%
707336	YNVLCA11	Yountville	Napa	819	-	27,544	0.00%
530524	YREKCA11	Yreka	Siskiyou	1314	-	13,848	0.00%
714802	YRLNCA11	Yorba Linda	Orange	3299	-	348,775	0.00%
714809	YRLNCA12	Gypsum Canyon	Orange	562	-	34,901	0.00%
209240	YSMTCA11	Yosemite Main	Mariposa	529	-	79,884	0.00%
209241	YSMTCA12	El Portal	Mariposa	299	-	44,657	0.00%
TOTALS 2018-2019				1,915,900	2,725,499	107,211,728	2.54%

Table 7.18

AT&T CALIFORNIA

COMPARISON OF GO 133-D \$9.7 "ALTERNATIVE PROPOSED INVESTMENTS" AND TOTAL 2018-2019 REHAB EXPENDITURES
(Sorted by Other Rehab Expenditures -- Largest to Smallest)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
661359	BKFCA14	Bakersfield Temple	Kern	6693	-	1,678,481	0.00%
805393	SIMICA11	Simi	Ventura	7815	-	1,643,216	0.00%
818610	CNPKCA01	Canoga Park	Los Angeles	13344	16,043	1,356,631	1.18%
661357	BKFCA12	Bakersfield Main Fairview	Kern	6158	-	1,338,241	0.00%
310615	GRDNCA01	Gardena	Los Angeles	11967	-	1,293,390	0.00%
805377	MRPKCA12	Moortpark	Ventura	2457	-	1,218,522	0.00%
310609	CMTNCA01	Compton	Los Angeles	9969	51,395	1,171,795	4.39%
661383	OLDLCA11	Export Oildale	Kern	2977	-	1,019,218	0.00%
951721	CORNCA11	Corona	Riverside	10738	12,733	1,015,536	1.25%
707331	VLLJCA01	Vallejo	Solano	6162	-	988,509	0.00%
760733	ESCNCA01	Escondido	San Diego	7483	-	988,311	0.00%
818648	NORGCA11	Northridge	Los Angeles	10424	37,683	986,797	3.82%
818600	AGORCA11	Agoura	Los Angeles	4858	-	951,226	0.00%
559159	CLVSCA11	Clovis	Fresno	8311	19,168	881,838	2.17%
909736	FNTACA11	Fontana	San Bernardino	5840	-	829,593	0.00%
818647	NHWDA02	NHWD Magnolia	Los Angeles	12672	-	788,265	0.00%
559168	FRSNCA01	Fresno Main	Fresno	7618	8,285	783,227	1.06%
707320	SNRSCA01	Santa Rosa Main	Sonoma	11549	-	734,403	0.00%
714702	ANHMCA11	Anaheim Cypress	Orange	7686	-	719,465	0.00%
559194	MADRCA11	Madera Main	Madera	3987	21,845	685,245	3.19%
818605	BRBNCA11	Burbank Palm	Los Angeles	9868	-	671,797	0.00%
323633	LSANCA12	Normandy	Los Angeles	9451	-	645,411	0.00%
818614	GLDLCA11	Glendale	Los Angeles	14660	-	644,655	0.00%
209199	MDSTCA02	Modesto Main	Stanislaus	11017	-	644,595	0.00%
559170	FRSNCA13	Fresno Sierra	Fresno	6388	-	641,601	0.00%
559235	VISLCA11	Visalia Main	Tulare	6971	-	641,327	0.00%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
209221	SKTNCA11	Stockton Granite	San Joaquin	7644	-	635,162	0.00%
661379	NHLLCA01	Newhall	Los Angeles	5371	-	634,278	0.00%
408131	SNJSCA13	San Jose Chynoweth	Santa Clara	7594	-	621,753	0.00%
818646	NHWDA01	NHWD Lankershim	Los Angeles	6119	-	621,565	0.00%
818656	SHOKCA01	Sherman Oaks	Los Angeles	13316	-	602,971	0.00%
818652	RESDA01	Reseda	Los Angeles	10038	19,900	602,866	3.30%
805389	SNLOCA01	San Luis Obispo	San Luis Obispo	4352	-	575,015	0.00%
707292	FTBRCA02	Fort Bragg	Mendocino	3227	49,006	571,959	8.57%
408132	SNJSCA14	San Jose Foxworthy	Santa Clara	9411	151,565	564,078	26.87%
209196	MRCDA01	Merced	Merced	5298	-	562,718	0.00%
714737	FUTNCA01	Fullerton	Orange	8005	-	559,318	0.00%
805385	PSRBCA01	Paso Robles	San Luis Obispo	4945	6,585	551,732	1.19%
323655	SGATCA01	South Gate	Los Angeles	4611	-	543,039	0.00%
530495	RDNGCA02	Redding Main	Shasta	4862	-	531,011	0.00%
323616	HLWDA01	Hollywood	Los Angeles	9481	-	530,927	0.00%
818662	VNNYCA02	Van Nuys	Los Angeles	10196	15,266	529,734	2.88%
925079	WNCKCA11	Walnut Creek	Los Angeles	11153	22,950	506,532	4.53%
661356	BKFDCA11	Bakersfield Empire	Contra Costa	1142	-	501,216	0.00%
415059	SNFCCA04	SF Market McCoppin	Kern	10962	5,814	499,757	1.16%
209220	SKTNCA01	Stockton Main	San Francisco	7703	-	489,989	0.00%
925025	LVMRCA11	Livermore	San Joaquin	6279	-	489,137	0.00%
916499	SCRMCA03	SCRm Garden	Alameda	8642	31,091	487,675	6.38%
951774	RVSDCA01	Riverside Orange	Sacramento	7926	8,685	477,823	1.82%
510037	OKLDA04	Oakland KellogFruitvale	Riverside	5109	-	477,445	0.00%
951704	ARTNCA11	Arlington	Alameda	5896	-	477,090	0.00%
714767	PLCNCA11	Placentia	Riverside	5397	-	476,847	0.00%
707330	VCVLCA12	Vacaville	Orange	5328	-	471,817	0.00%
510014	FRMTCA11	Fremont Main 11	Solano	7958	-	461,388	0.00%
415067	SNFCCA12	SF Larkin Steiner	Alameda	22366	-	450,909	0.00%
530489	PLVLCA11	Placerville Main	San Francisco	7102	78,185	445,092	17.57%
707310	NAPACA01	Napa	EI Dorado	7620	-	444,116	0.00%
714759	ORNGCA11	Orange Chapman	Napa	6854	-	441,253	0.00%
661358	BKFDCA13	Bakersfield Columbus	Orange	2365	-	439,850	0.00%
951765	PDLYCA11	Pedley	Kern	2466	-	435,505	0.00%
			Riverside		27,450		6.30%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
760792	SNMCCA11	San Marcos	San Diego	4889	1,511	419,648	0.36%
213632	LSANCA11	Rampart	Los Angeles	10841	-	413,279	0.00%
916479	NSCRCA11	Wabash	Sacramento	7088	95,277	412,604	23.09%
209218	SNRACA13	Sonora	Tuolumne	4857	-	412,432	0.00%
323617	HNPKA01	Huntington Park	Los Angeles	6751	-	406,759	0.00%
831105	CRMLCA11	Carmel Main	Monterey	4592	4,577	406,060	1.13%
310659	SNPDCA01	San Pedro	Los Angeles	7437	-	403,536	0.00%
818621	LACRCA11	La Crescenta	Los Angeles	6224	-	402,615	0.00%
661394	SLMNCA11	Solemint	Los Angeles	3415	-	397,607	0.00%
760800	VISTCA12	Vista	San Diego	5720	-	393,191	0.00%
209230	TRACCA11	Tracy	San Joaquin	4319	-	390,405	0.00%
510039	OKLDCA12	Oakland Holly	Alameda	7805	-	389,792	0.00%
805352	ARGRCA12	Arroyo Grande	San Luis Obispo	3827	-	389,592	0.00%
925003	ANTCCA11	Antioch	Contra Costa	5049	-	383,040	0.00%
909773	RILTCA11	Rialto	San Bernardino	3898	-	381,712	0.00%
559175	HNFRA01	Hanford	Kings	3748	-	381,264	0.00%
209232	TRLCCA11	Turlock	Stanislaus	6746	-	379,362	0.00%
714760	ORNGCA13	Orange Olive	Orange	5138	-	378,453	0.00%
323641	LSANCA34	LSAN Angeles	Los Angeles	9593	8,133	374,465	0.00%
661384	PLDLCA01	Palmdale	Los Angeles	4380	17,422	371,660	2.17%
310664	WLMGCA01	Wilmington	Los Angeles	5429	7,678	370,114	2.07%
916478	NHLDCA11	Edgewood N Highl	Sacramento	4053	31,539	368,641	8.56%
559231	TULRCA11	Tulare	Tulare	3875	-	367,230	0.00%
323629	LSANCA08	LSAN Melrose	Los Angeles	11621	-	365,907	0.00%
916451	FROKCA11	Fair Oaks	Sacramento	7463	56,582	362,215	15.62%
408133	SNJSCA15	San Jose Evergreen	Santa Clara	5113	-	360,280	0.00%
760735	FLBKCA12	Fallbrook	San Diego	3475	-	356,664	0.00%
707321	SBSTCA11	Sebastapol	Sonoma	2794	32,610	351,030	9.29%
714802	YRLNCA11	Yorba Linda	Orange	3299	-	348,775	0.00%
510052	RCMDCA11	Richmond SF	Contra Costa	7128	-	348,378	0.00%
707290	FRFDCA01	Fairfield	Solano	5082	32,398	345,379	9.38%
714710	BNPKCA11	Buena Park	Orange	4388	-	340,621	0.00%
619752	LAMSCA01	La Mesa	San Diego	5791	29,460	338,207	8.71%
323636	LSANCA15	LSAN Axminster	Los Angeles	7990	-	337,619	0.00%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
559245	FRSNCA14	Fresno West Highway City	Fresno	3283	80,144	335,224	23.91%
213630	LSANCA09	Richmond	Los Angeles	6015	-	335,031	0.00%
925009	CNCRCA01	Concord	Contra Costa	8980	-	332,450	0.00%
760758	OCSDCA11	Oceanside Mission	San Diego	4352	14,021	330,986	4.24%
858779	SNDGCA03	SNDG Linda Vista	San Diego	8083	-	330,520	0.00%
661375	LTRKCA11	Little Rock	Los Angeles	969	-	326,765	0.00%
619729	ELCJCA11	El Cajon	San Diego	4004	4,702	326,642	1.44%
714709	BREACA12	Brea	Orange	2998	-	326,264	0.00%
714701	ANHMCA01	Anaheim Lemon	Orange	7849	-	321,767	0.00%
310607	BVHLCA01	Beverly Hills	Los Angeles	16372	-	320,349	0.00%
415058	SNFCCA01	SF Bush Pine	San Francisco	14854	-	319,373	0.00%
707328	UKIHCA01	Ukiah Main	Mendocino	3947	17,349	316,473	5.48%
408129	SNJSCA11	San Jose White Rd	Santa Clara	8051	21,239	312,421	6.80%
661351	AGDLCA11	Agua Dulce	Los Angeles	456	-	311,170	0.00%
707304	LWLKCA11	Lower Lake	Lake	1965	27,689	308,029	8.99%
661361	BKFDCA17	Bakersfield West Rosedale	Kern	3311	-	307,839	0.00%
805382	OJAICA11	Ojai	Ventura	1639	-	307,558	0.00%
909720	COTNCA11	Colton	San Bernardino	3205	-	304,731	0.00%
925012	DAVLCA12	Danville Main 12	Contra Costa	5110	-	303,232	0.00%
707334	WLTSCA12	Willits	Mendocino	2049	-	302,155	0.00%
818666	CLBSCA11	Calabasas Park Sorrento	Los Angeles	3840	-	300,793	0.00%
510078	UNCYCA11	Union City	Alameda	4821	-	300,413	0.00%
805399	VNTRCA11	Ventura Main Montalvo	Ventura	4798	6,318	295,151	2.14%
415061	SNFCCA06	SF Juniper Onondaga	San Francisco	11364	67,367	293,567	22.95%
213624	LSANCA02	Madison 02 MO	Los Angeles	7967	-	291,514	0.00%
530438	CHICCA01	Chico Main	Butte	10221	6,955	287,579	2.42%
925030	MRTZCA11	Martinez	Contra Costa	3554	-	285,317	0.00%
530459	GRVYCA01	Grass Valley	Nevada	7879	28,787	284,966	10.10%
858762	PCBHCA01	Garnet	San Diego	4157	-	284,411	0.00%
323631	LSANCA10	LSAN Webster	Los Angeles	9845	-	283,033	0.00%
323634	LSANCA13	LSAN Plymouth	Los Angeles	5803	-	282,014	0.00%
408130	SNJSCA12	San Jose Dial Way	Santa Clara	13069	36,755	282,004	13.03%
310608	CLCYCA11	Culver City	Los Angeles	7964	-	277,935	0.00%
559169	FRSNCA11	Fresno Baldwin	Fresno	5377	-	275,888	0.00%

Table 7.18 GO 133-D §9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D §9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D §9.7
323643	LSANCA38	LSAN Republic	Los Angeles	6084	-	273,973	0.00%
559172	FRSNCA12	Fresno Clinton	Fresno	4088	-	273,821	0.00%
707316	PTVYCA11	Potter Valley	Mendocino	528	-	272,174	0.00%
530504	SGSPCA11	Shingle Springs	El Dorado	3431	34,518	268,615	12.85%
209191	LODICA01	Lodi	San Joaquin	5596	-	265,687	0.00%
714789	SNANCA11	Bristol	Orange	9617	73,863	264,596	27.92%
323642	LSANCA35	LSAN Montebello	Los Angeles	7620	-	261,864	0.00%
909741	HGLDCA11	Highland	San Bernardino	2208	-	260,788	0.00%
510015	FRMTCA12	Fremont Adams Oliver 12	Alameda	6839	-	260,114	0.00%
626611	ELMNCA01	El Monte	Los Angeles	9210	7,436	260,083	2.86%
209153	ATWRCA12	Atwater	Merced	1837	-	257,259	0.00%
661371	FZPKCA11	Frazier Park	Kern	757	-	255,429	0.00%
408128	SNJSCA02	San Jose Main	Santa Clara	12910	-	253,953	0.00%
925049	PSBGCA01	Pittsburg Main	Contra Costa	2490	-	253,899	0.00%
916498	SCRMCA02	SCRM Ivanhoe	Sacramento	7391	11,948	250,936	4.76%
415060	SNFCCA05	SF Mission 25th St	San Francisco	10082	10,859	247,554	4.39%
661407	SAGSCA11	Saugus	Los Angeles	2528	-	245,186	0.00%
650024	LSATCA11	Los Altos	Santa Clara	4386	45,785	236,071	19.39%
626658	SNGBCA01	San Gabriel	Los Angeles	4610	19,071	235,554	8.10%
760732	ENCTCA12	Encinitas	San Diego	4571	-	234,551	0.00%
626601	ALHBCA01	Alhambra	Los Angeles	8889	-	232,806	0.00%
415065	SNFCCA14	SF Montrose 19th	San Francisco	11765	-	232,590	0.00%
323626	LSANCA05	LSAN Pleasant	Los Angeles	6868	5,382	232,270	2.32%
707323	SONMCA12	Sonoma	Sonoma	3961	-	230,651	0.00%
661367	DELNCA11	Delano	Tulare	1939	48,637	230,364	21.11%
530472	MYVICA01	Marysville	Yuba	3543	-	229,635	0.00%
562649	PRMTCA01	Paramount	Los Angeles	4428	-	228,130	0.00%
707314	PTLMCA01	Petaluma	Sonoma	4990	-	227,253	0.00%
650053	RDCYCA01	Redwood City	San Mateo	7949	-	225,611	0.00%
626650	PSDNCA11	Pasadena Mt Wilson Green	Los Angeles	12284	-	222,373	0.00%
310661	TRNCCA11	Torrance	Los Angeles	4260	-	220,986	0.00%
530490	PLVLC A12	Placerville Niagara	El Dorado	2240	5,875	220,920	2.66%
323635	LSANCA14	LSAN Adams	Los Angeles	3816	17,409	218,231	7.98%
559213	PTVLC A11	Porterville	Tulare	4993	12,698	215,603	5.89%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
323604	BELCA11	Bell	Los Angeles	2449	-	214,911	0.00%
831112	KGCYCA11	King City	Monterey	1327	-	212,905	0.00%
510070	SNLNCA11	San Leandro	Alameda	8284	-	212,461	0.00%
925047	PLTNCA12	Pleasanton Main Hopyard	Alameda	4045	-	207,817	0.00%
323638	LSANCA23	LSAN Capitol	Los Angeles	7035	-	207,342	0.00%
209173	GVLDCA11	Groveland	Tuolumne	1863	-	205,768	0.00%
951775	RVSDCA11	Woodcrest	Riverside	2640	-	205,180	0.00%
408134	SNJSCA18	San Jose Almaden Valley	Santa Clara	2877	-	202,967	0.00%
661408	CSTCCA11	Castaic	Los Angeles	3431	-	201,094	0.00%
831141	WTVLCA01	Watsonville	Santa Cruz	7582	48,755	199,766	24.41%
209151	ARNLCA11	Arnold	Calaveras	1936	-	197,594	0.00%
209200	MDSTCA03	Modesto Kellog South Ceres	Stanislaus	2635	-	196,478	0.00%
714703	ANHMCA12	Anaheim La Palma	Orange	1791	-	194,078	0.00%
559180	IVNHCA11	Ivanhoe	Tulare	441	-	193,296	0.00%
323644	LSANCA56	LSAN Clinton	Los Angeles	6516	-	192,710	0.00%
323640	LSANCA29	LSAN Sunset	Los Angeles	5382	-	191,126	0.00%
415064	SNFCCA13	SF Evergreen 9th Ave	San Francisco	9186	-	191,019	0.00%
707302	LKPTCA02	Lakeport	Lake	2039	-	190,486	0.00%
858770	RBRNCA11	Rancho Bernardo	San Diego	4178	-	187,328	0.00%
510002	ALMDCA11	Alameda Central	Alameda	6355	5,120	185,433	2.76%
831109	GNFDCA11	Green Field	Monterey	940	-	185,052	0.00%
707277	BNCICA11	Benicia	Solano	1943	-	185,031	0.00%
661395	THCHCA01	Techachapi	Kern	1787	-	184,186	0.00%
714788	SNANCA01	Bush	Orange	8268	-	182,223	0.00%
213627	LSANCA06	Union	Los Angeles	4504	-	182,016	0.00%
530523	WDLDCA11	Woodland	Yolo	4358	-	181,131	0.00%
949725	CSMSCA11	Costa Mesa	Orange	5737	-	178,369	0.00%
650071	SNMTCA11	San Mateo	San Mateo	7900	-	178,254	0.00%
310622	LOMTCA11	Lomita	Los Angeles	5732	-	177,012	0.00%
408137	SNTCCA11	Santa Clara Bellomy	Santa Clara	8974	-	175,946	0.00%
530475	NVCYCA11	Nevada City	Nevada	3415	29,760	175,423	16.96%
650028	MNPKCA11	Menlo Park	San Mateo	4016	-	175,028	0.00%
209205	OKDLCA11	Oakdale	Stanislaus	2070	-	173,368	0.00%
831115	MTRYCA01	Monterey	Monterey	5760	-	172,928	0.00%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
415072	SNRFA01	San Rafael Main	Marin	6998	-	172,731	0.00%
619751	LKSDCA12	Lakeside	San Diego	1795	-	172,614	0.00%
530428	AUBNCA01	Auburn Main	Placer	5789	-	172,598	0.00%
707306	MDTWCA11	Middletown	Lake	874	-	172,164	0.00%
916454	FLSMCA13	Folsom El Dorado Hills	Sacramento	2631	-	172,078	0.00%
805364	CMBACA11	Cambria	San Luis Obispo	1435	-	170,952	0.00%
415066	SNFCCA17	SF Third St	San Mateo	4510	-	170,617	0.00%
925074	SNRMCA11	San Ramon	Alameda	4197	-	169,531	0.00%
805354	ATSCCA11	Atascadero	San Luis Obispo	2312	-	169,359	0.00%
626602	ARCDCA11	Arcadia	Los Angeles	4800	-	168,770	0.00%
559158	CHWCCA11	Chowchilla	Madera	963	-	166,189	0.00%
619718	CHVSCA11	Chula Vista Third Avenue	San Diego	3894	8,957	165,333	5.42%
916519	WSCRCA11	Frontier	Sacramento	3690	-	164,566	0.00%
626651	PSDNCA12	Pasadena Lake	Los Angeles	5609	-	164,318	0.00%
805400	VNTRCA02	Ventura Fir	Ventura	2365	-	163,802	0.00%
626654	ROSMCA11	Rosemead	Los Angeles	6423	-	163,405	0.00%
707297	HLBGCA11	Healdsburg	Sonoma	2672	16,075	162,508	9.89%
949731	ELTRCA11	El Toro	Orange	10967	14,400	161,360	8.92%
650010	COLACA01	Colma Daly City	San Mateo	5878	39,715	159,553	24.89%
760799	VLCTCA11	Valley Center	San Diego	2286	-	157,356	0.00%
209193	LSBNCA12	Los Banos	Merced	2068	-	157,287	0.00%
619782	SNDGCA11	SNDG College	San Diego	2566	-	157,196	0.00%
916501	SCRMCA12	SCRM Empire	Sacramento	4226	-	156,697	0.00%
559188	LEMCA11	Lemore Main	Kings	1200	15,802	156,276	10.11%
661374	LNVCYA11	Leona Valley	Los Angeles	322	-	156,071	0.00%
760730	ELCNCA01	El Centro	Imperial	3848	2,151	156,017	1.38%
707305	MNDCCA11	Mendocino	Mendocino	1560	-	155,033	0.00%
510036	OKLDCA03	Oakland Franklin	Alameda	12884	-	153,386	0.00%
805362	BYPKCA11	Baywood Park	San Luis Obispo	920	-	151,562	0.00%
510013	ELSBCA11	Rich Appian Way El Sobrante	Contra Costa	3219	-	150,753	0.00%
831118	SLDDCA11	Soledad	Monterey	947	-	148,989	0.00%
760769	RAMNCA11	Ramona	San Diego	1878	-	148,412	0.00%
408138	SNVACA01	Carrol Sunnyvale	Santa Clara	7759	6,195	147,584	4.20%
707291	FSVLCA11	Forestville	Sonoma	737	-	147,241	0.00%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
707282	CLSTCA11	Callistoga	Napa	1111	-	146,784	0.00%
661353	ARVNCA11	Arvin	Kern	736	-	146,034	0.00%
530442	DAVSCA11	Davis	Yolo	4191	-	143,752	0.00%
510018	HYWRCA11	Hayward Depot	Alameda	5286	-	143,013	0.00%
530485	ORVLA12	Oroville East	Butte	1522	11,418	139,512	8.18%
619795	SANTCA01	Santee	San Diego	2186	-	135,006	0.00%
559207	ORSICA11	Orosi	Tulare	757	-	134,780	0.00%
714798	TUSTCA11	Tustin 11	Orange	6962	-	134,751	0.00%
209222	SKTNCA12	Stockton Ashley	San Joaquin	1196	-	134,528	0.00%
707335	WNSCA11	Windsor	Sonoma	1693	-	134,483	0.00%
949722	CRDMCA11	Corona Del Mar	Orange	6350	-	132,880	0.00%
530493	QNCYCA12	Quincy	Plumas	1838	-	132,862	0.00%
707284	CODLCA11	Cloverdale	Sonoma	832	-	130,963	0.00%
530525	YBCYCA01	Yuba City Marysville	Sutter	4625	-	130,340	0.00%
559239	WDLKCA11	Woodlake	Tulare	533	-	130,178	0.00%
925007	BRWDCA12	Brentwood	Contra Costa	3696	-	129,956	0.00%
916500	SCRMCA11	SCRM Gladstone	Sacramento	6152	-	129,853	0.00%
559160	CLNGCA01	Coalinga	Fresno	817	-	128,060	0.00%
408114	MLPSCA11	Milpitas	Santa Clara	5636	-	127,982	0.00%
916502	SCRMCA13	SCRM Fruitridge	Sacramento	2983	62,711	127,645	49.13%
707289	EURKCA01	Eureka	Humboldt	4799	-	127,638	0.00%
831126	SNCZCA11	Santa Cruz Capitola	Santa Cruz	4979	32,778	126,850	25.84%
510017	HYWRCA01	Hayward Main	Alameda	7870	-	125,529	0.00%
661409	BKFDCA19	Bakersfield Nomad	Kern	1972	-	123,092	0.00%
661410	ACTNCA11	Acton	Los Angeles	743	-	122,841	0.00%
530484	ORVLA11	Oroville Main	Butte	3496	-	122,572	0.00%
949745	IRVNCA01	Irvine	Orange	4684	-	122,428	0.00%
209233	TWHRCA11	Twain Harte	Tuolumne	1607	-	122,275	0.00%
831101	BGSRCA11	Big Sur	Monterey	389	-	122,197	0.00%
805391	SATCCA12	Saticoy	Ventura	1946	5,363	121,595	4.41%
530494	RDBLCA01	Red Bluff	Tehama	3745	123,883	121,506	101.96%
707280	BNVLA11	Boonville	Mendocino	645	12,118	121,299	9.99%
559217	SELMCA11	Selma	Fresno	1616	-	121,015	0.00%
650045	PLALCA02	Palo Alto Main	Santa Clara	10518	-	120,501	0.00%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
619700	ALPICA12	Alpine	San Diego	1624	47,280	118,847	39.78%
530515	TRUCCA11	Truckee	Nevada	3351	-	117,401	0.00%
209212	PLMOCA11	Plymouth	Amador	1528	-	117,107	0.00%
530441	CTWDCA11	Cottonwood	Tehama	2138	45,885	116,846	39.27%
916470	LOMSCA11	Loomis	Placer	1397	-	115,392	0.00%
916453	FLSMCA12	Folsom Nimbus	Sacramento	1844	26,554	114,499	23.19%
831125	SNCZCA01	Santa Cruz	Santa Cruz	6297	-	112,232	0.00%
209179	IONECA11	Ione	Amador	874	-	112,159	0.00%
650032	MTVWCA11	Mountain View	Santa Clara	7929	-	111,521	0.00%
831119	SLNSCA01	Salinas Main	Monterey	5792	-	110,870	0.00%
707443	DIXNCA11	Dixon	Solano	1345	-	110,688	0.00%
619778	SNDGCA02	SNDG University	San Diego	5448	-	110,551	0.00%
209216	SNADCA11	San Andreas	Calaveras	1238	-	110,300	0.00%
209237	WTFRCA11	Waterford	Stanislaus	758	-	108,950	0.00%
760708	BRWLCA11	Brawley	Imperial	1759	-	108,509	0.00%
831102	BLCKCA11	Boulder Creek	Santa Cruz	1051	51,244	106,508	48.11%
760748	JULNCA12	Julian	San Diego	879	-	106,381	0.00%
619780	SNDGCA05	SNDG Saipan	San Diego	2182	-	106,177	0.00%
650006	BRLNCA01	Burlingame	San Mateo	7936	72,737	106,149	68.52%
707300	KLVLC A12	Kelseyville	Lake	1095	-	106,107	0.00%
650055	SNBUCA02	San Bruno	San Mateo	9822	-	104,775	0.00%
661372	LAMTCA11	Lamont	Kern	719	-	103,911	0.00%
209223	SKTNCA14	Stockton Redwood	San Joaquin	1471	-	102,554	0.00%
916541	RCKLCA01	Stanford Ranch	Placer	3201	-	102,471	0.00%
209181	JCSNCA01	Jackson	Amador	1451	-	102,215	0.00%
530503	SHLKCA01	Shasta Lake	Shasta	342	-	101,712	0.00%
209150	ANCMCA01	Angels Camp	Calaveras	809	-	100,528	0.00%
530457	GRTWCA11	Georgetown	El Dorado	1339	40,908	100,410	40.74%
707318	STHNCA11	St Helena	Napa	2372	-	99,871	0.00%
619744	IMBHCA11	Imperial Beach	San Diego	2049	12,190	99,724	12.22%
661392	SHFTCA11	Shafters	Kern	772	-	99,573	0.00%
559228	THRRCA11	Thre Rivers	Tulare	609	59,250	99,547	59.52%
510004	BKLYCA01	Berkeley Bancroft	Alameda	8600	-	98,859	0.00%
858771	RSFECA12	Rancho Santa Fe	San Diego	3255	-	98,303	0.00%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
760716	CRLSCA11	Carlsbad Harding	San Diego	2206	-	98,008	0.00%
707327	UKIHCA12	Capella Ivanhoe	Mendocino	995	-	97,224	0.00%
707295	GULLCA11	Gualala	Mendocino	1066	-	96,671	0.00%
707309	MNRICA11	Monte Rio	Sonoma	518	-	96,663	0.00%
209171	GALUCA11	Galt	Sacramento	1448	-	95,444	0.00%
661388	RSMDCA11	Rosamond	Kern	1123	-	94,721	0.00%
530487	PRDSCA12	Paradise Pines	Butte	1026	-	93,950	0.00%
209234	VYSPCA11	Valley Springs	Calaveras	1100	14,574	92,954	15.68%
714761	ORNGCA14	Orange West	Orange	3181	-	92,757	0.00%
510001	ALBYCA11	Albany Solano	Alameda	6236	21,550	92,458	23.31%
760764	PALACA11	Pauma Valley	San Diego	812	-	92,036	0.00%
530483	ORLDCA11	Orland	Glenn	1400	-	91,937	0.00%
707319	SNRSCA11	Los Alamos	Sonoma	2537	-	91,433	0.00%
650016	HMBACA12	Half Moon Bay	San Mateo	2349	37,312	91,019	40.99%
916482	ORVACA11	Orangevale	Sacramento	2287	39,700	90,970	43.64%
707296	GUVLCA11	Guerneville	Sonoma	691	-	89,939	0.00%
530440	CRNGCA12	Corning	Tehama	1179	-	89,716	0.00%
707276	ARCTCA11	Arcata	Humboldt	1835	-	89,453	0.00%
707281	BGVLCA11	Bridgeville	Humboldt	173	-	89,077	0.00%
707311	NICECA11	Nice	Lake	465	-	88,610	0.00%
510038	OKLDCA11	Oakland 45th Olympic	Alameda	9172	-	88,471	0.00%
661360	BKFDCA15	Bakersfield Mettler	Kern	299	-	88,208	0.00%
805380	NIPMCA11	Nipomo	San Luis Obispo	999	-	88,020	0.00%
209182	JMTWCA11	Jamestown	Tuolumne	800	-	86,889	0.00%
408143	SNTCCA01	Santa Clara Spacepark	Santa Clara	4768	-	86,502	0.00%
805378	MRBACA11	Morro Bay	San Luis Obispo	993	-	86,371	0.00%
916467	LNGLCA11	Lincoln	Placer	840	-	85,884	0.00%
707329	UPLKCA11	Upper Lake	Lake	388	-	83,640	0.00%
707315	PNARCA11	Point Arena	Mendocino	597	26,725	83,477	32.01%
707279	BDBACA11	Bodega Bay	Sonoma	336	-	83,346	0.00%
559206	ORCVCA11	Orange Cove	Fresno	399	-	81,348	0.00%
408136	SNMACA11	San Martin	Santa Clara	632	-	81,065	0.00%
209240	YSMTCA11	Yosemite Main	Mariposa	529	-	79,884	0.00%
530508	SDSPCA11	Soda Springs	Nevada	527	-	79,397	0.00%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
310619	IGWDCA01	Inglewood	Los Angeles	5028	-	79,328	0.00%
530427	ARSNCA11	Anderson	Shasta	1747	-	79,134	0.00%
858785	SNDGCA15	SNDG Regents	San Diego	6954	-	79,119	0.00%
559164	DINBCA01	Dinuba	Tulare	1352	-	78,090	0.00%
707285	CBMTCA11	Cobb Mountain	Lake	317	-	77,134	0.00%
209203	MRPHCA11	Murphys	Calaveras	818	-	76,963	0.00%
559195	MNDTCA11	Mendota	Fresno	448	-	76,929	0.00%
530535	GRVYCA12	Wildwood	Nevada	1442	13,769	76,597	17.98%
530486	PRDSCA11	Paradise Main	Butte	1089	-	76,534	0.00%
858768	POWYCA11	Poway Midland	San Diego	2729	-	76,457	0.00%
831100	APTSCA12	Aptos	Santa Cruz	2864	6,466	76,438	8.46%
916497	SCRMA01	Sacramento Mn	Sacramento	6182	-	75,992	0.00%
213625	LSANCA03	Madison 03 MA	Los Angeles	5572	-	75,499	0.00%
209161	CTLVCA11	Coulterville	Mariposa	663	-	75,405	0.00%
661403	BVSPCA11	Bear Villy Spring	Kern	334	-	74,992	0.00%
661373	LEBCCA11	Lebec	Kern	386	-	74,689	0.00%
559183	KGBGCA11	Kingsburg	Tulare	1028	-	74,271	0.00%
925029	MORGCA12	Moraga	Contra Costa	1735	-	74,237	0.00%
714804	SNANCA12	Santa Ana West SNAN Bolsa	Orange	2806	16,598	74,071	22.41%
805381	OKVWCA11	Oakview	Ventura	620	-	73,441	0.00%
916537	NSCRCA12	North Natomas	Sacramento	2047	-	72,922	0.00%
707337	RTPKCA11	Rohnert Park	Sonoma	2121	-	72,712	0.00%
661412	PLDLCA11	Palmdale East 47TH ST	Los Angeles	902	-	72,552	0.00%
310618	HWTHCA01	Hawthorne	Los Angeles	5016	-	72,255	0.00%
530509	STAHCA01	South Tahoe Sussex	El Dorado	2731	-	72,231	0.00%
661376	MOJVCA01	Mojave	Kern	581	-	71,609	0.00%
925081	CYTNCA11	Clayton	Contra Costa	1502	-	71,233	0.00%
707287	CTTICA12	Cotati	Sonoma	1983	11,393	71,216	16.00%
559226	TRBLCA11	Terra Bella	Tulare	417	-	70,772	0.00%
530531	RDNGCA11	Redding Enterpr	Shasta	3279	18,119	70,508	25.70%
858786	SNDGCA16	SNDG Mira Mesa	San Diego	5310	-	70,026	0.00%
916476	NWCSCA11	Newcastle	Placer	924	-	69,872	0.00%
559247	FRSNCA15	Fresno Woodward	Fresno	1076	-	69,414	0.00%
831110	GNZLCA11	Gonzales	Monterey	542	-	68,897	0.00%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
805366	CYCSCA11	Cayucos	San Luis Obispo	526	-	68,635	0.00%
714739	GRGVCA01	Euclid	Orange	6721	-	66,526	0.00%
661402	WASCCA01	Wasco	Kern	774	20,085	66,272	30.31%
858750	LAJLCA11	La Jolla Girard	San Diego	3647	16,281	63,981	25.45%
415027	MLVYCA01	Mill Valley	Marin	3821	-	63,792	0.00%
559166	FRBHCA11	Firebaugh	Fresno	604	-	63,246	0.00%
530522	WNTRCA11	Winters	Yolo	734	16,119	63,060	25.56%
209176	HERLCA11	Herald	Sacramento	273	-	62,776	0.00%
760717	CRLSCA12	Carlsbad La Costa	San Diego	3662	-	62,771	0.00%
661401	WLBSCA11	Walker Basin	Kern	447	-	61,856	0.00%
831106	CRVYCA11	Carmel Valley	Monterey	1039	-	61,473	0.00%
209209	PNCRCA11	Pinecrest	Tuolumne	921	-	60,972	0.00%
831111	HLSTCA11	Hollister	San Benito	2923	-	60,953	0.00%
209174	GUSTCA11	Gustine	Merced	604	-	59,174	0.00%
805370	FLMRCA11	Fillmore	Ventura	791	-	58,884	0.00%
415068	SNFCCA21	SF Folsom	San Francisco	7656	-	58,445	0.00%
707278	BLKCA11	Blue Lake	Humboldt	236	-	58,019	0.00%
530429	AUBNCA11	Auburn Placer Hills	Placer	1530	-	56,761	0.00%
650031	MSBHCA11	Moss Beach	San Mateo	830	-	56,552	0.00%
619715	CAMPCA11	Campo	San Diego	474	-	56,282	0.00%
559215	RVDLCA11	Riverdale	Fresno	336	-	56,131	0.00%
310663	WLANCA01	Century City	Los Angeles	5791	-	55,368	0.00%
916527	RCKLCA11	Rocklin	Placer	1244	-	55,233	0.00%
510040	OKLDCA13	Oakland Mountain	Alameda	4550	-	55,130	0.00%
559152	ASMTCA11	Sequoia Ash Mtn	Fresno	82	-	54,554	0.00%
831117	SESDCA11	Seaside	Monterey	1845	-	54,451	0.00%
619781	SNDGCA06	SNDG 37th Street	San Diego	3952	-	54,238	0.00%
714797	SLVRCA11	Silverado	Orange	191	-	54,216	0.00%
805387	PSBHCA11	Pismo Beach	San Luis Obispo	736	-	54,019	0.00%
530521	WLWSCA11	Willows	Glenn	989	-	53,383	0.00%
925085	DAVLCA13	Danville Tassajara 13	Contra Costa	2391	-	53,030	0.00%
530514	THCYCA01	Tahoe City	Placer	2438	-	52,998	0.00%
831144	ARMSCA11	Aromas	San Benito	446	-	52,895	0.00%
559154	AVNLCA12	Avenal	Kings	434	-	52,681	0.00%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
619794	SNYSACA12	San Ysidro	San Diego	1283	-	52,354	0.00%
559243	MADRCA12	Madera Bonnadelli	Madera	369	-	52,283	0.00%
714811	ANHMA17	ANHM Hills	Orange	848	-	52,121	0.00%
949706	BALBCA01	Balboa	Orange	2703	-	51,441	0.00%
707286	CORDCA12	Cordella	Solano	1340	-	51,378	0.00%
707312	OCNCA11	Occidental	Sonoma	599	-	49,970	0.00%
661368	ERLMCA11	Earlmarl	Tulare	332	-	49,860	0.00%
916536	FLSMCA14	Folsom Blue Ravine	Sacramento	1768	39,374	49,751	79.14%
925083	PLTNCA13	Pleasanton Hacienda	Alameda	1621	-	49,692	0.00%
650043	PCFCCA11	Pacifica	San Mateo	3023	-	49,646	0.00%
209177	HGSNCA11	Hughson	Stanislaus	531	-	49,456	0.00%
805396	TMTNCA11	Templeton	San Luis Obispo	643	-	49,354	0.00%
530433	BLRSCA12	Blairsden	Plumas	901	-	49,064	0.00%
831123	SLNSCA14	Moro	Monterey	1095	-	48,454	0.00%
925050	PSBGCA11	Pittsburg Bay Point Willow	Contra Costa	1095	-	48,373	0.00%
831120	SLNSCA11	Hickory Salinas	Monterey	2176	-	47,742	0.00%
530528	CNVYCA11	Central Valley	Shasta	1528	23,261	47,627	48.84%
209185	LGRNCA12	LaGrande D Pedro	Stanislaus	859	-	47,257	0.00%
619777	SNDGCA01	SNDG C Street	San Diego	5627	-	47,102	0.00%
707307	MKVLCA11	McKinleyville	Humboldt	1103	9,736	46,892	20.76%
530469	LSMLCA11	Los Molinos	Tehama	355	21,947	46,593	47.10%
510080	HRCLCA11	Hercules Pinole	Contra Costa	2622	-	45,967	0.00%
916526	RILNCA12	Rio Linda	Sacramento	1163	-	45,247	0.00%
209236	WLLCCA11	Wallace	Calaveras	400	23,151	44,903	51.56%
209241	YSMTCA12	El Portal	Mariposa	299	-	44,657	0.00%
925077	SUNLCA11	Sunol	Alameda	191	-	44,606	0.00%
209225	STCKCA11	Suttier Creek	Amador	697	-	44,477	0.00%
650056	SNCRCA11	San Carlos	San Mateo	6590	-	44,154	0.00%
559219	SPVLCA11	Springville	Tulare	751	-	44,138	0.00%
408145	SNJSCA21	San Jose Junction	Santa Clara	6140	-	44,129	0.00%
619719	CHVSCA12	Chula Vista Apache	San Diego	2258	5,956	44,012	13.53%
530447	DTFLCA11	Alta Dutch Flats	Placer	538	-	43,835	0.00%
530461	GRDLCA11	Gridley	Butte	797	-	43,743	0.00%
661405	LKLACA11	Lake Los Angeles	Los Angeles	427	-	43,680	0.00%



Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
209187	LGRDCA11	Le Grande	Merced	178	-	43,320	0.00%
209201	MDSTCA04	Modesto Kingswood Curtis Salid Stanislaus	Stanislaus	1201	-	43,279	0.00%
650051	PSCDCA11	Pescadero	San Mateo	565	-	43,093	0.00%
805390	SNMICA11	Santa Margarita	San Luis Obispo	540	-	42,927	0.00%
559210	PXLYCA11	Pixley	Tulare	273	-	42,836	0.00%
310613	ELSGCA12	El Segundo Douglas	Los Angeles	4029	-	42,748	0.00%
805363	BRDLCA90	Bradley	Monterey	495	-	42,059	0.00%
530463	HMWDCA11	Homewood	El Dorado	1117	-	41,885	0.00%
209190	LCFRCA11	Lockeford	San Joaquin	241	-	40,677	0.00%
858727	DLMRCA12	Del Mar	San Diego	5494	-	40,412	0.00%
209155	BVLYCA11	Bear Valley	Calaveras	436	-	40,343	0.00%
559242	BURLCA11	Burrell	Fresno	88	-	40,135	0.00%
949749	LNGGCA12	Laguna Niguel	Orange	3371	-	40,081	0.00%
760712	CLXCCA12	Calexico	Imperial	1886	-	40,026	0.00%
209227	THTNCA11	Thornton	San Joaquin	100	-	39,916	0.00%
530474	MTSHCA12	Mount Shasta	Siskiyou	1180	-	39,449	0.00%
661404	LEBCCA12	Pine Mountain	Kern	678	-	39,041	0.00%
925022	LFYTCA11	Lafayette	Contra Costa	2283	-	38,824	0.00%
650026	MLBRCA11	Millbrae	San Mateo	2613	-	38,267	0.00%
707293	FTUNCA11	Fortuna	Humboldt	1102	-	38,148	0.00%
530520	WTLDCA12	Wheatland	Sutter	497	-	37,759	0.00%
209211	PLNDCA11	Planada	Merced	279	-	37,551	0.00%
209204	NWMNCA12	Newman	Stanislaus	549	-	37,512	0.00%
707308	MRNDCA11	Miranda	Humboldt	286	-	37,236	0.00%
760801	WNSPCA12	Warner Springs	San Diego	373	-	37,095	0.00%
760742	HLVCA11	Holtville	Imperial	458	-	36,118	0.00%
707275	ANGWCA11	Angwin	Napa	591	-	36,041	0.00%
949791	SJPCPA12	S J Capistrano	Orange	4048	-	35,832	0.00%
714809	YRLNCA12	Gypsum Canyon	Orange	562	-	34,901	0.00%
619784	SNDGCA14	SNDG Tennyson	San Diego	2848	-	34,696	0.00%
619783	SNDGCA12	SNDG Market Street	San Diego	2184	-	33,865	0.00%
415076	STBHCA11	Stinson Beach	Marin	1202	-	33,640	0.00%
831103	BNLMCA11	Ben Lomond	Santa Cruz	579	-	33,465	0.00%
530432	BGGSCA11	Biggs	Butte	249	-	33,362	0.00%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
530464	HRBKCA11	Hombrook	Siskiyou	260	-	33,227	0.00%
209192	ESCLCA11	Escalon	San Joaquin	929	-	32,958	0.00%
760707	BRSPCA11	Borrego Springs	San Diego	698	-	32,948	0.00%
559229	TPTNCA11	Tipton	Tulare	199	-	32,856	0.00%
707294	GYVLCA11	Geyersville	Sonoma	295	-	32,547	0.00%
707332	VYFRCA11	Valley Ford	Sonoma	184	-	32,423	0.00%
707317	RIDECA11	Rio Dell	Humboldt	238	18,122	32,097	56.46%
559208	PRLRCA11	Parlier	Fresno	469	-	31,750	0.00%
530468	LVOKCA11	Live Oak	Sutter	672	-	31,160	0.00%
949807	IRVNCA11	Irvine Airport	Orange	5656	-	31,116	0.00%
530481	NYUBCA11	North Yuba	Yuba	515	-	29,786	0.00%
559157	CRTHCA11	Caruthers	Fresno	383	-	29,715	0.00%
530450	ESPRCA11	Esparto	Yolo	266	-	29,375	0.00%
626660	SPSDCA11	Sout Pasadena Mission	Los Angeles	2834	-	29,159	0.00%
831104	CHLRCA11	Chualar	Monterey	136	-	28,848	0.00%
949808	RSMGCA11	R S Margarita	Orange	2003	-	28,744	0.00%
415023	LRKSCA11	Larkspur Corte Madera	Marin	3120	-	28,622	0.00%
415069	SNGNCA11	San Geronimo	Marin	461	-	28,570	0.00%
760713	CLPTCA11	Calpatra	Imperial	259	-	28,477	0.00%
619728	DLZRCA11	Dulzura	San Diego	504	-	28,378	0.00%
559165	FRVLCA11	Farmersville	Tulare	401	-	27,801	0.00%
925042	ORNDCA11	Orinda	Contra Costa	1932	-	27,680	0.00%
707325	TMLSCA12	Tomales	Sonoma	287	-	27,618	0.00%
707336	YNVLC A11	Yountville	Napa	819	-	27,544	0.00%
707326	TRNDCA11	Trinidad	Humboldt	296	-	27,229	0.00%
619853	OTMSCA11	Otay Mesa	San Diego	986	-	26,841	0.00%
925041	OKLYCA11	Oakley	Contra Costa	1105	-	26,657	0.00%
831108	FETNCA11	Felton	Santa Cruz	976	-	26,254	0.00%
530512	STAHCA13	South Tahoe Meyers Apache	El Dorado	785	-	26,229	0.00%
559246	GSHNCA11	Goshen	Tulare	730	-	26,113	0.00%
530477	NCLSCA12	Nicolaus	Sutter	98	-	26,112	0.00%
707298	HPLDCA12	Hopland	Mendocino	201	-	25,981	0.00%
530532	GRVYCA11	Lake of the Pine	Nevada	1863	-	25,960	0.00%
408142	SNJS CA22	San Jose Bailey	Santa Clara	149	-	25,850	0.00%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
619766	PNVYCA11	Pine Valley	San Diego	247	-	25,547	0.00%
831116	SCVYCA01	Scotts Valley	Santa Cruz	1367	-	25,197	0.00%
831124	SNARCA11	San Ardo	Monterey	119	-	25,111	0.00%
831107	CSVLCA11	Castroville	Monterey	1012	-	24,845	0.00%
619754	NTCYCA11	National City Highland	San Diego	1415	-	24,742	0.00%
858763	PCBHCA11	Hornblend	San Diego	548	-	24,330	0.00%
530434	BCWYCA11	Brockway	Placer	924	-	23,972	0.00%
209214	RVRBCA11	Riverbank	Stanislaus	992	-	23,589	0.00%
818665	CLBSCA50	Calabasas Los Virgenes	Los Angeles	1058	-	23,283	0.00%
619852	RNSDCA11	Rancho San Diego	San Diego	814	-	23,052	0.00%
949776	SNCLCA12	San Clemente	Orange	2602	-	22,980	0.00%
530437	CHLNCA11	Challange	Yuba	1149	-	22,682	0.00%
559167	FVPNCA11	Five Points	Fresno	151	-	22,427	0.00%
650021	LAHNCA11	La Honda	San Mateo	389	-	22,156	0.00%
530455	FRGLCA11	French Gulch	Shasta	82	-	21,966	0.00%
925008	BTISCA11	Bethel Island	Contra Costa	265	-	21,915	0.00%
559163	DLRYCA11	Del Rey	Fresno	143	-	21,705	0.00%
831113	MARNCA11	Marina	Monterey	1358	-	21,687	0.00%
619746	JCMBCA11	Jacumba	San Diego	371	-	21,592	0.00%
831135	SNLCCA11	San Lucas	Monterey	43	-	21,562	0.00%
415073	SNRFCA11	Parkway	Marin	2956	-	21,352	0.00%
530458	GRBRCA11	Gerber	Tehama	182	-	20,926	0.00%
650046	PLALCA12	Palo Alto South	Santa Clara	4001	-	20,911	0.00%
530480	NSJNCA11	North San Juan	Nevada	490	-	20,740	0.00%
916491	PLGVCA12	Pleasant Grove	Placer	160	-	20,645	0.00%
925082	BSRNCA70	Bishop Ranch	Contra Costa	1443	-	20,613	0.00%
916533	RNMRC A11	Rancho Murietta	Sacramento	523	-	20,188	0.00%
707333	WEOTCA11	Weott	Humboldt	63	-	20,157	0.00%
760743	IMPRCA11	Imperial	Imperial	559	-	19,900	0.00%
530436	CMPVCA11	Camptonville	Yuba	216	-	19,650	0.00%
530446	DNSMCA11	Dunsmuir	Siskiyou	413	-	19,473	0.00%
530507	SMAVCA11	Smartsville	Yuba	318	-	19,293	0.00%
530492	PTOLCA01	Portola	Plumas	982	-	19,236	0.00%
707283	CLOKCA11	Clear Lake Oaks	Lake	536	-	19,221	0.00%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
310628	LSANCA07	LSAN Airport	Los Angeles	7220	-	19,121	0.00%
805355	AVBHCA11	Avila Beach	San Luis Obispo	337	-	19,066	0.00%
530445	DNGNCA12	Dunnigan	Yolo	113	-	18,518	0.00%
559178	HURNCA11	Huron	Fresno	294	-	18,336	0.00%
415075	SSLTCA11	Sausalito Larkspur	Marin	1737	-	17,833	0.00%
415048	PRSNCA11	Point Reyes	Marin	825	-	17,794	0.00%
415019	IGNCCA12	Ignacio	Marin	1539	-	17,718	0.00%
209248	MDSTCA05	Modesto Tally	Stanislaus	634	-	17,275	0.00%
707299	HYVLCA11	Hydesville	Humboldt	265	-	17,119	0.00%
760856	NILDCA12	Ninland Bombay Beach	Imperial	98	-	16,814	0.00%
415020	INVRCA11	Inverness	Marin	447	-	16,784	0.00%
805386	PIRUCA11	Piru	Ventura	145	-	15,616	0.00%
408139	SNVACA11	Mathilda Sunneynvale	Santa Clara	1662	-	15,573	0.00%
530425	ALGHCA11	Alleghaney	Sierra	47	-	15,482	0.00%
530471	LLTNCA11	Loyalton	Plumas	546	-	15,172	0.00%
530466	LSTNCA11	Lewiston	Trinity	508	4,855	14,930	32.52%
530448	EKCKCA11	Elk Creek	Glenn	100	-	14,917	0.00%
209202	MKHLCA12	Mokelumne Hill	Cataveras	183	-	14,871	0.00%
760855	NILDCA11	Niland Main	Imperial	83	-	14,460	0.00%
559224	SRFRCA11	Stratford	Kings	85	-	14,407	0.00%
559186	LATNCA11	Laton	Fresno	182	-	14,000	0.00%
530524	YREKCA11	Yreka	Siskiyou	1314	-	13,848	0.00%
619723	CRNDCA11	Coronado	San Diego	1724	10,589	13,839	76.52%
530430	BNGRCA11	Bangor	Butte	335	-	13,720	0.00%
209238	WANACA11	Wawana	Mariposa	267	-	13,352	0.00%
530518	WEEDCA01	Weed	Siskiyou	847	-	13,016	0.00%
619851	JAMLCA60	Jamul	San Diego	322	-	13,013	0.00%
858854	RNPSCA11	Rancho Penasquitos	San Diego	1446	-	12,207	0.00%
707322	ANNPCA11	Annapolis	Sonoma	71	-	12,067	0.00%
559156	CMNLCA11	Camp Nelson	Tulare	680	-	11,900	0.00%
707301	LKBRC A11	Lake Berryessa	Napa	188	-	11,886	0.00%
831122	SLNSCA13	Hunter	Monterey	680	-	11,406	0.00%
707324	SUISCA11	Suisun City	Solano	345	-	11,330	0.00%
415033	NICSCA11	Nicasio	Marin	250	-	11,117	0.00%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
530505	SRCYCA11	Sierra City	Sierra	430	-	10,677	0.00%
530517	VINACA12	Vina	Tehama	69	-	10,211	0.00%
530462	HMCYCA11	Hamilton City	Glenn	145	-	9,970	0.00%
209162	CWLDCA12	Crows Landing	Stanislaus	91	-	9,812	0.00%
760796	SHSHCA11	Shoshone	San Bernardino	137	-	9,499	0.00%
707303	LOLTCA11	Lolita	Humboldt	123	-	9,355	0.00%
530444	DWNVCA11	Downieville	Sierra	239	-	8,963	0.00%
530529	MTAGCA11	Montague	Siskiyou	534	-	8,569	0.00%
831121	SLNSCA12	Glenview	Monterey	556	-	8,556	0.00%
707288	ELK CA11	Elk	Mendocino	211	8,060	8,477	95.08%
530465	KYBRCA11	Kyburz	El Dorado	60	-	8,164	0.00%
530516	TRUCCA12	North Star	Placer	606	-	7,483	0.00%
209184	KNFYCA11	Knights Ferry	Stanislaus	141	4,871	7,234	67.33%
831127	SNJNCA11	San Juan Bautista	San Benito	384	-	7,077	0.00%
818620	LACNCA11	La Canada Oak Grove	Los Angeles	14	-	7,013	0.00%
661369	EDWRCA01	Edwards	Kern	137	-	6,702	0.00%
760753	MTPSCA11	Mountain Pass	San Bernardino	19	-	6,590	0.00%
707313	PPWDCA11	Pepperwood	Humboldt	75	-	6,529	0.00%
818606	BRBNCA13	Burbank Thornton	Los Angeles	755	-	6,093	0.00%
530511	STAHCA12	South Tahoe Tamarack	El Dorado	128	-	6,042	0.00%
760738	FRCKCA11	Furnace Creek	San Bernardino	140	-	5,860	0.00%
530513	STFRCA11	Stonyford	Colusa	138	-	5,436	0.00%
530473	MRDNCA11	Meridan	Sutter	150	-	5,420	0.00%
530496	RCVACA11	Richvale	Butte	107	-	5,405	0.00%
760714	CMPDCA01	Camp Pendleton	San Diego	107	-	5,250	0.00%
831140	TRPSCA11	Tres Pinos	San Benito	214	-	4,801	0.00%
530431	BEALCA11	Beale	Yuba	78	-	4,622	0.00%
949806	MSVJCAAT	Mission Viejo	Orange	1889	-	4,533	0.00%
530506	SRVLCA11	Sierraville	Sierra	162	-	4,145	0.00%
559189	LEMRC A12	Lemore Wyman	Kings	87	-	3,883	0.00%
415005	TBRNCA11	Tiburon	Marin	1686	-	3,569	0.00%
530460	GRNDCA13	Grenada	Siskiyou	81	-	3,010	0.00%
714805	TUSTCA70	Tustin 70	Orange	658	-	2,698	0.00%
530488	PSKNCA11	Paskenta	Tehama	101	-	2,639	0.00%

Table 7.18 GO 133-D \$9.7 "ALT INVESTMENTS" vs. TOTAL REHAB EXPENDITURES (Sorted by Other Rehab Expenditures) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	Pct GO 133-D \$9.7
760726	CYWLCA11	Coyote Wells	Imperial	46	-	1,680	0.00%
510011	CRCTCA02	Crockett	Contra Costa	289	-	1,666	0.00%
760705	BAKRCA11	Baker	San Bernardino	114	-	1,308	0.00%
209249	MDSTCA52	Modesto Davis	Stanislaus	18	-	1,268	0.00%
415084	SNFCCA64	UC Hospital	San Francisco	-	-	1,167	0.00%
949810	IRVNCA12	Spectrum Irvine	Orange	1708	-	948	0.00%
530435	BTCYCA11	Butte City	Glenn	109	-	423	0.00%
530456	GZLLCA11	Gazelle	Siskiyou	44	-	-	-
916497	SCRMALR	Sequoia Pacific State	Sacramento	6182	-	-	-
916538	SCRMAMZ	P Street State	Sacramento	-	-	-	-
916539	SCRMATE	First Ave DMV State	Sacramento	-	-	-	-
TOTALS 2018-2019				1,915,900	2,725,499	107,211,728	2.54%

Table 7.19

AT&T CALIFORNIA

2018-2019 SERVICE QUALITY METRICS IN WIRE CENTERS RECEIVING
GO 133-D \$9.7 "ALTERNATIVE INVESTMENTS" AND OTHER REHAB EXPENDITURES
(Sorted by Percent Cleared within 24 Hours)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	# days to clear 90% OOS (unadj)	Avg OOS Durath (mins)
530431	BEALCA11	Beale	Yuba	78	-	4,622	0	0	-	5.19	7471
760753	MTPSCA11	Mountain Pass	San Bernardino	19	-	6,590	2	2	-	7.16	7123
760733	WEOTCA11	Weott	Humboldt	63	-	20,157	1	1	-	6.67	4612
760738	FRGKCA11	Furnace Creek	San Bernardino	140	-	5,860	1	1	0	43.29	21026
760705	BAKRCA11	Baker	San Bernardino	114	-	1,308	2	2	0	7.05	7325
707322	ANNPCA11	Annapolis	Sonoma	71	-	12,067	3	2	0	18.77	11056
760796	SHSHCA11	Shoshone	San Bernardino	137	-	9,499	4	4	0	18.71	16171
530456	GZLLCA11	Gazelle	Siskiyou	44	-	-	2	1	0	4.81	4693
209240	YSMTCA11	Yosemite Main	Mariposa	529	-	79,884	1	1	0	11.12	7411
209241	YSMTCA12	El Portal	Mariposa	299	-	44,657	2	2	0	14.32	9764
209238	WANACA11	Wawana	Mariposa	267	-	13,352	1	0	0	9.67	8295
530455	FRGLCA11	French Gulch	Shasta	82	-	21,966	5	4	0	77.86	26999
530513	STFRCA11	Stonyford	Colusa	138	-	5,436	2	2	0	12.98	10459
530465	KYBRCA11	Kyburz	El Dorado	60	-	8,164	2	2	0	10.71	8990
831101	BGSRCA11	Big Sur	Monterey	389	-	122,197	4	3	0	5.76	4449
707315	PNARCA11	Point Arena	Mendocino	597	26,725	83,477	2	2	0	12.38	7611
707278	BLKCA11	Blue Lake	Humboldt	236	-	58,019	3	2	0	8.84	8663
559219	SPVLCA11	Springville	Tulare	751	-	44,138	3	2	0	10.21	6456
559152	ASMTCA11	Sequoia Ash Mtn	Fresno	82	-	54,554	4	4	0	4.84	5577
530425	ALGHCA11	Alleghaney	Sierra	47	-	15,482	4	4	0	7.28	5138
707288	ELK CA11	Elk	Mendocino	211	8,060	8,477	3	2	0	11.57	6991
209155	BVLYCA11	Bear Valley	Calaveras	436	-	40,343	2	1	0	34.84	14786
209185	LGRNCA12	LaGrande D Pedro	Stanislaus	859	-	47,257	3	0	0	9.97	5892
530511	STAACA12	South Tahoe Tamarack	El Dorado	128	-	6,042	2	1	0	9.42	7462
559156	CMNLCA11	Camp Nelson	Tulare	680	-	11,900	2	2	0	8.98	6236
530466	LSTNCA11	Lewiston	Trinity	508	4,855	14,930	2	2	0	11.27	6539
707295	GULLCA11	Gualala	Mendocino	1066	-	96,671	2	2	0	11.01	6949
707301	LKBRCA11	Lake Berryessa	Napa	188	-	11,886	3	3	0	9.86	5869
530448	EKGKCA11	Elk Creek	Glenn	100	-	14,917	4	3	0	8.09	5305
707316	PTVYCA11	Potter Valley	Mendocino	528	-	272,174	4	3	0	13.29	7839
760856	NILDCA12	Ninland Bombay Beach	Imperial	98	-	16,814	2	2	0	5.50	4723
707313	PPWDCA11	Pepperwood	Humboldt	75	-	6,529	3	2	0	5.17	3732
760855	NILDCA11	Niland Main	Imperial	83	-	14,460	3	2	0	6.02	3662
530430	BNGRCA11	Bangor	Butte	335	-	13,720	4	3	0	11.30	5919
661401	WLBSCA11	Walker Basin	Kern	447	-	61,856	4	4	0	5.42	3815
619851	JAMLCA60	Jamul	San Diego	322	-	13,013	2	1	0	7.72	5368
707280	BNVLC A11	Boonville	Mendocino	645	12,118	121,299	3	2	0	11.62	6784

Table 7.19 SERVICE QUALITY METRICS IN GO 133-D \$9.7 "ALT INVESTMENTS" WIRE CENTERS (Sorted by Percent Cleared within 24 Hours) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	# days to clear 90% OOS (unadj)	Avg OOS Duratn (mins)
530490	PLVCA12	Placerville Niagara	El Dorado	2240	5,875	220,920	4	3	0	14.33	8399
530485	ORVCA12	Oroville East	Butte	1522	11,418	139,512	5	3	0	7.37	5200
707308	MNRDCA11	Miranda	Humboldt	286	-	37,236	2	1	0	6.32	5725
559154	AVNLCA12	Avenal	Kings	434	-	52,681	3	2	0	7.02	4344
760735	FLBKCA12	Fallbrook	San Diego	3475	-	356,664	3	2	0	10.19	6823
209161	CTVLCA11	Coulterville	Mariposa	663	-	75,405	5	4	0	13.09	6862
559242	BURLCA11	Burrell	Fresno	88	-	40,135	5	4	0	5.17	3624
530457	GRTWCA11	Georgetown	El Dorado	1339	40,908	100,410	4	3	0	10.77	6103
209203	MRPHCA11	Murphys	Calaveras	818	-	76,963	3	2	0	16.43	10834
650031	MSBHCA11	Moss Beach	San Mateo	830	-	56,552	1	1	0	7.51	4850
707309	MNRICA11	Monte Rio	Sonoma	518	-	96,663	3	2	0	12.51	8492
805382	OJAICA11	Ojai	Ventura	1639	-	307,558	2	1	0	21.04	11969
619728	DLZRCA11	Dulzura	San Diego	504	-	28,378	3	2	0	8.62	5069
559186	LATNCA11	Laton	Fresno	182	-	14,000	5	3	0	6.45	3601
760801	WNSPCA12	Warner Springs	San Diego	373	-	37,095	3	2	0	9.11	5202
707294	GYVCA11	Geyersville	Sonoma	295	-	32,547	2	2	0	15.86	12237
760748	JULNCA12	Julian	San Diego	879	-	106,381	2	2	0	7.54	4652
619715	CAMPCA11	Campo	San Diego	474	-	56,282	2	2	0	7.10	4106
760764	PALACA11	Pauma Valley	San Diego	812	-	92,036	4	3	0	6.80	4398
707305	MNDCA11	Mendocino	Mendocino	1560	-	155,033	2	1	0	9.76	6335
805363	BRDLCA90	Bradley	Monterey	495	-	42,059	1	1	0	5.01	3096
530528	CNVYCA11	Central Valley	Shasta	1528	23,261	47,627	3	2	0	11.25	6530
559229	TPTNCA11	Tipton	Tulare	199	-	32,856	4	3	0	6.79	4380
209202	MKHLCA12	Mokelumme Hill	Calaveras	183	-	14,871	3	2	0	11.05	6167
209162	CWLDCA12	Crows Landing	Stanislaus	91	-	9,812	3	2	0	5.84	4029
805381	OKVWCA11	Oakview	Ventura	620	-	73,441	2	2	0	16.96	9619
530427	ARSNCA11	Anderson	Shasta	1747	-	79,134	3	2	0	11.13	6322
831124	SNARCA11	San Ardo	Monterey	119	-	25,111	2	1	0	6.31	3920
530432	BGGSCA11	Biggs	Butte	249	-	33,362	2	2	0	7.02	4949
650021	LAHNCA11	La Honda	San Mateo	389	-	22,156	2	1	0	7.30	4518
619778	SNDGCA02	SNDG University	San Diego	5448	-	110,551	1	0	0	7.55	4480
209173	GVLDCA11	Groveland	Tuolumne	1863	-	205,768	2	2	0	11.49	6323
661360	BKFDCA15	Bakersfield Mettler	Kern	299	-	88,208	1	1	0	10.30	5707
559226	TRBLCA11	Terra Bella	Tulare	417	-	70,772	5	3	0	5.72	3930
916476	NWCSCA11	Newcastle	Placer	924	-	69,872	2	2	0	7.19	4524
530446	DNSMCA11	Dunsmuir	Siskiyou	413	-	19,473	1	1	0	4.94	4553
619794	SNYSOCA12	San Ysidro	San Diego	1283	-	52,354	1	1	0	7.86	4834
530441	CTWDCA11	Cottonwood	Tehama	2138	-	116,846	4	3	0	10.80	6043
661374	LNVYCA11	Leona Valley	Los Angeles	322	45,885	156,071	4	2	0	6.54	4330
805386	PIRUCA11	Piru	Ventura	145	-	15,616	2	1	0	3.71	3385
707332	VYFRCA11	Valley Ford	Sonoma	184	-	32,423	2	1	0	10.02	6228
209151	ARNLCA11	Arnold	Calaveras	1936	-	197,594	2	2	0	12.27	6291
707297	HLBGCA11	Healdsburg	Sonoma	2672	16,075	162,508	2	1	0	7.03	6738
760799	VLCTCA11	Valley Center	San Diego	2286	-	157,356	2	1	0	7.53	4284
805390	SNMICA11	Santa Margarita	San Luis Obispo	540	-	42,927	2	1	0	4.35	3054

Table 7.19 SERVICE QUALITY METRICS IN GO 133-D \$9.7 "ALT INVESTMENTS" WIRE CENTERS (Sorted by Percent Cleared within 24 Hours) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	# days to clear 90% OOS (unadj)	Avg OOS Duratin (mins)
760769	RAMNCA11	Ramona	San Diego	1878	-	148,412	2	1	0	8.15	4951
707284	CODLCA11	Cloverdale	Sonoma	832	-	130,963	3	2	0	11.33	5981
619781	SNDGCA06	SNDG 37th Street	San Diego	3952	-	54,238	1	1	0	7.41	4219
530508	SDSPCA11	Soda Springs	Nevada	527	-	79,397	2	1	0	8.62	4915
661403	BVSPCA11	Bear Villy Spring	Kern	334	-	74,992	3	2	0	8.34	4940
858771	RSFECA12	Rancho Santa Fe	San Diego	3255	-	98,303	1	1	0	7.00	4236
760714	CMPDCA01	Camp Pendleton	San Diego	1057	-	5,250	1	1	0	4.60	2926
530450	ESPRCA11	Esparto	Yolo	266	-	29,375	3	2	0	9.22	7855
661404	LEBCCA12	Pine Mountain	Kern	678	-	39,041	2	1	0	6.56	4213
661373	LEBCCA11	Lebec	Kern	386	-	74,689	3	2	0	5.99	3594
530489	PLVCA11	Placerville Main	El Dorado	7102	78,185	445,092	3	2	0	11.22	6208
530512	STAHCA13	South Tahoe Meyers Apache	El Dorado	785	-	26,229	1	0	0	8.90	5055
530437	CHLNCA11	Challenge	Yuba	1149	-	22,682	3	2	0	8.06	6477
619746	JCMBCA11	Jacumba	San Diego	371	-	21,592	3	2	0	6.36	4017
530475	NVCYCA11	Nevada City	Nevada	3415	29,760	175,423	2	2	0	10.57	6008
707336	YNVCA11	Yountville	Napa	819	-	27,544	2	1	0	10.94	7981
707298	HPLDCA12	Hopland	Mendocino	201	-	25,981	2	2	0	17.30	8691
530484	ORVCA11	Oroville Main	Butte	3496	-	122,572	2	2	0	8.172	8172
707314	PTLMCA01	Petaluma	Sonoma	4990	-	227,253	1	1	0	10.90	6192
530503	SHLKCA01	Shasta Lake	Shasta	342	-	101,712	6	4	0	11.03	6034
619793	SNDGCA12	SNDG Market Street	San Diego	2184	-	33,865	2	1	0	8.47	5555
760713	CLPTCA11	Calpatria	Imperial	259	-	28,477	1	1	0	5.71	3543
209184	KNFYCA11	Knights Ferry	Stanislaus	141	4,871	7,234	1	1	0	11.34	5356
707281	BGVCA11	Bridgeville	Humboldt	173	-	89,077	4	3	0	4.62	3078
619794	SNDGCA14	SNDG Tennyson	San Diego	2848	-	34,696	1	1	0	7.11	4287
559160	CLNGCA01	Coalinga	Fresno	817	-	128,060	2	1	0	6.03	3759
510052	RCMDCA11	Richmond SF	Contra Costa	7128	-	348,378	2	1	0	9.31	4707
619700	ALPICA12	Alpine	San Diego	1624	47,280	118,847	3	2	0	8.89	4594
619744	IMBHCA11	Imperial Beach	San Diego	2049	12,190	99,724	1	1	0	8.66	4835
858763	PCBHCA11	Hornblend	San Diego	548	-	24,330	1	1	0	7.86	4843
559239	WDLKCA11	Woodlake	Tulare	533	-	130,178	4	3	0	5.06	3480
530504	SGSPCA11	Shingle Springs	El Dorado	3431	34,518	288,615	2	2	0	9.75	5323
619754	NTCYCA11	National City Highland	San Diego	1415	-	24,742	1	1	0	6.69	4009
510011	CRCTCA02	Crockett	Contra Costa	289	-	1,666	1	1	0	11.16	5473
619751	LKSDCA12	Lakeside	San Diego	1795	-	172,614	2	1	0	7.70	4404
707325	TMLSCA12	Tomales	Sonoma	287	-	27,618	1	1	0	10.12	5306
209150	ANCMCA01	Angels Camp	Calaveras	809	-	100,528	2	1	0	9.99	5486
626654	ROSMCA11	Rosemead	Los Angeles	6423	-	163,405	1	0	0	8.06	4958
209212	PLMOCA11	Plymouth	Amador	1528	-	117,107	3	2	0	8.15	4426
530509	STAHCA01	South Tahoe Sussex	El Dorado	2731	-	72,231	1	0	0	9.60	5578
650028	MNPKCA11	Menlo Park	San Mateo	4016	-	175,028	2	2	0	7.86	4710
559213	PTVCA11	Porterville	Tulare	4993	12,698	215,603	2	1	0	5.64	3738
530484	HRBKCA11	Hornbrook	Siskiyou	260	-	33,227	3	2	0	6.22	4213
530445	DNGNCA12	Dunnigan	Yolo	113	-	18,518	2	2	0	13.73	8283
530488	PSKNCA11	Paskenta	Tehama	101	-	2,639	2	2	0	6.96	4443

Table 7.19 SERVICE QUALITY METRICS IN GO 133-D \$9.7 "ALT INVESTMENTS" WIRE CENTERS (Sorted by Percent Cleared within 24 Hours) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments" Expenditures	Other Rehab Expenditures	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	# days to clear 90% OOS (unadj)	Avg OOS Duratin (mins)
619853	OTMSCA11	Olaj Mesa	San Diego	986	-	26,841	1	0	0	8.00	4576
707287	CTTICA12	Colati	Sonoma	1983	11,393	71,216	1	1	0	10.81	6074
619723	CRNDCA11	Coronado	San Diego	1724	10,589	13,839	1	0	0	8.91	4732
707292	FTBRCA02	Fort Bragg	Mendocino	3227	49,006	571,959	2	1	0	10.58	5569
209174	GUSTCA11	Gustine	Merced	604	-	59,174	3	2	0	6.94	4455
530496	RCVACA11	Richvale	Butte	107	-	5,405	1	0	0	9.27	5285
626658	SNGBCA01	San Gabriel	Los Angeles	4610	19,071	235,554	1	1	0	7.01	4213
949776	SNCLCA12	San Clemente	Orange	2602	-	22,980	1	1	0	7.01	4844
909720	COTNCA11	Colton	San Bernardino	3205	-	304,731	2	2	0	6.79	4114
858750	LAJLCA11	La Jolla Girard	San Diego	3647	16,281	63,981	1	1	0	8.29	4915
559228	THRRCA11	Three Rivers	Tulare	609	59,250	99,547	5	3	0	4.53	3252
619780	SNDGCA05	SNDG Saipan	San Diego	2182	-	106,177	2	1	0	8.02	4657
831104	CHLRCA11	Chualar	Monterey	136	-	28,848	1	1	0	6.58	3993
650024	LSATCA11	Los Altos	Santa Clara	4386	45,785	236,071	2	0	0	7.70	4780
530516	TRUCCA12	North Star	Placer	606	-	7,483	0	1	0	9.97	5935
530459	GRVYCA01	Grass Valley	Nevada	7879	28,787	284,966	2	1	0	9.39	5271
805364	CMBACA11	Cambria	San Luis Obispo	1435	-	170,952	1	1	0	3.93	2673
858727	DLMRCA12	Del Mar	San Diego	5494	-	40,412	1	0	0	7.89	4858
661395	THCHCA01	Techachapi	Kern	1787	-	184,186	2	1	0	7.57	4568
707296	GUVLCA11	Guerneville	Sonoma	691	-	89,939	2	1	0	13.10	6745
707319	SNRSCA11	Los Alamos	Sonoma	2537	-	91,433	1	1	0	15.90	9754
559224	SRFRCA11	Stratford	Kings	85	-	14,407	3	2	0	6.31	3417
559231	TULRCA11	Tulare	Tulare	3875	-	367,230	2	1	0	5.99	3577
530495	RDNCA02	Redding Main	Shasta	4862	-	531,011	2	1	0	9.72	5867
707291	FSVLCA11	Forestville	Sonoma	737	-	147,241	3	2	0	11.31	5930
707329	UPLKCA11	Upper Lake	Lake	388	-	83,640	3	2	0	18.56	8751
209225	STCKCA11	Sutter Creek	Amador	697	-	44,477	2	2	0	8.84	4536
805366	CYCSCA11	San Andreas	Calaveras	1238	-	110,300	3	2	0	8.89	4407
619718	CHVSCA11	Cayucos	San Luis Obispo	526	-	68,635	1	1	0	4.24	2746
530507	SMAVCA11	Chula Vista Third Avenue	San Diego	3894	8,957	165,333	1	1	0	7.36	4346
559208	PRLRCA11	Smartsville	Yuba	318	-	19,293	2	2	0	8.45	4817
619766	PNVYCA11	Parlier	Fresno	469	-	31,750	2	1	0	5.02	3181
530518	WEEDCA01	Pine Valley	San Diego	247	-	25,547	2	1	0	6.54	4156
530529	MTAGCA11	Weed	Siskiyou	847	-	13,016	1	1	0	4.48	2922
626601	ALHBCA01	Montague	Siskiyou	534	-	8,569	1	1	0	5.03	3221
559210	PXLYCA11	Alhambra	Los Angeles	8889	-	232,806	1	1	0	7.42	4521
760732	ENCTCA12	Pixley	Tulare	273	-	42,836	3	2	0	6.11	3563
619777	SNDGCA01	Encinitas	San Diego	4571	-	234,551	1	1	0	5.74	3752
209234	VYSPCA11	SNDG C Street	San Diego	5627	-	47,102	1	0	0	7.23	4353
559178	HURNCA11	Valley Springs	Calaveras	1100	14,574	92,954	3	2	0	8.16	4479
530523	WDLRCA11	Huron	Fresno	294	-	18,336	2	1	0	6.53	3574
858762	PCBHCA01	Woodland	Yolo	4358	-	181,131	1	1	0	9.86	5862
858785	SNDGCA15	Garnet	San Diego	4157	-	284,411	1	1	0	8.39	4755
805355	AVBHCA11	SNDG Regents	San Diego	6954	-	79,119	1	0	0	8.32	5078
		Avila Beach	San Luis Obispo	337	-	19,066	1	1	0	3.49	2454

Table 7.19 SERVICE QUALITY METRICS IN GO 133-D \$9.7 "ALT INVESTMENTS" WIRE CENTERS (Sorted by Percent Cleared within 24 Hours) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	# days to clear 90% OOS (unadj)	Avg OOS Duratin (mins)
209233	TWHRCA11	Twain Harte	Tuolumne	1607	-	122,275	2	1	0	8.47	4730
510013	ELSBACA11	Rich Applan Way El Sobrante	Contra Costa	3219	-	150,753	2	1	0	7.37	4484
760708	BRWLCA11	Brawley	Imperial	1759	-	108,509	1	1	0	6.17	3487
650046	PLALCA12	Palo Alto South	Santa Clara	4001	-	20,911	1	1	0	7.27	4484
559167	FVPNCA11	Five Points	Fresno	151	-	22,427	3	2	0	6.75	3848
707312	OCNCA11	Occidental	Sonoma	599	-	49,970	2	1	0	8.53	4750
707443	DIXNCA11	Dixon	Solano	1345	-	110,688	2	1	0	10.33	7298
650016	HMBACA12	Half Moon Bay	San Mateo	2349	37,312	91,019	1	1	0	8.40	4429
559215	RVDLCA11	Riverdale	Fresno	336	-	56,131	4	2	0	6.62	3842
858854	RNPSCA11	Rancho Penasquitos	San Diego	1446	-	12,207	0	0	0	10.55	5929
530531	RDNCA11	Redding Enterpr	Shasta	3279	18,119	70,508	1	1	0	8.76	5025
559163	DLRYCA11	Del Rey	Fresno	143	-	21,705	2	1	0	10.61	5521
530438	CHICCA01	Chico Main	Butte	10221	6,955	287,579	1	1	0	6.73	4497
619719	CHVSCA12	Chula Vista Apache	San Diego	2258	5,956	44,012	1	0	0	7.27	4589
707335	WNSCA11	Windsor	Sonoma	1693	-	134,483	1	1	0	11.08	7176
831118	SLDDCA11	Soledad	Monterey	947	-	148,989	1	1	0	4.94	2907
661392	SHFTCA11	Shafter	Kern	772	-	99,573	2	1	0	4.45	2901
408130	SNUSCA12	San Jose Dial Way	Santa Clara	13069	36,755	282,004	1	1	0	7.50	4516
707279	BBBACA11	Bodega Bay	Sonoma	336	-	83,346	2	1	0	9.56	5987
323638	LSANCA23	LSAN Capitol	Los Angeles	7035	-	207,342	1	1	0	7.36	4186
415058	SNFCCA01	SF Bush Pine	San Francisco	14854	-	319,373	1	0	0	6.28	3665
760716	CRLSA11	Carlsbad Harding	San Diego	2206	-	98,008	1	1	0	7.89	4450
626611	ELMNCA01	El Monte	Los Angeles	9210	7,436	260,083	1	1	0	7.77	4360
619752	LAMSCA01	La Mesa	San Diego	5791	29,460	338,207	1	1	0	6.79	4025
619729	ELCJCA11	El Cajon	San Diego	4004	4,702	326,642	1	1	0	6.53	3873
626602	ARCDCA11	Arcadia	Los Angeles	4800	-	168,770	1	1	0	7.97	4360
760800	VISTCA12	Vista	San Diego	5720	-	393,191	1	1	0	6.63	4407
707317	RIDCA11	Rio Dell	Humboldt	238	18,122	32,097	1	0	0	4.10	2423
707326	TRNDCA11	Trinidad	Humboldt	296	-	27,229	2	1	0	4.43	3040
619852	RNSDCA11	Rancho San Diego	San Diego	814	-	23,052	1	0	0	6.58	4616
650045	PLALCA02	Palo Alto Main	Santa Clara	10518	-	120,501	1	1	0	7.20	4462
707311	NICECA11	Nice	Lake	465	-	88,610	3	2	0	12.26	5911
805400	VNTRCA02	Ventura Fir	Ventura	2365	-	163,802	1	1	0	19.30	8466
707302	LKPTCA02	Lakeport	Lake	2039	-	190,486	2	1	0	15.87	7025
530487	PRDSCA12	Paradise Pines	Butte	1026	-	93,950	3	2	0	12.43	7823
559188	LEMRCAT11	Lemore Main	Kings	1200	15,802	156,276	2	1	0	6.11	3645
831109	GNFDCAT11	Green Field	Monterey	940	-	185,052	1	1	0	4.86	2959
530429	AUBNCA11	Auburn Placer Hills	Placer	1530	-	56,761	2	1	0	7.43	4049
415073	SNRFCA11	Parkway	Marin	2956	-	21,352	1	1	0	7.46	3993
530474	MTSHCA12	Mount Shasta	Siskiyou	1180	-	39,449	1	1	0	4.16	3652
510080	HRCLCA11	Hercules Pinole	Contra Costa	2622	-	45,967	1	1	0	7.63	4276
530458	GRBRCA11	Gerber	Tehama	182	-	20,926	3	2	0	4.85	3605
707306	MDTWCA11	Middletown	Lake	874	-	172,164	2	1	0	9.58	5062
209237	WTFRCA11	Waterford	Stanislaus	758	-	108,950	3	2	0	7.87	4197
619782	SNDDCA11	SNDD College	San Diego	2566	-	157,196	1	1	0	8.12	5692

Table 7.19 SERVICE QUALITY METRICS IN GO 133-D \$9.7 "ALT INVESTMENTS" WIRE CENTERS (Sorted by Percent Cleared within 24 Hours) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	# days to clear 90% OOS (unadj)	Avg OOS Duratin (mins)
909741	HGLDCA11	Highland	San Bernardino	2208	-	260,788	2	1	0	6.99	4366
209209	PNCRC11	Pinecrest	Tuolumne	921	-	60,972	1	1	0	5.58	4152
951775	RVSDCA11	Woodcrest	Riverside	2640	-	205,180	1	1	0	6.68	3830
650051	PSDC11	Pescadero	San Mateo	565	-	43,093	1	1	0	7.19	4388
209177	HGSNCA11	Hughson	Stanislaus	531	-	49,456	2	1	0	8.46	4949
530471	LLTNCA11	Loyalton	Plumas	546	-	15,172	1	1	0	3.39	2537
530435	BTCYCA11	Butte City	Glenn	109	-	423	2	1	0	5.33	3160
415027	MLVYCA01	Mill Valley	Marin	3821	-	63,792	1	1	0	6.07	3621
858786	SNDGCA16	SNDG Mira Mesa	San Diego	5310	-	70,026	1	0	0	6.57	3903
559180	IVNHCA11	Ivanhoe	Tulare	441	-	193,296	3	2	0	5.05	2982
858770	RBRNCA11	Rancho Bernardo	San Diego	4178	-	187,328	1	0	0	6.57	3863
831102	BLCKCA11	Boulder Creek	San Diego	1051	-	106,508	2	1	0	7.00	4119
949722	CRDMCA11	Corona Del Mar	Orange	6350	51,244	132,880	1	1	0	4.93	3216
530428	AUBNCA01	Auburn Main	Placer	5789	-	172,598	2	1	0	7.45	4019
831112	KGCYCA11	King City	Monterey	1327	-	212,905	2	1	0	5.58	3242
530447	DTFLCA11	Alta Dutch Flats	Placer	538	-	43,835	4	2	0	8.25	4723
323641	LSANCA34	LSAN Angeles	Los Angeles	9593	8,133	374,465	1	1	0	7.60	4338
949808	RSMGCA11	R S Margarita	Orange	2003	-	28,744	1	0	0	6.27	5195
760742	HLVLA11	Holtville	Imperial	458	-	36,118	2	1	0	6.41	3387
707321	SBSTCA11	Sebastopol	Sonoma	2794	32,610	351,030	2	1	0	8.99	4995
530463	HMWDCA11	Homeewood	El Dorado	1117	-	41,885	1	0	0	6.51	3502
707334	WLTSCA12	Willits	Mendocino	2049	-	302,155	2	1	0	10.44	6200
831106	CRVYCA11	Carmel Valley	Monterey	1039	-	61,473	2	1	0	5.26	3258
707303	LOLTCA11	Lolita	Humboldt	123	-	9,355	2	1	0	3.96	2451
323642	LSANCA35	LSAN Montebello	Los Angeles	7620	-	261,864	1	1	0	6.93	3749
707337	RTPKCA11	Rohnert Park	Sonoma	2121	-	72,712	1	0	0	9.72	5731
530481	NYUBCA11	North Yuba	Yuba	515	-	29,786	3	2	0	6.27	3534
916491	PLGVCA12	Pleasant Grove	Placer	160	-	20,645	4	2	0	6.34	3537
415075	SSLTCA11	Sausalito Larkspur	Marin	1737	-	17,833	1	1	0	5.81	3393
530522	WNTRCA11	Winters	Yolo	734	16,119	63,060	2	1	0	10.47	5081
949791	SJPCPA12	S J Capistrano	Orange	4048	-	35,832	1	1	0	6.06	4638
530521	WLWSCA11	Willows	Glenn	989	-	53,383	2	1	0	6.69	3850
415072	SNRFCA01	San Rafael Main	Marin	6998	-	172,731	1	1	0	8.36	4740
530460	GRNDCA13	Grenada	Siskiyou	81	-	3,010	2	1	0	4.49	2607
661351	AGDLCA11	Agua Dulce	Los Angeles	456	-	311,170	2	1	0	4.88	3410
760792	SNMCCA11	San Marcos	San Diego	4889	1,511	419,648	1	1	0	7.99	4290
408138	SNVACA01	Carrol Sunmyvale	Santa Clara	7759	6,195	147,584	1	1	0	6.99	3934
559157	CRTHCA11	Caruthers	Fresno	383	-	29,715	4	2	0	5.89	3415
209176	HERLCA11	Herald	Sacramento	273	-	62,776	3	2	0	7.75	3829
805354	ATSCCA11	Atascadero	San Luis Obispo	2312	-	169,359	1	1	0	4.40	2703
530514	THCYCA01	Tahoe City	Placer	2438	-	52,998	1	0	0	5.49	3194
805378	MRBACA11	Morro Bay	San Luis Obispo	993	-	86,371	1	1	0	4.24	2510
909773	RILTCA11	Rialto	San Bernardino	3898	-	381,712	2	1	0	6.08	3611
310618	HWTHCA01	Hawthorne	Los Angeles	5016	-	72,255	1	1	0	6.88	3868
559235	VISLCA11	Visalia Main	Tulare	6971	-	641,327	1	1	0	5.18	3328

Table 7.19 SERVICE QUALITY METRICS IN GO 133-D \$9.7 "ALT INVESTMENTS" WIRE CENTERS (Sorted by Percent Cleared within 24 Hours) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	# days to clear 90% OOS (unadj)	Avg OOS Duratn (mins)
510001	ALBYCA11	Albany Solano	Alameda	6236	21,550	92,458	1	1	0	6.60	3776
530442	DAVSCA11	Davis	Yolo	4191	-	143,752	1	0	0	8.12	5100
714739	GRGYCA01	Euclid	Orange	6721	-	66,526	1	1	0	5.60	3346
650032	MTVMCA11	Mountain View	Santa Clara	7929	-	111,521	1	0	0	6.92	4004
858779	SNDGCA03	SNDG Linda Vista	San Diego	8083	-	330,520	1	0	0	7.38	4194
209204	NWMNCA12	Newman	Stanislaus	549	-	37,512	2	1	0	5.62	3217
530505	SRCYCA11	Sierra City	Sierra	430	-	10,677	2	1	0	7.16	4132
714797	SLVRCA11	Silverado	Orange	191	-	54,216	2	1	0	4.46	2808
415019	IGNCCA12	Ignacio	Marin	1539	-	17,718	1	0	0	7.30	3686
408137	SNTCCA11	Santa Clara Bellomy	Santa Clara	8974	-	175,946	1	0	0	6.99	3904
510040	OKLDCA13	Oakland Mountain	Alameda	4550	-	55,130	1	0	0	6.17	3537
707275	ANGWCA11	Angwin	Napa	591	-	36,041	3	2	0	6.41	3580
805380	NIPMCA11	Nipomo	San Luis Obispo	999	-	88,020	1	1	0	3.94	2414
510004	BKLYCA01	Berkeley Bancroft	Alameda	8600	-	98,859	1	0	0	5.48	3336
530520	WTLDDCA12	Wheatland	Sutter	497	-	37,759	2	1	0	8.05	4185
408132	SNUSCA14	San Jose Foxworthy	Santa Clara	9411	151,565	564,078	1	1	0	6.90	4123
805387	PSBHCA11	Pismo Beach	San Luis Obispo	736	-	54,019	1	0	0	3.38	2247
707304	LWLKCA11	Lower Lake	Lake	1965	27,689	308,029	2	1	0	12.27	5874
805385	PSRBCA01	Paso Robles	San Luis Obispo	4945	6,585	551,732	1	1	0	3.99	2574
831125	SNCZCA01	Santa Cruz	Santa Cruz	6297	-	112,232	1	1	0	5.98	3527
209222	SKTNCA12	Stockton Ashley	San Joaquin	1196	-	134,528	3	2	0	7.10	3876
310628	LSANCA07	LSAN Airport	Los Angeles	7220	-	19,121	1	0	0	6.02	3547
760758	OCSDCA11	Oceanside Mission	San Diego	4352	14,021	330,986	1	1	0	6.38	4415
707276	ARCTCA11	Arcata	Humboldt	1835	-	89,453	1	1	0	4.70	2847
415005	TBRNCA11	Tiburon	Marin	1886	-	3,569	1	0	0	6.88	3798
209182	JMTWCA11	Jamestown	Tuolumne	800	-	86,889	2	0	0	8.01	4374
760730	ELCNCA01	El Centro	Imperial	3848	2,151	156,017	1	1	0	6.01	3269
209192	ESCLCA11	Escalon	San Joaquin	929	-	32,958	2	1	0	8.89	4435
530515	TRUCCA11	Truckee	Nevada	3351	-	117,401	1	0	0	5.51	3248
805370	FLMRCA11	Fillmore	Ventura	791	-	58,884	1	1	0	4.14	3150
661371	FZPKCA11	Frazier Park	Kern	757	-	255,429	2	1	0	6.07	3593
530493	QNCYCA12	Quincy	Plumas	1838	-	132,862	2	1	0	6.10	3710
707318	STHNCA11	St Helena	Napa	2372	-	99,871	1	1	0	6.91	4221
530462	HMCYCA11	Hamilton City	Glenn	145	-	9,970	2	1	0	5.48	3171
760726	CYWLCA11	Coyote Wells	Imperial	46	-	1,680	2	1	0	4.92	2980
714737	FUTNCA01	Fullerton	Orange	8005	-	559,318	1	1	0	5.58	3377
760733	ESCNCA01	Escondido	San Diego	7483	-	988,311	1	1	0	6.47	3611
714788	SNANCA01	Bush	Orange	8268	-	182,223	1	1	0	5.09	3191
209218	SNRACA13	Sonora	Tuolumne	4857	-	412,432	2	1	0	8.98	4399
209181	JCSNCA01	Jackson	Amador	1451	-	102,215	1	1	0	8.13	3978
925077	SUNLCA11	Sunol	Alameda	191	-	44,606	2	1	0	4.84	2769
707282	CLSTCA11	Calistoga	Napa	1111	-	146,784	2	1	0	6.19	4438
310619	IGWDCA01	Inglewood	Los Angeles	5028	-	79,328	1	1	0	6.82	3778
831141	WTVLCA01	Watsonville	Santa Cruz	7582	48,755	199,766	1	1	0	6.33	3535
530473	MRDNCA11	Meridian	Sutter	150	-	5,420	2	1	0	8.58	4049

Table 7.19 SERVICE QUALITY METRICS IN GO 133-D \$9.7 "ALT INVESTMENTS" WIRE CENTERS (Sorted by Percent Cleared within 24 Hours) (cont'd)

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831135	SNLCCA11	San Lucas	Monterey	43	-	21,562	2	1	0	6.89	2976
661372	LAMTCA11	Lamont	Kern	719	-	103,911	2	1	0	3.40	2609
858768	POWYCA11	Poway Midland	San Diego	2729	-	76,457	1	0	0	6.60	3643
415033	NICSCA11	Nicasio	Marin	250	-	11,117	2	1	0	7.39	4283
323629	LSANCA08	LSAN Melrose	Los Angeles	11621	-	365,907	1	1	0	5.81	3345
209223	SKTNCA14	Stockton Redwood	San Joaquin	1471	-	102,554	1	1	0	7.13	3566
209179	IONECA11	Ione	Amador	874	-	112,159	2	1	0	7.82	4126
949706	BALBCA01	Balboa	Orange	2703	-	51,441	1	1	0	6.76	3335
530472	MYVICA01	Marysville	Yuba	3543	-	229,635	2	1	0	5.55	3666
323640	LSANCA29	LSAN Sunset	Los Angeles	5382	-	191,126	1	0	0	5.43	3045
510038	OKLDCA11	Oakland 45th Olympic	Alameda	9172	-	88,471	1	1	0	5.64	3225
760717	CRLSCA12	Carlsbad La Costa	San Diego	3662	-	62,771	1	0	0	6.48	3719
530483	ORLDCA11	Orland	Glenn	1400	-	91,937	2	1	0	5.91	3499
831103	BNLMCA11	Ben Lomond	Santa Cruz	579	-	33,465	2	0	0	8.70	4231
714710	BNPKCA11	Buena Park	Orange	4388	-	340,621	1	1	0	5.55	3311
949745	IRVNCA01	Irvine	Orange	4684	-	122,428	1	1	0	5.68	3370
707300	KLVLCA12	Kelseyville	Lake	1095	-	106,107	2	1	0	11.79	5239
714798	TUSTCA11	Tustin 11	Orange	6962	-	134,751	1	0	0	5.42	4820
661368	ERLMCA11	Earlmarl	Tulare	332	-	49,860	2	1	0	4.43	2962
707320	SNRSCA01	Santa Rosa Main	Sonoma	11549	-	734,403	1	1	0	10.11	7450
707310	NAPACA01	Napa	Napa	7620	-	444,116	1	1	0	7.96	8212
619795	SANTCA01	Santee	San Diego	2186	-	135,006	1	0	0	6.41	3919
209200	MDSTCA03	Modesto Kellogg South Ceres	Stanislaus	2635	-	196,478	2	1	0	7.44	3993
415069	SNGNCA11	San Geronimo	Marin	461	-	28,570	2	1	0	5.25	2928
510036	OKDLCA03	Oakland Franklin	Alameda	12884	-	153,386	1	0	0	4.99	3175
209232	TRLCCA11	Turlock	Stanislaus	6746	-	379,362	1	1	0	7.27	3947
209205	OKDLCA11	Oakdale	Stanislaus	2070	-	173,368	2	1	0	8.22	4166
530440	CRNGCA12	Corning	Tehama	1179	-	89,716	2	1	0	5.68	3394
209193	LSBNCA12	Los Banos	Merced	2068	-	157,287	2	1	0	6.63	3650
805396	TMTNCA11	Templeton	San Luis Obispo	643	-	49,354	1	0	0	4.95	2742
760712	CLXCXA12	Calexico	Imperial	1886	-	40,026	1	0	0	4.93	3220
323626	LSANCA05	LSAN Pleasant	Los Angeles	6868	5,382	232,270	2	1	0	5.64	3261
323631	LSANCA10	LSAN Webster	Los Angeles	9845	-	283,033	1	1	0	6.01	3473
909736	FNTACA11	Fontana	San Bernardino	5840	-	829,593	2	0	0	6.35	3754
310607	BVHLCA01	Beverly Hills	Los Angeles	16372	-	320,349	1	1	0	5.54	3176
805362	BYPKCA11	Baywood Park	Los Angeles	920	-	151,562	1	1	0	4.07	2584
559206	ORCVCA11	Orange Cove	Fresno	399	-	81,348	3	2	0	4.75	2618
530525	YBCYCA01	Yuba City Marysville	Sutter	4625	-	130,340	1	0	0	7.95	4803
661402	WASCCA01	Wasco	Kern	774	20,085	66,272	2	1	0	3.64	2568
323644	LSANCA56	LSAN Clinton	Los Angeles	6516	-	192,710	1	1	0	6.25	3477
530524	YREKCA11	Yreka	Siskiyou	1314	-	13,848	1	0	0	4.01	2875
209220	SKTNCA01	Stockton Main	San Joaquin	7703	-	489,989	2	1	0	6.45	3585
559175	HNFRCA01	Hanford	Kings	3748	-	381,264	2	1	0	5.51	3266
661367	DELNCA11	Delano	Tulare	1939	-	230,364	1	1	0	3.68	2513
530488	LVOKCA11	Live Oak	Sutter	672	-	31,160	2	1	0	7.16	4088

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323643	LSANCA38	LSAN Republic	Los Angeles	6084	-	273,973	2	1	0	5.70	3158
559165	FRVLCA11	Farmersville	Tulare	401	-	27,801	2	1	0	3.98	2911
707323	SONMCA12	Sonoma	Sonoma	3961	-	230,651	1	1	0	32.80	12032
661405	LKLACA11	Lake Los Angeles	Los Angeles	427	-	43,680	1	1	0	4.18	2856
310663	WLANCA01	Century City	Los Angeles	5791	-	55,368	1	1	0	5.02	2886
323633	LSANCA12	Normandy	Los Angeles	9451	-	645,411	1	1	0	6.03	3401
831108	FETNCA11	Felton	Santa Cruz	976	-	26,254	2	1	0	7.72	3574
559246	GSHNCA11	Goshen	Tulare	730	-	26,113	2	1	0	4.53	2675
209214	RVRBCA11	Riverbank	Stanislaus	992	-	23,589	1	1	0	4.91	3234
951774	RVSDDA01	Riverside Orange	Riverside	7926	8,685	477,823	1	1	0	5.81	3301
559158	CHWCCA11	Chowchilla	Madera	963	-	166,189	2	1	0	5.35	2966
831110	GNZLCA11	Gonzales	Monterey	542	-	68,897	1	1	0	4.45	2548
310608	CLCYCA11	Culver City	Los Angeles	7964	-	277,935	1	1	0	5.40	2942
805391	SATCCA12	Saticoy	Ventura	1946	5,363	121,595	1	1	0	4.69	3541
707328	UKIHCA01	Ukiah Main	Mendocino	3947	17,349	316,473	1	1	0	9.12	5362
925012	DAVLCA12	Danville Main 12	Contra Costa	5110	-	303,232	1	0	0	4.47	2581
408139	SNVACA11	Mathilda Sunneycastle	Santa Clara	1662	-	15,573	1	0	0	7.06	3854
415023	LRKSCA11	Larkspur Corte Madera	Marin	3120	-	28,622	1	1	0	5.81	3221
916500	SCRMCA11	SCRM Gladstone	Sacramento	6152	-	129,853	1	1	0	6.58	3309
925042	ORNDCA11	Orinda	Contra Costa	1932	-	27,680	2	1	0	6.07	3216
707285	CBMTCA11	Cobb Mountain	Lake	317	-	77,134	2	1	0	11.53	5425
415064	SNFCCA13	SF Evergreen 9th Ave	San Francisco	9186	-	191,019	1	0	0	4.84	2814
661353	ARVNCA11	Arvin	Kern	736	-	146,034	2	1	0	3.09	2104
323636	LSANCA15	LSAN Axminster	Los Angeles	7990	-	337,619	2	1	0	5.26	3003
831100	APTSKA12	Aptos	Santa Cruz	2864	6,466	76,438	1	1	0	7.16	3855
559168	FRSNCA01	Fresno Main	Fresno	7618	8,285	783,227	2	1	0	4.67	2711
408129	SNUSCA11	San Jose White Rd	Santa Clara	8051	21,239	312,421	1	1	0	4.52	2789
951721	CORNCA11	Corona	Riverside	10738	12,733	1,015,536	1	1	0	4.40	2806
626660	SPSDCA11	Sout Pasadena Mission	Los Angeles	2834	-	29,159	1	0	0	4.91	2933
707286	CORRCA12	Cordelia	Solano	1340	-	51,378	1	0	0	6.95	3883
714809	YRLNCA12	Gypsum Canyon	Orange	562	-	34,901	0	0	0	5.21	3048
209199	MDSTCA02	Modesto Main	Stanislaus	11017	-	644,595	1	1	0	6.65	3723
661375	LTRKCA11	Little Rock	Los Angeles	969	-	326,765	3	2	0	3.57	2439
949806	MSVJCAAT	Mission Viejo	Orange	1889	-	4,533	1	0	0	5.22	3332
510070	SNLNCA11	San Leandro	Alameda	8284	-	212,461	1	1	0	8.79	4150
831116	SCVYCA01	Scotts Valley	Santa Cruz	1367	-	25,197	1	0	0	5.78	3153
714702	ANHMCA11	Anaheim Cypress	Orange	7686	-	719,465	1	1	0	4.61	2802
408143	SNITCCA01	Santa Clara Spacepark	Santa Clara	4768	-	86,502	1	0	0	6.66	3874
323635	LSANCA14	LSAN Adams	Los Angeles	3816	17,409	218,231	2	1	0	5.54	3568
559172	FRSNCA12	Fresno Clinton	Fresno	4088	-	273,821	2	1	0	5.61	3490
714759	ORNGCA11	Orange Chapman	Orange	6854	-	441,253	1	1	0	5.48	2956
415060	SNFCCA05	SF Mission 25th St	San Francisco	10082	10,859	247,554	1	0	0	4.99	2800
916536	FLSMCA14	Folsom Blue Ravine	Sacramento	1768	39,374	49,751	1	1	0	5.11	3141
949731	ELTRCA11	El Toro	Orange	10967	14,400	161,360	1	1	0	4.77	2940
925008	BTISCA11	Bethel Island	Contra Costa	265	-	21,915	3	2	0	2.26	1877

Table 7.19 SERVICE QUALITY METRICS IN GO 133-D \$9.7 "ALT INVESTMENTS" WIRE CENTERS (Sorted by Percent Cleared within 24 Hours) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	# days to clear 90% OOS (unadj)	Avg OOS Duration (mins)
650056	SNCRCA11	San Carlos	San Mateo	6590	-	44,154	1	0	0	4.52	2711
209153	ATWRCA12	Atwater	Merced	1837	-	257,259	2	1	0	5.75	3204
310613	ELSGCA12	El Segundo Douglas	Los Angeles	4029	-	42,748	1	0	0	5.98	3272
530492	PTOLCA01	Portola	Plumas	982	-	19,236	1	0	0	3.54	2242
530506	SRVLC A11	Sierraville	Sierra	162	-	4,145	1	0	0	3.95	2099
818646	NHWDC A01	NHWD Lankershim	Los Angeles	6119	-	621,565	1	1	0	5.59	3075
951704	ARTNCA11	Arlington	Riverside	5896	-	477,090	1	0	0	5.60	3480
805352	ARGRCA12	Arroyo Grande	San Luis Obispo	3827	-	389,592	1	0	0	3.11	2198
530433	BLRSCA12	Blairsdien	Plumas	901	-	49,064	1	0	0	3.98	2452
415067	SNFCCA12	SF Larkin Steiner	San Francisco	22366	-	450,909	1	0	0	5.48	2959
714761	ORNGCA14	Orange West	Orange	3181	-	92,757	1	0	0	5.49	2937
831115	MTRYCA01	Monterey	Monterey	5760	-	172,928	1	0	0	4.80	2685
650071	SNMTCA11	San Mateo	San Mateo	7900	-	178,254	1	1	0	5.27	3041
562649	PRMTCA01	Paramount	Los Angeles	4428	-	228,130	2	1	0	5.17	3040
530477	NCLSCA12	Nicolaus	Sutter	98	-	26,112	4	2	0	5.77	3858
925029	MORGCA12	Moraga	Contra Costa	1735	-	74,237	1	1	0	5.56	2936
415076	STBHCA11	Stinson Beach	Marin	1202	-	33,640	2	1	0	4.39	2450
209221	SKTNCA11	Stockton Granite	San Joaquin	7644	-	635,162	1	0	0	5.98	3468
310664	WLMGCA01	Wilmington	Los Angeles	5429	7,678	370,114	1	1	0	5.05	3122
209248	MDSTCA05	Modesto Tally	Stanislaus	634	-	17,275	1	0	0	6.94	3157
661412	PLDLCA11	Palmdale East 47TH ST	Los Angeles	902	-	72,552	1	1	0	4.30	2562
530461	GRDLCA11	Gridley	Butte	797	-	43,743	2	1	0	5.79	3233
209187	LGRDCA11	Le Grande	Merced	178	-	43,320	2	1	0	5.19	2840
415059	SNFCCA04	SF Market McCoppin	San Francisco	10962	5,814	499,757	1	0	0	4.71	2907
916499	SCRMCA03	SCRM Garden	Sacramento	8642	31,091	487,675	1	1	0	5.70	3387
831140	TRPSCA11	Tres Pinos	San Benito	214	-	4,801	2	0	0	3.48	2937
818647	NHWDC A02	NHWD Magnolia	Los Angeles	12672	-	788,265	1	1	0	5.01	2908
661384	PLDLCA01	Palmdale	Los Angeles	4380	17,422	371,660	1	0	0	4.33	2976
530494	RDBLCA01	Red Bluff	Tehama	3745	123,883	121,506	2	1	0	6.28	3481
831105	CRMLCA11	Carmel Main	Monterey	4592	4,577	406,060	1	1	0	4.73	2775
559183	KGBGCA11	Kingsburg	Tulare	1028	-	74,271	2	1	0	4.98	2719
805399	VNTRCA11	Ventura Main Montalvo	Ventura	4798	6,318	295,151	1	0	0	7.96	4533
661388	RSMDCA11	Rosamond	Kern	1123	-	94,721	2	1	0	3.51	2313
626651	PSDNCA12	Pasadena Lake	Los Angeles	5609	-	164,318	1	0	0	5.00	2760
650053	RDCYCA01	Redwood City	San Mateo	7949	-	225,611	1	1	0	4.09	2604
661410	ACTNCA11	Acton	Los Angeles	743	-	122,841	2	1	0	4.46	3012
714805	TUSTCA70	Tustin 70	Orange	658	-	2,698	1	0	0	4.61	2736
916526	RILNCA12	Rio Linda	Sacramento	1163	-	45,247	2	1	0	7.07	3453
707330	HYVLC A12	Vacaville	Solano	5328	-	471,817	1	1	0	7.37	4350
707299	HVYLC A11	Humboldt	Humboldt	265	-	17,119	2	1	0	3.60	2319
925082	BSRNCA70	Bishop Ranch	Contra Costa	1443	-	20,613	0	0	0	4.33	2165
559217	SELMCA11	Selma	Fresno	1616	-	121,015	2	1	0	5.09	2872
925025	LVMRCA11	Livermore	Alameda	6279	-	489,137	1	0	0	4.05	2486
661358	BKFDCA13	Bakersfield Columbus	Kern	2365	-	439,850	1	1	0	3.59	2411
559170	FRSNCA13	Fresno Sierra	Fresno	6388	-	641,601	1	1	0	4.51	2760

Table 7.19 SERVICE QUALITY METRICS IN GO 133-D \$9.7 "ALT INVESTMENTS" WIRE CENTERS (Sorted by Percent Cleared within 24 Hours) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	# days to clear 90% OOS (unadj)	Avg OOS Duratn (mins)
831127	SNUNCA11	San Juan Bautista	San Benito	384	-	7,077	2	1	0	3.24	2215
916470	LOWSCA11	Loomis	Placer	1397	-	115,392	1	1	0	4.54	2800
916482	ORVACA11	Orangevale	Sacramento	2287	39,700	90,970	1	1	0	5.49	3976
510002	ALMDCA11	Alameda Central	Alameda	6355	5,120	185,433	1	0	0	5.15	2815
714701	ANHMA01	Anaheim Lemon	Orange	7849	-	321,767	1	0	0	5.49	3105
818656	SHOKCA01	Sherman Oaks	Los Angeles	13316	-	602,971	1	1	0	4.87	2873
818662	VNNYCA02	Van Nuys	Los Angeles	10196	15,266	529,734	1	1	0	5.35	2868
559245	FRSNCA14	Fresno West Highway City	Fresno	3283	23,151	44,903	2	1	0	5.58	3574
949749	LNGGCA12	Wallace	Calaveras	400	80,144	335,224	2	1	0	5.16	2764
831113	MARNCA11	Laguna Niguel	Orange	3371	-	40,081	1	0	0	5.05	3139
805389	SNLOCA01	Marina	Monterey	1358	-	21,687	1	0	0	4.83	2836
209230	TRACCA11	San Luis Obispo	San Luis Obispo	4352	-	575,015	1	0	0	3.01	1943
559243	MADRCA12	Tracy	San Joaquin	4319	-	390,405	2	1	0	6.74	3771
916498	SCRMCA02	Madera Bonnadelli	Madera	369	11,948	52,283	3	2	0	4.54	2430
760743	IMPRCA11	SCRM Ivanhoe	Sacramento	7391	-	250,936	1	1	0	6.00	3092
714811	ANHMCA17	Imperial	Imperial	559	-	19,900	1	0	0	4.71	3109
559164	DINBCA01	ANHM Hills	Orange	848	-	52,121	1	0	0	4.19	2626
530489	LSMLCA11	Dinuba	Tulare	1352	-	78,090	2	1	0	4.31	2651
408128	SNUSCA02	Los Molinos	Tehama	355	21,947	46,593	2	1	0	6.77	4038
559169	FRSNCA11	San Jose Main	Santa Clara	12910	-	253,953	1	0	0	4.02	2831
661394	SLMNCA11	Fresno Baldwin	Fresno	5377	-	275,888	2	1	0	5.13	2712
831126	SNZCA11	Santa Cruz Capitola	Los Angeles	3415	-	397,607	1	1	0	3.90	2983
707307	MKVLCA11	McKinleyville	Santa Cruz	4979	32,778	126,850	1	1	0	6.25	3186
818610	CNPKCA01	Canoga Park	Humboldt	1103	9,736	46,892	1	0	0	4.08	2480
661357	BKFDCA12	Bakersfield Main Fairview	Los Angeles	13344	16,043	1,356,631	1	1	0	4.01	2417
530486	PRDSCA11	Paradise Main	Kern	6158	-	1,338,241	1	0	0	3.24	2581
408145	SNUSCA21	San Jose Junction	Butte	1089	-	76,534	1	1	0	4.29	2923
916454	FLSMCA13	Folsom El Dorado Hills	Santa Clara	6140	-	44,129	0	0	0	3.56	2305
661407	SAGSCA11	Saugus	Sacramento	2631	-	172,078	1	0	1	4.53	3113
707324	SUISCA11	Suisun City	Los Angeles	2528	-	245,186	1	1	1	3.95	2782
209227	THTNCA11	Thornton	Solano	345	-	11,330	0	0	1	4.29	2331
530517	VINACA12	Vina	San Joaquin	100	-	39,916	3	1	1	5.64	2824
408114	MLPSCA11	Milpitas	Tehama	69	-	10,211	2	1	1	3.14	1976
209196	MRCDA01	Merced	Santa Clara	5636	-	127,982	1	1	1	4.51	2713
714709	BREACA12	Brea	Merced	5298	-	562,718	1	1	1	5.95	3073
925074	SNRMCA11	San Ramon	Orange	2998	-	326,264	1	1	1	4.77	2895
714760	ORNGCA13	Orange Olive	Alameda	4197	-	169,531	0	0	1	3.99	3075
209211	PLNDCA11	Planada	Orange	5138	-	378,453	1	1	1	5.97	3430
831107	CSVLCA11	Castroville	Merced	279	-	37,551	2	1	1	5.55	2943
925081	CYTNCA11	Clayton	Monterey	1012	-	71,233	2	1	1	4.01	2276
661361	BKFDCA17	Bakersfield West Rosedale	Contra Costa	1502	-	307,839	1	1	1	6.71	4607
707290	FRFDCA01	Fairfield	Kern	3311	-	345,379	1	0	1	6.73	4089
916502	SCRMCA13	SCRm Fruitridge	Sacramento	5082	32,398	127,645	1	1	1	5.57	3405
323634	LSANCA13	LSAN Plymouth	Los Angeles	5803	-	282,014	3	1	1	4.98	2858

Table 7.19 SERVICE QUALITY METRICS IN GO 133-D \$9.7 "ALT INVESTMENTS" WIRE CENTERS (Sorted by Percent Cleared within 24 Hours) (cont'd)

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916497	SCRMCALR	Sequia Pacific State	Sacramento	6182	-	75,992	1	0	1	5.14	3023
310622	LOMTCAL1	Lomita	Los Angeles	5732	-	177,012	1	1	1	4.45	2627
661383	OLDLCA11	Export Olddale	Kern	2977	-	1,019,218	2	1	1	3.24	2278
831111	HLSSTCA11	Hollister	San Benito	2923	-	60,953	1	1	1	4.10	2562
925085	DAVLCA13	Danville Tassajara 13	Contra Costa	2391	-	53,030	0	0	1	3.81	2439
714789	SNANCA11	Bristol	Orange	9617	73,863	264,596	1	0	1	5.26	2948
510017	HYWRCA01	Hayward Main	Alameda	7870	-	125,529	1	0	1	5.56	3165
650006	BRLNCA01	Burlingame	San Mateo	7936	72,737	106,149	1	0	1	4.37	2530
209171	GALTCAL1	Galt	Sacramento	1448	-	95,444	1	1	1	5.49	2827
818652	RESDCA01	Reseda	Los Angeles	10038	19,900	602,866	1	1	1	4.02	2306
818621	LACRCA11	La Crescenta	Los Angeles	6224	-	402,615	1	1	1	4.03	2263
626650	PSDNCA11	Pasadena Mt Wilson Green	Los Angeles	12284	-	222,373	1	0	1	5.23	3042
650043	PCFCCA11	Pacifica	San Mateo	3023	-	49,646	1	1	1	4.09	2438
310659	SNPDCA01	San Pedro	Los Angeles	7437	-	403,536	1	1	1	4.76	2778
925007	BRWDCA12	Brentwood	Contra Costa	3696	-	129,956	1	0	1	3.20	2254
310615	GRDNCA01	Gardena	Los Angeles	11967	-	1,293,390	2	1	1	5.35	3370
707289	EURKCA01	Eureka	Humboldt	4799	-	127,638	1	0	1	4.00	2572
916501	SCRMCA12	SCRM Empire	Sacramento	4226	56,582	156,697	1	1	1	6.01	3264
916451	FROKCA11	Fair Oaks	Sacramento	7463	-	362,215	1	1	1	5.17	2829
661356	BKFDCA11	Bakersfield Empire	Kern	1142	-	501,216	2	1	1	3.38	2781
714767	PLNCA11	Placencia	Orange	5397	-	476,847	1	1	1	5.38	3361
661359	BKFDCA14	Bakersfield Temple	Kern	6893	-	1,678,481	2	1	1	3.12	2199
925047	PLTNCA12	Pleasanton Main Hopyard	Alameda	4045	-	207,817	1	0	1	3.57	2192
559247	FRSNCA15	Fresno Woodward	Fresno	1076	-	69,414	1	0	1	4.48	2539
707293	FTUNCA11	Fortuna	Humboldt	1102	-	38,148	1	0	1	2.96	2991
916478	NHLDCA11	Edgewood N Highl	Sacramento	4053	31,539	368,641	1	1	1	5.06	3054
714703	ANHMCA12	Anaheim La Palma	Orange	1791	-	194,078	1	0	1	4.59	2550
559207	ORSICA11	Orosi	Tulare	757	-	134,780	3	1	1	4.22	2698
213627	LSANCA06	Union	Los Angeles	4504	-	182,016	1	0	1	3.66	2180
831119	SLNSCA01	Salinas Main	Monterey	5792	-	110,870	1	0	1	4.04	2336
949810	IRVNCA12	Spectrum Irvine	Orange	1708	-	948	0	0	1	6.10	2867
925041	OKLYCA11	Oakley	Contra Costa	1105	-	26,657	1	1	1	8.02	2959
916479	NSCRCA11	Wabash	Sacramento	7088	95,277	412,604	1	0	1	5.41	2948
818648	NORGCA11	Northridge	Los Angeles	10424	37,683	986,797	1	1	1	3.97	3626
310609	CMTNCA01	Compton	Los Angeles	9969	51,395	1,171,795	2	1	1	4.16	3058
209201	MDSTCA04	Modesto Kingswood Curtis Salic Stanislaus	Los Angeles	1201	-	43,279	1	0	1	5.10	3175
661376	MOJVCA01	Mojave	Kern	581	-	71,609	2	1	1	3.01	1845
510018	HYWRCA11	Hayward Depot	Alameda	5286	-	143,013	1	0	1	5.32	2810
916467	LNCLCA11	Lincoln	Placer	840	-	85,884	1	1	1	3.08	2115
661379	NHLLCA01	Newhall	Los Angeles	5371	-	634,278	1	0	1	3.57	2601
661408	CSTCCA11	Castaic	Los Angeles	3431	-	201,094	1	0	1	3.56	2459
559159	CLVSCA11	Clovis	Fresno	8311	-	881,838	2	1	1	3.90	2445
949725	CSMSCA11	Costa Mesa	Orange	5737	19,168	178,369	1	0	1	4.80	2592
408133	SNUSCA15	San Jose Evergreen San Felipe	Santa Clara	5113	-	360,280	1	1	1	3.55	2799
916519	WSCRCA11	Frontier	Sacramento	3690	-	164,566	1	0	1	5.03	2706

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831120	SLNSCA11	Hickory Salinas	Monterey	2176	-	47,742	1	0	1	4.18	2269
213630	LSANCA09	Richmond	Los Angeles	6015	-	335,031	1	0	1	4.39	2556
831117	SESDCA11	Seaside	Monterey	1845	-	54,451	1	0	1	4.52	2434
209191	LODICA01	Lodi	San Joaquin	5596	-	265,687	2	1	1	5.95	3077
650026	MLBRCA11	Millbrae	San Mateo	2613	-	38,267	1	0	1	3.89	2406
323616	HLWDCA01	Hollywood	Los Angeles	9481	-	530,927	1	0	1	4.08	2445
650055	SNBUCA02	San Bruno	San Mateo	9822	-	104,775	1	0	1	4.00	2595
805393	SIMICA11	Simi	Ventura	7815	-	1,643,216	1	0	1	3.67	2172
323655	SGATCA01	South Gate	Los Angeles	4611	-	543,039	2	1	1	11.07	3691
530480	NSJNCA11	North San Juan	Nevada	490	-	20,740	3	1	1	5.19	2720
925049	PSBGCA01	Pittsburg Main	Contra Costa	2490	-	253,899	1	1	1	3.87	2238
818605	BRBNCA11	Burbank Palm	Los Angeles	9868	-	671,797	1	0	1	4.09	2323
559194	MADRCA11	Madera Main	Madera	3987	21,845	685,245	2	1	1	4.00	2458
209190	LCFRCA11	Lockeford	San Joaquin	241	-	40,677	2	1	1	6.59	2996
714802	YRLNCA11	Yorba Linda	Orange	3299	-	348,775	1	0	1	4.58	2426
925030	MRTZCA11	Marinez	Contra Costa	3554	-	285,317	1	0	1	3.59	2291
510037	OKLDCA04	Oakland KelloggFruitvale	Alameda	5109	-	477,445	1	1	1	4.22	2943
916541	RCKLCA01	Stanford Ranch	Placer	3201	-	102,471	1	0	1	3.42	1891
408134	SNUSCA18	San Jose Almaden Valley	Santa Clara	2877	-	202,967	2	1	1	4.50	2693
310661	TRNCCA11	Torrance	Los Angeles	4260	-	220,986	1	1	1	4.79	2723
415048	PRSNCA11	Point Reyes	Marin	825	-	17,794	2	1	1	5.15	2690
831122	SLNSCA13	Hunter	Monterey	680	-	11,406	2	1	1	3.85	2065
916537	NSCRCA12	North Natomas	Sacramento	2047	-	72,922	0	0	1	3.91	2283
925022	LFYTCA11	Lafayette	Contra Costa	2283	-	38,824	1	0	1	3.43	2031
408142	SNUSCA22	San Jose Bailey	Santa Clara	149	-	25,850	2	1	1	4.47	1896
831144	ARMSCA11	Aromas	San Benito	446	-	52,895	2	1	1	2.97	1711
831123	SLNSCA14	Moro	Monterey	1095	-	48,454	2	1	1	4.20	2252
661409	BKFDCA19	Bakersfield Nomad	Kern	1972	-	123,092	1	0	1	3.49	3177
213632	LSANCA11	Rampart	Los Angeles	10841	-	413,279	1	0	1	4.35	2473
805377	MRPKCA12	Moorpark	Ventura	2457	-	1,218,522	1	0	1	3.12	2116
916533	RNMIRCA11	Rancho Murietta	Sacramento	523	-	20,188	1	0	1	2.85	3156
559166	FRBHCA11	Firebaugh	Fresno	604	-	63,246	1	1	1	4.81	2708
818614	GLDLCA11	Glendale	Los Angeles	14660	-	644,655	1	0	1	4.01	2113
415068	SNFCCA21	SF Folsom	San Francisco	7656	-	58,445	0	0	1	4.49	2338
408136	SNMACA11	San Martin	Santa Clara	632	-	81,065	2	1	1	3.72	2024
510014	FRMTCA11	Fremont Main 11	Alameda	7958	-	461,388	1	0	1	3.40	2209
530434	BCWYCA11	Brockway	Placer	924	-	23,972	0	0	1	6.34	2732
831121	SLNSCA12	Glennview	Monterey	556	-	8,556	1	0	1	4.42	2355
530444	DWNVCA11	Downieville	Sierra	239	-	8,963	2	1	1	4.81	2324
510039	OKLDCA12	Oakland Holly	Alameda	7805	-	389,792	1	1	1	4.62	2655
661369	EDWRCA01	Edwards	Kern	137	-	6,702	0	0	1	1.02	1037
925050	PSBGCA11	Pittsburg Bay Point Willow	Contra Costa	1095	-	48,373	1	0	1	3.77	2215
323604	BELCA11	Bell	Los Angeles	2449	-	214,911	1	0	1	4.98	2146
916453	FLSMCA12	Folsom Nimbus	Sacramento	1844	-	114,499	0	0	1	2.80	2560
925003	ANTCCA11	Antioch	Contra Costa	5049	-	383,040	1	0	1	3.63	2436

Table 7.19 SERVICE QUALITY METRICS IN GO 133-D \$9.7 "ALT INVESTMENTS" WIRE CENTERS (Sorted by Percent Cleared within 24 Hours) (cont'd)

WC	CLLI	WC Name	County	Jan 2019 Access Lines	GO 133-D \$9.7 "Alternative Investments"	Other Rehab Expenditures	OOS per 100 ALs per month	OOS>24 per 100 ALs per month	Pct Cleared w/in 24 hours (unadj)	# days to clear 90% OOS (unadj)	Avg OOS Duratin (mins)
925079	WNCKA11	Walnut Creek	Contra Costa	11153	22,950	506,532	1	0	1	4.32	2161
510078	UNCYCA11	Union City	Alameda	4821	-	300,413	1	0	1	3.24	2414
415020	INVRCA11	Inverness	Marin	447	-	16,784	3	0	1	3.53	2229
925009	CNCRCA01	Concord	Contra Costa	8980	-	332,450	1	0	1	3.51	2137
323617	HNPKCA01	Huntington Park	Los Angeles	6751	-	406,759	1	1	1	3.05	1822
925083	PLTNCA13	Pleasanton Hacienda	Alameda	1621	-	49,692	0	0	1	3.38	1699
951765	PDLYCA11	Pedley	Riverside	2466	27,450	435,505	1	0	1	3.19	1861
818600	AGORCA11	Agoura	Los Angeles	4858	-	951,226	1	0	1	4.38	5841
818665	CLBSCA50	Calabasas Los Virgenes	Los Angeles	1058	-	23,283	1	0	1	5.22	3035
510015	FRMTCA12	Fremont Adams Oliver 12	Alameda	6839	-	260,114	1	0	1	2.93	2367
650010	COLACA01	Colma Daly City	San Mateo	5878	39,715	159,553	1	0	1	2.86	1989
707331	VLLJCA01	Vallejo	Solano	6162	-	988,509	1	0	1	2.86	2205
559195	MNDTCA11	Mendota	Fresno	448	-	76,929	1	0	1	3.46	1831
213624	LSANCA02	Madison 02 MO	Los Angeles	7967	-	291,514	1	0	1	3.33	1788
530436	CMPVCA11	Camptonville	Yuba	216	-	19,650	6	2	1	3.82	2227
408131	SNUSCA13	San Jose Chynoweth	Santa Clara	7594	-	621,753	2	1	1	3.08	2007
707277	BNICCA11	Benicia	Solano	1943	-	185,031	1	0	1	2.98	1828
760707	BRSPCA11	Borrego Springs	San Diego	698	-	32,948	4	1	1	4.00	2147
559189	LEMRCAT12	Lemore Wymen	Kings	87	-	3,883	0	0	1	1.01	817
818606	BRBNCA13	Burbank Thornton	Los Angeles	755	-	6,093	#N/A	#N/A	#N/A	#N/A	#N/A
818666	CLBSCA11	Calabasas Park Sorrento	Los Angeles	3840	-	300,793	#N/A	#N/A	#N/A	#N/A	#N/A
707283	CLOKCA11	Clear Lake Oaks	Lake	536	-	19,221	#N/A	#N/A	#N/A	#N/A	#N/A
530532	GRVYCA11	Lake of the Pine	Nevada	1863	-	25,960	#N/A	#N/A	#N/A	#N/A	#N/A
530535	GRVYCA12	Wildwood	Nevada	1442	13,769	76,597	#N/A	#N/A	#N/A	#N/A	#N/A
949807	IRVNCA11	Irvine Airport	Orange	5656	-	31,116	#N/A	#N/A	#N/A	#N/A	#N/A
818620	LACNCA11	La Canada Oak Grove	Los Angeles	14	-	7,013	#N/A	#N/A	#N/A	#N/A	#N/A
213625	LSANCA03	Madison 03 MA	Los Angeles	5572	-	75,499	#N/A	#N/A	#N/A	#N/A	#N/A
209249	MDSTCA52	Modesto Davis	Stanislaus	18	-	1,268	#N/A	#N/A	#N/A	#N/A	#N/A
916527	RCKLCA11	Rocklin	Placer	1244	-	55,233	#N/A	#N/A	#N/A	#N/A	#N/A
916497	SCRMCA01	Sacramento Mn	Sacramento	6182	-	75,992	#N/A	#N/A	#N/A	#N/A	#N/A
916538	SCRMCA01	P Street State	Sacramento	#N/A	-	-	#N/A	#N/A	#N/A	#N/A	#N/A
916539	SCRMCA01	First Ave DMV State	Sacramento	#N/A	-	-	#N/A	#N/A	#N/A	#N/A	#N/A
714804	SNANCA12	Santa Ana West SNAN Bolsa	Orange	2806	16,598	74,071	#N/A	#N/A	#N/A	#N/A	#N/A
415061	SNFCCA06	SF Juniper Onondaga	San Francisco	11364	67,367	293,567	#N/A	#N/A	#N/A	#N/A	#N/A
415065	SNFCCA14	SF Montrose 19th	San Francisco	11765	-	232,590	#N/A	#N/A	#N/A	#N/A	#N/A
415066	SNFCCA17	SF Third St	San Mateo	4510	-	170,617	#N/A	#N/A	#N/A	#N/A	#N/A
415084	SNFCCA64	UC Hospital	San Francisco	#N/A	-	1,167	#N/A	#N/A	#N/A	#N/A	#N/A
707327	UKIHCA12	Capella Ivanhoe	Mendocino	995	-	97,224	#N/A	#N/A	#N/A	#N/A	#N/A

Summary and conclusions

Little has changed in the relationship between AT&T California and its parent AT&T Inc. over the 2018-19 period relative to where things stood in 2010-2017. As a relatively small – and increasingly less important – component of the massive AT&T Inc., AT&T California’s financial condition and investment policies are largely subject to the parent company’s control. The California ILEC entity has no independent ability to raise equity capital on its own and, at the moment, appears to have relatively limited debt on its books. Plant retirements and depreciation accruals have generally exceeded Gross Plant Additions on an annual basis, and the company’s net Telecommunications Plant in Service (TPIS) – roughly equivalent to what would be considered its “rate base” under rate-of-return regulation – has eroded to only about \$5-billion, resulting in a Net-to-Gross book value ratio of roughly 13.7%.

It is clear that AT&T California has continued its policy of *disinvesting* in its California local network infrastructure. Moreover, a large portion of AT&T California’s Gross Plant Additions continues to be directed toward expanding its ability to offer services like broadband Internet access and video, rather than core legacy circuit-switched POTS services.

There appears to be wide variation across all of AT&T California’s 615 wire centers as to the amount of new investment that has been directed at each of them, and ETI has not observed any specific pattern to explain this prioritization. There is no indication, for example, that investment dollars are being directed toward those wire centers that have been underperforming with respect to service quality or in their ability to meet the Commission’s GO 133-C/D service quality standards.

Notably, while the demand for AT&T California legacy POTS services have dropped by 76.4% over the 2010-2019 period, the company’s operating revenues saw only a 31.6% decrease relative to their 2010 level. One key explanation for this appears to be AT&T California’s policy of effecting significant price increases for its legacy residential POTS services almost every year since the CPUC’s adoption of the Uniform Regulatory Framework in 2006. AT&T California residential flat-rate (POTS) prices have risen by 152%, and for measured residential service, prices have jumped by 325%. These large and persistent price increases – coupled with the general deterioration in service quality as discussed in Chapter 4A – are entirely consistent with what appears to be a “harvesting strategy” with respect to legacy circuit-switched services.

“Harvesting” of this sort works where the price elasticity of demand is sufficiently low that persistent price increases will still be profitable. The fact that AT&T has been able to profitably implement this succession of annual rate increases for more than a decade since the de-tariffing of basic residential voice service raises serious questions as to whether competition has actually

developed to a point where continued regulatory protection of basic residential telephone service prices is no longer required or appropriate. In competitive markets, customers will normally respond to price increases by switching to substitute services or by purchasing less. Here, however, AT&T's "harvesting" strategy is founded on the expectation that, while *some* customers will discontinue their service in response to the steadily increasing prices, there are still a sufficiently large number of customers who confront few if any actual competitive alternatives and/or who simply retain their AT&T legacy POTS service due to inertia – they simply haven't gotten around to seeking out any alternatives.

Finally, and as we discussed in Chapter 4A, this same "harvesting" philosophy would also explain why AT&T has failed to improve service quality for its POTS services at least to the point where the GO 133-C/D standards can be achieved. Where customers have competitive alternatives, they will respond to inferior service by "voting with their feet" and seeking out alternative suppliers. But if the market is not so competitive that customers face such limited choices, the provider has little financial incentive to direct its financial and other resources in this area.



AT&T's "harvesting" philosophy explains why AT&T has failed to improve service quality for its POTS services at least to the point where the GO 133-C/D standards can be achieved, because the gains it can realize by raising prices and curtailing investment and maintenance far exceed any financial penalties it might suffer from persistently poor service quality.

8 | FRONTIER CORPORATE AND CALIFORNIA FINANCIALS AND ILEC INVESTMENT POLICIES

Principal observations and takeaways

- Having grossly overpaid Verizon for the 2016 California-Texas-Florida (“CTF”) acquisition, Frontier assumed a massive debt burden that cannot be sustained.
- Most of that overpayment had been carried as “Goodwill” or “Other Intangibles” on Frontier’s corporate balance sheet; by the end of 2019, all of that Goodwill and most of the Other Intangibles have been written off.
- By the end of 2019, Frontier’s total debt was more than \$18.3-billion, and the Company’s total debt service (interest and amortization) payments in 2019 were more than \$3.5-billion.
- Frontier’s California customer base continued to dwindle, to the point where it has lost roughly 50% of the POTS access line customers it had acquired in the 2016 purchase.
- Frontier’s net income declined following each successive acquisition, to the point where it has now been negative for seven consecutive quarters.
- Frontier’s melt-down and ultimate Chapter 11 bankruptcy filing confirms the inescapable fact that Frontier had grossly overpaid Verizon for the CTF assets.
- Unlike AT&T, which had raised its legacy flat-rate residential POTS rates by 152% since the onset of URF, Verizon’s rates for this service had risen by only 31% as of the date of the sale to Frontier, and Frontier had not effected any rate increase since the acquisition through the end of 2019.
- Since acquiring the California ILEC from Verizon in 2016, Frontier continued to invest less in Gross Plant Additions than it took in retirements and depreciation accruals, resulting in a net disinvestment of \$469.5-million.

FRONTIER CORPORATE AND CALIFORNIA FINANCIALS
AND ILEC INVESTMENT POLICIES

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A lot has happened to Frontier since our Phase 1 Report

In our April 2019 Report on Phase 1 of this Network Examination, we expressed serious concerns as to Frontier’s near-term and ongoing ability to maintain and modernize its California wireline ILEC network so as to provide reliable service to California consumers. We noted that Frontier has been hemorrhaging customers in all major service categories across all of its 29-state footprint since its last major acquisition in 2016, as summarized in Table 8.1 below:

FRONTIER COMMUNICATIONS CORP. CUSTOMER COUNTS BY SERVICE CATEGORY, 2016-2019			
	Voice	Broadband	Video
1Q2016 (pre-CTF)	3,372,000	2,487,000	238,000
2Q2016	5,771,000	4,570,000	1,628,000
3Q2016	5,551,000	4,362,000	1,222,000
4Q2016	5,393,000	4,271,000	1,145,000
1Q2017	5,220,000	4,164,000	1,065,000
2Q2017	5,058,000	4,063,000	1,007,000
3Q2017	4,949,000	4,000,000	961,000
4Q2017	4,850,000	3,938,000	981,000
2Q2018	4,667,000	3,863,000	902,000
3Q2018	4,574,000	3,802,000	873,000
4Q2018	4,471,000	3,735,000	838,000
1Q2019	4,395,000	3,698,000	784,000
2Q2019	4,292,000	3,626,000	738,000
3Q2019	4,193,000	3,555,000	698,000
4Q2019	4,118,000	3,513,000	660,000

Source: Frontier Communications Corp. Forms 10-Qs; 10-Ks

On April 1, 2016, Frontier Communications Corp. completed its acquisition of what is now Frontier California under a three-state ILEC purchase from Verizon that also included Verizon ILEC operations in Florida and Texas (the “CTF acquisition”). Frontier paid Verizon \$10.54-billion in cash for the three ILECs, and financed the purchase primarily through the issuance of new debt. Even before Frontier took over control of these three Verizon ILECs, its stock had fallen by around 33% from the (equivalent of) \$125.70, where it had been February 9, 2015, shortly after the deal with Verizon had been announced. On July 10, 2017, Frontier implemented a 1-for-15 share reverse split so as to avoid de-listing of its stock. On December 16, 2020, Frontier stock was trading at 10.8¢ per share, down 99.91% from its February 2015 high (see Figure 8.1 below).



Figure 8.1. Frontier Communications Corp. Common Stock share prices, 5-year history.(Source: Google Finance, as of December 16, 2020)

Frontier’s 2019 Form 10-K filing puts the extreme distress under which the company has been operating in graphic perspective, by highlighting the cumulative return experienced by its shareholders relative to the concurrent performance of the S&P 500 index and the S&P Communications Sector index (see Figure 8.2 below):

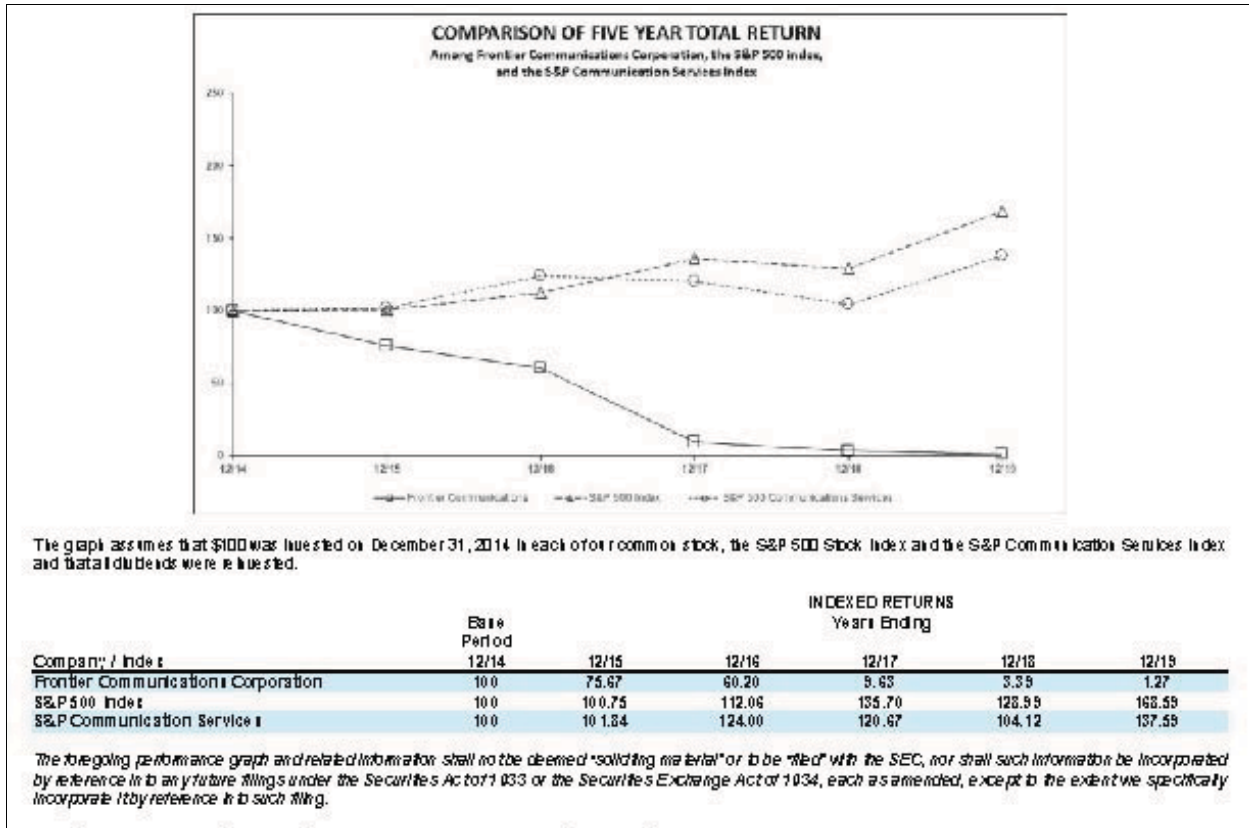


Figure 8.2. Frontier’s cumulative five-year total return in comparison to the five-year total return for all S&P 500 Index stocks and for all S&P Telecommunications Services Index stocks. (Source: Frontier Communications Corp. 2019 Form 10-K, at p. 30)

Following the 2016 CTF purchases, Frontier became the nation’s fourth largest ILEC with roughly 5.77-million residential and business customers (roughly corresponding to about 8.77-million switched access lines) across 28 states,⁵⁸ but in making these various acquisitions, the company had assumed \$11.9-billion in new debt, bringing its total debt as of the end of 2017 to around \$17-billion. By the end of 2019, Frontier’s ILEC access lines had eroded by 28.6% to approximately 6.33-million. Its total long-term debt was only slightly lower than in 2017, at \$18.3-billion.

58. “Frontier Communications to Acquire Verizon’s Wireline Operations in California, Florida and Texas, Doubling Frontier’s Size and Driving Shareholder Value,” Press Release, February 5, 2015 <http://investor.frontier.com/releasedetail.cfm?ReleaseID=895055> [accessed on July 15, 2015].

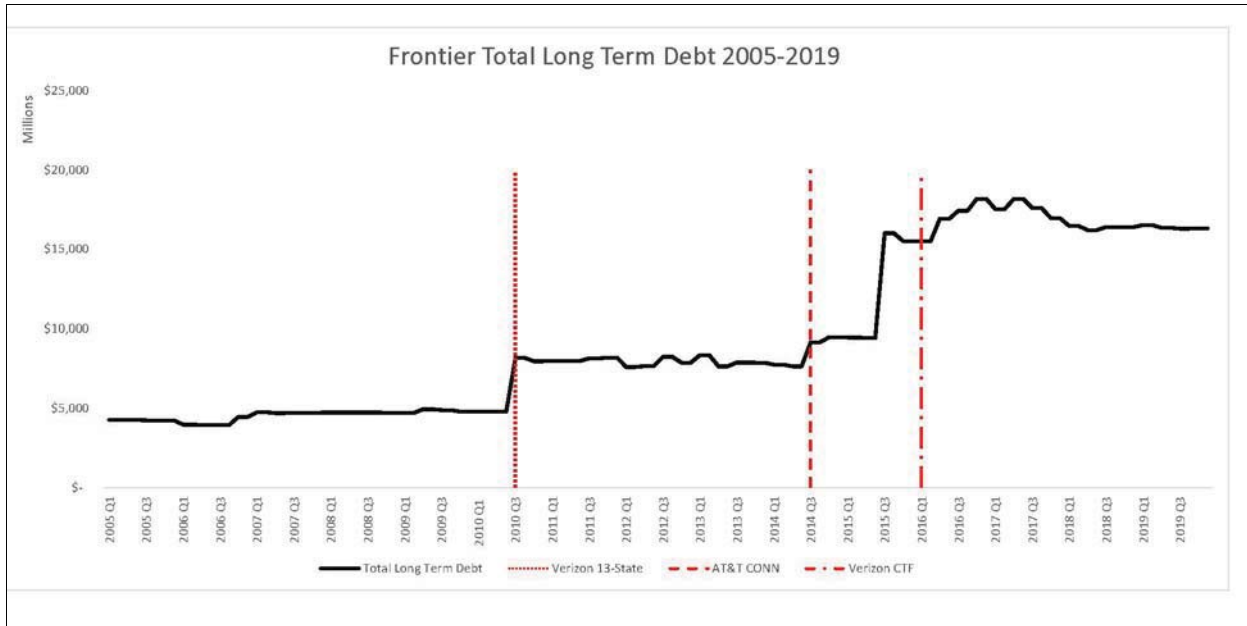


Figure 8.3. Frontier has financed its succession of ILEC acquisitions primarily through the issuance of debt. (Source: Frontier Communications Corp. Forms 10-K, 10-Q)

Frontier's growth strategy has, in each case, involved the absorption of large, multi-state operations, some of which had been larger in size than the pre-acquisition Frontier. Notably, and as illustrated on Figure 8.4 below, each of these acquisitions produced a large, one-time revenue spike followed in each instance by revenue erosion from the new immediate post-acquisition level – producing a sort of “sawtooth” effect. In the first quarter of 2016 – the last 3-month period immediately preceding the Verizon acquisition – Frontier companywide revenue was running at an annual rate of roughly \$5.4-billion. In the second quarter of 2016 – immediately following the Verizon acquisition – Frontier revenue had nearly doubled, jumping to an annual rate of around \$10.4-billion. But by the final quarter of 2019, Frontier's total revenue was running at an annual rate of less than \$7.8-billion. In other words, in less than four years, Frontier had given up more than half of the \$5-billion revenue gain that had resulted from its 2016 CTF acquisition. Note that this revenue erosion was not confined to those three states, but occurred across all of Frontier's operating areas. But the company had acquired that additional \$5-billion in operating revenues by incurring more than \$11-billion in new debt, and while its revenue gain had been cut in half, its total debt remained only slightly below its 2016 post-acquisition level.



Having grossly overpaid Verizon for the 2016 California-Texas-Florida ("CTF") acquisition, Frontier assumed a massive debt burden that cannot be sustained.

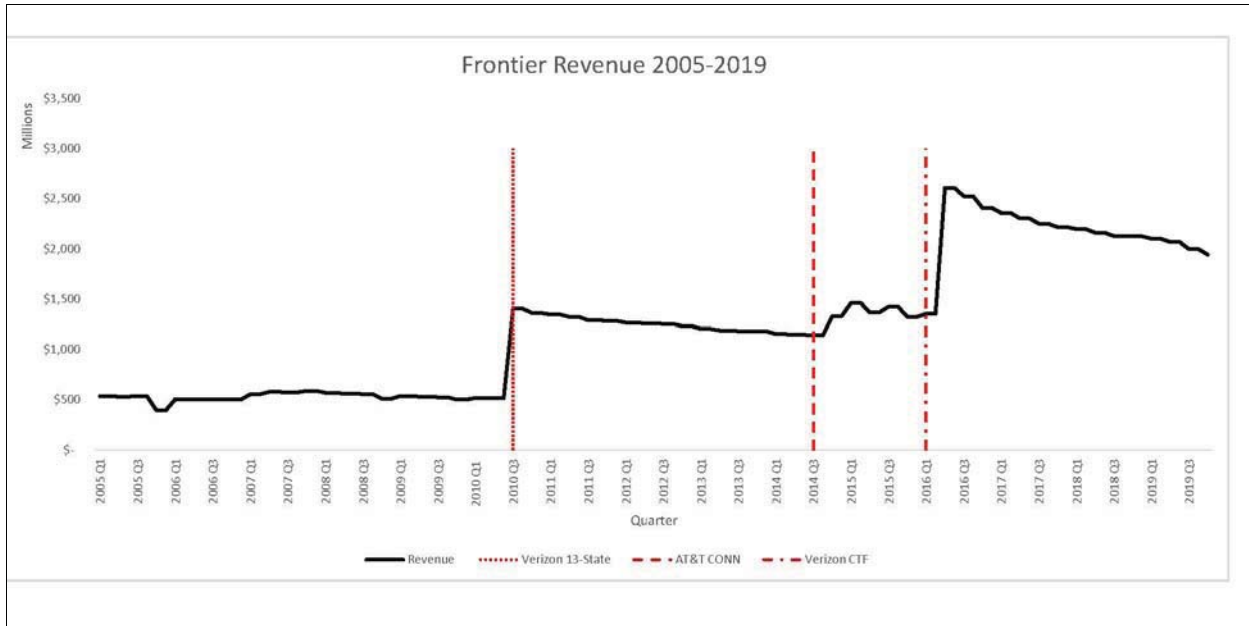


Figure 8.4. Frontier Communications Corp. Revenues, 2005-2019.
(Source: Frontier Communications Corp. Forms 10-K, 10-Q).



Most of that overpayment had been carried as "Goodwill" or "Other Intangibles" on Frontier's corporate balance sheet; by the end of 2019, all of that Goodwill and most of the Other Intangibles have been written off.

The same type of “sawtooth” effect – but even more pronounced – can be seen in the demand for access lines (Figure 8.5). As these “sawtooth” graphs suggest, Frontier was pursuing massive acquisitions into a market – wireline circuit-switched voice telephony – that was already in a steep decline.

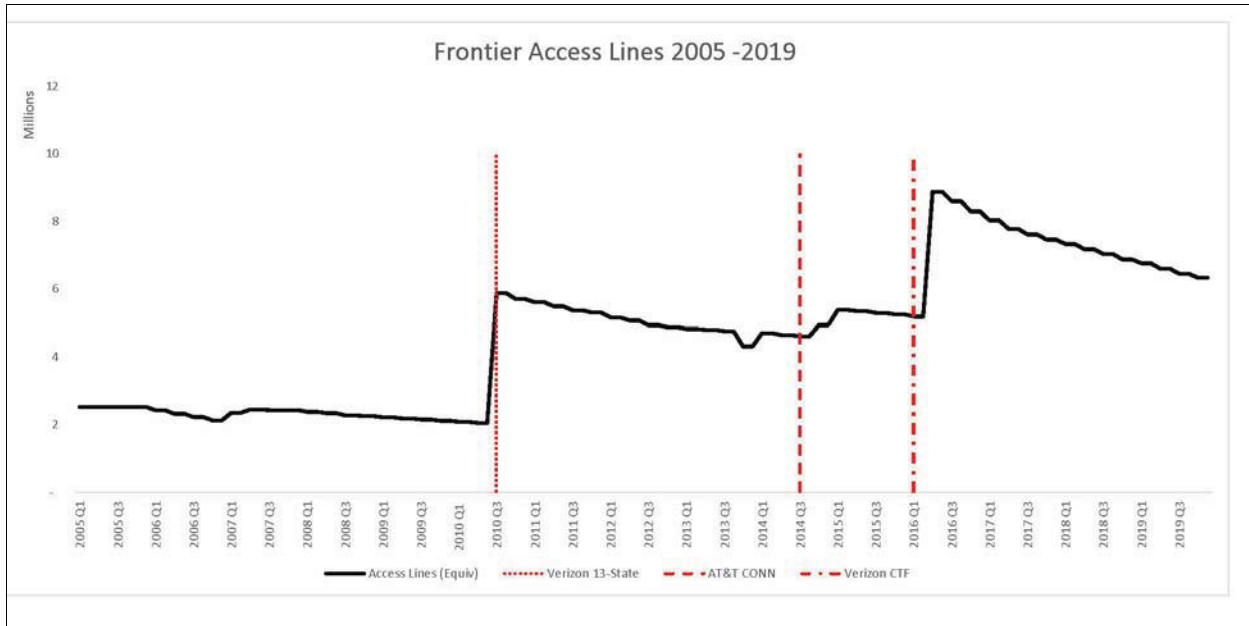


Figure 8.5. Frontier Communications Corp. Switched Access Lines in Service, 2005-2019. (Source: Frontier Communications Corp. Forms 10-K, 10-Q)



By the end of 2019, Frontier's total debt was more than \$18.3-billion, and the Company's total debt service (interest and amortization) payments in 2019 were more than \$3.5-billion.

Frontier's spate of acquisitions dating back to 2006 were accomplished at a total cost of \$22.4-billion, financed by \$10.5-billion in new equity and some \$14.1-billion in new debt.⁵⁹ As shown in Figure 8.3 above, by the end of 2019, Frontier's total debt was more than \$16.3-billion, and the Company's total debt service (interest and amortization) payments in 2019 were more than \$3.5-billion.⁶⁰ Together with the persistent drop-off in customers and revenues, this resulted in severe cash flow challenges and major earnings erosion despite the revenue growth overall. At year-end 2019, Frontier's debt-to-revenue ratio was 2.01, up from 1.86 as of year-end 2017. Frontier's cost of debt is now well into the junk bond range. Thus, some \$1.53-billion out of the total 2019 debt service of \$3.54-billion represents interest on that debt.

As we discussed in the Phase 1 Report, in its purchase of Verizon's three ILECs in April 2016, the price that Frontier paid to Verizon was well in excess of the amount that Verizon had

59. Frontier 10-K reports, 2007-2019. In mid-2006, Frontier carried about \$3.95-billion in total long-term debt. At year-end 2016, immediately following the CTF acquisition, Frontier's long-term debt sat at just under \$18.2-billion.

60. Frontier 2019 Form 10-K, at F-5 (Consolidated Balance Sheets); F-6 (Consolidated Statements of Operations); F-8 (Consolidated Statements of Cash Flows).

been carrying on its books for these assets. That excess over book value is carried as “Goodwill” on parent company Frontier Communications, Corp.’s balance sheet. Frontier explained the basis for this treatment as follows: “Goodwill represents the excess of purchase price over the fair value of identifiable tangible and intangible net assets acquired.”⁶¹ Goodwill would not be includable as a rate base asset under RORR, yet its acquisition created a real cost to Frontier in terms of cost of capital (debt and equity) plus any periodical amortization of the premium amount that Frontier may deem it necessary to make. Indeed, it is even possible that the California ILEC could be earning a satisfactory rate of return under traditional RORR standards while sustaining losses on a financial basis, which necessarily includes any premium above book value that it had paid to Verizon for the CTF acquisition

Out of the \$10.54-billion that Frontier paid Verizon when the deal closed in April 2016, it allocated some \$2.5-billion to “Goodwill” and another \$2.16-billion to “Other Intangibles,” which it attributed primarily to the value of Verizon’s 3-state “Customer Base” that was included in the acquisition.⁶² In the case of the Frontier California ILEC entity, Frontier recorded \$517.1-million of Goodwill at the time of acquisition.⁶³ In 2017, Frontier California Goodwill was increased by \$93.97-million to \$611.1-million.⁶⁴ In 2019, the entire \$611.1-million in Goodwill was written-off Frontier California’s regulatory accounting books.⁶⁵ Since Goodwill of this type would never be accepted as a rate base asset for regulatory purposes, it is entirely unclear as to why it was even recorded at all on Frontier’s regulatory accounting records. Only \$6.24-billion out of the total CTF purchase price was associated with “Property, Plant and Equipment.”⁶⁶ At year-end 2016, some \$12-34-billion out of Frontier Communications Corp.’s \$29-billion of Total Assets was associated with Goodwill and Other Intangibles;⁶⁷ at year-end 2019, all of Frontier’s Goodwill had been written off, and its “Other Intangibles” had eroded to just over \$1-billion.⁶⁸

In its 2019 Form 10-K, Frontier explained that it had “recorded aggregate Goodwill Impairments totaling \$5,725 million, \$641 million and \$2,748 million for 2019, 2018 and 2017, respectively. In the third quarter of 2019, [Frontier} impaired the \$276 million remaining balance of [its] goodwill. This impairment and the write down of the balance of [its] goodwill was largely driven by a lower enterprise valuation utilized in [its] testing which reflected, among

61. Frontier 2016 Annual Report and Proxy Statement, at p. F-11.

62. Frontier 2016 Annual Report, at F-15.

63. Frontier California 2016 ARMIS Form 43-02, at Table B-1.

64. Frontier California 2017 ARMIS Form 43-02, at Table B-1.

65. Frontier California 2019 ARMIS Form 43-02, at Table B-1.

66. *Id.*

67. *Id.*, at F-5.

68. Frontier 2019 Form 10-K, at F-5.

other things, pressures on [Frontier’s] business resulting in a continued deterioration in revenue, challenges in achieving improvements in revenue and customer trends, the long-term sustainability of [its] capital structure, and the lower outlook for [its] industry as a whole.”⁶⁹

These write-downs of intangibles resulted in a net 2019 Operating Loss of \$4.87-billion. However, since the write-downs do not affect cash, when the write-downs are ignored, Frontier’s 2019 Operating Income (before the intangible write-downs) was a *positive* \$852-million. But total 2019 debt service payments (principal repayments plus interest) were \$3.54-billion, well in excess of the company’s cash income for that year.⁷⁰

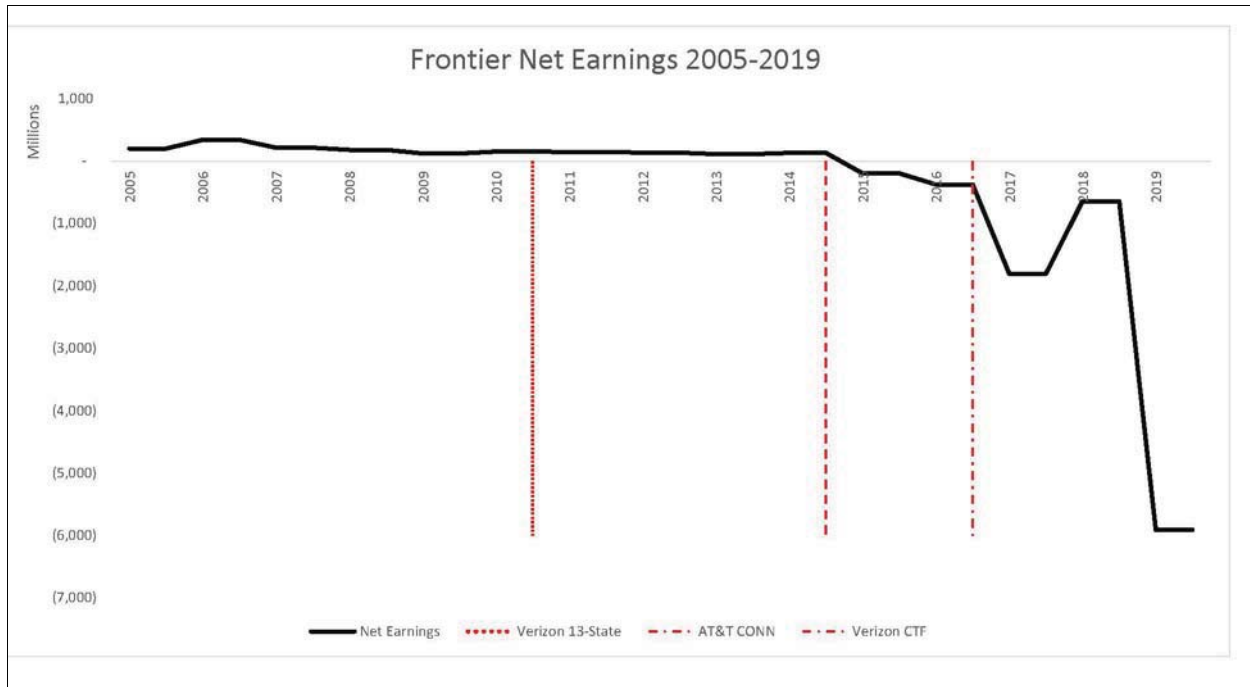


Figure 8.6. Frontier corporate net earnings have plummeted in the years since the 2016 California, Texas and Florida acquisitions from Verizon.

Frontier’s 2019 Form 10-K gives end-of-year long-term debt at \$16.31-billion, with total long-term and current liabilities at \$19.1-billion. Total assets are shown as \$17.49-billion, and total shareholder equity is given as a *negative* \$4.39-billion. Frontier’s spate of major acquisitions, while expanding its overall revenue base, has had precisely the opposite effect upon its overall profitability. As shown in Figure 8.6, the company’s profits, which had peaked in 2006 at over \$350-million, had turned into losses of \$1.8-million in 2017.⁷¹ These decreases in profit

69. *Is.*, at 22.

70. Frontier 2019 Form 10-K, at F-6.

71. Frontier 2017 Form 10-K, at 27.

are driven largely by two main factors – the steady and continuing erosion of its core wireline customer base, and a cost structure that has a large, volume- and traffic-insensitive component. At this point, Frontier has no realistic ability to raise equity capital, and whatever new debt capital that might be available to the company would almost certainly involve massive costs.



Frontier's net income declined following each successive acquisition, to the point where it has now been negative for seven consecutive quarters.

Notably, Verizon had no amount for “Goodwill” shown on its regulatory accounting balance sheet, as reflected on its ARMIS Form 43-02 submissions. However, Frontier California had included a portion of the “Goodwill” resulting from the premium over book value that it had paid for the Verizon California assets on its 2016 and 2017 ARMIS Forms 43-02 filed with the CPUC. In 2016, Frontier California recorded as a gross addition a Goodwill amount of \$511.12-million. For 2017, Goodwill gross additions are shown as \$93.97-million, for a total end-of-year 2017 value of \$611.09-million. To put these amounts in context, consider that, according to Frontier California's Form 43-02 for 2017, the Company's total *net* assets as of the end of 2017 were \$3.42-billion. Thus, the \$611.09-million of Goodwill resulting from the excessive purchase price of the Verizon assets represents 17.9% of the Company's total net assets. As of year-end 2019, the entire remaining \$611.09-million in Verizon California Goodwill was writen off, resulting in total Verizon California net assets of \$3.21-billion

Figure 8.7 compares Frontier's Operating Income with its debt service (debt repayment plus interest) obligations over the 2005-2019 period.



Frontier's meltdown and ultimate Chapter 11 bankruptcy filing confirms the inescapable fact that Frontier had grossly overpaid Verizon for the CTF assets.

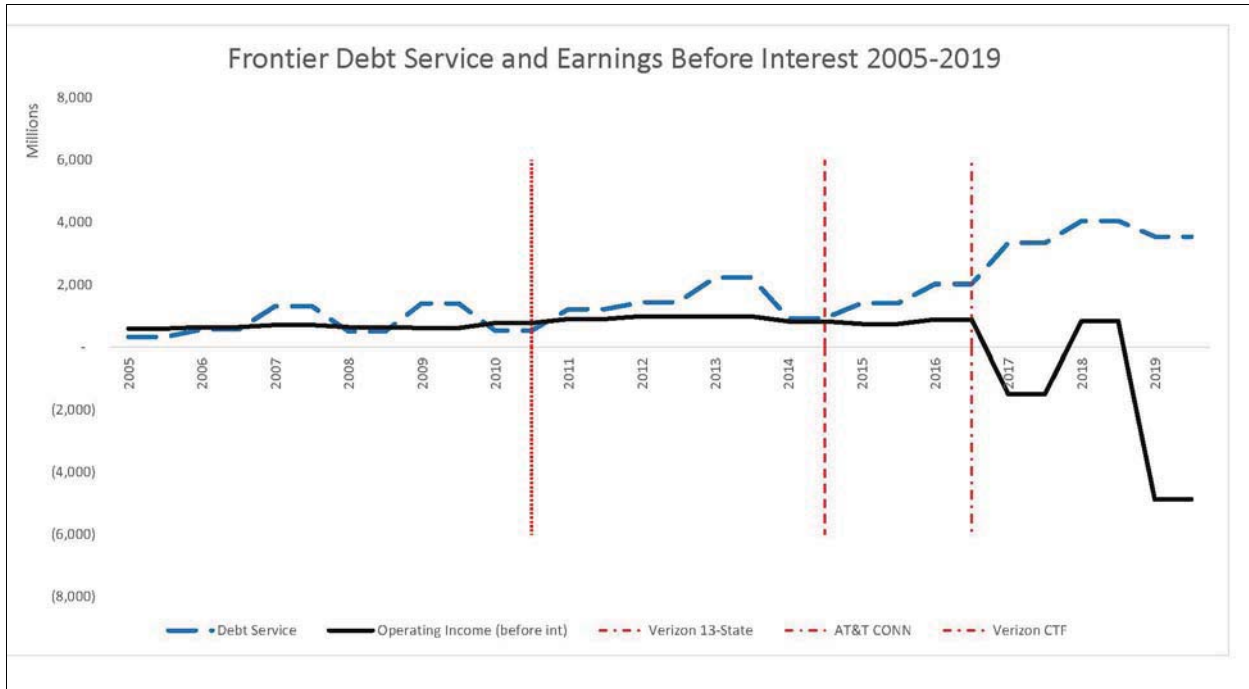


Figure 8.7. Frontier’s corporate debt service continued to increase while its operating revenues have plummeted. (Source: Frontier Communications Corp. Forms 10-K, 10-Q)

In addition to its overall leverage increases resulting from the succession of new debt as reflected in Figure 8.7 above, Frontier’s cost of debt had also been pushed skyward due to a series of downgrades by Moody’s to the company’s credit rating since the CTF acquisition. Moody’s has downgraded Frontier’s credit rating three separate times, from Ba3 to B1 in November 2016, from B1 to B2 in May 2018 and again, from B2 to B3, in November 2018.⁷² Having filed for Chapter 11 protection, Frontier’s access to additional debt or equity financing at this point is all but nonexistent.

Verizon California had been experiencing customer drop-offs for years preceding the Frontier acquisition

Prior to its 2016 sale to Frontier, Verizon California had been experiencing a steady decline in its legacy switched access lines in service for a number of years. Between January 2010 and March 31, 2016, the last day that Verizon owned the company, its switched access lines decreased by about 56.2%, from 2,778,584 to 1,216,829. In fact, between February 5, 2015,

72. Moody’s Investors Service, November 2nd, 2017: “Moody’s downgrades Frontier to B3, outlook remains negative.”

when the Securities Purchase Agreement for the CTF deal was signed by the two companies,⁷³ and the April 1, 2016 closing date, Verizon California switched access lines in service had fallen by 16.3% from about 1,453,444 (as of the end of January 2015) to 1,216,829. We don't have corresponding figures for Texas or Florida, but it's safe to assume that the results there were similar. Incredibly, the Securities Purchase Agreement did not include any provision for an adjustment in the purchase price to reflect any change in the size of the three ILECs' customer base as of the final closing date. The downward trend in the number of legacy circuit-switched access lines persisted into the post-transaction era. By 2019, average circuit-switched access lines in service had fallen by 82.8% relative to the 2010 level. Table 8.2 below extends the average number of switched access lines into the 2016-19 period:

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	VERIZON						FRONTIER			
VZ/FTRCA	2,641,467	2,322,926	1,991,862	1,706,402	1,507,460	1,368,589	1,154,018	951,351	746,975	615,964
% of 2010		87.9%	75.4%	64.6%	57.1%	56.1%	43.7%	36.0%	28.3%	23.3%
% of FTR acquisition							94.8%	78.2%	61.4%	50.6%

Source: CA POTS lines in service derived from GO 133-C/D § 3.3 and 3.4 Trouble Reports per 100 Lines (TRPH) quarterly filings, 2010-2019. Switched access lines are average over each year. "% of FTR Acquisition" is based upon 1,216,829 FTR Access Lines in Service as of 4/1/16.

Verizon California financial data for 2010 has not been provided. Between 2011 and 2015, Verizon saw a 41.1% drop in average legacy switched access lines over the 2010-2015 period. Notably, despite this, Verizon California gross revenues remained relatively constant through 2015. However, following Frontier's takeover of the company, the California ILEC's revenues went into a steep decline, as summarized on Table 8.3 below:

73. *I/M/O 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*, A.15-03-005, filed March 18, 2015, Exhibit 1.

Table 8.3									
VERIZON/FRONTIER OPERATING REVENUES HAVE DECREASED, BUT BY FAR LESS THAN THE DECREASE IN LEGACY SWITCHED ACCESS LINES, 2011-2019 (\$000)									
	2011	2012	2013	2014	2015	2016	2017	2018	2019
	VERIZON					FRONTIER			
Revenues	\$3,128,706	\$2,757,563	\$2,728,855	\$3,285,034	\$3,121,477	\$2,252,145	\$2,054,289	\$1,916,500	\$1,817,655
% of 2011		100.0%	87.2%	119.1%	113.2%	81.7%	65.7%	61.3%	58.1%
Avg. Switched access lines	2,322,926	1,991,862	1,706,402	1,507,460	1,368,589	1,154,018	951,351	746,975	615,964
% of 2011		85.7%	73.5%	64.9%	58.9%	49.7%	40.9%	32.2%	26.5%
Avg. Op. Rev. Per Switched Access Line	\$1,347	\$1,384	\$1,599	\$2,179	\$2,281	\$1,951	\$2,159	\$2,565	\$2,951
NOTE DATA FOR 2010 IS NOT AVAILABLE, SO ANALYSIS IS BASED ON 2011-2015. Source: Verizon/ Frontier CA ARMIS Form 43-01 as filed with CPUC; POTS lines in service derived from GO 133-C/D § 3.3 and 3.4 Trouble Reports per 100 Lines (TRPH) quarterly filings, 2010-2019. Switched access lines are average over each year.									

Of course, a portion of the Verizon/Frontier California operating revenues come from services other than legacy POTS lines. It is thus instructive to compare the decrease in switched access lines more directly with the principal revenue sources associated with these services. Fortunately, more detailed revenue data is provided in the annual financial reports, ARMIS Forms 43-01, 43-02 and 43-03, that were filed by Verizon and Frontier with the CPUC. However, this breakdown is only available for the period of Verizon ownership (2011-2015) and for the former GTE California (U-1002) entity, as summarized in Table 8.4 below.

As these data demonstrate, when confined to only those revenue sources directly attributable to legacy switched access line services – specifically, USOA Account 5001 (Basic Area Revenue), USOA Account 5081 (End User Common Line revenue), and USOA Account 5082 (Switched Access revenue) – Verizon California legacy access line-related revenues decreased by about 38.8%, only slightly less than the 42% drop in switched access line demand, over the 2011-2015 period. Switched access rates, which remain subject to tariff at both the state and federal levels, had remained unchanged over the 2010-2017 period.

Table 8.4

VERIZON/FRONTIER CALIFORNIA (U-1002) LEGACY SWITCHED ACCESS LINE REVENUES HAVE DECREASED ROUGHLY IN PROPORTION TO THE DECREASE IN LEGACY SWITCHED ACCESS LINES, 2011-2019 (\$000)

	2011	2012	2013	2014	2015	2016	2017	2018	2019
	VERIZON					FRONTIER			
USOA Acct 5001 Basic Area Rev	\$670,218	\$566,696	\$591,229	\$429,960	\$389,036	\$282,413	\$219,314	\$199,756	\$182,426
USOA Acct 5081 EUCL Revenue	\$220,551	\$198,073	\$191,186	\$186,869	\$171,415	\$123,579	\$97,175	\$83,601	\$76,615
USOA Acct 5082 Switched Access	\$174,462	\$44,270	\$42,549	\$114,878	\$91,143	\$88,246	\$79,357	\$71,691	\$66,513
Total switched access line rev	\$1,065,231	\$809,039	\$824,964	\$731,707	\$651,594	\$494,238	\$395,846	\$355,048	\$325,554
% of 2011		75.95%	77.44%	68.69%	61.17%	46.40%	37.16%	33.33%	30.56%
Avg. Switched access lines (000)	2,322,926	1,991,862	1,706,402	1,507,460	1,368,589	1,154,018	951,351	746,975	615,964
% of 2011		85.75%	73.46%	64.89%	58.92%	49.68%	40.95%	32.16%	26.52%
\$ per switched access line	\$458.57	\$406.17	\$483.45	\$485.39	\$476.11	\$428.28	\$416.09	\$475.31	\$528.53

NOTE DATA FOR 2010 IS NOT AVAILABLE. ANALYSIS IS BASED ON 2011-2015. Source: Verizon CA ARMIS Form 43-01 as filed with CPUC; POTS lines in service derived from GO 133-C/D § 3.3 and 3.4 Trouble Reports per 100 Lines (TRPH) quarterly filings, 2011-2015. Switched access lines are average over each year.

However, local switched POTS access line rates other than California LifeLine⁷⁴ have been detariffed and have been subject to modest rate increases – substantially less than those implemented by AT&T California – over the 2010-2017 period, as shown in Table 8.5 below:

74. PU Code § 871.5(a) caps LifeLine rates at one-half of the 1FR rate for flat-rate basic residential service.

		Flat-rate Residence (1FR)			Measured-rate Residence (1MR)		
Year	Eff date	Monthly Rate	% incr since onset of URF	% incr relative to 1/1/10	Monthly Rate	% incr since onset of URF	% incr relative to 1/1/10
2006	9/1/2006	\$16.85	–		\$10.00	–	
2008	1/1/2008	\$17.25	2.37%		\$10.24	2.40%	
2009	1/1/2009	\$19.50	15.73%		\$11.80	18.00%	
2010	1/1/2010	\$19.50	15.73%	–	\$11.80	18.00%	–
2011	1/1/2011	\$20.50	21.66%	5.13%	\$12.39	23.90%	5.00%
2012	3/1/2012	\$20.50	21.66%	5.13%	\$12.39	23.90%	5.00%
2013	1/1/2013	\$20.50	21.66%	5.13%	\$12.39	23.90%	5.00%
2014	1/1/2014	\$22.00	30.56%	12.82%	\$13.40	34.00%	13.56%
2015	1/1/2015	\$22.00	30.56%	12.82%	\$13.40	34.00%	13.56%
2016	1/1/2016	\$22.00	30.56%	12.82%	\$13.40	34.00%	13.56%
2017	1/1/2017	\$22.00	30.56%	12.82%	\$13.40	34.00%	13.56%
2018	1/1/2018	\$22.00	30.56%	12.82%	\$13.40	34.00%	13.56%
2019	1/1/2019	\$22.00	30.56%	12.82%	\$13.40	34.00%	13.56%
2020	1/1/2020	\$22.50	33.53%	15.38%	\$15.00	50.00%	27.12%

Source: CPUC Communications Division Staff.

It is instructive to compare the history of Verizon California rate increases to those imposed by AT&T California as summarized on Table 4A.10 (and referenced in Chapter 7). Historically, Verizon (and its predecessor GTE) basic local residential service rates were always higher than those of AT&T (Pacific Bell). However, that relationship changed in 2012, when AT&T raised its flat-rate residential service rate to \$21.00. Since the onset of URF, AT&T California has increased the price for its flat-rate residential POTS service by 152.57% vs. Verizon's 30.56% increase over the comparable time frame. Looking only at the 2010-2019 period under examination in this study, AT&T has raised its flat-rate residence rate by 64.13% vs. 12.82% for Verizon/Frontier.



Unlike AT&T, which had raised its legacy flat-rate residential POTS rates by 152% since the onset of URF, Verizon's rates for this service had risen by only 31% as of the date of the sale to Frontier, and Frontier had not effected any rate increase since the acquisition through the end of 2019.

Verizon California had been consistently disinvesting in its California local network infrastructure, and Frontier has been pursuing a similar strategy.

As we noted in our Phase 1 Report, Verizon California would typically pay dividends to its parent company that exceeded its net operating income. We view such practices as constituting *disinvestment*, in that by paying dividends in excess of earnings, the subsidiary (Verizon California) is effectively transferring a portion of its capital base to its parent. Since taking over the company in April 2016, Frontier California has issued no dividends to its parent, Frontier Communications Corporation. However, Frontier’s total net income was actually a loss of \$476-million. Frontier California did have positive net income in 2017, but paid no dividend to its parent.

Disinvestment also arises when retirements and depreciation accruals exceed the gross plant additions in any given year or cumulatively over time. This has the effect of reducing Net Plant in Service, a condition that has prevailed under Frontier ownership of the company. Since taking over the company, Frontier has invested \$914.7-million (net of adjustments) in gross plant additions, but has recorded \$188.3-million in retirements and has taken \$1.74-billion in depreciation accruals – a net *disinvestment* of just over \$1-billion.

Table 8.6

FRONTIER CALIFORNIA (U-1002)
PATTERN OF INVESTMENT, 2016-2019
(\$000)

	2016	2017	2018	2019	TOTAL
BOY Gross Telecom Plant in Service (TPIS)	13,496,895	13,392,504	13,689,509	13,973,021	
Gross Plant Additions	80,373	428,559	301,398	261,783	1,072,113
Retirements	190	(135,489)	(19,406)	(33,199)	(188,284)
Transfers/Adjustments	(164,574)	3,934	1,521	1,800	(157,319)
EOY Gross Telecom Plant in Service	13,392,504	13,689,508	13,973,022	14,203,405	
Annual TPIS depreciation accruals (acct 6561)	316,101	428,639	534,449	466,099	1,745,288
Cumulative depreciation reserve	11,229,881	11,229,881	12,116,741	12,560,117	
Net EOY TPIS	2,162,623	2,459,627	1,856,281	1,643,288	
Net/Gross TPIS	16.15%	17.07%	13.28%	11.57%	
Change in Net Telecommunications Plant in Service since FTR takeover					(469,557)
Change in Net Telecommunications Plant in Service since Network Exam Phase 1					(816,339)
NOTE: In response to a Communications Division data request, Frontier prepared Forms 43-02 for 2016 and 2017 that included both the former GTE and former Continental study areas. The figures shown here for 2016 and 2017 thus include both the GTE and Contel results. The accounting treatment that Frontier had adopted reflects the pre-acquisition condition of Frontier's books as of January 1, 2016. The TPIS from Verizon California that was transferred to Frontier on April 1, 2016 had been included in the 2016 "Transfer/Adjustment" on Frontier's 2016 Form 43-02. As submitted, Frontier had reported the beginning-of-year 2016 amount for TPIS as 0 and showed a positive adjustment of \$13,332,321. For consistency, the BOY TPIS for 2016 is shown on this Table is the EOY 2015 amount as carried on Verizon California's books, and the 2016 "Adjustment" has been modified to reflect only the net adjustment to TPIS, a negative \$164,574. The "Change in Net TPIS Since FTR takeover" is calculated relative to Verizon California's EOY 2015 Net TPIS of \$ 2,112,845.					

Verizon/Frontier California's Gross Telecommunications Plant in Service ("TPIS") increased over the 2016-2019 period. Total Gross Plant Additions – \$1.07-billion – were exceeded by the total depreciation accruals taken over the corresponding period – \$1.75-billion – which, together with a negative \$157-million in net Transfers and Adjustments, resulted in a net *disinvestment* (change in net TPIS) of a negative \$469.5-million. In fact, in the two years following the time period of Phase 1 of this Network Examination, Frontier-California's net TPIS decreased from \$2.46-billion at end-of-year 2017 to \$1.64-billion as of the end of 2019, a decrease of \$816-million.



Since acquiring the California ILEC from Verizon in 2016, Frontier continued to invest less in Gross Plant Additions than it took in retirements and depreciation accruals, resulting in a net disinvestment of 469.5-million..

Frontier California's nominally reported revenues, expenses and net income cannot by themselves provide a complete or accurate picture of the ILEC entity's financial performance, because they do not fully account for the extensive nature and amount of inter-affiliate transactions that take place on an ongoing basis between the Frontier California ILEC entity and numerous other affiliates that are themselves, directly or indirectly, wholly owned by the parent company. These transactions involve both *purchases* made by the ILEC from other Frontier affiliates as well as *sales* made by the ILEC to other Frontier affiliates.⁷⁵ Table 8.7 below provides a summary of these transactions and their relationship to Frontier California's overall revenues and operating expenses. Frontier advises that it "is not selling any services to affiliates"⁷⁶ and its ARMIS filings show zero revenue from such sales.

75. See Frontier California's response to CD DR 12-F-10. Frontier states that it "" Response to CD DR 12-F-10(d).

76. Frontier Response to DR 12-F-10(d).

Table 8.7				
FRONTIER CALIFORNIA				
AFFILIATE TRANSACTIONS WITH OTHER FRONTIER UNITS, 2016-2019				
(\$000)				
	2016	2017	2018	2019
Frontier California operating revenue ⁷⁷	819,948	2,054,287	1,916,501	1,817,555
Sales to other FTR affiliates	0	0	0	0
Pct of revenues from sales to other FTR affiliates	0.00%	0.00%	0.00%	0.00%
FTR CA pre-tax OpEx excl depr/amort ⁷⁸	863,814	1,213,774	1,160,941	1,116,584
Services Purchased from FTR affiliates	394,290	490,169	488,602	506,213
Pct of total OpEx paid to FTR affiliates	45.65%	40.38%	42.09%	45.34%
Source: Frontier CA ARMIS Form 43-02, Table I-1, I-2, Form 43-03, as filed annually with CPUC.				

With the exception of tariffed switched and special access services that were (presumably) being purchased from Frontier California by various other Frontier affiliates, the specific *transfer prices* at which these transactions are recorded can hardly be viewed as being set on the basis of arm's length negotiations. Since both the seller and buyer in each instance are wholly-owned by the same parent company, the nominal transfer price has little or no effect upon the parent company's bottom line. However, if it is the parent company's goal to extract cash from the ILEC entity, setting an inflated transfer price can accomplish this as effectively as making a dividend payment to the parent, but with far less exposure as to the precise purpose of the policy. As Table 8.7 demonstrates, from 2016 onward, in the range of 40% to 45% of Frontier California total operating expenses net of depreciation and amortization were paid over to other Frontier affiliates for services rendered.

77. ARMIS Form 43-02, Table I-1, for 2016-2019. Revenue and expense figures for the nine months of Frontier ownership during 2016 was derived by subtracting the Verizon account records as of the April 1, 2016 closing date, provided in response to DR 12-F-3, "Attachment 12-F-3 - Confidential Verizon provided income statement data (Frontier CA).xlsx".

78. Amounts shown are calculated as Total Operating Expenses (Form 43-03 Line 720) – Depreciation/Amortization expenses (Form 43-03 Line 6560), which represents current cash operating expenses. The source data for this calculation is as follows:

	2016	2017	2018	2019
Line 720 Total Operating Exp	1,704,838	1,642,411	1,695,390	1,817,555
Line 6560 Depre/Amort	316,100	428,637	534,449	466,099



Because so much of Frontier California’s operating expenses involved payments to other Frontier affiliates via inter-affiliate transactions, its nominally reported expenses and net income cannot by themselves provide a complete or accurate picture of the ILEC entity’s financial performance.

Prior to the sale of the three CTF ILECs to Frontier, Verizon had also provided an extensive array of services to these (and to all of its other) ILECs out of centralized service affiliates and other entities. Notably, Frontier had expressly stated – to investors and in testimony before this Commission in support of its assessment as to the financial merit of the 2016 Verizon ILEC acquisition – that it had concluded that the payments allocated by the three CTF ILECs to the parent Verizon Communications, Inc. for centralized and other affiliate services were excessive and that these could be accomplished at considerably lower cost by Frontier.⁷⁹



Frontier’s assessment as to the economic merit of the 2016 Verizon ILEC acquisition was heavily influenced by its belief that Verizon affiliate charges for centralized services were much higher than the cost that Frontier would incur to provide comparable services to these ILECs.

The focus of Frontier California’s capital investments over the 2016-2019 period

Frontier has provided accounting data at the wire center level for the 2018-2019 Phase 2 period. Account-level gross plant additions provide an indication as to both the type and geographic locations of Frontier’s capital spending in California.⁸⁰ Table 8.8 below summarizes the types of capital expenditures that Frontier California has made during the 2018-2019 Phase 2 study period.

79. *I/M/O Joint Application of Frontier Communications Corporation, Frontier Communications of America, Inc. (U5429C), Verizon California, Inc. (U1002C), Verizon Long Distance LLC (U5732C), and Newco West Holdings LLC for Approval of Transfer of Control Over Verizon California, Inc. and Related Approval of Transfer of Assets and Certifications*, A.15-03-005, Direct Testimony of John M. Jureller, Executive Vice President and Chief Financial Officer, Frontier Communications Corporation, May 11, 2015, at 30 (“The Company estimates \$700 million in annualized corporate consolidated cost efficiencies for the pro forma combined company primarily through costs that do not transfer to Frontier at the closing of the transaction.”), 25 (“While noting that [Standard & Poor’s] eventual rating will depend on the specific funding for the Transaction, the agency explained that its current ratings affirmation reflects a view that ‘the acquisition offers some business benefits and significant potential cost synergies’ arising to a great extent from avoided expenses previously allocated by Verizon to the acquired assets.”). Citations omitted.

80. See Frontier California Responses to CD DR 11-F-8 through 11-F-12.

Table 8.8

**FRONTIER CALIFORNIA
GROSS PLANT ADDITIONS 2018-2019
BY PLANT ACCOUNT**

Account	Description	2018	2019	TOTAL
2116	Tools and Other Work Equipment	224,934	47,939	272,873
2121	Buildings.	10,763,182	3,152,049	13,915,231
2124	General purpose computers.	9,237	95,602	104,839
2212	Digital electronic switching.	2,231,119	4,801,573	7,032,691
2231	Radio systems.	19,239		19,239
2232	Circuit equipment.	43,384,030	31,218,537	74,602,568
2362	Other terminal equipment.	12,748,829	6,577,281	19,326,111
2411	Poles.	68,354,060	74,805,934	143,159,993
2421	Aerial cable.	33,084,879	30,325,783	63,410,662
2422	Underground cable.	37,897,251	39,655,345	77,552,596
2423	Buried cable.	85,072,885	60,635,943	145,708,827
2426	Intrabuilding network cable.		391,545	391,545
2441	Conduit systems.	7,175,708	9,670,698	16,846,406
2681	Capital leases.	432,764		432,764
2712	NON-REG INTERNET EQUIPMENT		102,916	102,916
2732	NON-REG INTERNET EQUIPMENT	46,755	8,828	55,583
2744	NON-REG INTERNET EQUIPMENT	238,519		238,519
2745	NON-REG INTERNET EQUIPMENT	38,142	586,083	624,224
2746	NON-REG INTERNET EQUIPMENT	10,662	36,603	47,265
2792	NON-REG INTERNET EQUIPMENT	370,054		370,054
TOTAL ALL ACCOUNTS		302,102,248	262,112,658	564,214,905
TOTAL REG ACCOUNTS		301,398,116	261,378,229	562,776,345
CENTRAL OFFICE PLANT		45,634,388	36,020,110	81,654,498
OUTSIDE PLANT		231,584,781	215,485,247	447,070,029
OTHER REGULATORY PLANT		24,178,946	9,872,871	34,051,818
TOTAL NON-REG ACCOUNTS		704,132	734,429	1,438,561
% NON-REG		0.23%	0.28%	0.25%

Frontier has provided annual data for 2016 through 2019 by account and by wire center in response to DR-03F, DR-04F and, for 2018-2019, in its response to DR 11F. Frontier was also asked to provide annual 2018-2019 data on construction and rehabilitation expenditures for outside plant and for central office plant.

Overall, Frontier California (both the former GTE California and Continental Telephone components) made gross plant additions totaling \$946.9-million over the 45 months from April 2016 (when Frontier acquired the company) through December 2019. As shown in Table 8.9 below, \$176.3-million was spent on central office equipment (COE) (including both switches and circuit equipment), and \$717.8-million was spend on outside plant (OSP).

	2016	2017	2018	2019	TOTAL
Gross Plant Additions	60,503,799	323,586,362	301,398,116	261,378,229	946,866,506
COE	16,910,928	77,728,183	45,634,388	36,020,110	176,293,609
OSP	41,953,891	228,765,798	231,584,781	215,485,247	717,789,717
Other	1,638,980	17,092,381	24,178,947	9,872,872	52,783,180
Source: Frontier Response to DR-03F. The COE and OSP categories combined are slightly less than the total gross additions, which also include several minor asset categories.					

Since taking over the Company in April 2016, Frontier has directed some 75.8% of total gross additions toward outside plant, with another 18.6% gong to central office equipment. Focusing specifically upon 2018-2019, Frontier has provided account level plant additions by wire center, as well as Forms 43-02 for those same years.

Frontier's 2018-19 plant additions were spread across 247 wire centers, and ranged in magnitude from a few thousand dollars to \$52.6-million. However, roughly 63.8% of the total 4-year spend was directed toward only 30 individual wire centers, as summarized in Table 8.10.

Tables 8.11 and 8.12 provide more details on Frontier California's capital spending by individual wire center and by plant accout. Table 8.11 provides this data for each of Frontier's 247 California wire centers, sorted alphabetically by wire center name. Table 8.12 provides the same data, sorted by total gross plant addition spending, from highest to lowest.

Table 8.10

FRONTIER CALIFORNIA

GROSS PLANT ADDITIONS

30 WIRE CENTERS WITH LARGEST SPEND

2018-2018

Wire Center	Gross Plant Additions	Pct of Total
ANZA	52,653,317	9.33%
TORRANCE	49,517,144	8.78%
SAN BERNARDINO	47,793,287	8.47%
LA VERNE	44,244,163	7.84%
MALIBU	29,632,161	5.25%
LONG BEACH	11,624,434	2.06%
ADELANTO	10,092,536	1.79%
LA PUENTE	9,158,605	1.62%
ONTARIO	8,921,361	1.58%
WHITTIER	8,824,810	1.56%
Huntington Beach	7,169,619	1.27%
WESTMINSTER	6,858,353	1.22%
HESPERIA	5,546,481	0.98%
LANCASTER	5,081,545	0.90%
WILLOW CREEK	4,911,000	0.87%
Santa Monica	4,600,613	0.82%
VICTORVILLE	4,536,395	0.80%
BIG BEAR LAKE	4,380,012	0.78%
COVINA	4,310,449	0.76%
APPLE VALLEY	4,210,201	0.75%
SANTA BARBARA	4,152,509	0.74%
HEMET	3,987,089	0.71%
NOVATO	3,926,776	0.70%
REDLANDS	3,849,081	0.68%
PERRIS	3,791,804	0.67%
NORWALK	3,586,445	0.64%
DOWNEY	3,262,674	0.58%
SANTA MARIA	3,090,196	0.55%
PALM SPRINGS	3,031,956	0.54%
INDIO	3,018,409	0.53%
Total -- Highest 30 wire centers	359,763,423	63.76%
Total Gross plant additions	564,214,905	100.00%

Table 8.11

FRONTIER CALIFORNIA GROSS PLANT ADDITIONS 2018-2019

Table with columns: Wtr Center, TOTAL, 2116, 2121, 2124, 2122, 2231, 2232, 2362, 2411, 2412, 2421, 2422, 2423, 2426, 2441, 2681, 2712, 2732, 2744, 2745, 2746, 2792. Rows list various Wtr Centers such as ADELANTO, ALBERVILLE, ALBUQUERQUE, etc.



Table 8.11: GROSS PLANT ADDITIONS 2018-2019 (continued)
USOA PLANT ACCOUNT

Wire Center	TOTAL	2116	2121	2124	2212	2231	2332	2362	2411	2421	2422	2423	2426	2441	2444	2732	2744	2745	2746	2792		
Guinda	40,408						40,408															
HAYFORK	376,538						3,568	35,649	356,867	10,113	(316,785)											
HELENDALE-SILVERLAKES	(229,176)						51,960	97,554	1,364,759	594,028	1,203,953				506,317							
HELENDALE	3,769,719						434,799	9,759	1,804,764	3,770	2,919,684											
HERMOSA BEACH	5,652,799						630,464	557,230	2,750,540	107,409	1,426,729				46,922							
HESPERIA	516,481		974,862				149,365	409,405	409,405	18,211	446,150	447,369			283,956							
HOMELAND	1,871,200				47,185		460,477	131,014	42,272	111,969	90,902	419,670			83,208							
HOMESTEAD VALLEY	1,351,816				12,304			330,371	41,734	7,200	1,740,477	9,432	391,545	1,667,888								
HOOPA	373,305						632,016	196,047	2,047,231	155,755	70,744				3,742							
Huntington Beach	7,168,619		37,284				83,615	531,549	67,660	70,574	189,719				36,848							
IDYLLWILD	900,385						16,723	226,181	874,038	62,581	97,574				34,898							
INDIAPENDENCE	3,019,439		738,757				365,733	47,380	637,987	2,289	63,281											
INDIO	1,134,768						50,889	37,417	208,369	38,763	17,963	4,033										
JOSHUA TREE	357,445						63,556	36,766	191,175	29,733												
JUNE LAKE	321,230						104,108		499,989	158,962	1,231											
KENWOOD	162,676				38,810				18,445													
KERNVILLE	832,307								61,705													
KNIGHTS LANDING	21,705						46,046		1,801,104	446,061	3,774,558	51,098										
LA PUENTE	915,605		513,412				407,592		3,901,104	446,061	209,585			64,778								
LA QUINTE	760,826				153,893		175,640		54,357	8,830,018	314,878	28,057,966		5,474	28,656						3,509	
LA VERNE	44,244,163		31				6,136,762	126,025	432,562	108	363,591			585,258								
LAGUNA BEACH	2,816,783		1,207,488				180,001	221,326	289,029	108	363,591			31,547								
LAKE HUGHES	919,798						199,806		429,315	(44,304)	286,389	17,035										
LAKE ISABELLA	1,479,504						125,019		745,406	1,206,339	36,157											
LANCASTER	5,091,546		304,319				1,271,925	57,194	2,020,013	205,069	24,006			6,132								
LAKELAND	1,157,376						2,743		907,866	24,937												
LAYTONVILLE	935,526						75,325	37,159	67,684	21,748	25,605			21,525								
LEE WINING	329,045		79,002						53,818	31,947												
LEGGETT	85,764						53,606		59,115	30,550				13,972								
LEMON COVE	197,503				40,660		118,543		499,461	21,689	183,701			13,245								
LEMON COVE	934,640						146,121		161,818	183,870												
LINDEN	525,178				32,261		262,893	9,612	219,853	3,895	22,614			62,517								
LINDSEY	1,792,943				7,416		133,024	62,861	368,981	9,989	586,789			5,052								
LOMA LINDA	1,188,650						225,910		1,049,417	184,269	242,005			11,261								
LOMPOC	1,719,861						108,217		37,099	236,174	37,143			25,012		8,828						
LONG BEACH	566,047		384,461		61,480		1,072,895	662,526	6,564,440	551,274	2,222,227	58,608		42,279								
LOS ALAMOS	265,508						98,088		153,440		4,439											
LOS ALAMOS	1,390,026		7,541				597,109	164,416	560,816		12,774			48,777								
Los Celeros	2,815,997				6		497,961	1,016	1,420,550	335,117	43,616			73,669								
LOS GATOS	2,207,446						257,502	7,444	26,895	119,739	586,675											
LOST HILLS	2,207,446								824,861	157,666	322,492											
LUCERNE VALLEY	1,815,148		46,769				294,541	168,819	824,861													
MAD RIVER	115,378								115,378													
MALIBU	29,632,161				245		4,021,578	371,486	10,933,280	9,897,441	249,012	13,743,658		238,519	12,766						4,234	
MAMMOTH LAKES	289,274				18,424		9,773	40,993	176,528	15,876	27,880											
MANHATTAN BEACH	715,967				105,950		15,903	61,536	330,028	69,131	122,419											
MARIPOSA	659,639						253,600	7,192	344,452	(11,612)	55,373											
MARLBOROUGH	225,455						36,109		146,539	9,323	26,881											
MCFARLAND	225,455								146,539	9,323	26,881											
MCKITTRICK	81,203								78,203					42,712								
MECCA	402,985				23,787		175,673	18,685	52,108		127,003			5,730								
MENTONE	515,667						114,443	58,283	38,097	93,535	182,829	13,595		13,885								
MIRAMONTE	276,586						48,591	29,332	88,601	41,192	48,606			20,275								
MONROVIA	2,391,431		9,932				209,112		1,539,770	213,374	417,866	4,827										
MORGAN HILL	34,663						253,413		639,732	294,471	1,578,250			(3,050)								
MORGAN HILL	2,819,793						69,468		69,468					23,451								
MORONGO VALLEY	505,732				20,892		222,688	150,786	111,362	3												
MURRIETA	2,091,434		107,095				617,480	169,936	201,676	99,340	413,786	252,426		128,487								
MUSCOY DEVORE	1,398,997		48,246				70,263		913,216	219,848	119,348	5,346		22,731								
Needles	39,665						39,390			275												
NEWBERRY SPRINGS	1,091,483						142,236	46,268	450,903													
NEWBURY PARK	767,743				8,427		153,278	56,554	214,859													
NORFOLK	49,690						1,055,223		1,055,223	1	1,330											
NORTH SHORE	341,298				17,793		49,663	86,719	119,149	8,131	60,900											
NORWALK	3,898,445						340,751	6,163	1,439,086	262,445	852,397	3,665		14,209								
NORWALK	3,926,776		667,830		469		1,120,026	7,430	317,117	1,298,174	118,464	1,043,949										
OASIS	459,972						127,073		151,595					8,808								20
OLANCHA	288,560						70,876		122,925					17,349								
ONTARIO	8,921,361		73,731		13,189		1,359,104	21,667	17,777,719	363,651	5,574,103	905,900		861,391								
ORCUTT	1,483,542						59,510		1,196,866	196,246	26,899											
ORLANDO	1,674,271								67,009													
OROLOMA	167,471								39,219													
Oxnard	2,244,779		26,038				602,815	44,861	1,138,993	93,703	338,324			35								
PACIFIC PALISADES	1,170,774				13,217		143,775		547,598	39,771	71,572											
PACOMA	2,072,214						133,970		1,245,038	560,459	137,748			3,001								
PALM DESERT	1,754,637						433,200	300,289	442,021	418	557,999			73,078								
PALM SPRINGS	3,031,996		261,487			911	864,129		843,977	26,834	863,934	94,483										
PALMS SPRINGS	16,903						32,788		664,913	16,267	194,520											
PARKFIELD	1,572,555		392,321				577,683	8,468	(70,904)	292,388	434,260					1,737					521	



Table 8.11: GROSS PLANT ADDITIONS 2018-2019 (continued)

	2116	2121	2124	2212	2231	2232	2262	2411	2421	2422	2423	2426	2441	2442	2443	2444	2445	2446	2732	2733	2746	2792	
Wire Center	TOTAL	51,936	2124	2212	2231	2232	2262	2411	2421	2422	2423	2426	2441	2442	2443	2444	2445	2446	2732	2733	2746	2792	
PASADENA	1,332,627					32,055				48,636													4,049
PERRIS	3,791,804			13,683		571,180	288,463	1,694,218	170,815	688,264	124,179		256,953										
PHELAN	2,098,878			120,711		277,537	337,333	655,861	334,313	125,053	189,311		79,760										
PLACERVILLA	1,728,079					11,435		704,672	166,796	244,119													
PINE CREEK	179,572							149,658															
PINOYON PINES	134,336					29,914																	
PLAYA DEL REY	1,632,993			(940)		306,745	161,490	489,305	38,195	451,539			75,260										
POINT MUGU NAWC	3,994,470					74,218	69,227	6,637	164,908	1,155	40,423												
POINTON	3,009,499					282,718	7,809	1,884,585	182,679	611,285			236,055										
QUAIL VALLEY	1,021,625					7,646		207,347	48,434	15,845			236,055										
REDDLEWOOD	1,225,768					8,642		58,827	182,679	14,154			236,055										
RANCHO CALIFORNIA	1,938,708					478,115	121,163	122,620	835	718,917			297,238										
RANCHO CORDOVA																							
RANCHO MIRAGE	1,039,026					256,785		335,038	(6,762)	326,093			74,972										
REDLANDS	211,524					52,253	41,481	90,735															
REDLANDS	3,846,091					192,890	6,337	27,000,290	54,750	703,113			37,722										
REDONDO BEACH	1,781,660					96,090	40,423	975,693	48,976	620,477													
REDFELY	1,487,428					86,055	4,535	501,247	221,855	172,313			273,754										
RIPON	918,939					18,700	148,235	159,173	188,249	17,338													
ROBBINS	28,990					138,287	18,935		133,592	102,422			229,062										
ROBBINS								26,990															
RUNNING SPRINGS	692,451					9,099		640,218	30,123	13,011													
SALTON CITY	554,144					165,238	4,457	246,344	100,708														
SAN BERNARDINO	47,795,287			19,955		5,386,810	35,080	4,508,755	5,810,677	1,254,235	30,410,205		1,825										3,063
SAN DIMAS	903,721					90,271		382,861	44,602	227,202			47,192										
SAN FERNANDO	2,018,172					161,074		676,354	62,565	324,129			120,894										
SAN JOAQUIN	1,133,695					16,089	6,609	57,585	164,437	286,104													
SAN MIGUEL	347,236					110,815		26,558															
Sanger	662,722					91,851	5,507	329,799	48,979	142,862	20,720		41,903										
SANTA BARBARA	4,152,509			104,839		1,214,503	27,506	1,163,487	861,214	271,470													
SANTA MARIA	3,090,196					576,698	75,861	905,670	483,688	434,504			22,846										
Santa Monica	4,600,613					974,065	1,092,994	679,705	166,863	82,346													
SEAL BEACH	1,807,500					33,316	28,214	31,642	267,490	4,304													
SEAL BEACH	1,452,994					873,113		594,633	347,000	650,486													
SEAL BEACH	2,482,731					17,450		944,982	160,386	141,806			26,879										354,740
SEPUVEDA	2,036,771					149,085	524,759	485,502	16,018	70,699													
SIERRA MADRE	846,767					131,722		41,252	173,429														
SNELLING	643,021					108,894		21,591	118,721	156,532			38,850										
SOLVANG	2,094,205					158,403	55,001	711,169	118,721	156,532													
SOUTH LAGUNA BEACH	327,044					195,403		39,213	83,750	74,427			100,553										
STANFORD	1,418,029					185,427	108,337	44,678	153,478	56,148			13,586										
STRATHMORE	765,245					165,427		243,761	92,347	114,200													
SUMMIT VALLEY	278,042					71,494		92,347	92,347	114,200													
SUNLAND	2,094,380					122,015		289,912	422,869	402,313			183,522										
SUNLAND	1,343,006					265,115	310,280	422,224	315	239,154	236,535		127,634										
SUNNYMEAD	1,801,257					545,137		167,827	773,426	158,416													
SYLMAR	74,095					27,211		384,225	128,137	194,883													
THERMAL	1,196,733					705,376	48,589	124,497	33,759	57,913			74,330										
THERMAL	1,268,169					132,802		227,985	59,349	133,038													
THERMAL	765,599					38,783		600,464	337,857	446,192			12,070										
THOUSAND OAKS	2,334,982					150,251		205,802		33,245													
THOUSAND PALMS	396,326					59,620	34,451	98,331															
TIMBER COVE	192,403					297,039	109,089	535,502	706,303	1,164,506	66,705		77,787										
TIMBER VALLEY	2,878,139					33,833	115,723	320,066	45,884	3,753			573,768										
TOPANGA	1,093,096					2,995,928	744,342	9,648,887	8,867,856	10,129,572	13,446,447		37,280										
TRANCE	48,976,683					167																	
TRANQUILITY								44,171	83,691	48,887													
TRONA	416,075					133,797	24,966	124,634	83,691														
TWENTYNINE PALMS	649,209					696,839		837,577	841,062	413,620	287,873												
UPLAND	2,824,059							25,235	226,477														
VALLE VISTA	251,711					389,243		29,137															
VANDENBERG AFB	418,380					1,319,109	311,395	674,569	314,692	749,993	111,239		626,760										
VICTORVILLE	4,636,385			16,459		376,088	1,385,726	3,678,934	2,676,598	2,824,059													
WAGNER	2,933,321					363,764		376,088	1,506,593	23,522	213,539		108,188										
WEAVERVILLE	2,257,275																						
WEAVERVILLE	1,888																						
WELDON	3,090,777					63,643		188,527	7,907	48,													

Table 8.12
FRONTIER CALIFORNIA
GROSS PLANT ADDITIONS 2018-2019
(sorted by highest to lowest wire center expenditure)

Wire Center	TOTAL	2116	2124	2212	2231	2232	2362	2411	2421	USOA PLANT ACCOUNT	2426	2444	2081	2712	2732	2744	2745	2746	2752		
MIZ	62,652,317																				
TORRANCE	49,617,144	167						3,241,813	4,844,370	590,232	40,520,243	130,870					80,078		1,646		
SAN BERNARDINO	47,793,287	18,554	3,598,005		2,995,065	198,625	748,342	9,643,693	8,987,856	10,129,572	13,446,447	37,290					3,488		28,246		
LA VERNE	252,365		19,955		5,386,810	354,060	4,508,755	5,910,677	1,254,235	30,410,205		1,825					22,751		23,988	3,063	
MALIBU	29,632,161			245	6,136,762	126,025	4,32,562	8,630,018	314,878	28,057,966		8,768				236,519			12,786		
LONG BEACH	11,624,434		61,480		4,021,578	371,486	1,069,280	8,997,441	249,012	13,743,698		42,279							4,146		
ADELANTO	10,092,536			5,324	1,072,895	662,526	424,124	2,222,227	581,274	59,608		28,007								4,234	
LA PUENTE	9,158,605				1,565,699	286,992	3,901,104	1,287,113	728,107	5,712,171		64,778							132		
WHITTIER	8,821,361			13,189	407,892	21,667	1,747,719	363,651	3,574,103	905,900		576,150								905	
Huntington Beach	7,169,619				339,213	2,783,403	2,448,936	775,874	1,035,705	9,432	1,687,888										
WESTMINSTER	6,656,333				1,438,016	196,047	2,047,231	155,795	1,740,477	6,940,322		69,403									
LA BREA	6,591,013				1,438,016	32,537	3,031,963	1,073,903	696,533	1,831,819		46,422									
JANCASTER	5,091,545				1,216,825	57,184	2,027,013	205,099	1,308,139	534		102,916									
WILLOW CREEK	4,811,000				684,785	104,184	1,039,613	1,143,271	1,143,271	910,943		35,303									
Santa Monica	4,800,613				1,319,109	1,052,594	311,395	674,569	314,692	749,893		626,760								3,063	
VICTORVILLE	4,536,395				6,174			686,777	22,003	615,598		5,062					25				
BIG BEAR LAKE	4,390,012				135,302	486,701	2,511,345	89,587	647,966	33,247	3,044,398										
COVINA	4,310,449				723,898	739,632	1,660,261	226,110	541,678	42,476	386,302										
APPLE VALLEY	4,210,201				1,214,503	27,506	1,163,487	661,214	271,470		171,720										
SANTA BARBARA	4,152,509				434,799	97,554	1,384,729	324,028	1,203,883		506,317										
HEMET	3,997,089				1,120,026	7,420	3,171,17	1,299,174	118,464	35,778											
NOVATO	3,926,776				192,890	6,337	2,700,290	54,750	703,113	1,043,849		37,722									
REDLANDS	3,948,081				371,160	286,463	1,699,048	1,699,048	1,699,048	153,979		256,953									
PERKINS	3,165,804				67,830			379,414	88,264	124,179		14,269									
DOXNEY	3,159,583				323,296	61,001	2,168,539	82,792	590,047	3,186											
SANTA MARIA	3,262,674				576,698	75,861		661,408	294,171	1,578,250		23,501									
PALM SPRINGS	3,095,196				884,129	1,123		843,977	28,834	863,934		22,846									
INDIO	3,031,956				315,730	225,161		874,038	62,591	577,574		73,078									
TIVY VALLEY	3,009,499				282,718	7,809	1,884,585	182,679	611,265	40,423	36,848										
POMONA	3,076,139				297,039	109,889	5,355,502	706,303	1,164,506	66,705		77,787									
WEST LOS ANGELES	2,946,834				25,825	1,504,634		304,271	146,916	1		189,107									
WEAVERVILLE	2,893,321				376,098	34,933	1,528,583	23,522	214,539	29,288		109,189									
IRLAND	2,824,099				636,610		837,577	541,062	413,620	287,673		252,562									
CLAYTON	2,898,508				221,279	48,613	643,662	344,694	983,135	3,517		413,955									
BEAUMONT	2,853,141				48,613	847,160	847,160	77,513	385,975	848,627		58,825									
LAKE BEACH	2,666,584				1,211,368	221,368		1,983,179	385,975	13,616		1,158									
JACKSONVILLE	2,615,697				487,961	1,916		1,429,650	395,119	489,514		48,771									
MORGAN HILL	2,810,743				253,413			661,408	294,171	1,578,250		23,501									
CLAREMONT	2,800,581				242,976			1,487,617	90,279	501,512		242,739									
BALDWIN PARK	2,789,418				272,089			1,427,929	128,692	228,135		20,809									
CUCAMONGA	2,768,334				364,297	12,767	417,502	84,599	528,454	37,483		13,992									
ELSINORE	2,731,790				289,673	102,654	995,085	29,201	931,324	6,273		55,912									
HERMOSA BEACH	2,552,773				273,791		1,163,864	3,781	136,476	246,777		137,075									
SEAL BEACH	2,482,731				873,113		594,633	347,040	650,496												
BARSTOW	2,438,680				229,108	175,550	940,843	121,343	971,636												
CAMARILLO	2,411,594				446,861		700,363	127,618	1,037,766			24,255									
MONROVIA	2,391,431				209,112		1,539,770	213,374	417,686	4,627		(3,050)									
CANTERBURY	2,356,540				656,949		531,912	397,177	413,933		438,162										
CHULAVITA	2,356,540				656,949		531,912	397,177	413,933		438,162										
GOLTA	2,265,751				203,444	59,686	1,454,354	287,489	297,656			17,818									
OXNARD	2,244,779				602,815	44,881	1,138,963	93,703	338,324			20,809									
CHINO	2,158,044				355,098		905,708	65,666	447,934	363,369		20,809									
LA HABRA	2,105,781				46,046		1,587,821	65,519	362,625	43,770											
LOS SERRANOS	2,100,104				257,502	7,444	152,210	119,759	902,445	586,875		73,869									
PHELAN	2,099,478				277,537	337,333	636,861	334,313	125,053	189,311		79,760									
MURRIETA	2,091,454				617,480	169,936	201,676	99,340	413,786	252,428		128,487									
SUN CITY	2,094,380				122,015	289,912	4,22,969	1	653,647	402,313		193,522									
PACIFICA	2,077,214				133,970		1,245,038	560,459	1	373,748											
SOLVANG	2,064,205				1,038,834		711,169	118,221	196,532			38,650									
SERVILDEA	2,036,771				149,085	524,759	944,962	160,366	41,936		26,979										
WHEATWOOD	2,036,771				149,085	524,759	944,962	160,366	41,936		26,979										
CULVER CITY	2,033,575				204,298	203,928	1,181,776	112,446	333,739												
RANCHO CALIFORNIA	1,919,708				478,119	121,183		409,405	18,211	200,598		287,208									
HOMELAND	1,871,200				149,365	49,589		409,405	18,211	446,150		74,330									
TEMECULA	1,848,191				705,376	49,589		409,405	18,211	446,150		74,330									
YUCCA VALLEY	1,828,339				960,091	512,126	824,861		157,666	322,492		305,897									
LUCERNE VALLEY	1,815,148				284,541	168,819		920,012	28,598	471,088											
GLENDORA	1,795,702				70,107			975,683	48,976	620,477											
REDONDO BEACH	1,781,660				96,090	40,423															



Table 8.12: GROSS PLANT ADDITIONS 2018-2019 (sorted by highest to lowest wire center expenditure) (continued)

Wire Center	TOTAL	2116	2121	2124	2212	2231	2232	2382	2411	2421	2422	2423	2426	2444	2744	2745	2746	2792
		USOA PLANT ACCOUNT																
		(15,174)																
ARTESIA	1,774,273						202,762	3,362	588,143	66,551	887,211	14,427	22,421					
PALM DESERT	1,754,637	17,708					433,200	300,289	442,021	418	557,999							
PICO RIVERA	1,727,179						11,435		764,877	168,796	244,119							
LOMPOC	1,710,861						225,910		1,048,417	184,269	242,005							
BANNING	1,703,323						226,185		1,288,168	9,737	183,184							
BELLWOOD	1,676,191	609,494					99,030		670,154	36,465	195,995							
LANCASTER	1,670,891						102,565		1,436,377	84,373	134,150							
EDGEMONT	1,615,489						269,906	78,148	173,293	403	948,922	115,093						
SUNNYMEAD	1,601,257	332,321					265,115	310,280	422,224	315	238,154	236,535						
PARKFIELD	1,577,595						577,983	9,469	(70,904)	292,308	424,260							521
DESERT HOT SPRINGS	1,564,312	10,306					395,806	148,876	484,748	4,234	374,064	12,753						
PLAYA DEL REY	1,532,983		112,844				306,745	161,490	489,305	39,195	451,539	75,280						
FOWLER	1,506,135				(540)		289,323		610,634	335,619	197,812	12,819						
BIG BEAR CITY	1,501,957	318,681					7,814		1,147,181	28,281								
WALNUT	1,500,288						39,847		465,736	287,697	586,720	110,198						
REDFEEL	1,487,428	227,690					86,055	4,555	501,247	212,835	172,313							
ORCUTT	1,485,542						59,510		1,186,888	198,246	28,899							
LAKE ISABELLA	1,479,504						125,019		745,406	588,535	14,386							
LAKEVIEW	1,478,074						142,903		1,335,171	18,765	44,409							
ARIZONA OWNER	1,466,917						42,698	111,980	1,387,885	60,225	391,245							
MUSCOY DEVORE	1,398,997						70,283		889,781	60,225	1,868							1,852
LOS ANGELES	1,389,028						48,246		915,216	219,848	119,348	5,346						22,731
SANTA PAULA	1,369,991						597,109	164,416	560,816	12,774								
SYLMAR	1,354,387	74,095					272,442	59,138	675,913	267,490	95,008							
HOMESTEAD VALLEY	1,351,816						545,137		384,225	128,137	194,583							83,208
YUCAIPA	1,347,191				12,304		460,477	131,014	42,272	111,969	90,902	419,670						
SUNLAND	1,343,006						44,171		1,061,440	140,947	82,754	17,880						
CALIMESA	1,327,034				5,833		167,827		773,426	159,416	227,618							
LINDSAY	1,321,757						182,595		925,050	93,365	296,618	45,784						36,119
SAN JACINTO	1,301,124				7,416		228,084	2,912	975,649	281,679	136,171							32,634
LANCANA	1,292,510						116,081	6,669	430,066	194,457	280,154							62,317
ICOMA LINDA	1,188,600						133,024	189,292	888,591	68,584	142,310							120,684
GRANDLAND HILLS	1,186,040	24,486					62,481		990,591	9,980	588,769							(12,959)
PACIFIC PALISADES	1,170,774	354,608					132,809		892,595	66,145	150,006	2,673						3,952
BELL GARDENS	1,094,856						13,217	143,775	547,598	39,971	71,572							35
TOPANGA	1,093,056						33,833	116,723	320,086	136,008	222,949							152,139
NEWBERRY SPRINGS	1,091,483						142,236	46,268	450,903	45,894	3,753							573,768
DUNLAP	1,055,035						207,804	30,260	373,128	137,767	260,167							157,328
RANCHO MIRAGE	1,039,026	52,901					256,785		335,038	(6,762)	326,093							45,908
GARBERVILLE	1,034,181	444,889					55,429		448,088	44,079	32,931							74,872
QUAIL VALLEY	1,021,625						7,646		207,347	320,301								236,055
QUANTZ HILL	1,006,679	6,330					84,042		583,726	46,434	165,864							94,815
INDIO	1,002,924						89,016	215,525	839,762	14,471	139,478							29,598
RIDGEcrest	998,463						58,107		939,702	7,189								27,153
BISHOP	926,671						160,787	145,681	324,234	88,053	226,619							
PALOS VERDES ESTATES	939,399	48,621					142,654	37,022	546,798	73,256	70,572	25,576						
LAYTONVILLE	937,271						32,768		664,513	39,267	184,820							
LEWISVILLE	935,526						2,743		907,846	24,937								
LENWOOD	934,640						118,543		489,461	163,701								131,245
LAKE HUGHES	919,788						189,806		428,315	(44,304)	286,399	17,035						31,547
RIPON	918,939						138,287	16,935	159,173	133,592	102,422	139,469						229,062
IDYLLWILD	900,395						112,554		531,549		70,744							3,742
KEYTER	898,391						110,464	47,390	637,987	2,289	63,281							34,899
INYOKER	895,172						216,110		284,214	97,780	304,098							56,594
BELENO MADRE	851,267						104,108	3,031	745,159	122,613	482,897							26,669
KEENWILLE	832,307						16,112	41,252	499,889	159,982	7,665							22,973
SAN DIMAS	803,721						90,271		399,681	44,602	227,202							47,182
NEWBURY PARK	767,743				8,427		153,278	56,554	214,895	1	333,259	1,330						13,585
STRATHMORE	765,245	24,490					165,427	108,337	243,781	153,478	56,148							13,585
THERMAL	765,599						132,802	119,319	227,935	59,349								218
LA QUINTA	760,826	75,320					175,640		54,357	209,585	86,556							5,474
LETWANDA	726,253						110,157	10,898	115,183	3,670	304,746	146,539						35,051
MANHATTAN BEACH	712,967						15,903	61,536	338,028	69,131	122,419							
RUNNING SPRINGS	692,451						9,099		640,218	30,123								
Mentec	689,538						5,951	5,957	329,799	49,979	142,862							41,903
PALMDALE DUNES	689,351	7,633					253,600	7,192	344,452	(11,612)	58,373							20,720
PHOENIX PALMS	649,251						326,633	189,560	49,761	3,451	233,547							5,326
SNELLING	643,021	448,001					332,606	57,336	258,268		71,163							
DESERT KNOLS	626,319						49,416		441,973		173,429							15,455
DIAMOND BAR	610,249						52,190		161,342	39,243	240,102							117,371
SOUAV VALLEY	576,469						32,211	74,103	244,667	82,750	42,186							100,553
LOVE PINE	566,047						108,217	37,099	236,174	113,574	37,143							25,012
GRANT GROVE VILLAGE	565,602						517,733		44,706	3,163								
SALTION CITY	554,144						165,238	4,457	246,344		100,708							

Table 8.12: GROSS PLANT ADDITIONS 2018-2019 (sorted by highest to lowest wire center expenditure) (continued)

Wire Center	USOA PLANT ACCOUNT																				
	2116	2121	2124	2212	2231	2232	2382	2411	2421	2422	2423	2426	2441	2681	2712	2732	2744	2745	2746	2792	
TOTAL	46,973	-	-	-	-	-	46,973	-	-	-	-	-	-	-	-	-	-	-	-	-	
PIERCY	46,663	-	-	-	-	7,766	-	38,887	-	20	-	-	-	-	-	-	-	-	-	-	
Guinda	40,408	-	-	-	-	40,408	-	38,887	-	-	-	-	-	-	-	-	-	-	-	-	
CANTUA CREEK	39,907	-	-	-	-	16,812	-	23,095	-	-	-	-	-	-	-	-	-	-	-	-	
Needles	38,665	-	-	-	-	39,390	-	23,095	-	-	-	-	-	-	-	-	-	-	-	-	
FARMERSVILLE	36,422	-	-	-	-	-	36,422	275	-	-	-	-	-	-	-	-	-	-	-	-	
CANTUA CREEK	36,422	-	-	-	-	-	36,422	-	-	-	-	-	-	-	-	-	-	-	-	-	
ROBBINS	26,990	-	-	-	-	-	26,990	-	-	1	-	-	-	-	-	-	-	-	-	-	
CANTUA CREEK	26,990	-	-	-	-	-	26,990	-	-	-	-	-	-	-	-	-	-	-	-	-	
CUYAMA	23,095	-	-	-	-	-	23,095	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cedarville	23,095	-	-	-	-	-	23,095	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cedarville	2,479	-	-	-	-	-	2,479	-	-	-	-	-	-	-	-	-	-	-	-	-	
RANCHO CORDOVA	-	-	-	-	-	51,960	36,649	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cedarville	-	-	-	-	-	51,960	36,649	-	-	-	-	-	-	-	-	-	-	-	-	-	
HELENDALE-SILVER LAKE	(229,176)	-	-	-	-	-	-	-	-	(316,785)	-	-	-	-	-	-	-	-	-	-	
TOTALS	564,214,905	272,873	13,916,231	104,839	7,052,691	19,239	74,602,668	19,326,111	143,159,983	63,410,662	77,552,696	145,708,827	391,545	16,846,406	432,764	102,916	55,883	238,519	624,224	47,265	370,054

Maintenance and rehabilitation expenses 2018-19 

In CD Data Request 11-F-13, Frontier California was asked to “provide the Operating Expense charges as recorded on each of the following USOA expense accounts separately for each central office building and its associated wire center serving area, for each of the six-month periods between January 1, 2018 and December 31, 2019 ...” Frontier provided only summary, company-wide amounts, but has not provided this information “accounts separately for each central office building and its associated wire center serving area.” The response also provided a breakdown of expenses as between regulated and non-regulated services. Table 8.13 below, which was prepared based upon data provided by Frontier California in response to DR 11-F-13, summarizes the information that was provided. Over the 2018-2019 period, Frontier California incurred a total of \$1.02-billion in central office and outside plant operating costs. Of this amount, approximately \$904.5-million, about 88.42%, was spent in support of regulated services, while the remaining \$118.5-million, roughly 11.58%, was spent in support of non-regulated services.

Frontier California also provided operating expenses incurred in support of non-regulated services in its response to DR 12-F-5, which is summarized on Table 8.15. Table 8.14 is limited to outside plant expense accounts, whereas Table 8.13 includes central office expense accounts as well. Overall, both of these table put nonregulated operating expenses in the range of 11% of total OpEx.

Table 8.15, on the other hand, provides a breakdown of regulated and non-regulated revenues and operating expenses as provided by Frontier California in response to DR 5F-12. The Table includes a number of expense accounts in the 9XXX series that, when aggregated and compared with the total of regulated services expense accounts (6XXX series) produce a considerably higher non-regulated expense component overall. Table 8.15 also provides total and non-regulated revenues. The table provides calculations of the percentages of total revenues and total costs that are associated with non-regulated services; overall, these percentages, while not exactly the same for both revenues and expenses, are fairly close when viewed for each of the four years.

Table 8.13

FRONTIER CALIFORNIA
BREAKDOWN OF OPERATING EXPENSES
2018-2019

Account	Description	ALL SERVICES 2- YR TOTAL		REGULATED SERVICES		NON-REGULATED SERVICES		TOTAL	Pct Dereg
		2018	2019	2018	2019	2018	2019		
6212	Digital electronic central office switching expense	36,917,103	17,974,904	18,943,159	17,974,904	36,918,064	(961)	-	0.00%
6220	Operators system expense	37,648	18,049	19,599	18,049	37,648	-	-	0.00%
6231	Central Office Radio systems expense	2,731,535	87,419	87,419	27,120	114,539	1,684,420	932,576	95.81%
6232	Central Office Circuit equipment expense	99,443,811	52,759,252	52,759,252	46,339,284	99,098,536	296,784	48,491	0.35%
6411	Poles expense	9,780,313	7,332,630	7,332,630	2,447,683	9,780,313	-	-	0.00%
6421	Aerial cable expense	94,320,023	39,024,617	39,024,617	41,793,600	80,818,217	6,355,782	7,146,025	14.31%
6422	Underground cable expense	31,932,537	15,878,145	15,878,145	16,054,392	31,932,537	-	-	0.00%
6423	Buried cable expense	114,925,205	49,876,817	49,876,817	51,692,489	101,569,305	6,288,366	7,067,534	11.62%
6424	Submarine cable expense	209,411	92,418	92,418	116,993	209,411	-	-	0.00%
6426	Intra-building network cable expense	10,300	9,719	9,719	581	10,300	-	-	0.00%
6431	Aerial wire expense	971,717	757,981	757,981	213,737	971,717	-	-	0.00%
6441	Conduit systems expense	1,334,285	370,984	370,984	963,301	1,334,285	-	-	0.00%
6510	Other property, plant and equipment expenses.	-	-	-	-	-	-	-	-
6511	Property held for future telecommunications use	-	-	-	-	-	-	-	-
6534	Plant operations administration expense.	60,429,967	28,500,285	28,500,285	31,929,681	60,429,967	-	-	0.00%
6535	Engineering expense.	7,244,655	2,459,954	2,459,954	4,784,701	7,244,655	-	-	0.00%
6623	Customer services.	296,773,924	164,621,207	164,621,207	87,770,781	252,391,988	23,116,951	21,264,985	14.95%
6720	General and administrative expenses	265,983,166	96,650,533	96,650,533	125,035,314	221,685,847	23,123,045	21,174,274	16.65%
TOTALS		1,023,045,600	477,384,719	477,384,719	427,162,610	904,547,329	60,864,387	57,633,884	11.58%

Source: Frontier California Response to CD Data Request 11-F-13

Table 8.14

FRONTIER CALIFORNIA
OUTSIDE PLANT MAINTENANCE EXPENSES
2016-2019

Account Description	2016	2018	2019	2018-18 TOTAL	TOTAL
REGULATED SERVICES OUTSIDE PLANT MAINTENANCE EXPENSES					
6421 Aerial Cable	29,009,338	39,024,617	41,793,600	80,818,217	152,950,615
6422 Underground Cable	11,791,084	15,878,145	16,054,392	31,932,537	56,733,936
6423 Buried Cable	33,389,710	49,876,817	51,692,489	101,569,305	181,136,753
6424 Submarine Cable	8,312	92,418	116,993	209,411	372,789
6426 Intrabuilding Network	100,656	(15,829)	581	10,300	95,127
6431 Aerial Wire	1,638,866	757,981	213,737	971,717	5,412,668
6441 Conduit	345,625	370,984	963,301	1,334,285	2,046,749
TOTAL REGULATED SERVICES EXPENSE	76,283,591	106,010,680	110,835,092	216,845,772	398,748,637
NON-REGULATED SERVICES OUTSIDE PLANT MAINTENANCE EXPENSES					
9421 Aerial Cable	5,249,955	4,200,725	7,146,025	13,501,807	22,952,487
9423 Buried Cable	6,624,484	4,579,832	7,067,534	13,355,900	24,560,216
TOTAL NON-REGULATED SERVICES EXPENSE	11,874,439	8,780,557	14,213,559	26,857,707	47,512,703
TOTAL ALL OUTSIDE PLANT MAINTENANCE COST	88,158,030	114,399,831	125,048,651	243,703,479	446,261,340
PERCENT NON-REGULATED	13.47%	7.68%	11.37%	11.02%	10.65%

Table 8.15

**FRONTIER CALIFORNIA
REGULATED AND NONREGULATED REVENUES AND EXPENSES
2016-2019**

Account Description	2016	2017	2018	2019	2018-2019 TOTAL	4-YR TOTAL
Regulated Revenues	819,948,000	2,054,287,000	1,916,501,000	1,817,555,000	3,734,056,000	6,608,291,000
5280 Non-regulated revenues	959,317,428	1,070,296,238	997,634,174	962,981,513	1,960,615,687	3,990,229,352
Total Revenues	1,779,265,428	3,124,583,238	2,914,135,174	2,780,536,513	5,694,671,687	10,598,520,352
Pct. Non-Reg Revenues	53.92%	34.25%	34.23%	34.63%	34.43%	37.65%
Total operating expenses	863,814,000	1,213,774,000	1,160,941,000	1,116,584,000	2,277,525,000	4,355,113,000
Non-reg operating expenses	409,910,751	467,310,225	413,216,959	362,464,986	775,681,945	1,652,902,921
Pct Non-Reg expenses	47.45%	38.50%	35.59%	32.46%	34.06%	37.95%

Source: Frontier Responses to DR 12-F-3, 12-F-5

GO 133-D §9.7 Alternative Investments

As we discussed in our Phase 1 Report, in August 2016, the Commission issued a revised GO 133-D that imposes financial penalties upon ILECs that persistently fail to meet minimal POTS service quality standards. GO-133-D §§9.3, 9.4 and 9.5 provide for escalating daily fines where a carrier's failure to meet the required service standards persists for an extended period of time.⁸¹ A total of \$3.35-million in fines was assessed against Frontier California since this provision became effective.⁸² §9.7 allows offending carriers the opportunity to submit an "Alternative Proposal for Mandatory Corrective Action" whereby carriers can avoid the fine by agreeing to invest an amount of at least double the fine if such an investment will be effective in remedying the service problem for which the fine had been imposed. This "alternative" opportunity is initiated by the carrier by submitting "a request to suspend the fine." Under this provision,

... carriers may propose, in their annual fine filing, to invest no less than twice the amount of their annual fine in a project (s) which improves service quality in a measurable way within 2 years. The proposal must demonstrate that 1) twice the amount of the fine is being spent, 2) the project (s) is an incremental expenditure with supporting financials (e.g. expenditure is in excess of the existing construction budget and/or staffing base), 3) the project (s) is designed to address a service quality deficiency and, 4) upon the project (s) completion, the carrier shall demonstrate the results for the purpose proposed.⁸³

Carriers can avoid fines either by meeting the GO-133-D §3 performance standards or by investing in network upgrades that will result in improved service quality overall. These investments must, however, be directed specifically at services that fall within the scope of GO 133-D, i.e., legacy circuit-switched voice lines. Frontier California has sought approval of alternative proposals for mandatory corrective action under § 9.7 in lieu of paying the assessed fines in 2017, 2018 and 2019.⁸⁴ The company's "alternative investment" proposals for 2017 and 2018 amounted to \$4.14-million, in lieu of paying \$2.07-million in fines for the two years. The Commission approved these requests for 2017 and 2018. For 2019, Frontier calculated its fine at \$1.28-million and sought CPUC approval for its "alternative investment" proposal amounting to \$2.56-million. However, CD staff recommended that the Commission deny Frontier's "alternative investment" proposal:

81. D.16-08-021 (R.11-12-001), Adopted Aug. 18, 2016; Effective Aug. 18, 2016; Except Section 9 on fines, which is effective Jan. 1, 2017.

82. CPUC Resolution T-17631, issued November 8, 2018; CPUC Resolution T-17652, issued May 30, 2019; CPUC Resolution T-17731, issued March 4, 2021.

83. GO 133-D, §9.7.

84. See Resolutions T-17631, Resolution T-17652, Resolution T-17731.

This, however, is not the first time that Frontier CA has proposed a corrective action plan, pursuant to Section 9.7, in lieu of paying fines for failure to comply with the Commission's service quality standards. Its past corrective action plans have thus far not resulted in sustained improvement in its service quality performance, as demonstrated by Frontier CA's need to file this advice letter, which is its third consecutive Section 9.7 corrective action plan. As a result, it is unclear to Staff whether the project Frontier CA describes in its AL 12828 proposed corrective action plan would result in the necessary sustained performance results that are consistent with the Commission's long-term goals for service quality.⁸⁵

CD has been tracking the effectiveness of such "alternative investments" in improving service quality and, in Frontier's case, has found them wanting.

As background, from April 2016 (when Frontier CA acquired Verizon California) through the 4th Quarter of 2019, Frontier CA has repeatedly failed to meet the minimum Out of Service Repair Interval and Answer Time standards. For those past years, Frontier CA similarly proposed Section 9.7 corrective action plans in lieu of paying fines for its sub-standard service quality performance and non-compliance with the GO 133-D minimum standards in years 2017 and 2018, which CD approved in November 2018¹³ and May 2019, respectively. Despite proposing to spend a total of \$4,849,913 in those two previous GO 133-D corrective action plans, Frontier CA did not demonstrate significant improvement in its Out of Service Repair Interval standard through December 2019. Considering Frontier CA's past unsuccessful performances with its corrective action plans, CD found it unreasonable to similarly approve Frontier CA's third consecutive Section 9.6 corrective action plan proposed in AL 12828.⁸⁶

As we noted above, during 2018-2019, Frontier California invested \$562.8-million in Gross Plant Additions, primarily in central office equipment (\$301.4-million) and outside plant (\$261.4-million). Had it simply paid the fine, Frontier would have been out \$2.07-million. That extra \$2.07-million that Frontier had offered to invest (over and above the \$2.07-million it would have paid anyway) amounts to less than 0.37% of Frontier's total 2018-2019 plant additions – a truly *de minimis* sum, little more than a rounding error. There is no indication that, absent its acceptance of the §9.7 Alternative Investments option, the same total amount would not have been invested anyway. In our Phase 1 Report, we had concluded that the GO 133-D fines were insufficient to offer a financial inducement for ILEC compliance with the Commission's service quality minimum performance standards because the cost of the fine represented a minuscule fraction of the cost that the ILEC would need to incur to improve its service quality. We reiterate that observation here, as well as our recommendation that the level of these fines be significantly increased. We certainly concur with the Staff's recommendation and the

85. Draft Resolution T-17724, at 4.

86. *Id.*, citations omitted.

Commission’s March 4, 2021 ruling that Frontier’s §9.7 Alternative Investment proposal for 2019 be denied.⁸⁷

Summary and conclusions

Frontier California represents a major component of its new parent, Frontier Communications Corp. But with the parent company’s financial condition at a crisis stage, Frontier California’s financial condition and investment policies will be dictated by conditions that are largely beyond the CPUC’s control. The California ILEC entity has virtually no ability to raise equity or debt capital on its own. If the parent company successfully emerges from bankruptcy, its ability to raise capital may improve, and at this point that is speculative at best

Since taking over the company in 2016, Frontier has made gross infrastructure investments totalling some \$946-million, the vast majority of which (\$718-million) have been directed toward new outside plant. Although only a relatively small portion of that investment has been identified officially as supporting “non-regulated” services, it seems highly likely that the bulk of these projects have involved extending fiber optic distribution facilities to individual customer premises primarily to facilitate deployment of high-speed broadband Internet access and video services. While such undertakings also have the potential to improve the reliability of basic voice telephone service, such outlays could not be economically justified for that alone. Indeed, Frontier did not even offer standalone VoIP telephone services to customers who do not also take broadband Internet access before July 2019, and does not track the number of such customers: “The number of interconnected VoIP subscriptions on a standalone basis is not tracked and Frontier is investigating whether this data is available.”⁸⁸ For those customers who continue to take legacy basic voice telephone services, such investments have limited benefit. As we noted in Chapter 4F above, with respect to such legacy services, Frontier California has seen deterioration in almost all of the GO 133 service quality metrics in most of the company’s wire centers over the 2018-2019 period. With Frontier having invested nearly a billion dollars in California since acquiring the company, this is not the outcome that one would expect to see.

87. CPUC Resolution T-17731, issued March 4, 2021.

88. Frontier response to CD DR 13-F-03(d).

11 | ILEC SERVICE QUALITY AND COMMUNITY DEMOGRAPHICS

Key findings addressed in this Chapter

- While we have attempted to compile the requested data on the relationships between ILEC service quality and communities' income level and racial makeup, we caution the Commission as to both the precision and usefulness of these results, and recommend that their use at this time be limited solely to considering the need for a more detailed and more granular investigation.
- The incidence of service outages for both AT&T and Frontier appears to be somewhat lower in higher income areas, although the companies' responses to those service outages that do occur exhibit no similar income-related pattern.
- Average gross plant additions investment per access line are similar in all five quintiles for both AT&T and Frontier, but wire centers serving higher income areas tend to have a lower rate of out-of-service incidents and greater broadband availability than their counterparts in lower income communities.
- For both AT&T and Frontier, there is no indication that wire centers that serve relatively higher percentages of Black, Hispanic or Non-White populations exhibit more frequent incidents of service outages; moreover, as with our income analysis, there does not appear to be any observable pattern for either company associated with any of the service restoration metrics.

ILEC SERVICE QUALITY AND COMMUNITY DEMOGRAPHICS

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Introduction

There is considerable variation in service quality performance across each ILEC's wire centers. In our Phase 1 study, we undertook to preliminarily examine whether there was any observable relationship between a community's median household income and the treatment that its ILEC was providing customers with respect to service quality. That examination was limited to AT&T California wire centers, and its results were discussed in Chapter 11 of our Phase 1 report, at pp. 518-522.

As addressed in Chapter 4A of our Phase 1 report (at pp. 206-210), we had observed that wire centers with the lowest rates of customer drop-off had experienced the poorest levels of service quality. At first glance, this outcome seems anomalous. All else equal, one would expect that areas with the poorest service quality overall would exhibit the higher rates of customer defection away from the ILEC and over to alternative providers, but in fact the result was precisely the opposite – communities experiencing the highest levels of service quality were also the ones with the highest rates of service disconnections. The likely explanation for this result was that customers in areas with the lowest rates of competitive loss were those where customers had access to the fewest competitive choices. Whether deliberate or coincidental, AT&T appeared to be directing its attention to service quality and making investments in those areas most heavily impacted by competition, paying the least attention to areas where its customers were most captive. Since competitors were likely to focus upon markets at the higher end of the economic spectrum, we wanted to see whether areas with the lowest levels of household income were also those receiving the poorest service quality.

All of the service quality metrics we studied exhibited a degradation in service quality over the 2010-2017 study period. We classified wire center serving areas into one of five median household income quintiles, and found that:

- (1) Out-of-service incidents per 100 access lines in service were lowest in the highest income areas, highest in the lowest income areas;
- (2) Out-of-service durations were shortest in the highest income areas;
- (3) Areas with the highest household incomes also had the highest percentage of outages cleared within 24 hours; and
- (4) High income areas generally required the fewest days to clear 90% of out-of-service conditions.

The highest income areas had the lowest incidence of service outages; the shortest out-of-service durations, the highest percentage of outages cleared within 24 hours, and had the fewest number of days required to clear 90% of the service outages that did occur.

We had found that wire centers that had been upgraded with fiber optic distribution facilities tended to exhibit superior service quality overall, and noted that average median annual household incomes were highest in areas that were being served by wire centers that had such upgrades. Although fiber deployment and the availability of broadband were not necessarily critical to the provision of high-quality legacy POTS services, their presence provided an indication that the ILEC had committed investment dollars to such locations, and these plant upgrades had also contributed to fewer POTS service outages overall.

For Phase 2, we have been tasked with extending this examination to include Frontier California as well as AT&T California, and also to examine whether there was any evidence of service quality differences in communities with varying racial characteristics. As we discuss below, we have determined that the incidence of service outages for both AT&T and Frontier appears to be somewhat lower in higher income areas, although the companies' responses to those service outages that do occur do not appear to have a similar relationship with median household income levels. For AT&T, there is some indication that communities with proportionately higher black and Hispanic populations do experience higher incidences of service outages, but this pattern does not seem to be present for Frontier. For both ILECs, there is no discernable pattern that responses to those service outages that do occur is linked to racial demographics.



While we have attempted to compile the requested data on the relationships between ILEC service quality and communities' income level and racial makeup, we caution the Commission as to both the precision and usefulness of these results, and recommend that their use at this time be solely limited to considering the need for a more detailed and more granular investigation.

Median household income, ILEC investment, and service quality

In order to categorize AT&T and Frontier wire centers into income quintiles, we utilized population and household count data from the 2010 Decennial Census⁸⁹ as well as Median Household Income (“MHI”) data from the 2018 US Census Bureau *American Community Survey* (“ACS”) database.⁹⁰ The 2010 Census reports demographic data at the Census Block level (15-digit geographic identifier), the most granular geographic area available, while the ACS reports MHI at the Census Tract level (11-digit geographic identifier). To best approximate the average MHI of households located within each AT&T or Frontier wire center footprint, we weight 2018 Census Tract level MHI by 2010 Census Block level household counts. There are roughly 500,000 Census Blocks in AT&T California’s operating areas. Since all of the service quality metrics were developed at the individual *wire center* level, we needed to associate each

89. 2010 Decennial Census, <https://www.census.gov/data/developers/data-sets/decennial-census.html>

90. 2018 American Community Survey, <https://www.census.gov/programs-surveys/acs/data.html>

Census Block with its serving wire center. This was accomplished for AT&T California utilizing a mapping analysis that was prepared for us by the Communications Division's GIS staff. Frontier provided us with a similar mapping, except that this was done at a Census Tract level.⁹¹ Census Tracts are larger, and include many individual Census Blocks. There are approximately 2,600 Census Tracts in Frontier California operating areas. Because Frontier's data was at the Census Tract level, individual Census Block household data was aggregated to the corresponding Census Tracts in order to develop wire center level MHI statistics.

Each ILEC's wire centers were ranked by their respective MHIs, and were then classified into one of five quintile categories based upon the MHI for the wire center. The MHI brackets for each of the two ILECs are summarized in Table 11.1 below: Tables 11.3 and 11.6 provide the MHI for each AT&T California and Frontier California wire center, respectively, sorted from lowest to highest MHI, each grouped into five quintiles.

	AT&T California		Frontier California	
Quintile	MHI Range	No. of Wire Centers	MHI Range	No. of Wire Centers
0%-20%	\$0 – \$42,500	122	\$0 – \$45,800	43
20%-40%	\$42,500 – \$53,550	121	\$45,800 – \$59,400	44
40%-60%	53,550 – \$66,100	121	\$59,400 – \$72,000	42
60%_80%	\$66,100 – \$87,400	121	\$72,000 – \$84,800	41
80%-100%	\$87,400 and above	121	\$84,800 and above	43

Investment

AT&T California has advised us that, as of the end of 2017, 557 of its 615 wire centers had been upgraded with facilities supporting broadband services,⁹² and has further confirmed that no additional wire centers had received such upgrades after 2017.⁹³ Frontier California has identified three categories of wire centers -- those with *FiOS* availability, those without *FiOS* but where some form of broadband Internet access service is available, and those where no broadband services are offered.

91. Frontier California Response to CD Data Request 11-F-**.

92. AT&T California Responses to CD Data Request 11-A-3, 01-A-3.

93. AT&T California Response to CD Data Request 12-A-10..

During 2018 and 2019, AT&T California made Gross Plant Additions identified to individual wire centers totaling approximately \$2-billion. We have calculated the weighted (by POTS access lines in service as of December 31, 2018, the midpoint of the Phase 2 study period) average Median Household Income of the areas served by these wire centers in each of the specified quintiles, together with the average Gross Plant Addition investment per access line, average monthly out-of-service incidents per 100 access lines, and the percentage of wire centers equipped for broadband services, as summarized in Table 11.2 below. As the data indicate, although average gross plant additions per access line are similar in all five quintiles, wire centers serving higher income areas tend to have fewer out-of-service incidents and greater broadband availability than their counterparts in lower income communities.

Table 11.2

AT&T CALIFORNIA
MEDIAN HOUSEHOLD INCOME AND 2018-19 GROSS PLANT ADDITIONS

Quintile	Households	Median Household Income	Access Lines Jan 2019	2018-2019 Gross Plant Additions per Access Line	Out-of-Service per 100 ALs per month	Pct Wire Centers with Broadband
0%-20%	1,142,727	\$36,673	205,299	\$1,099	2.29	83.6%
20%-40%	1,654,443	\$48,591	305,857	\$1,131	1.77	84.3%
40%-60%	2,611,078	\$59,866	434,625	\$1,018	1.59	95.0%
60%-80%	2,610,669	\$75,927	485,362	\$900	1.36	97.5%
80%-100%	2,565,025	\$105,167	473,132	\$1,268	0.96	98.3%
Total AT&T-CA	10,583,942	\$70,540	1,904,275	\$1,077	1.59	91.7%

NOTE: Individual Census Blocks may include parts of more than one wire center and more than one ILEC serving area. The total number of households passed by AT&T shown here may well exceed those actually present in AT&T California's service area. However, for our purposes, the relevant calculation is the Median Household Income, which would apply for the entire Census Block irrespective of which ILEC serves a particular household.



The incidence of service outages for both AT&T and Frontier appears to be somewhat lower in higher income areas, although the companies' responses to those service outages that do occur have no similar income-related pattern.

Table 11.3 provides the total Gross Plant Addition investment and the per-access line Gross Plant Additions for each AT&T California wire center, along with the median household income.

Table 11.3

AT&T CALIFORNIA
 WIRE CENTER SERVING AREA MEDIAN HOUSEHOLD INCOME
 BASED ON 2018 AMERICAN COMMUNITY SURVEY DATA

QUINTILE SUMMARY STATISTICS

Quintile	No. of Wire Centers	No. of Wire Centers with Broadband	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month
1	122	102	3,810,528	1,124,595	84,603	42,045	203,997	249,360,339	1,222	2.29
2	121	102	5,827,285	1,792,444	107,434	55,549	314,063	335,416,269	1,068	1.77
3	121	115	7,434,401	2,486,229	109,482	68,562	425,804	438,700,085	1,030	1.59
4	121	118	7,089,211	2,427,679	100,847	86,647	426,448	393,874,358	924	1.36
5	121	119	7,592,944	2,752,995	97,199	121,639	533,963	633,634,384	1,187	0.96
All AT&T-CA Operating Areas	606	556	31,754,369	10,583,942	499,565	81,495	1,904,275	2,050,985,435	1,077	1.59

Table 11.3

**AT&T CALIFORNIA
WIRE CENTER SERVING AREA MEDIAN HOUSEHOLD INCOME
BASED ON 2018 AMERICAN COMMUNITY SURVEY DATA**

QUINTILE 1: MEDIAN HOUSEHOLD INCOME \$0 - \$49,250

Wire Center	CLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan-18	Total Gross Plant Additions 2018	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered
BOMBAY BEACH	NILDCA11	IMPERIAL	1,507	555	189	26,904	83	(42,668)	(514)	2.63	YES
NILAND	NILDCA12	IMPERIAL	1,164	669	174	28,475	98	(6,983)	(71)	1.98	NO
EARLIMART	ERLMCA11	TULARE	10,150	2,283	355	28,595	332	315,214	949	2.22	YES
HURON	HURNCA11	FRESNO	7,652	1,733	496	28,837	294	480,936	1,636	1.70	YES
PIXLEY	PXLYCA11	TULARE	6,891	1,649	343	29,033	273	458,650	1,680	3.45	YES
ORANGE COVE	ORCVCA11	FRESNO	12,493	2,987	367	29,471	399	175,303	439	2.89	YES
MENDOTA	MNDTCA11	MADERA	13,217	2,936	738	31,019	448	390,016	871	1.24	YES
CALIPATRIA	CLPTCA11	IMPERIAL	7,960	1,107	564	31,696	259	115,972	448	1.23	YES
MOJAVE	MOJVCA01	KERN	5,466	1,940	1,969	31,965	581	1,707,432	2,939	1.83	YES
PARLIER	PLRCA11	FRESNO	17,151	3,933	191	33,065	469	824,796	1,759	2.08	YES
TERRA BELLA	TRBLCA11	TULARE	6,069	1,587	283	33,186	417	774,248	1,857	3.03	YES
TIPTON	TPTNCA11	TULARE	4,052	1,004	225	34,061	199	1,370,916	6,889	3.93	YES
FRESNO-MAIN	FRSNCA01	FRESNO	157,289	42,249	2,985	34,789	7,618	6,779,085	890	2.08	YES
FIVE POINTS	FVFNCA11	FRESNO	1,637	375	323	35,006	151	119,383	791	2.72	NO
WEOTT	WEOTCA11	HUMBOLDT	676	265	163	35,756	63	45,343	720	0.84	YES
LOWERLAKE	LWLKCA11	LAKE	22,507	9,031	1,251	36,019	1,965	901,145	459	2.38	YES
ADAMS	LSANCA14	LOS ANGELES	145,043	31,667	686	36,266	3,816	5,641,139	1,478	1.91	YES
BAKERSFIELD-FAIRVIEW/BKFDCA12	LSANCA09	KERN	103,575	31,330	1,972	36,409	6,158	6,209,670	1,008	1.20	YES
LSAN-RICHMOND	LSANCA09	LOS ANGELES	69,766	18,852	762	36,433	6,015	6,347,306	1,055	0.84	YES
DUNSMUIR	DNMCA11	SISKIYOU	2,631	1,225	832	36,472	413	111,415	270	0.99	YES
PEPPERWOOD	PPWDCA11	HUMBOLDT	487	180	112	37,264	75	259,273	3,457	3.16	NO
RIO DELL	RIDCA11	HUMBOLDT	4,624	1,796	252	37,697	238	319,533	1,343	0.79	YES
DEL REY	DLRYCA11	FRESNO	2,912	739	98	38,286	143	97,567	682	3.51	YES
LAMONT	LAMTCA11	KERN	21,153	4,761	262	38,510	719	318,465	443	2.25	YES
NICE	NICECA11	LAKE	5,913	2,656	364	38,524	465	197,735	425	2.65	YES
WASCO	WASCCA01	KERN	28,322	5,951	657	38,690	774	1,124,899	1,453	2.27	YES
OROVILLE-MAIN	ORVCA11	BUTTE	45,582	16,356	1,874	38,756	3,496	4,505,482	1,289	2.25	YES
LSAN-PLEASANT	LSANCA05	LOS ANGELES	186,361	51,625	1,368	39,158	6,868	12,848,149	1,871	2.19	YES
LSAN-PUBLIC	LSANCA38	LOS ANGELES	155,614	46,959	802	39,243	6,084	6,007,211	987	1.73	YES
LSAN-RAMPART	LSANCA11	LOS ANGELES	212,868	77,703	623	39,281	10,841	2,780,021	256	0.80	YES
MIRANDA	MRNDCA11	HUMBOLDT	1,986	973	283	39,750	286	1,186,621	4,149	1.67	YES
BORREGO SPRINGS	BRSPCA11	IMPERIAL	4,088	1,811	399	39,773	698	171,851	246	4.48	YES
FURNACE CREEK	FRCKCA11	INYO	450	279	69	40,150	140	44,782	320	1.28	NO
SHOSHONE	SHSHCA11	INYO	212	129	153	40,150	137	102,838	751	4.14	NO
PLAN ANDREAS	SNADCA11	CALAVERAS	6,705	2,900	243	40,209	1,238	715,304	578	2.88	YES
PLANADA	PLNDCA11	MARIPOSA	6,074	1,455	267	40,420	279	154,596	554	2.36	YES
ARCATA	ARCTCA11	HUMBOLDT	23,528	9,788	892	40,549	1,835	777,629	424	1.06	YES
WALKER BASIN	WLBSCA11	KERN	1,331	586	358	40,580	447	492,799	1,102	3.85	NO
MOKELUMNE HILL	MKHLCA12	AMADOR	1,689	731	68	40,609	183	342,132	1,870	3.03	NO
ARVIN	ARVNCA11	KERN	22,803	4,964	554	40,648	736	643,968	875	1.90	YES
HORN BROOK	HRBKCA11	SISKIYOU	1,341	618	533	40,780	260	892,122	3,431	3.14	NO
LAKE LOS ANGELES	LKLA11	LOS ANGELES	14,077	3,879	1,031	40,831	427	313,212	734	1.42	YES
LEWISTON	LSTNCA11	TRINITY	1,377	638	364	40,988	508	514,098	1,012	2.13	NO
CALEXICO	CLXC12	IMPERIAL	41,627	10,227	779	41,039	1,886	1,824,868	968	0.89	YES
STOCKTON-MAIN	SKTNCA01	SAN JOAQUIN	165,808	48,860	3,454	41,115	7,703	5,772,015	749	1.60	YES
AVENAL	AVNLCA12	FRESNO	14,203	2,686	2,001	41,150	434	563,498	1,298	2.50	YES
NATIONAL CITY-HIGHL*	NTCYCA11	SAN DIEGO	35,313	10,247	656	41,167	1,415	4,109,314	2,904	1.15	YES

QUINTILE 1: MEDIAN HOUSEHOLD INCOME \$0 - \$49,250												
Wire Center	GLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered	
STRAITFORD	SRFCA11	KINGS	1,826	486	309	41,352	85	100,008	1,177	3.13	YES	
FRAZIER PARK	FZPKCA11	KERN	6,404	2,516	358	41,449	757	2,285,756	3,019	2.16	YES	
OROSI	ORSICA11	TULARE	20,521	4,813	673	41,489	757	480,725	635	3.02	YES	
WOODLAKE	WDLKCA11	TULARE	10,142	2,829	332	41,550	533	844,661	1,585	4.10	YES	
HUNTINGTON PARK	HNPKA01	LOS ANGELES	170,245	39,742	1,459	41,704	6,751	8,067,033	1,195	1.43	YES	
CLEARLAKE OAKS	CLOKCA11	LAKE	4,498	2,163	434	41,797	536	342,841	640	1.70	YES	
PORTERVILLE	PTVLA11	TULARE	85,616	23,951	2,338	42,091	4,993	2,778,066	556	1.71	YES	
RED BLUFF	RDBLCA01	SHASTA	32,592	12,614	1,549	42,125	3,745	2,336,647	624	1.71	YES	
UPPERLAKE	UPLKCA11	LAKE	3,104	1,215	561	42,200	388	543,323	1,400	3.11	YES	
LSAN-MADISON 03	LSANCA03	LOS ANGELES	30,403	11,095	321	42,293	5,572	(2,395,311)	(430)	0.50	YES	
IVANHOE	IVNHCA11	TULARE	7,707	2,179	287	42,351	441	309,115	701	2.50	YES	
FRESNO-BALDWIN	FRSNCA11	FRESNO	118,435	40,789	1,426	42,412	5,377	4,686,483	872	1.59	YES	
BOONVILLE	BNVLA11	MENDOCINO	2,926	1,039	365	42,572	645	416,928	646	3.16	YES	
FARMERSVILLE	FRVLA11	TULARE	11,526	2,878	223	42,603	401	245,304	612	2.30	YES	
FIREBAUGH	FRBHA11	MADERA	10,146	2,630	693	42,714	604	166,522	276	1.48	YES	
WILLITS	WLTSCA12	MENDOCINO	13,189	5,138	751	42,767	2,049	1,844,893	900	2.16	YES	
CAMP NELSON	CMNLCA11	TULARE	208	110	566	42,775	680	356,835	525	2.50	NO	
BELL	BELLA11	LOS ANGELES	94,886	22,555	206	42,815	2,449	6,046,768	2,469	1.23	YES	
CARUTHERS	CRTHCA11	FRESNO	6,774	1,782	266	43,049	383	225,480	589	3.62	YES	
SHAFTER	SHFTCA11	KERN	22,362	5,515	765	43,236	772	917,400	1,188	2.29	YES	
WARNER SPRINGS	WNSPCA12	SAN DIEGO	2,455	1,024	479	43,317	373	435,131	1,167	3.41	NO	
CHALLENGE	CHLNCA11	BUTTE	3,397	1,504	634	43,383	1,149	203,067	177	2.73	NO	
ANGELUS	LSANCA34	LOS ANGELES	207,969	51,643	43,523	43,523	9,593	13,660,688	1,424	1.17	YES	
DELANO	DELNCA11	KERN	69,984	13,131	1,011	43,540	1,939	1,975,520	1,019	1.47	YES	
SPRINGVILLE	SPVLA11	TULARE	4,184	1,580	211	43,635	751	1,221,056	1,626	2.85	NO	
FRESNO-CLINTON	FRSNCA02	FRESNO	115,022	32,008	1,322	43,696	4,088	2,751,071	673	1.90	YES	
SOUTH GATE	SGATCA01	LOS ANGELES	165,383	37,748	1,228	44,173	4,611	6,495,277	1,409	1.93	YES	
CORNING	CRNGCA12	TEHAMA	15,479	5,347	1,042	44,196	1,179	800,063	679	2.21	YES	
LSAN-POLYNOS	LSMLCA11	TEHAMA	4,043	1,573	264	44,224	355	324,085	913	2.21	YES	
LSAN-PLYMOUTH	LSANCA13	LOS ANGELES	142,683	39,423	1,469	44,261	5,803	8,835,185	1,523	2.86	YES	
BURREL	BURLCA11	FRESNO	1,065	275	334	44,314	88	420,915	4,783	4.73	YES	
SHASTA LAKE	SHLKCA01	SHASTA	1,122	562	626	45,094	342	598,939	1,751	5.53	YES	
GERBER	GRBRCA11	TEHAMA	3,388	1,206	188	45,095	182	156,889	862	2.51	YES	
LSAN-MADISON 02	LSANCA02	LOS ANGELES	29,800	15,581	378	45,189	7,967	17,506,897	2,197	0.67	YES	
LSAN-UNION	LSANCA06	LOS ANGELES	103,728	35,179	548	45,417	4,504	4,246,068	943	0.81	YES	
LATON	LATNCA11	FRESNO	4,302	1,260	194	45,709	182	292,358	1,606	4.69	YES	
ELK CREEK	EKCKCA11	GLENN	635	207	235	45,734	100	112,378	1,124	3.66	NO	
YREKA	YREKCA11	SISKIYOU	10,505	4,586	618	45,967	1,314	2,859,776	2,176	0.64	YES	
OROVILLE-EAST	ORVLA12	BUTTE	10,358	4,548	753	45,994	1,522	567,717	373	4.61	YES	
LAKEPORT	LKPTCA02	LAKE	11,604	4,718	634	46,011	2,039	1,011,963	496	1.58	YES	
BRAWLEY	BRWLCA11	IMPERIAL	30,830	8,779	1,450	46,033	1,759	573,725	326	1.14	YES	
CAMPIONVILLE	CMPIVCA11	SIERRA	1,716	826	295	46,352	216	128,129	593	6.07	YES	
ANDERSON	ARSNCA11	SHASTA	22,981	9,113	897	46,406	1,747	20,787,568	11,899	3.09	YES	
CROWS LANDING	CWLDCA12	STANISLAUS	1,249	424	84	46,620	91	9,737	107	2.77	YES	
HAMILTON CITY	HMCYCA11	GLENN	2,857	828	243	46,623	145	85,390	589	1.67	YES	
FORTUNA	FTUNCA11	HUMBOLDT	14,086	5,467	535	46,688	1,102	1,180,510	1,071	0.76	YES	
BAKERSFIELD-EMPIRE	BKFDCA11	KERN	39,403	10,179	1,190	46,728	1,142	1,686,358	1,477	1.80	YES	
PARADISE-MAIN	PRDSCA11	BUTTE	28,530	12,800	486	46,778	1,089	17,945,604	16,479	1.19	YES	
SELMA	SELMCA11	FRESNO	33,753	9,229	704	46,855	1,616	2,163,856	1,339	2.20	YES	
WILLOWS	WLWVCA11	BUTTE	10,307	3,747	1,137	46,912	989	500,914	506	2.26	YES	
MONTAGUE	MTAGCA11	SISKIYOU	4,288	1,809	794	47,104	534	37,681	71	1.45	YES	
COULTERVILLE	CTVLA11	MARIPOSA	2,539	1,173	484	47,156	663	1,506,064	2,272	4.88	NO	
BRIDGEVILLE	BGVLA11	HUMBOLDT	724	317	265	47,407	173	200,086	1,157	4.37	NO	
NSCR-WABASH	NSCRCA11	SACRAMENTO	142,725	49,500	2,305	47,473	7,088	12,724,279	1,795	1.03	YES	

QUINTILE 1: MEDIAN HOUSEHOLD INCOME \$0 - \$49,250

Wire Center	CLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered
INGLEWOOD	IGWDC01	LOS ANGELES	127,657	38,542	1,059	47,594	5,028	4,112,744	818	1.36	YES
ORLAND	ORLDC01	BUTTE	16,638	5,891	1,172	47,635	1,400	855,588	611	2.14	YES
DINUBA	DINBC01	FRESNO	34,131	8,718	904	47,728	1,352	811,849	600	2.21	YES
LE GRAND	LGRDC01	MADERA	2,705	792	214	47,866	178	83,790	471	2.31	YES
VINA	VINACA12	TEHAMA	752	274	106	47,907	69	50,297	729	2.48	YES
LITTLE ROCK	LTRKCA11	LOS ANGELES	16,735	4,813	1,302	47,997	969	1,355,734	1,399	3.30	YES
MT SHASTA	MTSHCA12	SISKIYOU	7,346	3,441	662	48,063	1,180	337,222	286	0.83	YES
ALLEGHANY	ALGHCA11	SIERRA	126	54	170	48,068	47	62,324	1,326	4.34	NO
SIERRA CITY	SRCYCA11	SIERRA	261	132	221	48,125	430	178,374	415	1.58	YES
DOWNIEVILLE MAIN	DWNVCA11	SIERRA	424	226	196	48,125	239	104,302	436	1.72	YES
SIERRAVILLE	SRVLC01	PLUMAS	559	263	219	48,125	162	89,367	552	0.83	NO
PARADISE-PINES	PRDSCA12	TEHAMA	11,678	4,908	486	48,315	1,026	667,791	651	2.62	YES
LOLETA	LOLTCA11	HUMBOLDT	2,024	786	195	48,362	123	61,592	501	1.89	YES
JACUMBA	JCUMBCA11	IMPERIAL	2,741	1,059	520	48,616	371	193,318	521	2.69	YES
MURPHYS	MRPHCA11	CALAVERAS	5,700	2,571	448	48,692	818	333,166	407	2.74	YES
COTTONWOOD	CTWDC01	SHASTA	18,728	6,967	671	48,826	2,138	491,600	230	4.17	YES
BEALE-MSVL STERLING	BEALCA11	NEVADA	2,099	520	369	48,920	78	285,020	3,654	0.11	YES
EUREKA	EURKCA01	HUMBOLDT	51,472	21,138	2,316	48,950	4,799	2,260,381	471	0.82	YES
TRINIDAD	TRNDCA11	HUMBOLDT	2,770	1,292	322	49,089	296	1,284,866	4,341	1.77	NO
CAMPO	CAMPCA11	SAN DIEGO	5,541	1,827	640	49,231	474	1,300,100	2,743	2.10	YES
PASKENTA	PSKNCA11	TEHAMA	494	171	137	49,241	101	38,185	378	2.46	NO

Table 11.3

AT&T CALIFORNIA
WIRE CENTER SERVING AREA MEDIAN HOUSEHOLD INCOME
BASED ON 2018 AMERICAN COMMUNITY SURVEY DATA

QUINTILE 2: MEDIAN HOUSEHOLD INCOME \$49,250 - \$61,300

Wire Center	CLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered
QUINCY	QNYCA12	PLUMAS	6,592	2,859	878	49,272	1,838	520,911	283	1.77	YES
SCRM-FRUITRIDGE	SCRMCA13	SACRAMENTO	47,776	15,606	585	49,364	2,983	3,094,602	1,037	1.27	YES
THORNTON	THTNCA11	SACRAMENTO	1,988	625	106	49,368	100	82,079	821	2.82	YES
FORT BRAGG	FTBRCA02	MENDOCINO	16,573	6,771	1,007	49,609	3,227	778,230	241	1.68	YES
LSAN-AXMINSTER	LSANCA15	LOS ANGELES	130,365	45,443	1,157	49,918	7,990	4,583,013	574	1.85	YES
LOYALTON	LLTNCA11	LASSEN	2,548	1,048	615	50,029	546	41,373	76	0.85	YES
COYOTE WELLS	CYWLCA11	IMPERIAL	419	207	99	50,208	46	52,187	1,135	2.05	YES
NORTH SAN JUAN	NSJNCA11	NEVADA	3,525	1,487	193	50,469	490	287,208	586	3.28	YES
UKIAH-MAIN	UKIHA01	MENDOCINO	30,164	10,823	1,279	50,518	3,947	1,763,438	447	1.34	YES
BLUE LAKE	BLKCA11	HUMBOLDT	2,356	1,013	497	50,524	236	2,054,949	8,707	2.80	NO
KING CITY	KGCYCA11	SAN BENITO	19,893	4,851	1,701	50,699	1,327	381,092	287	1.59	YES
RIVERDALE	RVDLCA11	FRESNO	6,541	1,816	287	50,904	336	203,857	607	3.53	YES
CHOWCHILLA	CHWCCA11	MADERA	24,528	5,576	995	51,163	963	722,807	751	2.35	YES
DUNNIGAN	DNGNCA12	YOLO	2,341	631	179	51,200	113	199,801	1,768	2.40	YES
FRUITVALE	FKLCA04	ALAMEDA	103,798	31,705	1,285	51,203	5,109	4,032,206	789	1.27	YES
BANGOR	BNGRCA11	BUTTE	3,503	1,399	129	51,318	335	116,615	348	3.78	NO
MERCED	MRCDA01	MADERA	113,417	33,885	2,255	51,387	5,298	13,354,795	2,521	1.29	YES
MADERA	MADRAA11	FRESNO	94,334	24,282	2,496	51,558	3,987	4,221,757	1,059	1.89	YES
WEED	WEEDCA01	SISKIYOU	6,800	2,792	950	51,647	847	59,972	71	1.23	YES
MCKINLEYVILLE	MKVLCA11	HUMBOLDT	2,506	964	180	51,669	265	283,872	1,071	2.23	NO
REDDING-MAIN	RDNCA02	SHASTA	16,900	6,920	476	51,700	1,103	733,971	665	0.71	YES
GUSTINE	GUSTCA11	MERCED	62,882	25,872	2,087	51,745	4,862	8,834,710	1,817	1.73	YES
ANGELS CAMP	ANCMCA01	CALAVERAS	7,091	2,988	338	52,060	604	271,135	449	2.58	YES
CENTRAL VALLEY	CNVYCA11	SHASTA	17,097	6,639	743	52,215	1,528	477,510	590	2.25	YES
KELSEYVILLE	KLVLCA12	LAKE	8,979	3,512	486	52,245	1,095	750,848	491	3.06	YES
GOSHEN	GSHNCA11	TULARE	7,163	2,005	336	52,249	730	885,059	808	2.49	YES
STONYFORD	STFRCA11	COLUSA	671	299	212	52,273	138	1,445,021	1,979	2.03	YES
JAMESTOWN	JMTWCA11	CALAVERAS	9,307	2,449	586	52,324	800	35,973	261	2.30	NO
HOLTVILLE	HLVCA11	IMPERIAL	8,875	2,602	1,092	52,396	458	825,161	1,031	2.37	YES
EL MONTE	ELMCA01	LOS ANGELES	162,062	40,106	1,325	52,532	9,210	(7,840)	(17)	1.52	YES
LEMOORE-WYMAN	LEMRCA12	FRESNO	7,282	1,588	309	52,537	87	10,477,458	1,138	1.35	YES
SNDG-MARKET	SNDGCA12	SAN DIEGO	123,396	32,192	1,052	52,716	2,184	16,154	186	0.19	YES
CAMP PENDLETON	CMPCDA01	ORANGE	26,239	4,114	590	52,799	107	4,636,474	2,123	1.59	YES
NORTH YUBA	NYUBCA11	YUBA	3,222	1,395	226	52,969	515	33,239	311	0.73	YES
VAN NUYS	VNNYCA02	LOS ANGELES	196,357	63,004	1,031	53,100	10,196	560,614	1,089	2.96	NO
HAWTHORNE	HWTHCA01	LOS ANGELES	116,874	37,277	966	53,183	5,016	7,245,027	711	1.10	YES
BAKERSFIELD-TEMPLE	BKFDCA14	KERN	192,727	57,324	2,472	53,255	6,693	4,526,332	902	1.40	YES
ROSEMEAD	ROSMCA11	LOS ANGELES	101,181	28,381	812	53,276	6,423	8,181,079	1,222	1.63	YES
EL CENTRO	ELCNCA01	IMPERIAL	72,383	18,853	1,503	53,390	3,848	4,851,281	755	1.22	YES
LEBEC-PINE MTN	LEBCCA12	KERN	3,175	1,399	170	53,491	678	3,113,992	671	1.03	YES
NORTH HIGHLANDS-EDC	NHLDCA11	PLACER	116,991	39,703	1,147	53,602	4,053	455,184	671	1.53	NO
SAN LUCAS	SNLCCA11	MONTEREY	760	215	303	53,697	43	2,160,029	533	1.42	YES
GREENFIELD	GNFDCA11	MONTEREY	19,112	3,976	428	53,702	940	35,489	825	1.81	NO
HOPLAND	HPLDCA12	LAKE	1,686	586	294	53,855	201	576,291	613	1.43	YES
POINT ARENA	PNARCA11	MENDOCINO	1,794	763	258	53,958	597	(58,498)	(291)	2.22	YES
BAKER	BAKRCA11	SAN BERNARDINO	892	280	285	54,040	114	542,695	909	1.98	NO
								18,206	160	2.08	NO

QUINTILE 1: MEDIAN HOUSEHOLD INCOME \$0 - \$49,250											
Wire Center	GLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered
SOUTH TAHOE-SUSSEX	STAHA01	ELDORADO	24,018	9,881	762	54,126	2,731	1,633,641	598	0.73	YES
MOUNTAIN PASS	MTSCA11	SAN BERNARDINO	76	28	18	54,174	19	2,247	118	1.71	NO
CAPITOL	LSANCA23	LOS ANGELES	145,840	40,393	1,319	54,249	7,035	8,719,587	1,239	1.48	YES
GROVELAND	GVLDCA11	TUOLUMNE	4,245	2,012	665	54,357	1,863	1,363,315	732	2.39	YES
LA GRANGE	LGRNCA12	MARIPOSA	3,956	1,634	529	54,379	859	648,116	755	2.99	YES
GRIDLEY	GRDLCA11	BUTTE	12,186	4,064	583	54,381	797	600,369	753	2.19	YES
N TAHOE BROCKWAY	BCWYCA11	PLACER	6,048	2,303	226	54,440	924	288,747	312	0.47	YES
ATWATER	ATWACA12	MERCED	49,592	14,790	815	54,471	1,837	1,359,551	740	1.76	YES
PORTOLA	PTOLCA01	PLUMAS	4,255	1,774	674	54,502	982	55,150	56	0.60	YES
TULARE	TULRCA11	TULARE	77,641	22,526	2,254	54,557	3,875	5,979,865	1,543	1.94	YES
FRENCH GULCH	FRGLCA11	SHASTA	557	246	82	54,612	82	1,153,948	14,073	4.74	NO
COMPTON	CMTNCA01	LOS ANGELES	238,700	55,784	2,742	54,683	9,969	26,495,957	2,658	1.78	YES
EXPORT	OLDLCA11	KERN	57,656	19,731	2,640	54,712	2,977	6,248,705	2,099	1.55	YES
LANKERSHIM	LANKCA01	LOS ANGELES	137,038	36,696	922	54,719	6,119	6,465,682	1,057	1.38	YES
LEBEC-MAIN	LEBCCA11	KERN	2,262	792	498	54,722	386	(619,835)	(1,606)	3.13	YES
SONORA	SNRACA13	CALAVERAS	31,047	13,449	1,368	54,784	4,857	2,099,720	432	2.27	YES
CHULA VISTA-THIRD A*	CHVSCA11	SAN DIEGO	134,073	42,596	1,053	54,795	3,894	3,016,260	775	1.31	YES
MODESTO-MAIN	MDSTCA02	SAN JOAQUIN	223,675	72,781	3,127	54,812	11,017	12,213,904	1,109	1.13	YES
GONZALES	GNZLCA11	MONTEREY	9,999	2,189	395	54,900	542	110,885	205	1.26	YES
COLTON	COTNCA11	SAN BERNARDINO	72,284	21,446	1,053	54,907	3,205	7,270,721	2,269	2.32	YES
MODESTO-KELLOG	MDSTCA03	STANISLAUS	71,902	19,026	938	55,041	2,635	2,090,028	793	1.92	YES
JULIAN	JULNCA12	SAN DIEGO	4,876	2,081	959	55,043	879	335,607	382	2.36	YES
REDDING-ENTERPRISE	RDNGCA11	SHASTA	48,773	18,351	948	55,206	3,279	2,668,125	814	1.33	YES
SAN ARDO	SNARCA11	MONTEREY	773	203	401	55,262	119	51,985	437	1.66	YES
MERIDIAN	MIRDCA11	COLUSA	1,045	412	453	55,892	150	26,836	179	2.09	NO
MONTEBELLO	LSANCA35	LOS ANGELES	112,249	32,496	1,675	55,948	7,620	10,617,110	1,393	1.24	YES
BIG SUR	BGSRCA11	MONTEREY	1,338	544	130	55,980	389	297,840	766	3.74	NO
SCRM-GARDEN	SCRMCA03	SACRAMENTO	191,294	61,734	1,902	56,089	8,642	5,412,654	626	1.45	YES
SAN YSIDRO	SNYSCA12	SAN DIEGO	61,413	15,589	389	56,103	1,283	3,318,587	2,587	1.31	YES
ARNOLD	ARNLCA11	CALAVERAS	5,471	2,536	651	56,140	1,936	656,030	339	2.38	YES
LIVE OAK	LVOKCA11	BUTTE	11,182	3,325	359	56,150	672	172,071	256	1.87	YES
MARYSVILLE	MYVICA01	BUTTE	63,943	21,806	1,772	56,230	3,543	2,278,252	643	1.91	YES
MENDOCINO	MNDCCA11	MENDOCINO	4,601	2,196	483	56,328	1,560	447,042	287	1.89	YES
LOS BANOS	LSBNCA12	MERCED	45,156	12,870	1,315	56,419	2,068	2,427,236	1,174	1.57	YES
UKIAH-CALPELLA	UKIHCA12	LAKE	9,482	3,422	668	56,478	995	896,754	901	1.78	YES
PIRU	PIRUCA11	VENTURA	3,168	786	445	56,617	145	201,206	1,388	1.78	YES
CHICO	CHICCA01	BUTTE	120,433	47,793	2,317	56,830	10,221	13,431,753	1,314	1.39	YES
BEAR VALLEY	BVLYCA11	ALPINE	237	122	174	57,015	436	77,407	178	1.51	YES
HOLLYWOOD	HLWDCA01	LOS ANGELES	116,046	52,903	714	57,133	9,481	9,235,038	974	0.92	YES
GRASS VALLEY	GRVYCA01	NEVADA	45,912	19,623	1,397	57,291	7,879	4,440,596	564	1.14	NO
RICHVALE	RCVACA11	BUTTE	470	178	140	57,423	107	99,396	929	1.83	YES
RIALTO	RILTA11	SAN BERNARDINO	134,844	32,659	1,167	57,575	3,898	4,509,123	1,157	1.14	NO
LAKE BERRYESSA	LKBRC11	LAKE	2,411	908	337	57,851	188	236,403	1,257	3.24	NO
GAZELLE	GZLLCA11	SISKIYOU	379	153	174	57,863	44	(9,598)	(218)	1.60	NO
GUALALA	GULLCA11	MENDOCINO	2,913	1,281	213	57,871	1,066	411,310	386	2.49	NO
MONTE RIO	MNRICA11	SONOMA	2,658	1,315	229	57,943	518	178,453	345	2.51	YES
SALINAS-MAIN	SLNSCA01	MONTEREY	114,773	28,407	1,122	57,973	5,792	6,594,941	1,139	0.89	YES
YUBA CITY-MARYSVILLE YBCYA01	YBCYA01	SUTTER	83,293	27,454	1,595	58,015	4,625	3,070,239	664	1.04	YES
JACKSON	JCSNCA01	AMADOR	9,405	3,987	292	58,241	1,451	1,489,460	1,027	1.35	YES
IMPERIAL BEACH	IMBHCA11	SAN DIEGO	84,532	25,195	952	58,312	2,049	1,187,697	580	1.20	YES
MODESTO-DAVIS	MDSTCA52	STANISLAUS	1,754	266	7	58,493	18	10,770	598	1.48	NO
TURLOCK	TURLCA11	STANISLAUS	121,579	37,208	2,361	58,579	6,746	3,215,044	477	1.48	NO
BUTTE CITY	BTCYCA11	GLENN	781	295	185	58,767	109	34,211	314	2.44	NO
FRESNO-WEST	FRSNCA14	FRESNO	87,905	26,963	1,075	58,828	3,283	1,634,671	498	1.70	YES

QUINTILE 1: MEDIAN HOUSEHOLD INCOME \$0 - \$49,250												
Wire Center	CLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered	
BUSH	SNANCA01	ORANGE	194,307	43,683	1,561	58,854	8,268	10,049,734	1,215	1.12	YES	
BAKERSFIELD-COLUMBIA	BKFDCA13	KERN	55,662	18,242	984	59,117	2,365	1,531,355	648	1.41	YES	
SUTTER CREEK	STCKCA11	AMADOR	4,986	2,142	175	59,155	697	774,087	1,111	2.46	YES	
TEHACHAPI	THCHCA01	KERN	28,935	9,261	1,322	59,178	1,787	3,214,001	1,799	1.69	YES	
LEMOORE-MAIN	LEMRCOA11	KINGS	31,227	10,462	756	59,286	1,200	1,995,215	1,663	2.23	YES	
MIDDLETOWN	MDTWCA11	LAKE	9,211	3,635	553	59,454	874	1,259,822	1,441	1.98	YES	
COALINGA	CLNGCA01	FRESNO	22,804	4,329	2,315	59,494	817	809,659	991	2.04	YES	
NEWMAN	NWMNCA12	MERCED	13,453	3,865	465	59,620	549	299,283	545	2.24	YES	
WATERFORD	WTFRCA11	MERCED	13,235	3,828	432	59,642	758	202,143	267	2.74	YES	
SAN LUIS OBISPO	SNLOCA01	SAN LUIS OBISPO	66,978	22,131	1,912	59,884	4,352	8,093,235	1,860	0.87	YES	
PARAMOUNT	PRMTCA01	LOS ANGELES	111,048	30,227	1,162	59,940	4,428	6,483,525	1,464	1.67	YES	
BIGGS	BGGSCA11	BUTTE	3,406	1,155	271	59,976	249	55,457	223	2.20	YES	
NEVADA CITY	NVCYCA11	NEVADA	15,273	6,488	976	59,978	3,415	1,190,145	349	2.25	YES	
VISALIA	VISLCA11	TULARE	142,250	45,576	2,167	60,121	6,971	7,145,650	1,025	1.26	YES	
GUERNEVILLE	GUVLCA11	SONOMA	6,716	3,303	240	60,142	691	229,536	332	2.05	YES	
PALMDALE	PLDLCA01	LOS ANGELES	116,761	33,309	1,719	60,161	4,380	3,902,474	891	0.81	YES	
GRENADE	GRNDCA13	SISKIYOU	1,429	599	191	60,534	81	35,113	433	1.52	YES	
SNDG-C STREET	SNDGCA01	SAN DIEGO	111,737	40,003	1,600	60,568	5,627	17,514,442	3,113	0.62	YES	
SNDG-37TH STREET	SNDGCA06	SAN DIEGO	141,675	54,436	1,452	61,040	3,952	591,861	147	1.20	YES	
LA PALMA	ANHMCA12	ORANGE	21,207	5,659	237	61,117	1,791	4,741,364	2,647	0.87	YES	

Table 11.3

AT&T CALIFORNIA
WIRE CENTER SERVING AREA MEDIAN HOUSEHOLD INCOME
BASED ON 2018 AMERICAN COMMUNITY SURVEY DATA

QUINTILE 3: MEDIAN HOUSEHOLD INCOME \$61,300 - \$75,600

Wire Center	CLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered
SCRM-EMPIRE	SRMCA12	SACRAMENTO	81,716	29,032	890	61,559	4,226	2,829,680	670	1.16	YES
POTTER VALLEY	PTVYCA11	LAKE	1,956	746	362	61,652	528	303,825	575	3.68	NO
BURBANK-THORNTON	BRBNCA13	LOS ANGELES	5,061	1,725	122	61,736	755	441,684	585	0.93	YES
KINGSBURG	KGBGCA11	FRESNO	19,828	6,371	750	62,199	1,028	397,213	386	2.49	YES
47TH STREET	PLDLCA11	LOS ANGELES	47,890	11,953	511	62,279	902	295,814	328	1.00	YES
PINECREST	PNCRA11	TUOLUMNE	396	206	328	62,355	921	347,886	378	0.98	NO
LODI	LODICA01	SACRAMENTO	89,845	30,962	2,422	62,415	5,596	3,188,912	570	1.87	YES
WILDWOOD	GRVYCA12	NEVADA	11,942	4,945	245	62,485	1,442	561,127	389	2.15	YES
BAKERSFIELD-METTLER	BKFDCA15	KERN	1,036	276	1,246	62,537	299	587,513	1,965	1.49	NO
RIVERSIDE	RVSDCA01	RIVERSIDE	176,534	52,070	2,159	62,576	7,926	12,325,791	1,555	1.17	YES
HANFORD	HNFRCA01	FRESNO	72,397	23,330	2,177	62,602	3,748	3,012,915	804	1.75	YES
ROSAMOND	RSMDCA11	KERN	19,694	6,557	1,845	62,746	1,123	1,126,378	1,003	1.77	YES
SODA SPRINGS	SDSPCA11	NEVADA	679	312	503	62,950	527	163,528	310	1.67	YES
WILMINGTON	WLMGCA01	LOS ANGELES	122,253	31,576	1,442	63,045	5,429	5,621,254	1,035	1.36	YES
SOLEAD	SLDDCA11	MONTEREY	27,371	4,113	598	63,119	947	438,771	463	1.17	YES
COBB MOUNTAIN	CBMTCA11	LAKE	3,637	1,598	509	63,237	317	469,998	1,483	1.54	YES
TWAIN HARTE	TWHRCA11	TUOLUMNE	9,297	4,084	494	63,243	1,607	433,859	270	1.78	YES
KYBURZ	KYBRCA11	ELDORADO	182	87	338	63,288	60	118,689	1,978	2.26	YES
EUCLID	GRGVCA01	ORANGE	175,127	44,005	1,350	63,351	6,721	6,651,533	990	0.98	YES
SNFC-BUSH ST	SNFCA01	SAN FRANCISCO	47,068	23,852	433	63,576	14,854	16,928,638	1,140	0.51	YES
STOCKTON-GRANITE	SKTNCA11	SAN JOAQUIN	190,582	60,065	1,940	63,593	7,644	7,457,367	976	1.27	YES
RICHMOND	RCMDCA11	CONTRA COSTA	133,899	43,755	2,249	63,678	7,128	17,866,249	2,506	1.72	YES
SCRM-IVANHOE	SCRMCA02	SACRAMENTO	122,539	51,820	1,424	63,764	7,391	10,337,152	1,399	1.28	YES
PLYMOUTH	PLMOCA11	ELDORADO	11,454	4,659	412	63,828	1,528	734,675	481	2.76	YES
ARLINGTON	ARTNCA11	RIVERSIDE	178,857	48,959	1,286	63,912	5,896	5,091,039	863	1.08	YES
SEASIDE	SESDCA11	MONTEREY	36,270	11,357	566	64,187	1,845	1,736,174	941	0.83	YES
ALHAMBRA	ALHBCA01	LOS ANGELES	121,918	41,765	1,191	64,489	8,889	1,422,125	160	1.02	YES
EL PORTAL	YSMTCA12	MARIPOSA	789	382	324	64,617	299	167,977	562	2.17	YES
GLENDALE	GLDLCA11	LOS ANGELES	172,715	64,320	1,462	64,635	14,660	6,905,488	471	0.83	YES
LEMON	ANHMCA01	ORANGE	209,955	54,936	1,712	64,732	7,849	10,219,169	1,302	0.95	YES
DUTCH FLAT ALTA	DTFLCA11	NEVADA	2,740	1,113	883	64,771	538	318,947	593	4.11	YES
LOCKEFORD	LCFRCA11	SAN JOAQUIN	5,468	1,811	149	64,859	241	268,712	1,115	2.44	YES
SCRM-MAIN	SCRMCA01	SACRAMENTO	51,582	25,739	1,485	64,915	6,182	9,474,455	1,533	0.75	YES
ESPARTO	ESPRCA11	YOLO	5,153	1,282	193	65,044	266	1,154,513	4,340	2.70	YES
CHUALAR	CHLRCA11	MONTEREY	2,000	435	134	65,332	136	65,635	483	1.25	YES
OCEANSIDE-MISSION	OCSDCA11	SAN DIEGO	144,865	46,863	1,603	65,478	4,352	3,464,376	796	0.96	YES
EL CAJON	ELCAJA11	SAN DIEGO	143,151	48,138	1,411	65,748	4,004	3,776,321	943	1.30	YES
HOLLY	OKLDCA12	ALAMEDA	135,774	42,578	1,983	65,758	7,805	8,617,743	1,104	1.23	YES
CAYUCOS	CYCSA11	SAN LUIS OBISPO	3,153	1,542	228	65,815	526	130,443	248	1.38	YES
ORANGE - WEST	ORNGCA14	ORANGE	70,178	18,495	562	65,847	3,181	5,082,482	1,598	0.59	YES
ANNAPOLIS	ANNPCA11	MENDOCINO	774	338	138	66,117	71	18,536	261	2.79	NO
HIGHLAND	HGLDCA11	SAN BERNARDINO	66,802	19,749	726	66,145	2,208	1,166,364	528	1.91	YES
GARDENA	GRDNCA01	LOS ANGELES	141,789	46,236	2,025	66,238	11,967	14,080,398	1,177	1.56	YES
LSAN-NORMANDY	LSANCA12	LOS ANGELES	152,685	61,825	1,140	66,459	9,451	4,303,031	455	1.37	YES
RIO LINDA	RILNCA12	PLACER	28,770	8,700	417	66,465	1,163	4,437,409	3,815	2.24	YES
OKDALE	OKDLCA11	CALAVERAS	34,608	11,736	713	66,487	2,070	722,523	349	1.90	YES

QUINTILE 3: MEDIAN HOUSEHOLD INCOME \$61,300 - \$75,600												
Wire Center	GLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered	
SOUTH TAHOE-TAMARA	STAHC12	ELDORADO	260	123	117	66,519	128	34,220	267	1.56	YES	
SMARTVILLE	SMVCA11	NEVADA	3,668	1,438	285	66,571	318	162,430	511	2.46	YES	
GEORGETOWN	GRWCA11	PLACER	7,602	2,969	472	67,004	1,339	672,652	502	3.63	YES	
BOLSA	SNANCA12	ORANGE	72,643	18,575	766	67,272	2,806	1,828,004	651		YES	
YOSEMITE-MAIN	YSMTCA11	MARIPOSA	1,103	315	205	67,356	529	1,264,378	2,390	0.98	YES	
FORESTVILLE	WVANCA11	MADERA	172	74	58	67,376	267	228,872	857	1.20	YES	
MORRO BAY	FVSLCA11	SONOMA	6,561	2,861	164	67,380	737	244,001	331	2.68	YES	
FONTANA	MRBACA11	SAN LUIS OBISPO	12,111	5,598	588	67,530	993	325,064	327	1.05	YES	
FILLMORE	FNTACA11	SAN BERNARDINO	256,549	60,595	1,704	67,557	5,840	14,245,157	2,439	2.11	YES	
WOODLAND	VNTRCA02	VENTURA	35,813	13,847	728	67,579	2,365	3,920,211	1,658	0.96	YES	
WATSONVILLE	MARNCA11	MONTREY	25,628	7,932	403	67,591	1,358	738,497	544	0.87	YES	
FRONTIER	WTVLCA01	SANTA CRUZ	100,135	26,222	1,237	67,710	7,582	4,268,636	563	1.18	YES	
SNDG-COLLEGE	FLMRA11	VENTURA	17,395	4,821	802	68,011	791	1,047,589	1,324	1.02	YES	
PLACERVILLE-NIAGARA	WDLCA11	SUTTER	53,732	21,786	1,311	68,195	4,358	4,730,372	1,085	1.24	YES	
SCRM-GLADSTONE	WSCRA11	YOLO	104,496	18,673	847	68,235	3,690	6,643,318	1,800	1.05	YES	
IONE	SNDGCA11	SAN DIEGO	93,421	37,577	873	68,334	2,566	5,236,796	2,041	1.21	YES	
RIVERBANK	PLVCA11	ELDORADO	27,223	7,360	576	68,457	2,240	1,278,357	571	3.60	YES	
PLACERVILLE-MAIN	PLVCA11	SAN JOAQUIN	49,776	19,863	1,907	68,544	6,152	9,041,791	1,470	1.05	YES	
SALINAS-HICKORY	SLNSCA11	MONTEREY	67,464	17,778	265	68,636	874	655,688	750	2.42	YES	
STOCKTON-REDWOOD	SKTNCA14	SAN JOAQUIN	49,053	11,918	388	68,679	992	1,024,049	1,032	1.00	YES	
CASTROVILLE	CSVCA11	MONTEREY	14,812	3,788	550	68,767	2,176	4,257,672	600	3.30	YES	
ROHNERT PARK	RTPKCA11	SONOMA	31,806	12,218	457	68,906	1,471	1,701,896	782	1.01	YES	
PITTSBURG-MAIN	PSBGA01	CONTRA COSTA	60,819	18,350	841	69,026	2,121	3,249,595	3,211	1.63	YES	
LINCOLN	LNLCA11	PLACER	20,018	6,839	340	69,193	2,490	946,594	446	0.64	YES	
DAVIS	DNVCA11	YOLO	82,280	28,516	1,042	69,212	840	950,823	1,132	1.17	YES	
LA MESA	LAMCA01	SAN DIEGO	195,998	70,548	2,095	69,309	4,191	3,652,262	871	0.78	YES	
ESCALON	ESCLCA11	SAN JOAQUIN	14,381	4,845	482	69,368	5,791	8,672,064	1,498	1.12	YES	
TAHOE CITY	THCYCA01	PLACER	5,485	2,452	372	69,472	929	550,066	592	2.11	YES	
PASO ROBLES	PSRBCA01	KERN	51,069	18,607	3,305	69,916	2,438	973,650	399	0.52	YES	
CAMBRIA	CMBACA11	MONTEREY	7,407	3,372	575	69,994	4,945	3,563,889	721	1.33	YES	
FRESNO-SIERRA	FRSNCA13	FRESNO	89,820	36,429	1,372	70,088	1,435	3,816,092	2,659	1.17	YES	
AUBURN-MAIN	AUBNCA01	PLACER	45,381	17,863	1,304	70,254	6,388	3,375,526	528	1.25	YES	
FRANKLIN	OKLCA03	ALAMEDA	99,808	46,638	1,647	70,386	5,789	5,542,931	957	1.62	YES	
SAN GABRIEL	SNGBCA01	LOS ANGELES	77,513	24,878	1,647	70,491	12,884	11,414,938	886	0.63	YES	
CLOVERDALE	CODLCA11	MENDOCINO	11,886	4,445	748	70,567	4,610	1,055,746	229	1.07	YES	
WHEATLAND	WTLCA12	NEVADA	7,558	2,660	677	70,682	832	518,399	623	2.94	YES	
MAGNOLIA	NHWDCA02	LOS ANGELES	168,450	71,120	378	70,721	497	328,701	661	1.96	YES	
LSAN-WEBSTER	LSANCA10	LOS ANGELES	148,028	59,363	1,219	70,736	12,672	11,783,334	930	1.28	YES	
BLAIRSDEN	BLRSCA12	PLUMAS	2,228	1,110	609	70,814	9,845	7,396,199	751	1.49	YES	
LSAN-SUNSET	LSANCA29	LOS ANGELES	48,494	27,938	334	70,981	901	81,402	90	0.99	NO	
PITTSBURG - WILLOW *	PSBGA11	CONTRA COSTA	36,707	10,402	666	71,051	5,382	4,083,315	759	1.34	YES	
HUGHSON	HGSNCA11	STANISLAUS	10,582	3,258	209	71,095	1,095	1,799,017	1,643	0.65	YES	
BODEGA BAY	BDBACA11	SONOMA	1,489	733	132	71,276	531	398,144	750	2.00	YES	
PNEDG-SAIKAN	SNDGCA05	SAN DIEGO	112,549	31,609	1,013	71,608	336	123,765	368	1.89	YES	
PEDLEY	PDLYCA11	RIVERSIDE	88,528	22,990	861	71,624	2,182	3,086,282	1,414	1.52	YES	
SEQUOIA	ASMTCA11	FRESNO	299	133	159	71,701	2,466	4,096,354	1,661	1.19	YES	
THREE RIVERS	THRRCA11	TULARE	2,333	1,061	169	71,789	82	224,901	2,743	2.79	NO	
STOCKTON-ASHLEY	SKTNCA12	SAN JOAQUIN	16,322	5,564	355	71,823	609	623,097	1,023	4.80	YES	
ESCONDIDO	ESCNCA01	SAN DIEGO	186,773	58,434	2,363	71,972	1,196	915,543	766	3.10	YES	
VISTA	VISTCA12	SAN DIEGO	169,567	53,375	1,625	72,080	7,483	5,910,509	790	1.16	YES	
OJAI	OJAICA11	SANTA BARBARA	20,419	7,981	650	72,454	5,720	1,857,335	325	1.29	YES	
						72,518	1,639	4,449,347	2,715	2.01	YES	

QUINTILE 3: MEDIAN HOUSEHOLD INCOME \$61,300 - \$75,600												
Wire Center	CLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered	
HOMEWOOD	HMWDCA11	PLACER	2,109	979	341	72,823	1,117	204,783	183	0.71	YES	
FAIR OAKS	FROKGA11	SACRAMENTO	118,277	46,099	1,305	72,890	7,463	3,919,940	525	1.06	YES	
RESEDA	RESDA01	LOS ANGELES	152,800	52,831	1,062	73,165	10,038	4,659,446	464	1.29	YES	
COTATI	CTTICA12	SONOMA	42,090	15,195	633	73,219	1,983	1,200,804	606	0.93	YES	
TORRANCE	TRNCCA11	LOS ANGELES	70,259	22,856	922	73,434	4,260	4,088,914	960	1.34	YES	
NICOLAUS	NCLSCA12	SUTTER	1,085	409	151	73,509	98	37,473	382	3.57	YES	
VALLEJO	VLLJCA01	NAPA	147,798	49,450	2,658	73,843	6,162	6,255,389	1,015	1.29	YES	
MODESTO-KINGSWOOD	MDSTCA04	SAN JOAQUIN	26,331	7,907	380	74,042	1,201	630,027	525	1.03	YES	
MADERA-BONADELLE	MADRCA12	FRESNO	10,636	3,423	279	74,279	369	297,096	805	3.38	YES	
OAKVIEW	OKVWCA11	VENTURA	12,112	4,435	506	74,296	620	921,306	1,486	2.40	YES	
BAYWOOD PARK	BYPKCA11	SAN LUIS OBISPO	14,651	6,106	507	74,318	920	(115,774)	(126)	1.05	YES	
CYPRESS	ANHMCA11	ORANGE	175,912	52,370	1,473	74,329	7,686	9,771,921	1,271	1.26	YES	
EDWARDS	EDWRCA01	KERN	2,334	646	654	74,476	137	113,082	825	0.36	YES	
VALLEY SPRINGS	VYSPCA11	AMADOR	11,872	4,479	284	74,672	1,100	719,316	654	2.86	YES	
WALLACE	WLLCCA11	AMADOR	3,428	1,327	101	74,737	400	257,210	643	2.24	YES	
FALLBROOK	FLBKCA12	RIVERSIDE	55,164	18,688	1,363	74,811	3,475	2,279,117	656	2.55	YES	
SNDG-UNIVERSITY	SNDGCA02	SAN DIEGO	86,010	42,547	1,424	75,064	5,448	10,403,799	1,910	0.71	YES	
NORTHRIDGE	NORGCA11	LOS ANGELES	177,886	58,759	1,232	75,227	10,424	10,587,580	1,016	1.14	YES	
YOUNTVILLE	YNVLC A11	NAPA	4,729	1,830	145	75,235	819	651,011	795	1.77	YES	
SANTA ROSA-MAIN	SNRSCA01	SONOMA	187,650	67,536	2,595	75,473	11,549	31,738,254	2,748	0.90	YES	
HESPERIAN	SNLNCA11	ALAMEDA	138,210	46,197	1,842	75,591	8,284	9,312,541	1,124	1.11	YES	

Table 11.3

**AT&T CALIFORNIA
WIRE CENTER SERVING AREA MEDIAN HOUSEHOLD INCOME
BASED ON 2018 AMERICAN COMMUNITY SURVEY DATA**

QUINTILE 4: MEDIAN HOUSEHOLD INCOME \$75,600 - \$98,800

Wire Center	CLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered
INVERNESS	INVRCA11	MARIN	1,031	481	73	75,625	447	52,463	117	2.76	YES
BETH-EL ISLAND	HTISCA11	CONTRA COSTA	4,034	1,687	356	75,679	265	535,396	2,020	3.08	YES
HAYWARD-DEPOT	HYWRCA11	ALAMEDA	97,158	27,778	1,047	76,026	5,286	(1,906,648)	(361)	0.82	YES
ANTIOCH	ANTOCA11	SACRAMENTO	117,060	35,823	1,576	76,501	5,049	4,352,923	862	1.13	YES
CLOVIS	CLVSCA11	FRESNO	186,828	63,971	2,208	76,515	8,311	7,609,163	916	1.56	YES
LOMITA	LOMTCA11	LOS ANGELES	82,104	29,431	805	76,566	5,732	2,170,860	379	1.27	YES
CLINTON	LSANCA56	LOS ANGELES	141,236	46,405	1,233	77,064	6,516	3,712,225	570	1.26	YES
LAKE OF THE PINE	GRVYCA11	NEVADA	17,218	6,591	367	77,082	1,863	1,697,480	911	1.08	YES
FAIRFIELD	FRFDCA01	NAPA	118,996	39,220	2,054	77,118	5,082	3,260,691	642	0.30	YES
BURBANK	BRBNCA11	LOS ANGELES	115,480	45,570	1,726	77,187	9,868	8,274,319	839	0.30	YES
3RD STREET	SNFCCA17	SAN FRANCISCO	59,530	16,548	757	77,231	4,510	3,953,088	877	1.77	NO
OCCIDENTAL	OCDNCA11	SONOMA	4,340	1,971	136	77,603	599	170,217	284	1.35	YES
GALT	GALTC A11	SACRAMENTO	30,898	9,222	532	77,906	1,448	521,639	360	0.89	YES
MAIN - VENTURA (MON)	VNTRCA11	VENTURA	48,169	18,379	774	77,971	4,798	5,341,917	1,113	1.54	YES
LAKESIDE	LKSDCA12	SAN DIEGO	63,621	22,242	882	78,385	1,795	1,464,090	816	0.79	YES
SNDG-LINDA VISTA	SNDGCA03	SAN DIEGO	138,705	50,118	1,300	78,538	8,083	8,797,595	1,088	1.04	YES
ATASCADERO	ATSCCA11	SAN LUIS OBISPO	34,887	12,991	661	78,588	2,312	1,797,682	778	1.08	YES
NIPOMO	NIPMCA11	SAN LUIS OBISPO	18,064	5,989	397	78,775	999	1,398,477	1,400	1.08	YES
BEAR VALLEY SPRINGS	BVSPCA11	KERN	5,676	2,266	191	78,822	334	799,381	2,393	2.93	YES
ARROYO GRANDE	ARGRCA12	SAN LUIS OBISPO	51,493	20,061	1,229	79,267	3,827	1,042,407	272	1.33	YES
MODESTO-TALLY	MDSTCA05	STANISLAUS	136,967	43,247	1,523	79,588	634	1,121,590	1,769	0.78	YES
FULLERTON	FUTNCA01	ORANGE	17,048	4,870	691	80,745	559	7,942,738	1,157	1.15	YES
IMPERIAL	IMPRCA11	IMPERIAL	13,992	4,418	143	80,786	1,095	456,387	417	0.93	YES
MORO	SLNSCA14	MONTEREY	168,547	46,689	1,755	80,826	9,617	15,462,517	1,608	1.70	YES
BRISTOL	SNANCA11	ORANGE	78,334	27,497	1,448	80,875	6,297	7,899,249	1,254	0.96	YES
SANTA CRUZ-MAIN	SN CZCA01	SANTA CRUZ	215,446	69,967	1,833	81,068	12,910	20,535,390	1,591	1.14	YES
SAN JOSE MAIN	SNJSCA02	SANTA CLARA	95,563	41,612	1,378	81,309	4,157	8,382,196	2,016	0.89	YES
GARNET	PCBHCA01	SAN DIEGO	7,290	3,027	292	81,393	785	416,787	531	1.25	YES
SOUTH TAHOE-MEYERS	STA HCA13	EL DORADO	31,216	11,097	383	81,720	814	499,622	614	0.72	YES
RANCHO SAN DIEGO	RNSDCA11	SAN DIEGO	43,200	17,563	936	81,962	3,961	2,827,112	714	0.59	YES
SONOMA	SANTCA01	SONOMA	78,258	27,520	907	82,218	2,186	2,168,540	992	1.29	YES
SANTEE	SANCA01	SAN DIEGO	23,298	7,420	1,206	82,353	1,345	2,201,524	1,637	0.81	YES
DIXON	DIXNCA11	SOLANO	104,002	38,541	1,159	82,390	7,437	7,483,490	1,006	1.65	YES
SAN PEDRO	SNPDCA01	LOS ANGELES	54,613	22,502	978	82,469	4,979	5,194,553	1,043	1.42	YES
SANTA CRUZ-CAPITOLA	SN CZCA11	SANTA CRUZ	4,532	1,460	167	82,548	658	794,041	1,207	1.04	YES
RED HILL	TUSTCA70	ORANGE	64,794	22,312	768	82,713	3,219	4,927,176	1,531	0.53	YES
EL SOBRANTE	ELSBCA11	CONTRA COSTA	2,244	920	161	82,725	141	38,369	272	1.73	YES
KNIGHTS FERRY	KNFYCA11	CALAVERAS	94,358	27,768	1,111	82,878	4,388	5,548,070	1,264	1.31	NO
BUENA PARK	BNPKA11	LOS ANGELES	2,434	1,065	105	83,042	184	42,096	229	1.21	YES
VALLEY FORD	VYFRCA11	SONOMA	100,762	39,372	1,332	83,151	8,600	8,323,430	968	1.63	NO
BERKELEY	BKLYCA01	ALAMEDA	107,253	36,352	2,121	83,406	5,328	3,836,945	720	0.91	YES
VACAVILLE	VCVLCA12	NAPA	8,721	3,513	279	83,853	1,111	711,818	641	1.42	YES
CLISTOGA	CLSTCA11	LAKE	31,675	13,171	584	83,996	2,794	1,064,033	381	1.98	YES
SEBASTOPOL	SBSTCA11	SONOMA	13,034	4,948	527	84,004	1,530	843,134	551	2.09	YES
AUBURN-PLACER HILL	AUBNCA11	NEVADA	100,325	42,625	979	84,012	7,964	7,456,276	899	1.93	YES
CULVER CITY	CLCYCA11	LOS ANGELES	2,393	1,077	117	84,114	1,202	101,473	84	1.17	YES
STINSON BEACH	STBHCA11	MARIN								2.36	YES

QUINTILE 4: MEDIAN HOUSEHOLD INCOME \$75,600 - \$98,800												
Wire Center	GLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Plant Additions 2018-2019	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered
TRES PINOS	TRPSCA11	SAN BENITO	1,007	385	294	84,430	214	194,387	908	2.04	YES	
HOLLIST REYES	PRSCA11	MARIN	2,397	1,116	159	84,915	825	626,533	759	1.86	YES	
POINT REYES	HLSTCA11	MERCED	51,356	15,494	1,499	85,036	2,923	3,955,078	1,353	1.16	YES	
ORANGEVALE	ORVACA11	PLACER	43,846	16,959	564	85,293	2,287	857,658	375	1.43	YES	
PISMO BEACH	PSBHCA11	SAN LUIS OBISPO	8,693	4,244	365	85,348	736	506,922	689	0.71	YES	
SANTA ROSA-LOS ALAM	SNRSCA11	SONOMA	39,504	16,823	692	85,432	2,537	748,600	295	1.35	YES	
ARCADIA	ARCDCA11	LOS ANGELES	71,871	24,466	590	86,338	4,800	2,927,302	610	1.25	YES	
CROCKETT	CRCTCA02	CONTRA COSTA	3,620	1,645	276	86,430	289	1,112,236	3,849	1.15	YES	
WINTERS	WNTRCA11	NAPA	11,146	3,496	555	86,663	734	1,003,707	1,367	2.44	YES	
SAN MARCOS	SNMCCA11	SAN DIEGO	130,035	42,914	1,392	86,699	4,889	5,953,202	1,218	0.85	YES	
ROCKLIN	RCKLCA11	PLACER	26,211	10,030	384	87,298	1,244	2,533,261	2,036	2.06	YES	
GREEN - PASADENA	PSDNCA11	LOS ANGELES	109,005	45,267	1,572	87,482	12,284	2,992,795	244	0.69	YES	
PAUMA VALLEY	PALACA11	SAN DIEGO	7,553	2,552	675	87,495	812	438,811	540	3.53	YES	
ST HELENA	STHNCA11	NAPA	11,303	4,668	306	87,563	2,372	1,632,751	688	1.27	YES	
SATICOY	SATCCA12	VENTURA	39,139	13,563	595	87,640	1,946	1,340,189	689	1.00	YES	
SNDG-TENNYSON	SNDGCA14	SAN DIEGO	62,496	26,652	1,188	87,821	2,848	5,169,737	1,815	0.93	YES	
SOLAMINT	SLMNCA11	LOS ANGELES	97,782	31,065	1,045	87,850	3,415	4,062,815	1,190	1.23	YES	
DULZURA	DLZRCA11	SAN DIEGO	4,157	1,388	250	87,995	504	388,073	770	2.67	YES	
HEALDSBURG	HLBGCA11	SONOMA	19,151	7,394	863	88,182	2,672	1,507,176	564	2.15	YES	
LAKE PASADENA	PSDNCA12	LOS ANGELES	97,170	32,485	1,047	88,477	5,609	3,825,112	682	1.09	YES	
CONCORD	CNCRCA01	CONTRA COSTA	155,917	56,273	2,266	88,533	8,980	8,627,874	961	1.00	YES	
MONTEREY	MTRYCA01	MONTEREY	53,452	22,846	1,427	88,548	5,760	4,044,369	702	0.88	YES	
NSCR-NORTH NATOMAS	NSCRCA12	SACRAMENTO	57,116	19,878	886	88,703	2,047	4,505,348	2,201	0.44	YES	
SAN GERONIMO	SNGNCA11	MARIN	3,894	1,681	146	88,868	461	79,818	173	2.34	YES	
PETALUMA	PTLMCA01	SONOMA	73,522	27,283	1,494	88,947	4,990	1,764,591	354	0.83	YES	
CARLSBAD-HARDING	CRLSCA11	SAN DIEGO	41,566	16,449	433	89,387	2,206	1,442,785	654	0.89	YES	
CANOGA PARK	CNPKCA01	LOS ANGELES	199,229	69,208	1,752	89,778	13,344	7,082,067	531	1.30	YES	
ANGWIN	ANGWCA11	LAKE	5,055	1,579	163	89,903	591	180,147	305	2.83	YES	
NAPA	NAPACA01	NAPA	100,464	36,247	1,685	89,935	7,620	8,631,474	1,133	1.32	YES	
SNDG-REGENTS	SNDGCA15	SAN DIEGO	85,017	32,527	509	90,269	6,954	5,442,898	783	0.50	YES	
BEN LOMOND	BNLMCA11	SANTA CRUZ	7,578	2,962	174	90,352	579	217,996	377	1.56	YES	
PINE VALLEY	PNVYCA11	SAN DIEGO	2,531	1,033	355	90,364	247	421,706	1,707	2.23	YES	
LEONA VALLEY	LVNYCA11	LOS ANGELES	2,817	1,091	232	90,490	322	440,257	1,367	3.58	YES	
VALLEY CENTER	VLCTCA11	SAN DIEGO	28,762	9,760	1,034	90,583	2,286	1,869,300	818	2.15	YES	
LSAN-MELROSE	LSANCA08	LOS ANGELES	89,469	49,060	770	90,663	11,621	3,769,116	324	1.45	YES	
S WHITE ROAD	SNJSCA11	SANTA CLARA	223,959	55,164	1,424	90,912	8,051	9,930,714	1,233	1.35	YES	
CORONA	CORNCA11	RIVERSIDE	300,683	82,146	2,796	91,046	10,738	16,827,719	1,567	0.97	YES	
PLEASANT GROVE	PLGVCA12	PLACER	2,136	757	222	91,110	160	135,317	846	3.94	YES	
OTAY MESA	OTMSCA11	SAN DIEGO	24,189	4,153	215	91,141	986	3,453,787	3,503	0.69	YES	
COSTA MESA	CSMSCA11	ORANGE	90,910	33,950	1,067	91,262	5,737	7,267,513	1,267	0.98	YES	
TOMALES	TMLSCA12	MARIN	941	410	77	91,380	287	125,136	436	0.83	YES	
ALPICA12	ALPICA12	SAN DIEGO	24,769	8,981	815	91,389	1,624	735,294	453	2.65	YES	
TRACY	TRACCA11	CONTRA COSTA	116,895	32,948	2,333	91,436	4,319	6,539,928	1,514	1.77	YES	
CHAPMAN	ORNGCA11	ORANGE	116,586	37,014	1,433	91,762	6,854	6,179,314	902	0.96	YES	
NEWCASTLE	NWCSA11	EL DORADO	9,429	3,498	340	92,004	924	513,384	556	2.28	YES	
TEMPLETON	TMTNCA11	SAN LUIS OBISPO	10,067	3,696	253	92,072	643	376,711	586	0.79	YES	
BREA	BREACA12	LOS ANGELES	56,620	20,172	799	92,573	2,998	4,673,693	1,559	1.02	YES	
AGUA DULCE	AGDLCA11	LOS ANGELES	4,386	1,555	387	92,763	456	612,024	1,342	2.04	YES	
GEYSERVILLE	GYVLCA11	SONOMA	2,148	773	175	93,148	295	71,152	241	2.20	YES	
OAKLEY	OKLYCA11	CONTRA COSTA	44,507	13,025	662	93,444	1,105	1,455,731	1,317	1.11	YES	
HERALD	HERLCA11	AMADOR	4,683	1,468	150	93,662	273	353,388	1,294	3.11	YES	
SHINGLE SPRINGS	SGSPCA11	EL DORADO	41,875	15,327	715	93,924	3,431	2,199,897	641	2.46	YES	
AROMAS	ARMSCA11	MONTEREY	8,220	2,609	147	94,079	446	384,485	862	1.74	YES	
AIRPORT	IRVNCA11	ORANGE	28,785	12,336	471	94,317	5,656	(2,392,931)	(423)		YES	

QUINTILE 4: MEDIAN HOUSEHOLD INCOME \$75,600 - \$98,800												
Wire Center	CLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered	
IGNACIO	IGNCCA12	MARIN	23,792	9,128	279	94,523	1,539	210,854	137	0.64	YES	
PLACENTIA	PLCNCA11	SAN BERNARDINO	95,755	32,185	1,225	94,835	5,397	3,386,858	628	1.05	YES	
BAKERSFIELD-NOMAD	BKFDCA19	KERN	54,172	17,242	564	95,051	1,972	1,914,820	971	0.66	YES	
HAYWARD-MAIN	HYWRCA01	ALAMEDA	149,809	50,830	1,867	95,158	7,870	8,626,786	1,096	0.92	YES	
WINDSOR	WINDSCA11	SONOMA	30,990	10,379	433	95,286	1,693	381,950	226	1.04	YES	
RAMONA	RAMNCA11	SAN DIEGO	39,010	12,805	997	95,357	1,878	2,398,809	1,277	1.61	YES	
BAKERSFIELD-WEST	BKFDCA17	KERN	88,680	28,272	1,443	95,614	3,311	3,220,205	973	0.99	YES	
TRUCKEE-NORTH STAR	TRUCCA12	NEVADA	709	334	111	95,619	606	45,622	75	0.14	YES	
WASHINGTON	COLACA01	SAN FRANCISCO	122,571	37,195	844	95,828	5,878	10,047,752	1,709	1.00	YES	
FELTON	FETNCA11	SANTA CRUZ	14,205	5,783	412	96,103	976	380,839	390	1.58	YES	
NEWHALL	NHLLCA01	LOS ANGELES	108,112	36,592	1,099	96,295	5,371	4,536,981	845	0.82	YES	
BOULDER CREEK	BLCKCA11	SAN MATEO	10,591	4,487	371	96,710	1,051	440,508	419	2.19	YES	
TRUCKEE-MAIN	TRUCCA11	NEVADA	18,628	7,182	1,495	96,772	3,351	2,647,101	790	0.53	YES	
AVILA BEACH	AVBHCA11	SAN LUIS OBISPO	2,331	1,140	195	97,351	337	62,519	186	1.16	YES	
SNFC-ONONDAGA	SNFCCA06	SAN FRANCISCO	185,326	55,278	1,592	97,410	11,364	11,083,972	975	1.11	YES	
HERCULES	HRCLCA11	CONTRA COSTA	54,153	18,032	791	97,636	2,622	2,637,314	1,006	1.44	YES	
ROCKLIN-MAIN	RCKLCA01	NEVADA	86,396	31,111	1,127	97,687	3,201	6,904,429	2,157	0.64	YES	
SIMI VALLEY	SIMICA11	VENTURA	135,767	44,632	1,590	97,824	7,815	3,172,841	406	0.96	YES	
LOOMIS	LOMSCA11	PLACER	16,608	5,849	375	98,524	1,397	1,062,077	775	1.17	YES	
APTOS	APTSKA12	SANTA CRUZ	27,595	11,341	456	98,693	2,864	9,283,117	3,241	1.15	YES	

Table 11.3

AT&T CALIFORNIA
WIRE CENTER SERVING AREA MEDIAN HOUSEHOLD INCOME
BASED ON 2018 AMERICAN COMMUNITY SURVEY DATA

QUINTILE 5: MEDIAN HOUSEHOLD INCOME ABOVE \$98,800

Wire Center	CLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered
ALAMEDA	ALMDCA11	ALAMEDA	80,481	31,409	1,307	98,953	6,355	9,566,143	1,505	0.81	YES
EL TORO	ELTRCA11	ORANGE	212,802	77,669	2,476	99,910	10,967	5,036,520	459	0.99	YES
LSAN-AIRPORT	LSANCA07	LOS ANGELES	58,988	23,470	820	99,965	7,220	10,004,662	1,386	0.68	YES
FRESNO-WOODWARD	FRSNCA15	FRESNO	28,077	10,635	303	99,983	1,076	826,842	768	0.86	YES
CARMEL VALLEY	CRVYCA11	MONTEREY	8,347	3,337	269	100,129	1,039	642,360	618	2.31	YES
BENICIA	BNCICA11	SOLANO	27,821	10,862	549	100,447	1,943	1,084,881	558	1.01	YES
MISSION - PASADENA	SPSDCA11	LOS ANGELES	34,914	14,280	470	100,757	2,834	133,011	47	0.83	YES
CHULA VISTA-EAST	CHVSCA12	SAN DIEGO	142,192	40,934	1,023	100,804	2,258	4,764,628	2,110	0.57	YES
SUISON CITY	SUISCA11	SOLANO	9,421	2,362	409	101,183	345	450,262	1,305	0.41	YES
CORONADO	CRNDCA11	MONTEREY	22,727	6,788	511	101,561	1,724	1,673,150	971	0.63	YES
CARMEL	CRMLCA11	MONTEREY	20,997	9,493	769	101,721	4,592	4,427,175	964	1.34	YES
HORNBLEND	PCBHCA11	SAN DIEGO	11,871	5,626	413	102,065	548	1,419,259	2,590	1.34	YES
SAN BRUNO	SNBUCA02	SAN MATEO	114,941	37,622	1,243	102,413	9,822	11,668,741	1,188	0.91	YES
SAN JUAN	SNJNCA11	SAN BENITO	98,383	37,119	1,842	102,572	384	299,991	781	1.71	YES
IRVINE	IRVYCA01	ORANGE	150,655	51,685	1,385	102,710	4,684	4,904,884	1,047	0.89	YES
SAN RAFAEL-PARKWAY	SNRFCA11	MARIN	33,988	13,538	464	102,759	2,956	152,686,789	51,653	0.83	YES
CENTURY CITY	WLANCA01	LOS ANGELES	24,855	11,761	323	103,013	5,791	6,639,585	1,147	1.13	YES
MARTINEZ	MRTZCA11	CONTRA COSTA	47,073	17,942	1,260	103,060	3,554	3,009,808	847	0.99	YES
ACTON	ACTNCA11	LOS ANGELES	7,989	2,704	525	103,642	743	683,022	919	1.51	YES
EL SEGUNDO-DOUGLAS	ELSGCA12	LOS ANGELES	25,239	10,319	501	103,955	4,029	4,074,223	1,011	0.64	YES
SNFC-STEINER ST	SNFCCA12	SAN FRANCISCO	176,797	93,909	1,049	104,425	22,366	904,052	40	0.53	YES
W CHYNOWETH	SNJSCA12	SANTA CLARA	204,409	59,453	1,314	104,886	7,594	4,776,788	629	1.71	YES
WOODCREST	RVSDCA11	RIVERSIDE	60,937	18,048	892	105,168	2,640	1,928,655	731	1.39	YES
BRENTWOOD	RNWDCA12	CONTRA COSTA	82,545	26,145	1,541	105,289	3,696	3,239,220	876	1.03	YES
RANCHO MURIETA	RMRCA11	SACRAMENTO	7,066	2,788	132	106,151	523	248,081	474	0.90	YES
POWAY	POWYCA11	SAN DIEGO	60,281	20,144	492	106,289	2,729	1,097,309	402	0.72	YES
SAUSALITO	SSLTCA11	MARIN	11,035	5,763	255	106,500	1,737	1,096,261	631	0.93	YES
FLSM-NIMBUS	FLSMCA12	ELDORADO	44,564	13,310	843	107,313	1,844	2,159,373	1,171	0.47	YES
SAN CLEMENTE	SNCLCA12	ORANGE	71,819	25,189	946	107,575	2,602	3,667,867	1,410	1.03	YES
BELLOMY	SNTCCA11	SANTA CLARA	177,523	64,811	1,835	107,745	8,974	7,283,695	812	1.08	YES
LAGUNA NIGUEL	LGNGCA12	ORANGE	107,583	39,844	1,006	108,034	3,371	3,865,311	1,147	0.62	YES
SNFC-9TH AVENUE	SNFCCA13	SAN FRANCISCO	93,657	38,623	684	108,086	9,186	5,466,598	595	0.78	YES
SNDG-MIRA MESA	SNDGCA16	SAN DIEGO	122,178	38,552	932	108,375	5,310	3,983,021	750	0.69	YES
SHERMAN OAKS / KESTT-SHOKA01	TUSTCA11	LOS ANGELES	102,517	46,233	787	108,561	13,316	6,736,978	506	1.08	YES
TUSTIN	TUSTCA11	ORANGE	139,853	47,250	1,368	108,703	6,962	3,501,977	503	1.08	YES
NICASIO	NICSCA11	MARIN	2,110	767	112	109,146	250	76,975	308	1.81	NO
45TH STREET	OKLDCA11	ALAMEDA	105,768	46,951	1,740	109,396	9,172	9,826,233	1,071	0.94	YES
UNION CITY GREENLEAF	UNYCA11	ALAMEDA	92,992	26,303	1,120	109,708	4,821	4,258,157	883	1.12	YES
MOSS BEACH	MSBHCA11	SAN MATEO	9,169	3,188	234	109,940	830	63,600	77	1.01	YES
SILVERADO	SLVRCA11	ORANGE	4,131	1,492	206	110,186	191	470,590	2,464	2.15	YES
RANCHO BERNARDO	RBRNCA11	SAN DIEGO	99,114	36,774	698	110,720	4,178	2,682,988	642	0.70	YES
SPECTRUM	IRVYCA12	ORANGE	15,346	6,500	235	112,272	1,708	1,979,294	1,159	0.34	YES
ALBANY-SOLANO	ALBYCA11	CONTRA COSTA	76,943	30,713	1,337	112,451	6,236	7,853,330	1,259	1.20	YES
CSTAIC	CSTCCA11	LOS ANGELES	40,327	10,235	803	113,961	3,431	2,334,069	680	0.81	YES
SAN MARTIN	SNMACA11	SANTA CLARA	8,144	2,385	173	114,000	632	1,025,798	1,623	1.87	YES
CORONA DEL MAR	CRDMCA11	ORANGE	95,930	35,282	1,087	114,253	6,350	2,353,378	371	0.92	YES
CALABASAS	CLBSCA50	LOS ANGELES	15,769	5,904	256	114,397	1,058	(74,561)	(70)	0.83	YES

QUINTILE 5: MEDIAN HOUSEHOLD INCOME ABOVE \$98,800													
Wire Center	GLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered		
SAN RAFAEL-MAIN	SNRFA01	MARIN	80,365	28,286	1,076	115,514	6,998	9,203,117	1,315	1.07	YES		
BEVERLY HILLS	BVHLSA12	LOS ANGELES	66,527	30,355	912	115,547	16,372	4,088,565	250	1.28	YES		
CARLSBAD-SOUTH	CRLSCA12	SAN DIEGO	52,850	20,554	675	115,551	3,662	2,550,026	696	0.50	YES		
ENCINITAS	ENCTCA12	SAN DIEGO	85,371	32,964	1,022	115,936	4,571	3,258,969	713	0.78	YES		
PACIFICA	PCFCA01	SAN MATEO	43,341	15,206	437	116,150	3,023	3,277,901	1,084	1.19	YES		
MATHILDA	SNVACA11	SANTA CLARA	20,740	7,606	470	116,831	1,662	(441,239)	(265)	0.57	YES		
PESCADERO	PSCDA11	SAN MATEO	2,146	724	200	117,049	565	100,557	178	1.44	YES		
SNFC-MCOPPIN	SNFCCA04	SAN FRANCISCO	109,382	52,344	912	117,315	10,962	4,844,311	442	0.65	YES		
CORDELLA	CORDCA12	NAPA	21,947	7,138	732	117,995	1,340	1,545,454	1,153	0.83	YES		
ORANGE OLIVE	ORNGCA12	ORANGE	78,868	26,350	1,101	118,325	5,138	4,483,644	873	1.08	YES		
SAUGUS	SAGS0A11	LOS ANGELES	78,716	24,842	715	118,736	2,528	1,961,372	776	1.17	YES		
LA CRESSENTA	LACRCA11	LOS ANGELES	74,268	26,053	1,137	118,946	6,224	2,800,708	450	1.15	YES		
WALNUT CREEK	WNCKCA11	CONTRA COSTA	128,406	55,631	1,858	120,558	11,153	7,837,971	703	0.83	YES		
MILPITAS-ABEL	MLPSCA11	ALAMEDA	97,917	27,306	838	120,821	5,636	7,405,015	1,314	1.01	YES		
SCOTT'S VALLEY	SCVYCA01	SANTA CRUZ	18,140	6,839	291	120,884	1,367	1,176,326	861	0.89	YES		
FREMONT MAIN	FRMTCA11	ALAMEDA	169,572	54,208	1,929	120,952	7,958	5,695,101	716	0.92	YES		
FLSM-BLUE REVINE	FLSMCA14	EL DORADO	47,162	17,059	422	121,140	1,768	2,062,911	1,167	0.52	YES		
REDWOOD CITY	RDCYCA01	SAN MATEO	107,072	35,079	1,430	121,337	7,949	16,594,291	2,088	1.09	YES		
HALF MOON BAY	HMBACA12	SAN MATEO	20,757	7,149	400	121,350	2,349	3,126,514	1,331	1.02	YES		
SNFC-19TH AVENUE	SNFCCA14	SAN FRANCISCO	143,029	53,344	1,242	121,435	11,765	6,627,746	563	0.99	YES		
LIVERMORE	LVMRCA11	ALAMEDA	93,633	32,382	2,382	122,110	6,279	4,679,182	745	0.81	YES		
LA HONDA	LHNCA11	SAN MATEO	2,029	839	117	122,172	389	253,360	651	1.65	YES		
SAN JOSE-FOXWORTHY	SNJSCA14	SANTA CLARA	169,192	61,576	1,631	122,768	9,411	9,980,955	1,061	1.06	YES		
MOORPARK	MRPKCA12	VENTURA	51,423	15,945	886	123,010	2,457	3,054,595	1,243	0.88	YES		
PARK SORRENTO	CLBSCA11	LOS ANGELES	31,041	10,872	404	124,565	3,840	1,280,904	334	0.99	YES		
BALBOA	BALBOA01	ORANGE	18,203	9,328	793	124,706	2,703	3,424,577	1,267	0.92	YES		
JAMUL	JAMLCA80	SAN DIEGO	9,828	2,988	177	124,913	322	8,381	26	1.64	YES		
YORBA LINDA	YRLNCA11	ORANGE	54,853	18,083	720	126,969	3,299	1,607,686	487	0.96	YES		
SAN JOSE-JUNCTION A*	SNJSCA21	SANTA CLARA	45,648	17,077	450	126,991	6,140	34,386,605	5,600	0.42	YES		
AGOURA	AGORCA11	LOS ANGELES	60,946	22,214	943	127,462	4,858	10,049,583	2,069	1.07	YES		
OAKLAND MOUNTAIN	OKLDCA13	ALAMEDA	57,718	23,177	760	128,247	4,550	3,576,851	786	0.78	YES		
GYPSUM CANYON	YRLNCA12	ORANGE	15,030	4,816	250	128,570	562	957,082	1,703	0.39	YES		
LA JOLLA-GIRARD	LJLCA11	SAN DIEGO	27,789	12,175	499	129,045	3,647	1,537,373	422	0.85	YES		
MILLBRAE	MLBRCA11	SAN MATEO	22,613	8,102	262	129,782	2,613	3,271,708	1,252	0.75	YES		
RANCHO PENASQUITOS	RNPSCA11	SAN DIEGO	50,615	15,971	350	130,458	1,446	537,524	372	0.43	YES		
SALINAS-HUNTER	SLNSCA13	MONTEREY	10,367	3,595	149	130,578	680	577,496	849	2.12	YES		
SNFC-25TH STREET	SNFCCA05	SAN FRANCISCO	134,441	53,511	1,285	130,602	10,082	9,974,690	989	0.70	YES		
SANTA MARGARITA	RSMGCA11	RIVERSIDE	86,991	29,271	1,698	132,223	2,003	1,254,728	626	0.62	YES		
SNFC-FOLSOM ST	SNFCCA21	SAN FRANCISCO	32,526	18,377	270	132,795	7,656	5,694,544	744	0.35	YES		
ANAHEIM HILLS	ANHMA17	ORANGE	21,024	7,196	130	132,867	848	1,011,324	1,193	0.82	YES		
CLAYTON	CYTNCA11	CONTRA COSTA	21,851	7,880	540	132,954	1,502	1,312,215	874	1.14	YES		
BURLINGAME	BRLNCA01	SAN MATEO	84,746	31,735	1,029	133,715	7,936	6,323,893	797	0.81	YES		
FLSM-EL DORADO	FLSMCA13	EL DORADO	49,531	14,824	677	134,168	2,631	3,408,552	1,296	0.99	YES		
SAN FELIPE RD - EVE*	SNJSCA15	SANTA CLARA	121,657	31,893	936	134,185	5,113	2,897,241	567	1.24	YES		
LARKSPUR	LRKSCA11	MARIN	29,490	12,505	557	134,574	3,120	3,510,860	1,125	0.95	YES		
MISSION VIEJO	MSVJCAAT	ORANGE	54,909	17,861	722	135,071	1,889	3,507,829	1,857	0.68	YES		
FREMONT ADAMS AVE	FRMTCA12	ALAMEDA	119,089	37,183	1,471	135,586	6,839	6,418,649	939	1.01	YES		
PLEASANTON-13	PLTNCA13	ALAMEDA	8,488	3,385	271	137,212	1,621	(234,029)	(144)	0.31	YES		
SALINAS-GLENVIEW	SLNSCA12	MONTEREY	6,661	2,124	148	137,227	556	116,034	209	0.88	YES		
SAN MATEO	SNMTCA11	SAN MATEO	100,050	37,429	1,020	138,367	7,900	10,169,676	1,287	1.04	YES		
PALO ALTO MAIN	PLALCA02	SAN MATEO	123,366	40,995	1,579	139,713	10,518	11,684,256	1,111	0.94	YES		
CARROLL	SNVACA01	SANTA CLARA	131,767	48,002	1,502	140,016	7,759	10,790,803	1,391	0.90	YES		
SPACE PARK	SNTCCA01	SANTA CLARA	28,713	9,829	649	141,377	4,768	4,173,155	875	0.52	YES		
MOUNTAIN VIEW	MTVWCA11	SANTA CLARA	109,984	41,412	1,599	143,151	7,929	12,856,583	1,621	0.77	YES		

QUINTILE 5: MEDIAN HOUSEHOLD INCOME ABOVE \$98,800

Wire Center	CLLI	County	Population	Households	No. of Census Blocks	Median Household Income	Jan 2019 Access Lines	Total Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month	Broad-band offered
DEL MAR	DLMRCA12	SAN DIEGO	81,468	30,616	861	144,337	5,494	3,276,496	596	0.65	YES
SAN JOSE-DIAL WAY	SNUSCA12	SAN MATEO	199,389	69,922	2,398	147,178	13,069	9,254,154	708	1.21	YES
BISHOP RANCH	BSRNCA70	CONTRA COSTA	16,034	6,020	150	149,491	1,443	827,784	574	0.25	YES
RANCHO SANTA FE	RSFCA12	SAN DIEGO	27,690	9,341	668	150,702	3,255	2,357,706	724	1.17	YES
PALO ALTO SOUTH	PLALCA12	SAN MATEO	51,075	19,179	731	151,964	4,001	3,579,219	895	0.94	YES
SAN RAMON	SNRMCA11	CONTRA COSTA	111,466	36,601	1,263	151,973	4,197	5,382,123	1,282	0.50	YES
MILL VALLEY	MLVYCA01	MARIN	37,705	15,572	632	152,491	3,821	6,620,040	1,733	1.12	YES
SAN CARLOS	SNCRCA11	SAN MATEO	72,826	28,501	943	154,470	6,590	9,597,491	1,456	0.79	YES
PLEASANTON-12	PLTNCA12	ALAMEDA	71,445	24,307	1,108	154,587	4,045	1,897,995	469	0.50	YES
LAFAYETTE	LFYTC A11	CONTRA COSTA	27,595	11,041	429	154,973	2,283	2,727,957	1,195	0.97	YES
MORAGA	MORGCA12	CONTRA COSTA	22,580	7,940	320	155,624	1,735	1,067,878	615	1.34	YES
DANVILLE-12	DAVLCA12	CONTRA COSTA	62,904	22,849	755	160,596	5,110	1,509,885	295	0.78	YES
DANVILLE-13	DAVLCA13	CONTRA COSTA	51,977	18,004	565	164,977	2,391	1,342,445	561	0.50	YES
ALMADEN VALLEY	SNUSCA18	SANTA CLARA	48,254	15,984	647	171,250	2,877	3,254,697	1,131	1.84	YES
TIBURON	TBRNCA11	MARIN	11,918	4,730	170	171,832	1,686	407,837	242	0.55	YES
SUNOL	SUNLCA11	ALAMEDA	2,343	798	165	183,964	191	377,414	1,976	1.89	YES
LA CANADA-OAK GROVE/LACNCA11		LOS ANGELES	1,012	347	10	184,562	14	(124,546)	(8,896)		NO
MENLO PARK	MNPKCA11	SAN MATEO	24,971	9,458	605	188,114	4,016	2,495,102	621	2.32	YES
LOS ALTOS	LSATCA11	SAN MATEO	40,929	15,425	851	193,505	4,386	4,747,321	1,082	1.79	YES
ORINDA	ORNDCA11	CONTRA COSTA	18,508	6,662	334	213,330	1,932	3,980,284	2,060	1.57	YES

A substantial focus of AT&T and Frontier plant investment in recent years has been directed at upgrading its feeder and distribution outside plant to fiber optics aimed at upgrading the companies’ ability to offer high-speed broadband Internet access and video services to customers. It appears that, to some extent, both companies have directed these upgrades toward higher income communities, as shown in Table 11.4.

Table 11.4				
AT&T CALIFORNIA AND FRONTIER CALIFORNIA WEIGHTED AVERAGE MEDIAN HOUSEHOLD INCOME IN WIRE CENTER SERVING AREAS WITH AND WITHOUT BROADBAND SERVICE UPGRADES BASED ON 2018 AMERICAN COMMUNITY SURVEY DATA				
Category	AT&T California		Frontier California	
	Wtd Avg MHI	No. of Wire Centers	Wtd Avg MHI	No. of Wire Centers
No broadband	\$ 50,322	50	51,385	35
FTTP / FiOS				66
Other broadband	\$ 70,616	555	75,252	178

NOTE: AT&T California has deployed FTTP in certain areas, but we do not have the breakdown of such deployment at the individual wire center level. Hence, for AT&T, “Other broadband” should be interpreted as “All broadband,” including both FTTN and FTTP locations.

During 2018 and 2019, Frontier California made Gross Plant Additions identified to individual wire centers totaling approximately \$562-million. As we did for AT&T California, we calculated the similar weighted average Median Household Income of the areas served by these wire centers in each of the five quintile groups, together with the average Gross Plant Addition investment per access line, as summarized in Table 11.5 below. The results are similar to what we found for AT&T. Average gross plant additions per access line were actually higher in the lower income quintiles. However, as with AT&T, Frontier wire centers serving higher income areas tended to have fewer out-of-service incidents and greater broadband availability than their counterparts in lower income communities.



Average gross plant additions investment per access line are similar in all five quintiles for both AT&T and Frontier, but wire centers serving higher income areas tend to have a lower rate of out-of-service incidents and greater broadband availability than their counterparts in lower income communities.

Quintile	Households	Median Household Income	Access Lines Jan 2019	2018-2019 Gross Plant Additions per Access Line	Out-of-Service per 100 ALs per month	Pct Wire Centers with Broadband
0%-20%	294,942	40,438	71,907	\$ 1,249	1.85	51.2%
20%-40%	759,127	53,421	136,170	\$ 2,261	1.21	84.1%
40%-60%	734,943	65,579	109,751	\$ 694	1.24	88.1%
60%-80%	989,671	77,088	260,326	\$ 599	0.93	95.1%
80%-100%	1,284,373	97,266	319,981	\$ 1,170	0.61	100.0%
Total Frontier-CA	4,063,056	74,302	898,135	5,973	1.17	83.6%

NOTE: Individual Census Tracts may include parts of more than one wire center and more than one ILEC serving area. The total number of households passed by Frontier shown here may thus exceed those actually present in Frontier California's service area. However, for our purposes, the relevant calculation is the Median Household Income, which would apply for the entire Census Tract irrespective of which ILEC serves a particular household.

Table 11.6 provides the total Gross Plant Addition investment and the per-access line Gross Plant Additions for each AT&T California wire center, along with the median household income.

Table 11.6

FRONTIER CALIFORNIA
WIRE CENTER REPORTING UNIT SERVING AREA MEDIAN HOUSEHOLD INCOME
BASED ON 2018 AMERICAN COMMUNITY SURVEY DATA

QUINTILE SUMMARY STATISTICS

Quintile	Total Reporting Units	Reporting Units with Broadband	Population	Households	No. of Census Tracts	Median Household Income	Access Lines as of Jan 2019	Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	OOS per 100 ALs per month
Quintile 1: \$0 - \$45,800	43	22	951,007	294,942	206	40,438	71,907	89,818,513	1,249	1.85
Quintile 2: \$45,800 - \$59,400	44	37	2,308,845	759,127	481	53,421	136,170	307,867,961	2,261	1.21
Quintile 3: \$59,400 - \$72,000	42	37	2,451,506	734,943	530	65,579	109,751	76,203,294	694	1.24
Quintile 4: \$72,000 - \$84,800	41	39	3,130,389	989,671	652	77,068	260,326	155,998,170	599	0.93
Quintile 5: \$84,800 and above	43	43	3,556,532	1,284,373	764	97,266	319,981	374,244,802	1,170	0.61
ALL FRONTIER CALIFORNIA OPE	213	178	12,396,279	4,063,056	2,633	74,302	898,135	1,004,132,740	5,973	1.17

Table 11.6

FRONTIER CALIFORNIA
WIRE CENTER REPORTING UNIT SERVING AREA MEDIAN HOUSEHOLD INCOME
BASED ON 2018 AMERICAN COMMUNITY SURVEY DATA

QUINTILE 1: MEDIAN HOUSEHOLD INCOME \$0 - \$45,800

Reporting Unit CLLIs	Reporting Unit Name	County	Population	Households	No. of Census Tracts	Median Household Income	Access Lines as of Jan 2019	Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	QOS per 100 ALs per month	Broad-band Offered
ALPCXAF	ALPAUGH	TULARE	14,211	3,348	2	29,418	67	81,969	1,223	2.39	YES
JSTRXAF	JOSHUA TREE	SAN BERNARDINO	19,348	8,199	5	34,379	616	357,445	580	0.90	YES
DSSHCXAF	DESERT SHORES	IMPERIAL	10,389	2,025	2	34,395	69	100,775	1,461	3.63	NO
HYFKCAXF	HAYFORK	TRINITY	6,947	3,162	3	34,478	526	370,538	704	0.94	NO
ELMGCAXF	EL MIRAGE	SAN BERNARDINO	8,267	1,796	1	34,637	89	248,537	2,793	1.44	YES
LKISCAXF	LAKE ISABELLA	KERN	16,234	7,611	3	35,223	1,112	1,479,504	1,330	1.20	YES
SLCYCAXF	SALTON CITY	IMPERIAL	13,029	2,778	3	35,307	144	554,144	3,848	6.97	YES
KRVLXCAF	KERNVILLE	KERN	10,076	4,796	2	35,341	830	832,307	1,003	1.39	NO
DSCTCAXG	DESERT CENTER	RIVERSIDE	2,043	732	1	36,810	16	53,810	3,363	10.87	NO
HOPACAXF	HOOPA	HUMBOLDT	3,041	960	1	36,830	501	379,305	757	0.64	NO
SNBRCAKX	SAN BERNARDINO	SAN BERNARDINO	125,971	32,093	24	37,254	7,045	47,793,287	6,784	1.03	YES
CRRCRAXF	CORCORAN	KINGS	49,473	10,176	10	37,405	726	418,516	576	1.74	YES
CVLXCAXF	COVELO	MENDOCINO	7,117	3,301	3	38,042	491	420,020	855	2.33	NO
CHSPCAXF	CALIFORNIA HOT SPRI	TULARE	12,243	3,922	2	38,376	285	70,120	246	2.18	NO
WVWLCAXG	WEAVERVILLE	TRINITY	12,811	5,623	4	38,526	1,488	2,933,321	1,971	0.65	YES
CNCKCAXF	CANTUA CREEK	FRESNO	16,282	3,945	3	38,698	62	39,907	624	1.99	NO
LGTCAXF	LEGGETT	MENDOCINO	6,742	2,841	2	38,703	64	85,764	1,383	2.62	NO
YCVYXAG	YUCCA VALLEY	SAN BERNARDINO	37,979	15,608	8	39,268	1,783	1,828,339	1,025	0.97	YES
BORNCAXF	BORON	KERN	12,557	2,984	3	39,743	306	564,701	1,845	1.18	YES
LNPHCAXL	LONG BEACH	LOS ANGELES	55,462	14,425	12	40,061	17,031	11,624,434	683	0.55	YES
LNPNCAF	LONE PINE	INYO	3,378	1,565	1	40,150	455	566,047	1,244	1.01	YES
LSHLCAF	LOST HILLS	KERN	21,548	5,337	4	40,334	224	207,446	926	1.10	NO
WWCKCAXF	WILLOW CREEK	HUMBOLDT	8,206	3,273	3	40,335	787	4,911,000	6,240	1.16	NO
LNWSCAXF	LINDSAY	TULARE	53,481	15,659	10	40,475	1,606	2,066,369	1,287	1.53	YES
SNJOCAXF	SAN JOAQUIN	FRESNO	33,414	8,416	6	40,855	418	180,378	432	1.26	NO
ALPNCAXF	ALDERPOINT	HUMBOLDT	8,276	3,548	2	40,988	89	178,738	2,008	2.21	YES
WLANCXJ	WEST LOS ANGELES	LOS ANGELES	17,037	4,065	3	41,512	26,346	2,946,834	112	0.55	YES
BTNWCAF	BUTTONWILLOW	KERN	5,273	1,399	2	41,545	308	72,422	235	1.52	NO
MDRVCAF	MAD RIVER	TRINITY	12,909	5,442	4	41,890	167	115,378	691	2.04	NO
HIMVYCAF	HOMESTEAD VALLEY	SAN BERNARDINO	22,881	7,687	6	41,910	498	1,351,816	2,714	1.82	YES
ORLNCAXF	ORLEANS	HUMBOLDT	2,884	1,310	1	41,938	161	30,051	187	0.83	NO
DHSPCAXF	DESERT HOT SPRINGS	RIVERSIDE	54,813	19,755	15	42,273	1,770	1,564,312	884	2.38	YES
MCFACAXF	MCFARLAND	KERN	32,701	5,939	4	42,514	606	225,455	372	1.39	NO
FRVLCAXF	FARMERSVILLE	TULARE	24,329	6,736	4	42,857	422	38,422	91	1.66	YES
TWPLCAXF	TWIPLEX/DHSHGCA	SAN BERNARDINO	49,124	16,149	11	43,707	1,039	1,431,870	1,378	1.58	YES
DSPLCAXF	DOS PALOS	MERCED	56,352	15,598	13	43,835	770	514,611	668	1.51	YES
PIRCAXF	PIERCY	MENDOCINO	12,697	5,797	3	44,220	48	46,973	979	1.69	NO
LYVLCAXF	LAYTONVILLE	MENDOCINO	15,344	6,541	3	45,177	672	935,526	1,392	1.70	NO
OLNCCAXF	OLANCHA	INYO	5,946	2,690	2	45,296	89	288,560	3,242	0.89	YES
GRVLCAXF	GARBENVILLE	HUMBOLDT	9,517	4,426	3	45,302	848	1,034,181	1,220	1.63	NO
GLVLCAXF	GLENVILLE	KERN	20,423	9,038	4	45,481	338	143,973	426	1.90	NO
CFCYCAXF	CALIFORNIA CITY	KERN	16,548	5,102	3	45,636	947	422,332	446	0.98	YES
WLDNCAF	WELDON	KERN	23,104	9,145	5	45,672	48	309,077	6,439	1.81	NO

Table 11.6

FRONTIER CALIFORNIA
WIRE CENTER REPORTING UNIT SERVING AREA MEDIAN HOUSEHOLD INCOME
BASED ON 2018 AMERICAN COMMUNITY SURVEY DATA

QUINTILE 2: MEDIAN HOUSEHOLD INCOME \$45,800 - \$59,400

Reporting Unit CLLIs	Reporting Unit Name	County	Population	Households	No. of Census Tracts	Median Household Income	Access Lines as of Jan 2019	Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	QOS per 100 ALs per month	Broad-band Offered
MRVYCAFX	MORONGO VALLEY	SAN BERNARDINO	11,196	4,855	3	45,964	332	505,732	1,523	2.41	YES
ADLNCAFX	ADELANTO	SAN BERNARDINO	45,903	11,453	6	46,932	1,521	10,092,536	6,635	0.59	YES
LCVYCAFX	LUCERNE VALLEY	SAN BERNARDINO	17,533	6,898	5	47,482	500	1,815,148	3,630	2.24	YES
GCHLCAFX	COACHELLA	RIVERSIDE	54,047	13,594	11	47,773	16	498,408	31,150	#N/A	YES
RDLYCAFX	REEDLEY	FRESNO	60,192	16,997	11	47,865	2,029	1,487,428	733	1.31	YES
BRWCAXH/BRSWCAXJ	BARSTOW	SAN BERNARDINO	57,743	20,392	12	47,878	1,836	4,877,360	2,657	0.94	YES
SNBRCAXL	SAN BERNARDINO	SAN BERNARDINO	10,415	2,722	2	47,932	7,045	95,586,573	13,568	1.03	YES
LNBHCAFX	LONG BEACH	LOS ANGELES	67,613	27,920	19	48,201	17,031	11,624,434	683	0.55	YES
BRMSCAFX	BERRANDA MESA	KERN	9,185	1,661	2	48,599	18	0	0	4.61	NO
INYKCAFX	INYOKERN	KERN	15,050	6,854	3	48,668	460	898,391	1,953	1.60	YES
KNLDCAXF	KNIGHTS LANDING	YOLO	5,754	2,034	2	49,534	128	51,705	404	1.46	NO
ANZACAXF	ANZA	RIVERSIDE	10,620	4,179	2	49,797	352	52,653,317	149,583	2.77	YES
LMPCCAFX/SURFCAXF	LOMPOC	SANTA BARBARA	84,169	26,107	24	49,944	3,815	3,844,102	1,008	0.60	YES
FTIRCAFX	FORT IRWIN	SAN BERNARDINO	14,870	4,703	3	49,985	292	317,793	1,088	0.05	YES
EXTRCAFX	EXETER	TULARE	44,453	14,382	8	50,096	1,525	856,172	561	1.04	YES
WHITNCAFX	WHITETHORN	HUMBOLDT	8,564	3,894	2	50,325	547	460,565	842	1.61	NO
FWLRCAXF	FOWLER	FRESNO	32,840	9,334	6	50,724	1,222	1,506,135	1,233	1.54	YES
HEMTCASEF/MLVSCAXF	HEMET	RIVERSIDE	173,599	63,410	38	51,262	0	4,238,801	#DIV/0!	0.64	YES
BBYCAFX	BIG BEAR CITY	SAN BERNARDINO	16,005	6,609	6	51,497	1,513	1,501,957	993	0.73	YES
LNWDCAFX	LENWOOD	SAN BERNARDINO	22,761	8,314	5	51,754	359	934,640	2,603	1.40	YES
INDPCAFX	INDEPENDENCE	INYO	7,664	3,389	3	51,984	119	250,361	2,104	0.92	YES
XF/NSHRCAXF/OASSCAFX/THR											
INDIO	INDIO	RIVERSIDE	246,517	72,837	42	52,451	9,523	5,747,088	603	1.57	YES
SNBRCAFXN	SAN BERNARDINO	SAN BERNARDINO	11,710	3,908	3	52,840	7,045	47,793,287	6,784	1.03	YES
RBNSCAFX	ROBBINS	SUTTER	4,022	1,372	2	52,930	76	26,990	355	1.46	NO
PHLNCAFX	PHELAN	SAN BERNARDINO	34,163	10,249	5	53,210	1,847	2,099,878	1,137	0.97	YES
PLSFCAXG/RNMGCAFX	PALM SPRINGS	RIVERSIDE	137,309	58,120	43	53,297	9,917	7,102,939	716	1.29	YES
SNJCCAXG	SAN JACINTO	RIVERSIDE	93,561	31,338	18	53,761	1,850	1,292,510	699	0.75	YES
SNNGCAFX	SNELLING	MERCED	5,620	1,356	2	53,920	127	643,021	5,063	3.02	NO
TRONCAFX	TRONA	SAN BERNARDINO	16,842	6,831	4	53,935	441	416,075	943	#N/A	YES
SNBRCAFXH/MSCYCAFX	MUSCOY	SAN BERNARDINO	166,326	49,195	31	54,075	4,375	1,283,863	283	1.07	YES
RDGCCAXG	RIDGECREST	KERN	45,961	17,855	9	54,315	3,518	962,671	274	1.20	YES
BRPTCAFX	BRIDGEPORT	MONO	2,502	1,039	1	54,559	431	1,004,643	2,331	0.73	NO
IDYLCAXF	IDYLLWILD	RIVERSIDE	14,846	6,000	4	55,286	1,126	900,395	800	0.98	YES
CRNLNCAFX	CRESTLINE	SAN BERNARDINO	14,050	5,540	4	55,350	1,183	1,321,757	1,117	1.39	NO
BBLKCAFX	BIG BEAR LAKE	SAN BERNARDINO	10,427	4,454	7	55,431	1,302	4,380,012	3,364	0.82	YES
LNBHCAFXH	LONG BEACH	LOS ANGELES	90,596	26,561	18	56,967	17,031	11,624,434	683	0.55	YES
VTVLCAXA/HNDLCAFX	HELENDALE-SILVER LA	SAN BERNARDINO	157,514	48,296	20	56,994	5,700	0	0	0.48	NO
WRWDCAXF	WRIGHTWOOD	SAN BERNARDINO	25,191	9,228	5	57,445	778	494,609	636	0.89	YES
APYVCAFX/DSKNCAFX	APPLE VALLEY	SAN BERNARDINO	213,222	76,264	46	57,709	4,129	9,392,984	2,275	0.76	YES
CZDCAFXG	CAZADERO	SONOMA	5,890	2,882	2	58,416	365	338,581	928	1.76	YES
HSPRCAXF	HESPERIA	SAN BERNARDINO	134,807	40,119	19	58,742	5,327	5,546,481	1,041	0.80	YES
LVNGCAFX	LEE VINING	MONO	9,919	4,383	3	58,779	135	328,045	2,430	0.78	YES
OXNRCAFX	OXNARD	VENTURA	87,489	18,916	18	59,268	6,801	2,244,779	330	0.44	YES
ONTRCAXM	ONTARIO	SAN BERNARDINO	10,185	2,683	2	59,268	12,483	8,921,361	715	0.36	YES

Table 11.6

FRONTIER CALIFORNIA
WIRE CENTER REPORTING UNIT SERVING AREA MEDIAN HOUSEHOLD INCOME
BASED ON 2018 AMERICAN COMMUNITY SURVEY DATA

QUINTILE 3: MEDIAN HOUSEHOLD INCOME \$59,400 - \$72,000

Reporting Unit CLLIs	Reporting Unit Name	County	Population	Households	No. of Census Tracts	Median Household Income	Access Lines as of Jan 2019	Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	QOS per 100 ALs per month	Broad-band Offered
BGPICAXF	BIG PINE	INYO	7,043	3,033	3	59,572	163	280,007	1,718	0.80	YES
RNBGCAXF	RANDSBURG	KERN	11,427	3,650	2	60,153	42	211,524	5,036	0.69	YES
YERIMCAXF	YERMO	SAN BERNARDINO	19,967	7,524	4	60,365	247	513,081	2,077	1.85	YES
TAFTCAXF/FLWSCAXF/MRCPCA\FELLOWS		KERN	64,720	18,725	15	64,720	1,068	600,914	563	0.82	NO
BSHPCAXG	BISHOP	INYO	16,063	6,858	5	61,621	1,804	939,399	521	0.63	YES
JNLKCAXF	JUNE LAKE	MONO	5,965	2,538	2	61,781	275	321,230	1,168	0.44	YES
POMINCAXF	POMONA	LOS ANGELES	139,848	35,938	28	62,056	5,570	3,009,499	540	0.53	YES
PNYNCAXF	PINYON PINES	RIVERSIDE	16,423	7,215	5	62,135	138	134,336	973	1.99	YES
ONTRCAXF	ONTARIO	SAN BERNARDINO	140,375	37,997	28	63,421	12,483	8,921,361	715	0.36	YES
CHLKCAXF	CHINA LAKE	KERN	14,513	5,840	3	63,473	10	171,121	17,112	#N/A	YES
PERSCAXF	PERRIS	RIVERSIDE	170,650	44,750	26	63,910	2,834	3,791,804	1,338	0.81	YES
LNCSXAF/FEDMTCAXF/SNYMCA\EDGEMONT		RIVERSIDE	382,968	110,800	82	64,063	7,632	8,298,291	1,087	0.34	YES
PLDSCAXF/THPLCAXF	PALM DESERT	RIVERSIDE	65,635	30,669	21	64,337	11,235	2,150,963	191	0.99	YES
WEIMRCAXF	WEIMAR	PLACER	9,541	3,861	2	64,344	360	257,275	715	1.10	NO
PCRVCAXF	PICO RIVERA	LOS ANGELES	55,487	14,776	10	64,406	7,276	1,727,179	237	0.79	YES
CRLKCAXF	CROWLEY LAKE	MONO	11,700	4,729	2	64,599	226	232,392	1,028	0.54	YES
MMLKCAXF	MAMMOTH LAKES	MONO	11,700	4,729	2	64,599	1,893	289,274	153	0.47	YES
SNFNCAXG	SAN FERNANDO	LOS ANGELES	65,577	16,052	15	65,044	3,294	2,019,712	613	0.63	YES
SERNCAXF	SEA RANCH	SONOMA	4,120	1,973	2	65,088	555	454,904	820	1.14	YES
TMCVCAXH	TIMBER COVE	SONOMA	4,120	1,973	2	65,088	412	192,403	467	1.38	YES
PACMCAXF	PACOIMA	LOS ANGELES	131,034	30,181	35	65,343	3,583	2,077,214	580	0.57	YES
DWNYCAXF/DWNYCAXG/BLGRC/BELL GARDENS		LOS ANGELES	203,129	59,076	40	65,790	9,204	7,620,203	828	0.90	YES
LMCVCAXF	LEMON COVE	TULARE	10,723	3,840	2	66,139	82	197,903	2,413	0.99	YES
SNTMCAXF	SANTA MARIA	SANTA BARBARA	122,553	34,389	21	66,301	9,401	3,090,196	329	0.35	YES
SNPLCAXF	SANTA PAULA	VENTURA	54,418	16,174	12	66,639	2,185	1,369,991	627	1.21	YES
BNTNCAXF	BENTON	MONO	3,463	1,499	1	66,786	93	84,421	908	1.82	NO
ARHDCAXF	ARROWHEAD FARMS	SAN BERNARDINO	18,900	7,238	6	66,869	1,938	1,626,913	839	0.91	YES
BRDNCAXF	BERMUDA DUNES	RIVERSIDE	65,532	29,239	16	67,305	#N/A	649,431	#N/A	#N/A	YES
DNLP CAXF	DUNLAP	FRESNO	6,304	2,383	1	67,417	222	1,055,035	4,752	6.26	YES
SVYFCAXF	SQUAW VALLEY	FRESNO	6,304	2,383	1	67,417	127	576,469	4,539	3.21	YES
BLPKCAXF	BALDWIN PARK	LOS ANGELES	140,968	34,584	30	67,579	18	2,789,418	154,968	#N/A	YES
MCKTCAXF	MCKITTRICK	KERN	11,798	3,350	2	67,823	151	81,203	538	1.47	NO
CUYMCAXF	CUYAMA	SANTA BARBARA	7,795	2,975	2	68,124	156	23,095	148	1.23	NO
SNRCAXF	SANGER	FRESNO	50,228	15,087	9	68,217	1,944	682,722	351	1.47	YES
YUCPCAXF	YUCAIPA	SAN BERNARDINO	61,118	21,985	11	68,585	#N/A	1,347,191	#N/A	0.92	YES
SPLVCAXF	SEPLVEDA	LOS ANGELES	105,941	28,950	26	68,880	4,804	4,073,543	848	0.60	YES
BDGRCAXF	BADGER	TULARE	11,446	4,465	2	69,471	66	103,341	1,566	6.01	YES
GGVGCAXF	GRANT GROVE VILLAG	FRESNO	11,446	4,465	2	69,471	247	565,602	2,290	1.08	YES
BLFLCAXF	BELLFLOWER	LOS ANGELES	97,920	31,195	22	69,504	16	1,427,814	89,238	#N/A	YES
GDLP CAXG	GUADALUPE	SANTA BARBARA	19,643	6,284	3	69,715	854	440,862	516	0.34	YES
PNCKCAXF	PINE CREEK	INYO	5,181	2,198	2	70,264	112	179,572	1,603	0.86	YES
LNBCAXG	LONG BEACH	LOS ANGELES	87,820	29,373	25	71,389	17,031	11,624,434	683	0.55	YES

Table 11.6

FRONTIER CALIFORNIA
WIRE CENTER REPORTING UNIT SERVING AREA MEDIAN HOUSEHOLD INCOME
BASED ON 2018 AMERICAN COMMUNITY SURVEY DATA

QUINTILE 4: MEDIAN HOUSEHOLD INCOME \$72,000 - \$84,800

Reporting Unit CLLIs	Reporting Unit Name	County	Population	Households	No. of Census Tracts	Median Household Income	Access Lines as of Jan 2019	Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	QOS per 100 ALs per month	Broad-band Offered
SNLDCAFX	SUNLAND	LOS ANGELES	54,838	19,557	18	72,020	3,042	1,343,006	441	0.77	YES
LNBCAXT	LONG BEACH	LOS ANGELES	71,103	32,518	15	72,153	17,031	11,624,434	683	0.55	YES
MUGUCAXF	POINT MUGU NAWC	VENTURA	71,376	19,523	15	72,501	1,789	399,470	223	0.71	YES
LAPNCAFX	LA PUENTE	LOS ANGELES	113,929	31,426	26	72,615	13,617	18,317,209	1,345	0.72	YES
SNMGCAXF	SAN MIGUEL	MONTEREY	21,715	7,839	4	72,686	482	347,236	720	0.54	YES
CLEFCAXF	COLFAX	PLACER	41,535	16,930	7	72,766	722	481,153	666	1.29	NO
ELSNXAGIELSNXCAF	ELSINORE MAIN	RIVERSIDE	196,693	58,922	35	72,855	3,599	0	0	0.51	YES
LNCSXAG/QZHLXCAF	LANCASTER	LOS ANGELES	124,323	36,903	25	72,887	9,847	6,088,224	618	0.63	YES
NRWLCAFX/NRWLCAFX	NORWALK	LOS ANGELES	152,591	40,883	33	72,906	17,632	0	0	0.56	YES
WHTRCAXH	WHITTIER	LOS ANGELES	79,517	21,213	17	73,417	10,409	8,824,810	848	0.47	YES
WNTCCAXG/LTHPCAXF	LATHROP	SAN JOAQUIN	114,605	34,835	24	73,430	73,430	142	142	0.67	YES
RDLDCAXF/LMLNCAFX	LOMA LINDA	SAN BERNARDINO	147,707	52,318	24	73,502	8,765	5,037,680	575	0.50	YES
WMNSCAXF	WESTMINSTER	ORANGE	150,471	45,308	31	74,060	10,713	6,858,353	640	0.71	YES
WHTRCAXJ	WHITTIER	LOS ANGELES	86,512	24,182	19	74,475	7,276	8,824,810	1,213	0.47	YES
SNCYCAXF/QIUVYCAF	QUAIL VALLEY	RIVERSIDE	155,441	52,127	31	74,913	4,334	3,106,005	717	0.55	YES
SYLMAR	SYLMAR	LOS ANGELES	67,163	17,048	16	75,169	2,994	1,354,387	452	0.58	YES
PRDFCAXF	PARKFIELD	MONTEREY	13,821	4,840	2	75,419	32	1,577,595	49,300	0.96	YES
TVVYCAF	TINY VALLEY	FRESNO	20,707	7,286	4	78,071	454	2,978,139	6,560	3.45	YES
LNDNCAXF	LINDEN	SAN JOAQUIN	10,317	3,471	2	78,188	591	525,178	889	1.16	YES
COVNCAXF	COVINA	LOS ANGELES	130,327	40,975	27	78,190	17,683	4,310,449	244	0.57	YES
UPLDCAXF	UPLAND	SAN BERNARDINO	110,358	36,789	27	78,291	2,924,099	136	136	0.49	YES
LAPNCAFX	LA PUENTE	LOS ANGELES	124,931	32,501	28	79,073	13,617	9,158,605	673	0.72	YES
CLEMCAFX	CLEMENTS	SAN JOAQUIN	10,993	3,677	3	79,087	260	211,495	813	1.72	YES
FRTNCAFX	FARMINGTON	STANISLAUS	16,457	5,649	3	79,121	149	110,340	741	1.40	YES
ELWDCAXF	ELLWOOD	SANTA BARBARA	48,686	13,865	12	79,123	177	1,676,191	9,470	1.12	YES
LNBCAXM	LONG BEACH	LOS ANGELES	60,449	24,534	15	79,164	17,031	11,624,434	683	0.55	YES
KNWDCAFX	KENWOOD	SONOMA	11,508	5,711	3	79,911	313	162,676	520	1.20	NO
WHTRCAXF	WHITTIER	LOS ANGELES	103,904	32,336	23	80,177	10,409	8,824,810	848	0.47	YES
MNRVCAFX	MONROVIA	LOS ANGELES	83,169	28,564	18	80,293	6,568	2,391,431	364	0.83	YES
RIPNCAFX	RIPON	SAN JOAQUIN	39,798	13,046	7	80,674	1,636	918,939	562	0.82	YES
CLPCYXAG	LOS ANGELES	LOS ANGELES	73,752	30,704	20	81,227	5,125	1,380,026	269	0.71	YES
CRPRCAFX	CARPINTERIA	SANTA BARBARA	18,963	7,112	5	81,518	1,843	2,356,540	1,279	1.18	YES
ONTRCAFX	ONTARIO	SAN BERNARDINO	72,354	19,652	13	82,442	12,483	8,921,361	715	0.36	YES
HMLDCAFX	HOMELAND	RIVERSIDE	87,195	26,265	13	82,994	1,080	1,871,200	1,733	1.55	YES
OXNRCAXG	OXNARD	VENTURA	40,635	14,404	7	83,066	6,801	2,244,779	330	0.44	YES
CCMNCAXF	CUCAMONGA	SAN BERNARDINO	162,674	54,643	29	84,011	5,536,668	11,051	11,051	3.76	YES
ELRICAXF	EL RIO	VENTURA	86,499	24,021	16	84,079	5,487	851,267	155	0.28	YES
CLMISCAFX	CALIMESA	RIVERSIDE	57,768	20,298	11	84,111	4,385	1,327,034	303	#N/A	YES
LKHGCAFX	LAKE HUGHES	LOS ANGELES	12,445	4,348	4	84,360	557	919,798	1,651	1.32	YES
RNSPCAXF	RUNNING SPRINGS	SAN BERNARDINO	17,008	6,274	5	84,463	576	692,451	1,202	1.23	YES
LAPNCAXL	LA PUENTE	LOS ANGELES	66,152	17,174	15	84,740	13,617	9,158,605	673	0.72	YES

Table 11.6

FRONTIER CALIFORNIA
WIRE CENTER REPORTING UNIT SERVING AREA MEDIAN HOUSEHOLD INCOME
BASED ON 2018 AMERICAN COMMUNITY SURVEY DATA

QUINTILE 5: MEDIAN HOUSEHOLD INCOME \$84,800 and above

Reporting Unit CLLIs	Reporting Unit Name	County	Population	Households	No. of Census Tracts	Median Household Income	Access Lines as of Jan 2019	Gross Plant Additions 2018-2019	Avg Gross Plant Addition per Access Line	QOS per 100 ALS per month	Broad-band Offered
SLVNCXG	SOLVANG	SANTA BARBARA	29,720	11,175	7	84,811	3,971	2,064,205	520	0.89	YES
ARTSCAXF	ARTESIA	LOS ANGELES	87,105	26,431	18	84,811	#N/A	1,774,273	#N/A	#N/A	YES
CLMTCAXF/LVRNCAXF/SNDMCA)	CLAREMONT	LOS ANGELES	205,887	66,467	43	84,879	13,837	47,848,465	3,458	0.50	YES
MENTCAXF	MENTONE	SAN BERNARDINO	65,234	22,141	10	86,577	1,874	515,667	275	0.80	YES
LSALCAXF	LOS ALAMOS	SANTA BARBARA	15,080	5,256	3	86,944	418	263,508	630	0.51	YES
SNMNCAXJ	SANTA MONICA	LOS ANGELES	49,527	25,144	12	86,959	19,269	4,600,613	239	0.60	YES
MURTCAXF	MURRIETA	RIVERSIDE	138,806	43,903	20	87,529	6,918	2,091,434	302	0.29	YES
WLHNCAXH	WEST LOS ANGELES	LOS ANGELES	47,359	23,619	12	88,615	26,346	5,893,669	224	0.55	YES
LAHBCAXF	LA HABRA	LOS ANGELES	84,736	26,989	17	89,381	7,362	2,105,781	286	0.82	YES
AZUSCAXF/GLNDXCF	GLENDORA	LOS ANGELES	72,815	23,997	19	89,516	6,967	1,795,702	258	0.75	YES
CHNOCAXF/FLSRXCF	CHINO	SAN BERNARDINO	247,025	68,399	41	91,496	12,261	4,258,148	347	0.34	YES
WLNTCAXF	WALNUT	LOS ANGELES	84,519	23,934	23	92,341	11	1,500,298	136,391	0.80	YES
TMCLCAXG/RNCACAXF	RANCHO CALIFORNIA	RIVERSIDE	137,653	43,904	23	92,348	10,100	3,787,900	375	0.46	YES
HNBHCAXF	HUNTINGTON BEACH	ORANGE	263,025	101,820	60	92,466	13,391	28,678,477	2,142	0.71	YES
SLBHCAXF	SEAL BEACH	ORANGE	79,676	33,599	25	92,734	12,899	2,482,731	192	0.53	YES
SNBCCAXF/SNBCCAXG/GOLTCAXF	GOLETA	SANTA BARBARA	209,072	79,142	47	92,962	17,535	11,562,408	659	0.91	YES
WHTRCAXG	WHITTIER	LOS ANGELES	64,176	21,578	12	94,932	10,409	8,824,810	848	0.47	YES
DMBRXCF	DIAMOND BAR	LOS ANGELES	48,964	15,807	10	95,314	8,088	610,249	75	0.31	YES
WLHNCAXF	WEST LOS ANGELES	LOS ANGELES	91,233	42,852	25	96,345	26,346	19,029,646	722	0.55	YES
LNHBCAXS	LONG BEACH	LOS ANGELES	80,970	28,222	18	101,262	17,031	11,624,434	683	0.54	YES
TMCLCAXH	TEMECULA	RIVERSIDE	60,004	18,298	10	101,569	#N/A	1,848,191	#N/A	0.46	YES
GRHLXCF	GRANADA HILLS	LOS ANGELES	98,395	33,273	26	102,895	5,064	1,186,040	234	0.64	YES
GLRYCAXF	GILROY	LOS ANGELES	68,271	20,130	14	103,035	5,825	2,898,508	498	0.72	YES
CMRLCAXF	CAMARILLO	SANTA CLARA	95,910	34,623	19	104,661	7,544	2,411,594	320	0.28	YES
THOKCAXF	THOUSAND OAKS	VENTURA	62,872	24,201	15	105,306	8,389	4,669,964	557	0.30	YES
NOVTCAXF	NOVATO	MARIN	52,361	20,468	11	106,310	3,274	3,926,776	1,199	0.63	YES
ETWNCAXF	ETWANDA	SAN BERNARDINO	78,165	21,310	8	109,927	1,840	726,253	395	0.52	YES
PDRCAXF	PLAYA DEL REY	SAN DIEGO	68,864	36,028	17	110,118	6,323	1,532,993	242	0.78	YES
SNMNCAXG	SANTA MONICA	LOS ANGELES	50,936	26,689	11	114,244	19,269	4,600,613	239	0.00	YES
SRMDCAXF/PSDNXCF	PASADENA	LOS ANGELES	26,925	10,517	6	114,251	2,831	980,394	346	0.83	YES
MRHLXCF	MORGAN HILL	SANTA CLARA	58,878	18,958	14	120,798	4,867	2,810,743	578	0.62	YES
NWPKCAXF	NEWBURY PARK	VENTURA	66,599	23,158	13	121,138	168	767,743	4,570	0.18	YES
AXFRHLXCF/TRNCCAXF/TRNCCAXG	HERMOSA BEACH	LOS ANGELES	328,073	129,798	72	122,014	1,022	105,018,958	102,758	0.36	YES
THOKCAXH	THOUSAND OAKS	VENTURA	48,287	16,239	10	125,420	1,653	2,334,982	1,413	0.31	YES
LGBHCAXF/SLGBXCF	LAGUNA BEACH	ORANGE	68,337	29,336	13	139,341	2,539	3,143,827	1,238	0.75	YES
MALBCAXG	MALIBU	LOS ANGELES	17,218	6,332	5	143,695	4,240	29,632,161	6,969	0.47	YES
TPNGCAXF	TOPANGA	LOS ANGELES	10,325	4,323	3	144,583	599	1,093,056	1,825	0.81	YES
LSGTCAXG	LOS GATOS	SANTA CLARA	15,919	6,417	4	148,035	6,214	2,815,697	453	1.05	YES
MALBCAXF	MALIBU	LOS ANGELES	21,237	7,439	6	149,077	4,240	29,632,161	6,989	0.47	YES
LSGTCAXF	LOS GATOS	SANTA CLARA	53,716	21,990	13	149,797	6,214	5,631,395	906	1.05	YES
LSGTCAXA	LOS GATOS	SANTA CLARA	40,992	15,652	8	156,576	6,214	2,815,697	453	1.05	YES
PCPLCAXF	PACIFIC PALISADES	LOS ANGELES	30,783	12,536	9	193,824	6,181	1,170,774	189	0.75	YES
BELRCAXF	BEL AIR	LOS ANGELES	30,883	12,279	12	194,009	438	1,283,863	2,931	1.05	YES

Frequency and restoration of service outages

AT&T California. The frequency with which service outages occur in any given wire center is driven, in large measure, by the physical condition of the ILEC's central office and outside plant in the wire center's serving area. The rapidity with which a service outage is restored is also affected by the condition of the plant, but may be more directly related to the available resources that the ILEC is able to deploy to correct the problem. For this reason, we have examined these two aspects of service quality separately.

Figures 11.1 through 11.4 are bar graphs showing the values of the four service quality metrics in each of the five MHI quintiles. Figure 11.1 presents the number of service outages per 100 access lines separately for each of the five MHI quintiles, for AT&T California during the 2018-2019 Phase 2 study period. As the chart shows, there appears to be a clear relationship between the frequency of service outages and the median household income of the communities in each of the five MHI quintiles, with the lowest rates of service outages occurring in the highest income communities. Figures 11.2 through 11.4 present three service restoration metrics, also separately for each of the five MHI quintiles. Figure 11.2 shows the percentage of service outages that are restored within the first 24 hours; Figure 11.3 shows the average duration of service outages; and Figure 11.4 shows the average number of days required for AT&T to clear 90% of service outages. Although these metrics all vary across the five MHI quintiles, there is no obvious relationship between these metrics and the MHI for each quintile. Thus, while the overall condition of AT&T California's plant may be better in higher income communities, the company's response to addressing and resolving service outages appears to be more uniform in all income areas.

Figures 11.5 through 11.8 provide long-term trend lines for each of these four metrics over the full 2010-2019 Phase 1/Phase 2 study period. The clear relationship between the outage rate and MHI has persisted throughout the ten years, with the higher income communities consistently experiencing the lowest outage rates. However, no such pattern is discernable for the three restoration metrics.

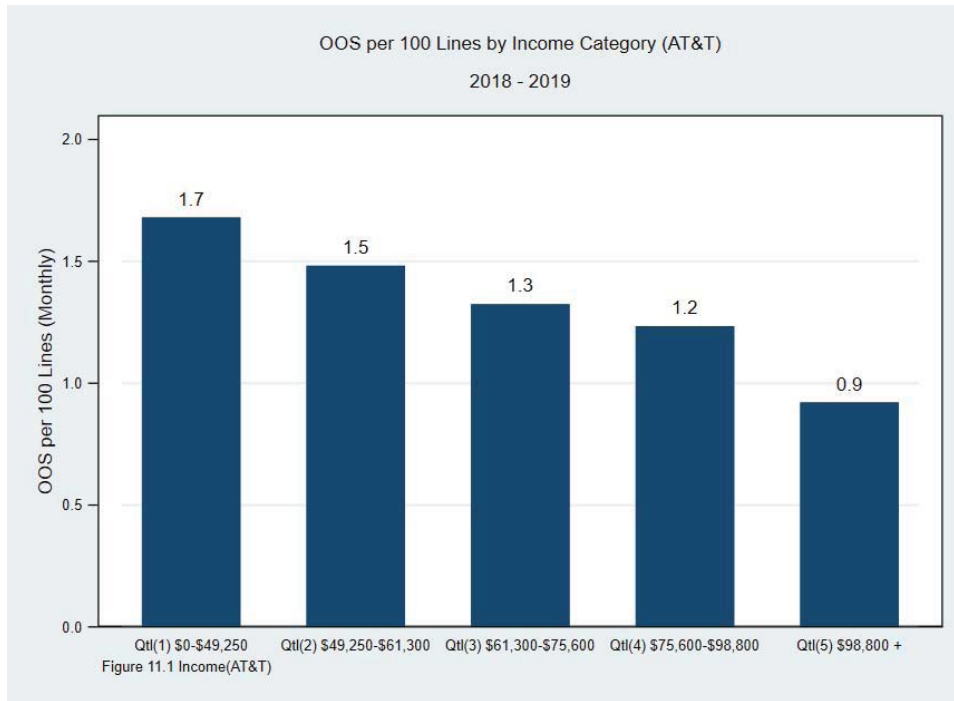


Figure 11.1. AT&T California Service Outages per 100 Access Lines per Month for the Five Median Household Income Quintiles, 2018-2019.

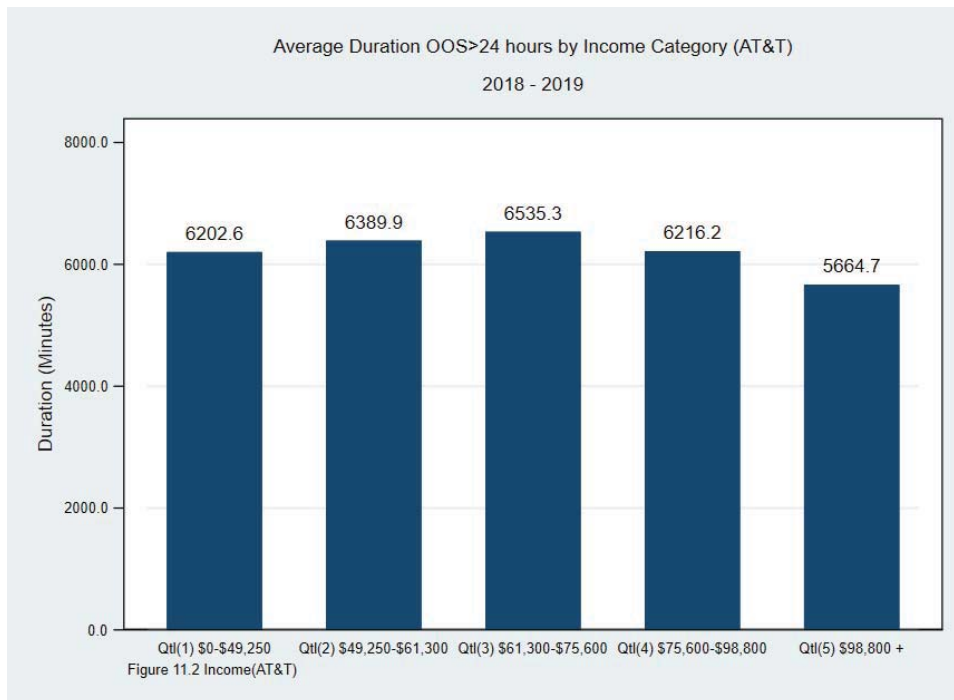


Figure 11.2. AT&T California Average Duration of Service Outages for the Five Median Household Income Quintiles, 2018-2019.

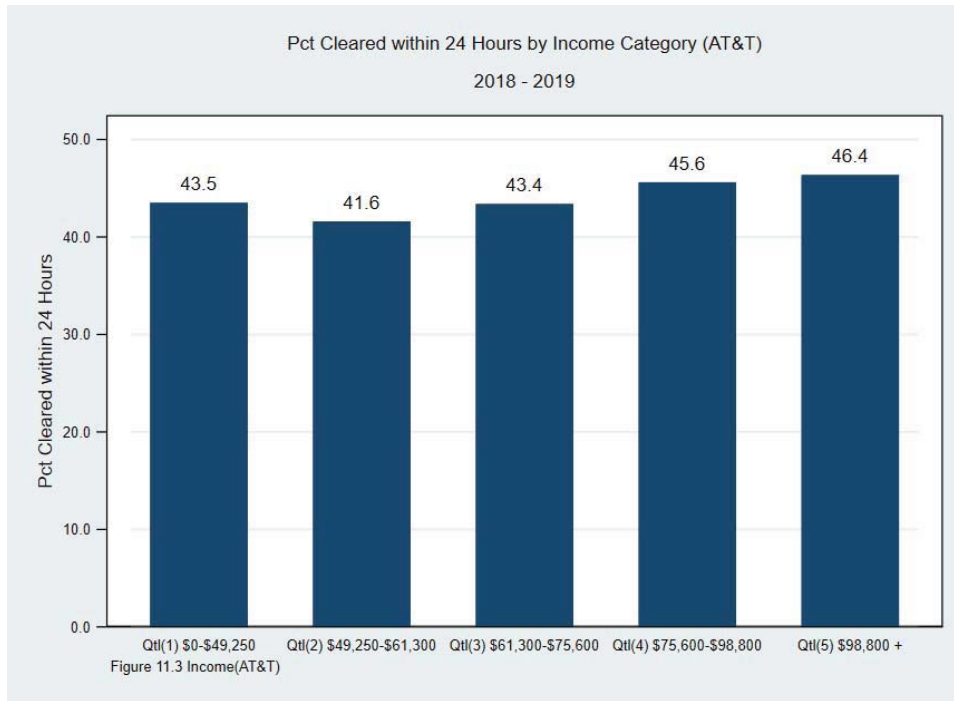


Figure 11.3. AT&T California Percent of Service Outages Restored Within 24 Hours for the Five Median Household Income Quintiles, 2018-2019.

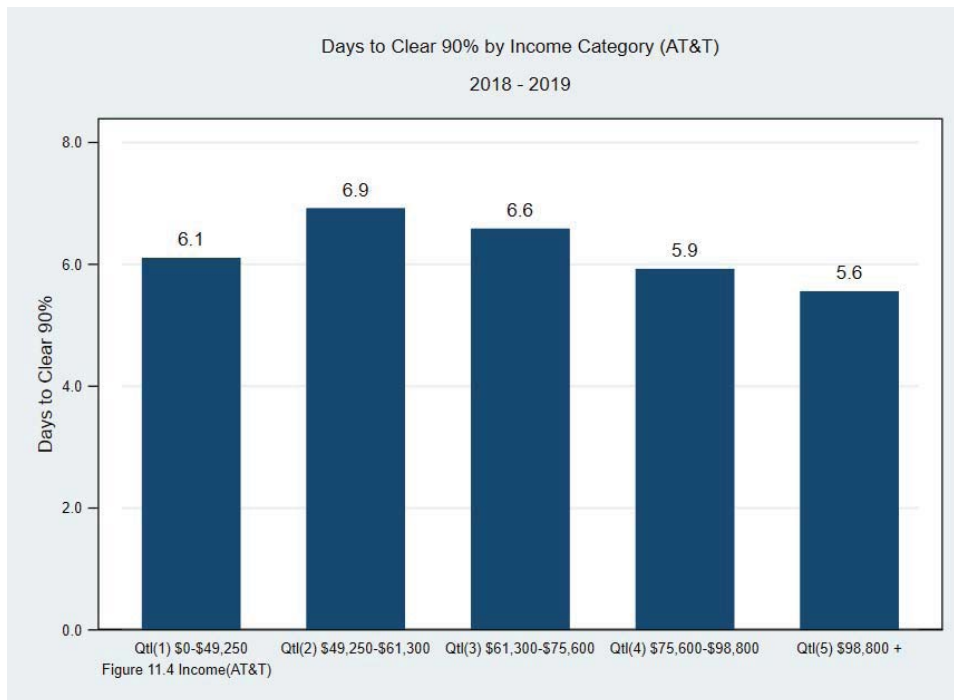


Figure 11.4. AT&T California Average Number of Days Required to Restore 90% of Service Outages for the Five Median Household Income Quintiles, 2018-2019.

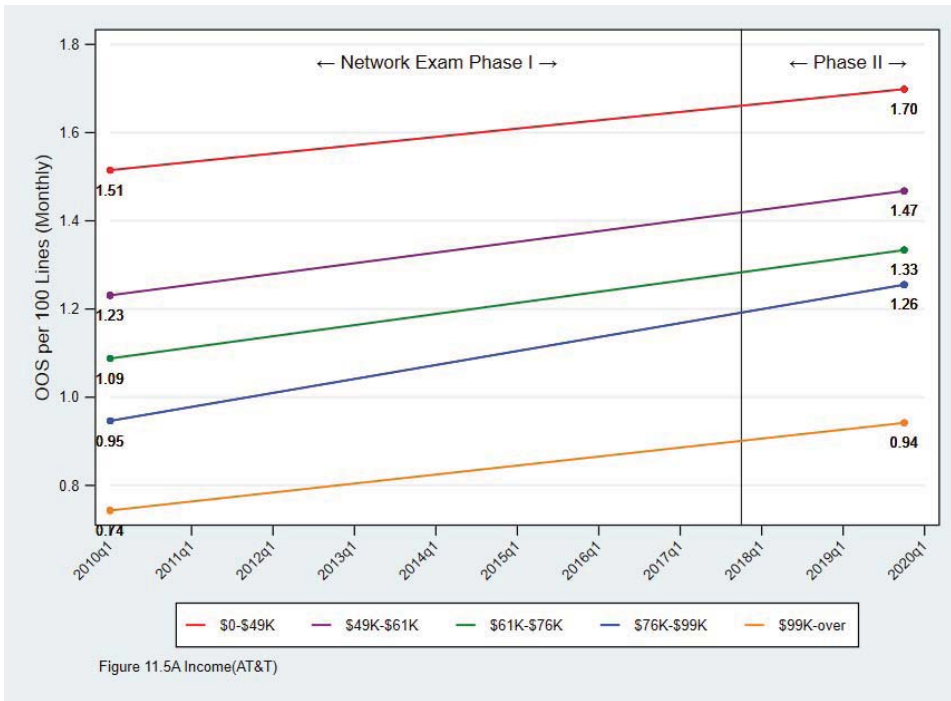


Figure 11.5A Income(AT&T)

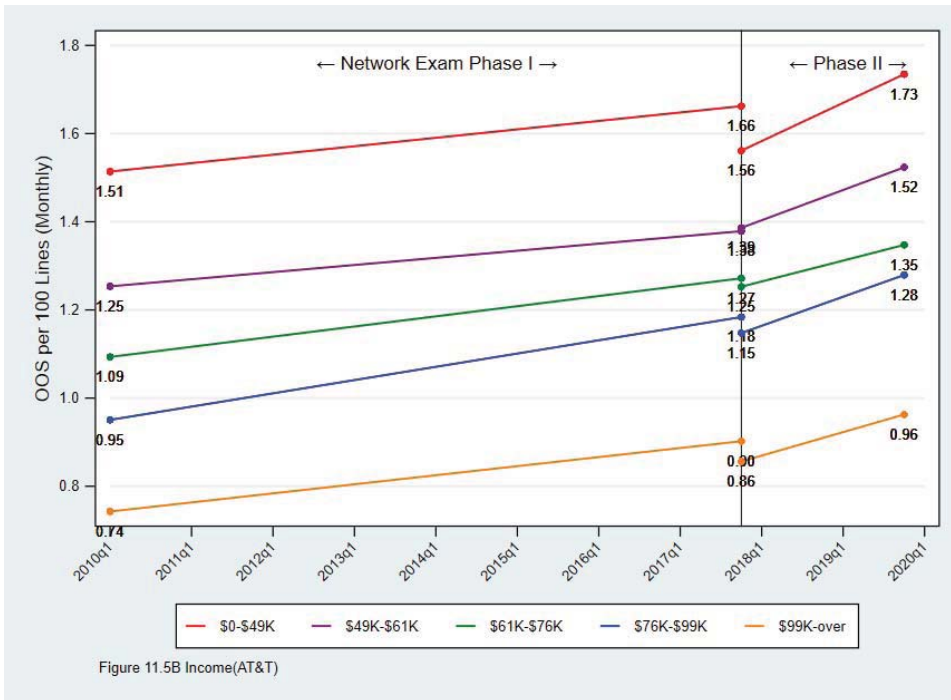


Figure 11.5B Income(AT&T)

Figure 11.5. AT&T California Service Outages per 100 Access Lines per Month, Long-term trends for the Five Median Household Income Quintiles, 2010-2019.

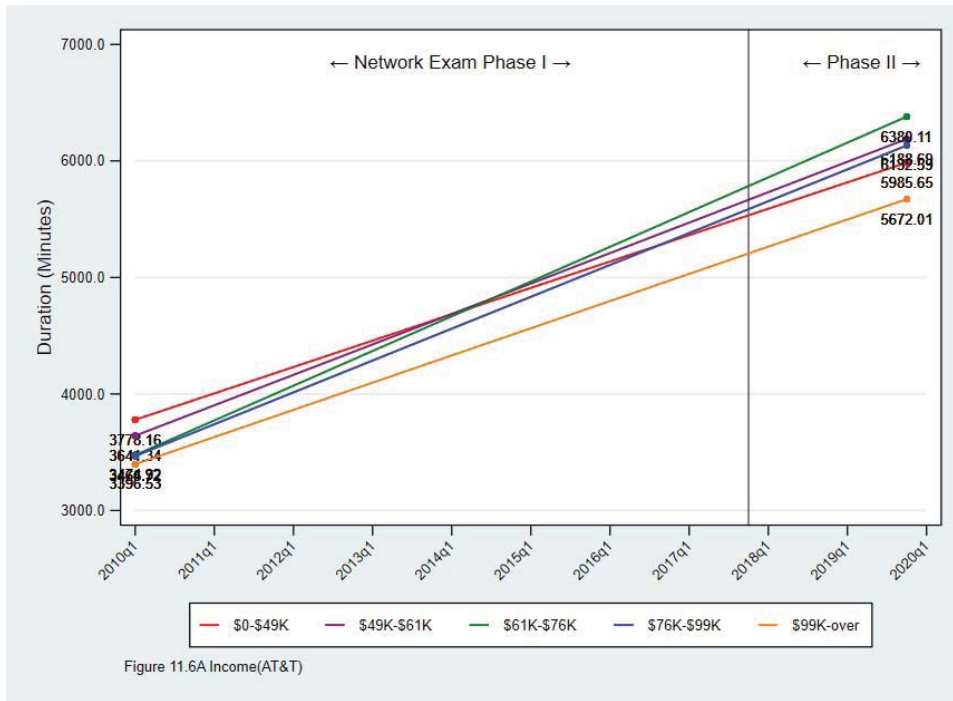


Figure 11.6A Income(AT&T)

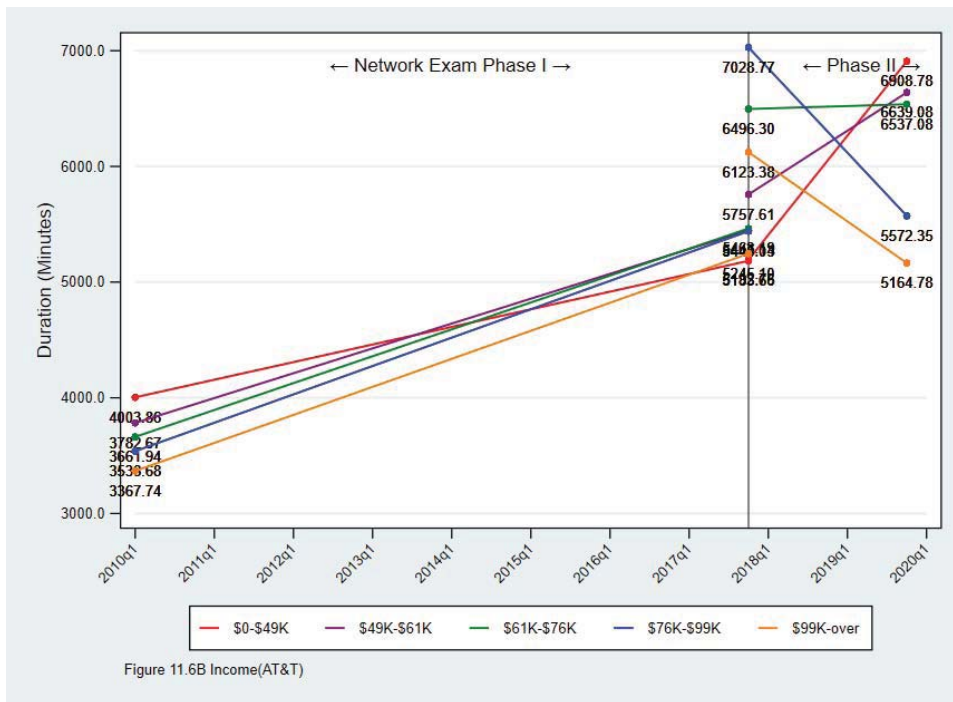


Figure 11.6B Income(AT&T)

Figure 11.6. AT&T California Average Duration of Service Outages, Long-term trends for the Five Median Household Income Quintiles, 2010-2019.

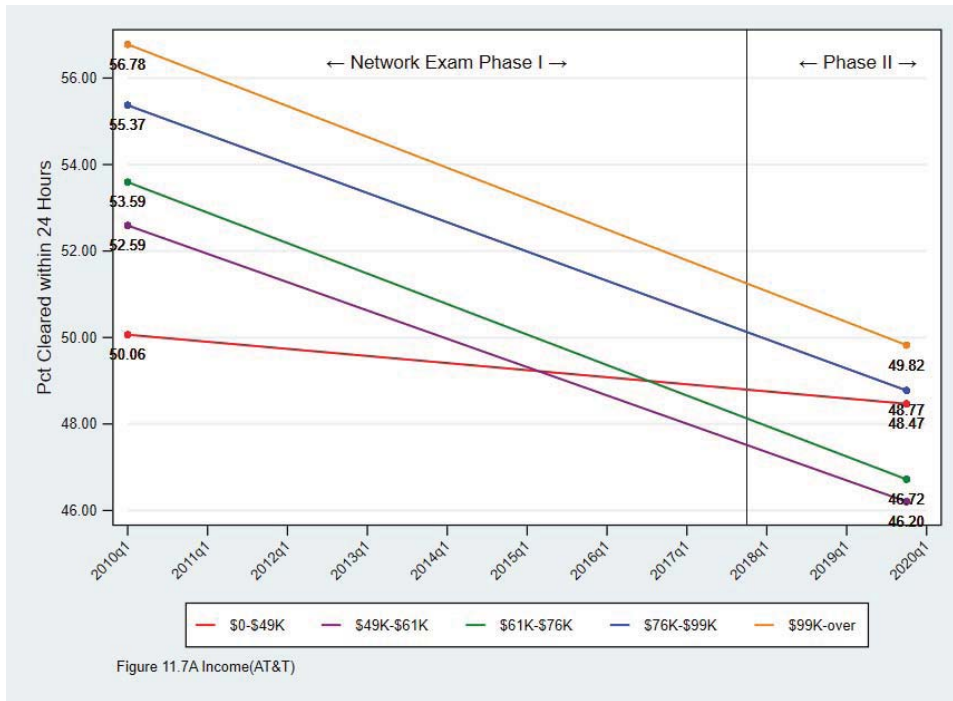


Figure 11.7A Income(AT&T)

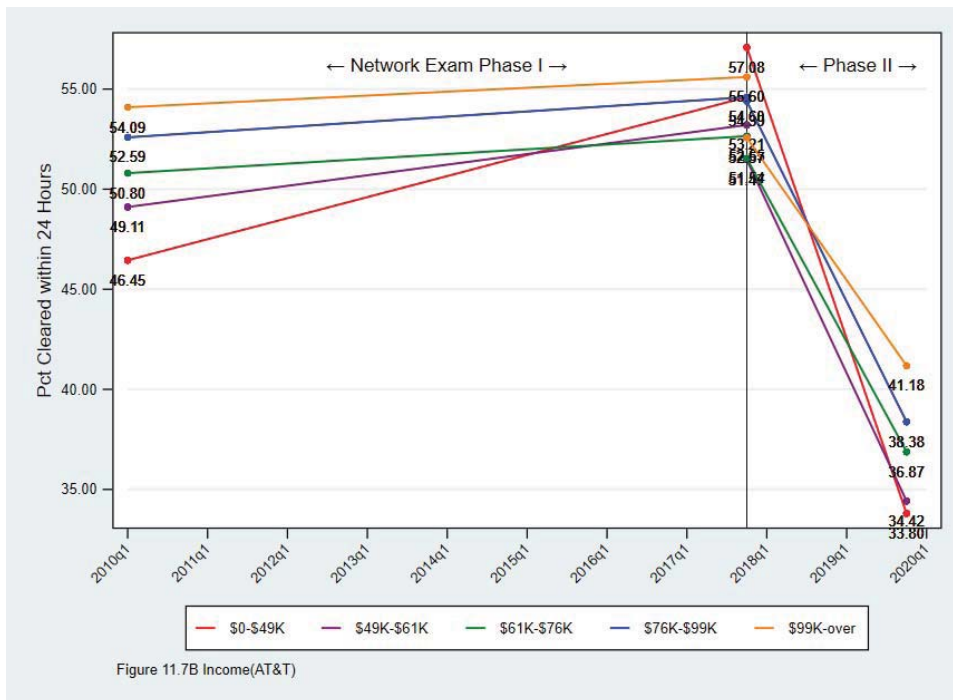


Figure 11.7B Income(AT&T)

Figure 11.7. AT&T California Percent of Service Outages Restored Within 24 Hours, Long-term trends for the Five Median Household Income Quintiles, 2010-2019.

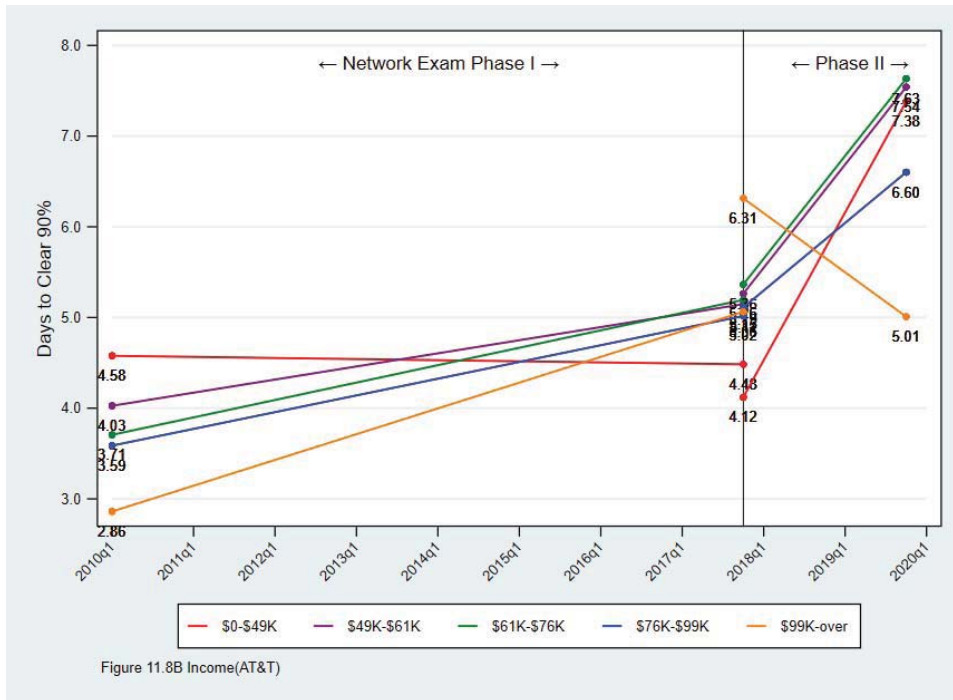
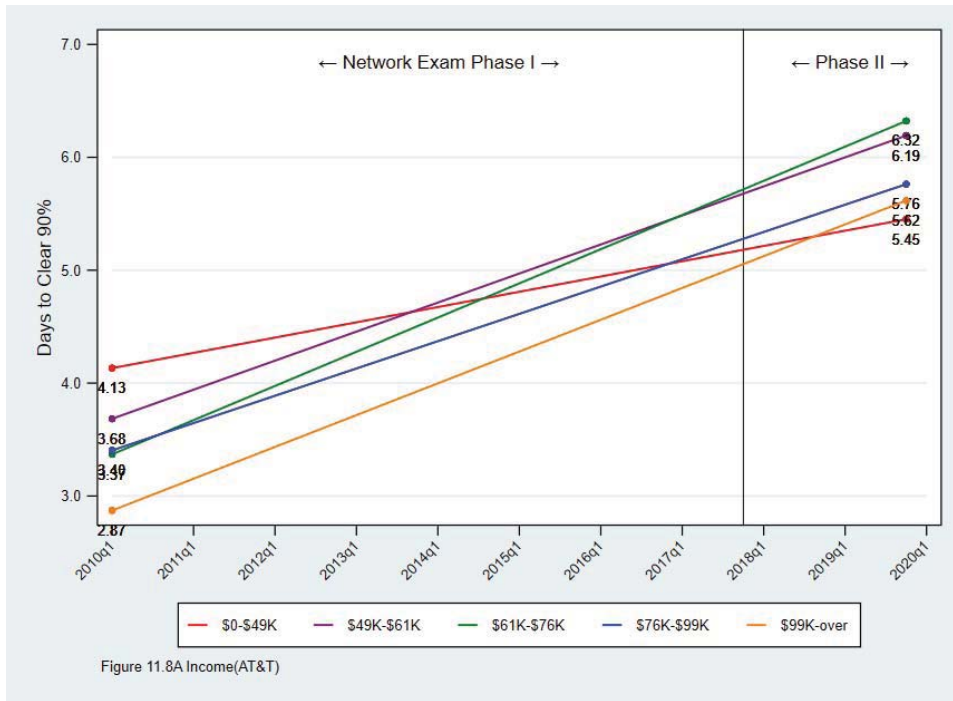


Figure 11.8. AT&T California Average Number of Days Required to Restore 90% of Service Outages, Long-term trends for the Five Median Household Income Quintiles, 2010-2019.

Frontier California. Figures 11.9 through 11.12 present the corresponding bar graphs for Frontier California wire centers. The results for Frontier are quite similar to those for AT&T: The Frontier data also shows a clear relationship between income levels and the frequency of service outages, with the highest income communities experiencing the lowest outage rates (Figure 11.9). And as with AT&T, the three restoration metrics show no discernable household income-related pattern (Figures 11.10 through 11.12).

Figures 11.13 through 11.16 provide long-term trend lines covering the period under Frontier ownership, April 2016 through December 2019. And, as with AT&T, there is no discernable income-driven pattern with respect to any of the restoration metrics.

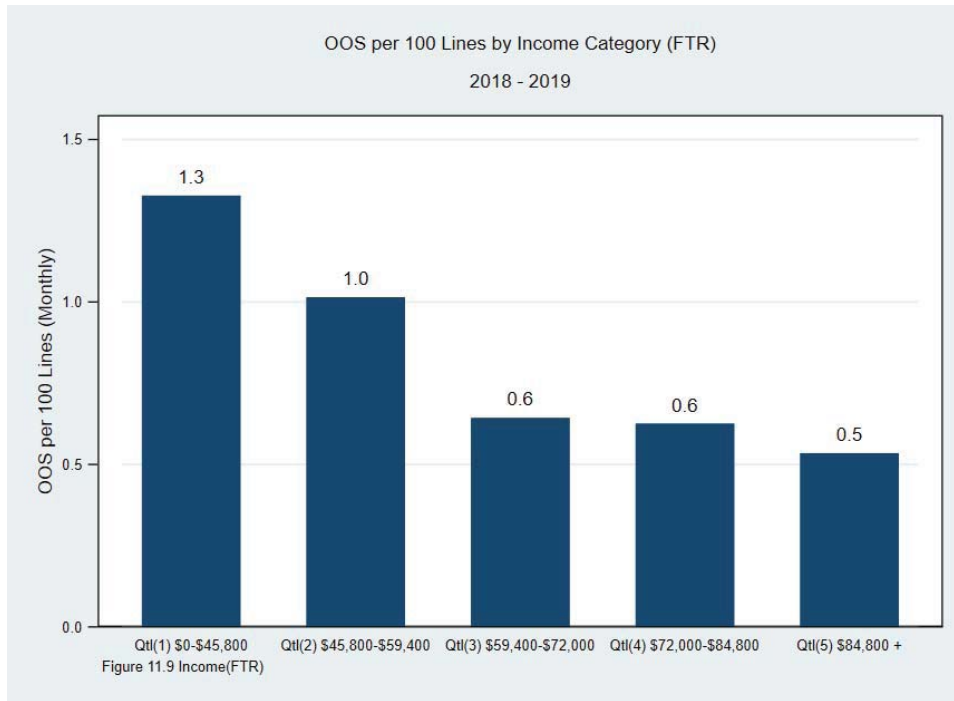


Figure 11.9. Frontier California Service Outages per 100 Access Lines per Month for the Five Median Household Income Quintiles, 2018-2019.

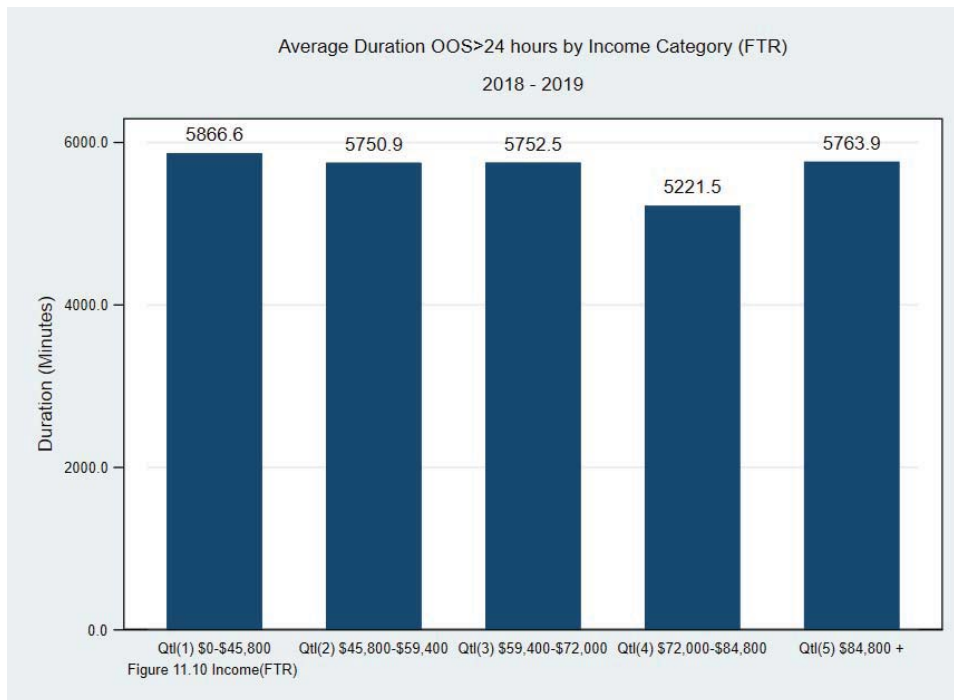


Figure 11.10. Frontier California Percent of Service Outages Restored Within 24 Hours for the Five Median Household Income Quintiles, 2018-2019.

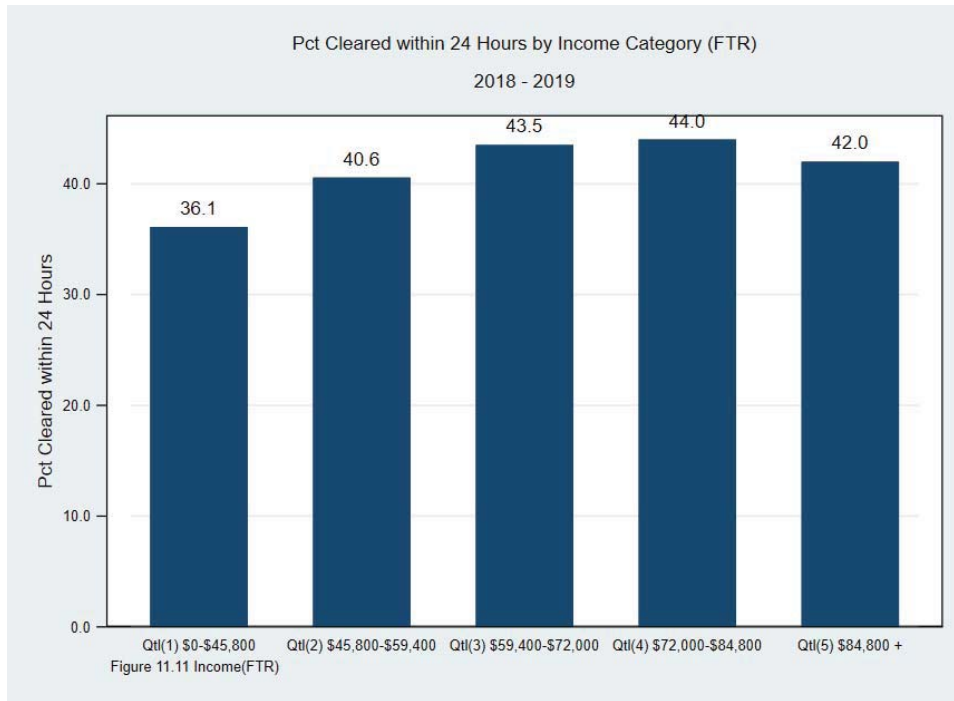


Figure 11.11. Frontier California Average Duration of Service Outages for the Five Median Household Income Quintiles, 2018-2019.

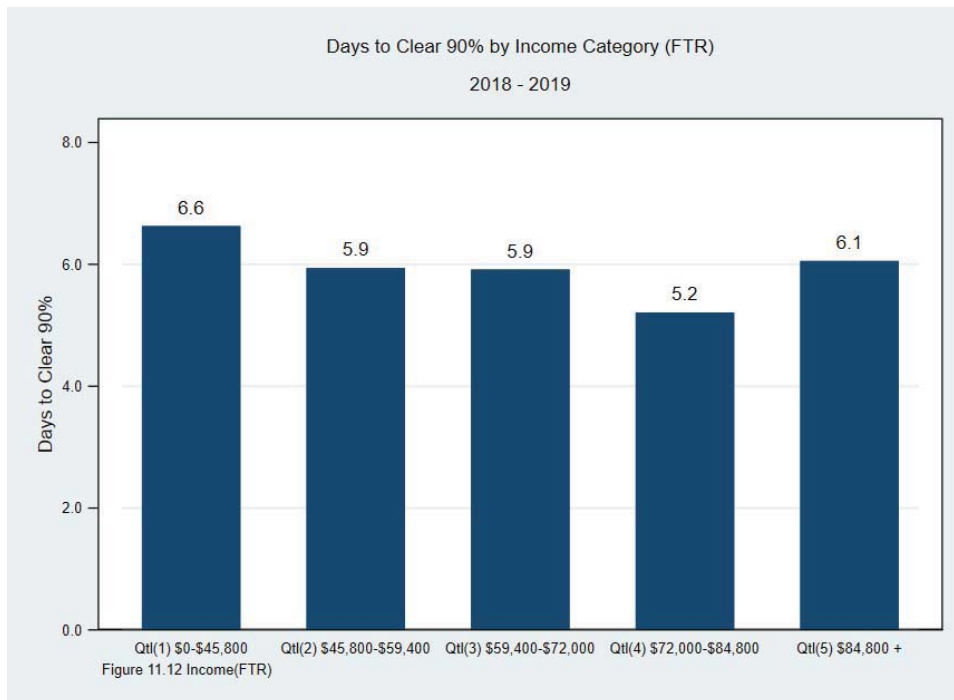


Figure 11.12. Frontier California Average Number of Days Required to Restore 90% of Service Outages for the Five Median Household Income Quintiles, 2018-2019.

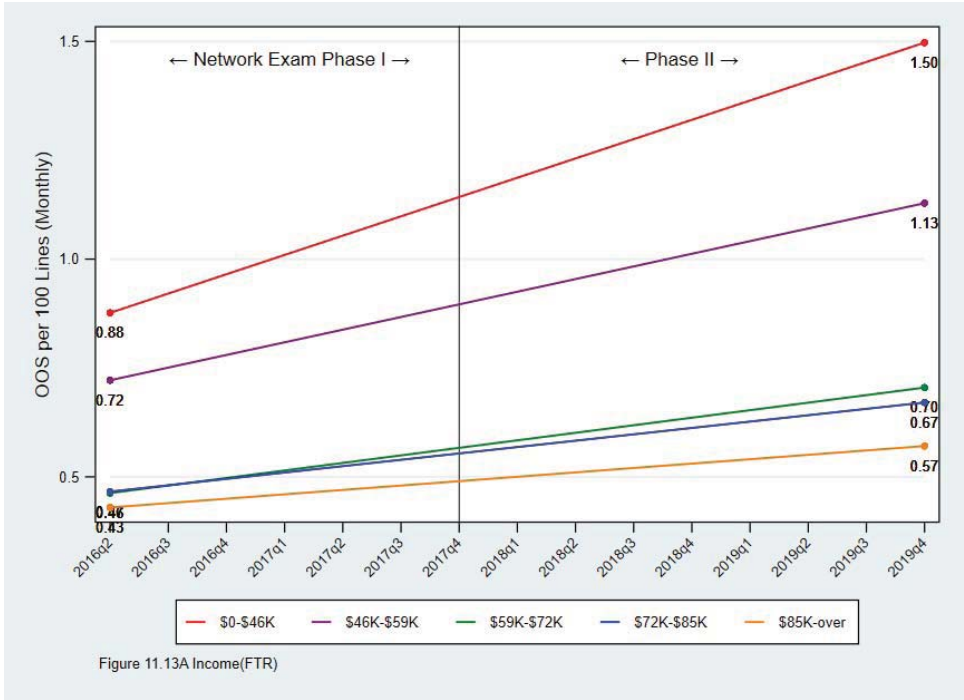


Figure 11.13A Income(FTR)

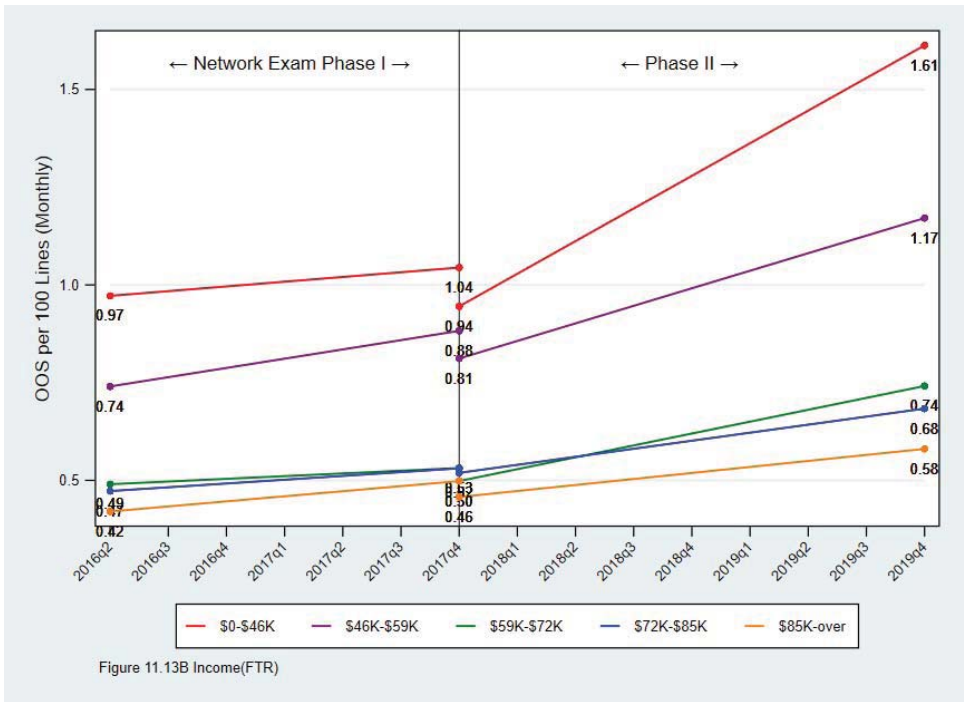


Figure 11.13B Income(FTR)

Figure 11.13. Frontier California Service Outages per 100 Access Lines per Month, Long-term trends for the Five Median Household Income Quintiles, 2010-2019.

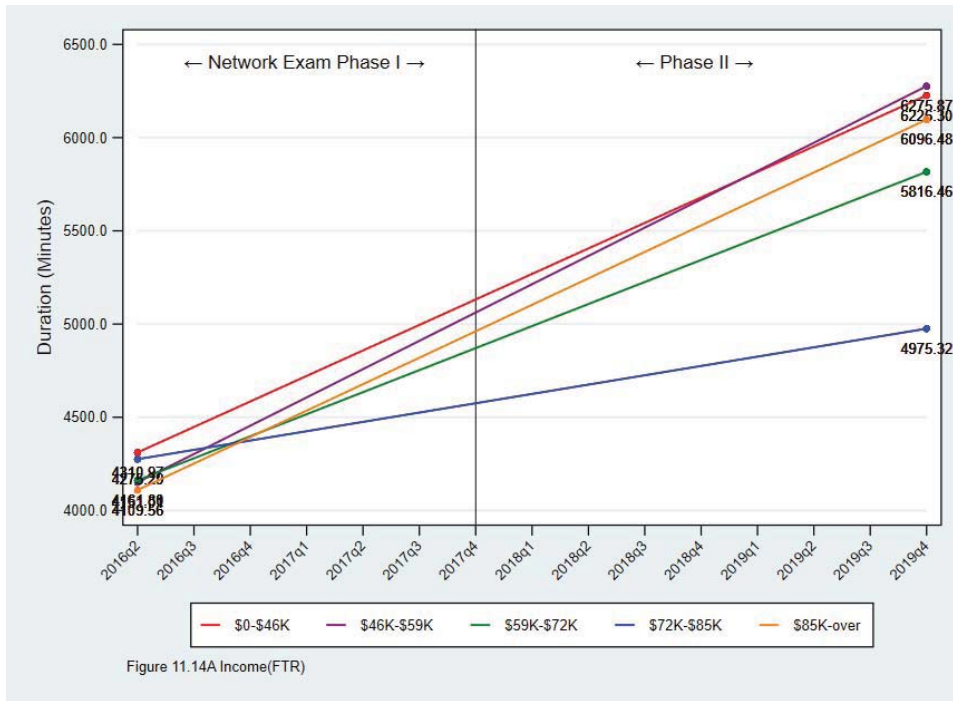


Figure 11.14A Income(FTR)

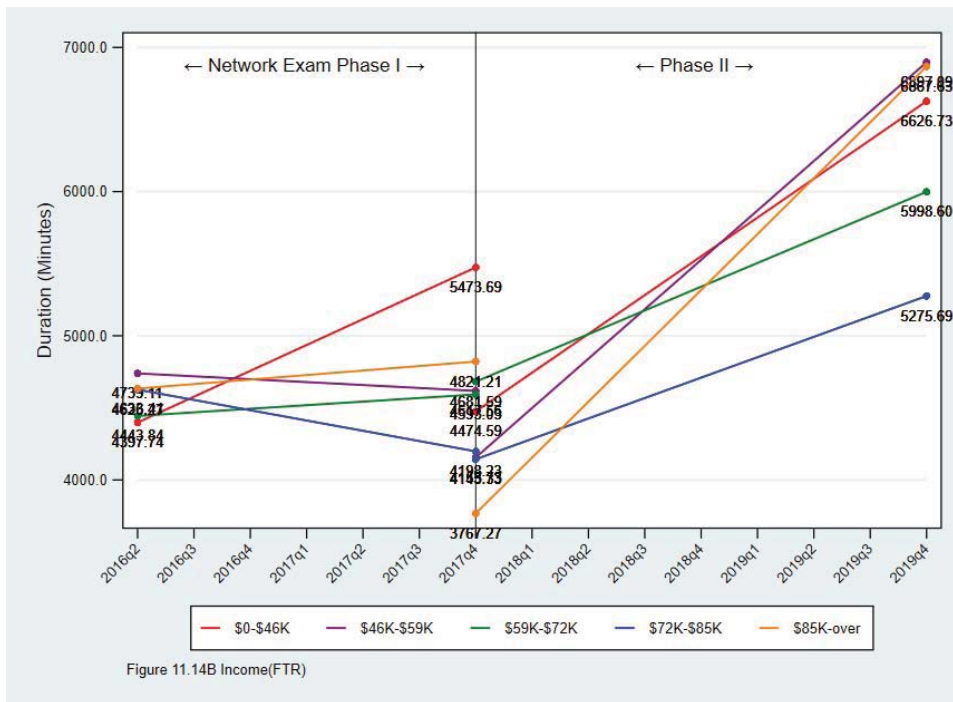


Figure 11.14B Income(FTR)

Figure 11.14. Frontier California Average Duration of Service Outages, Long-term trends for the Five Median Household Income Quintiles, 2010-2019.

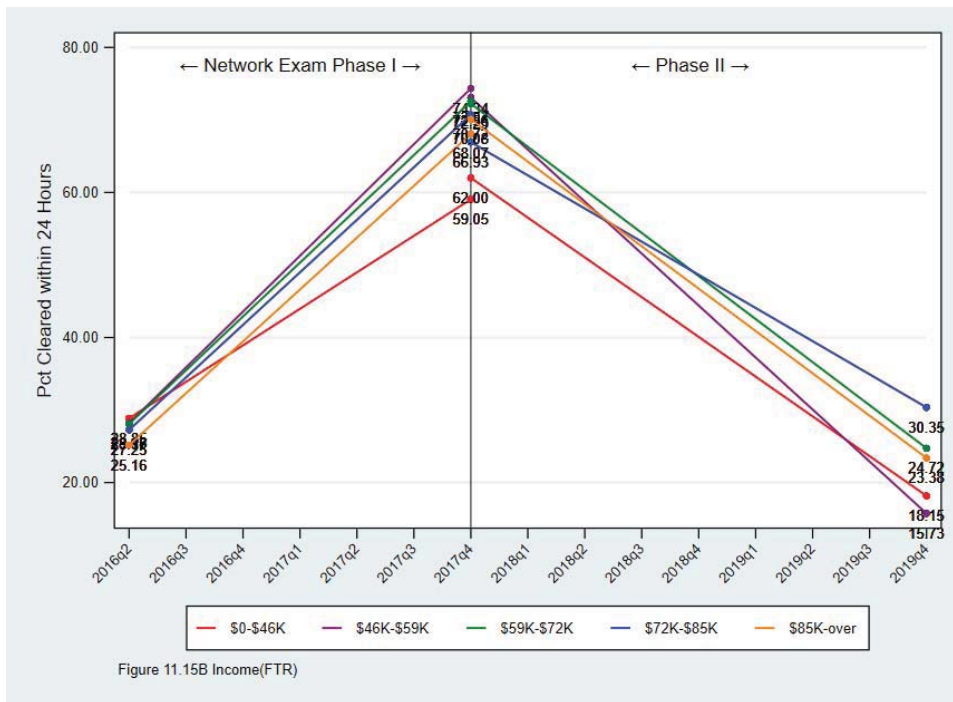
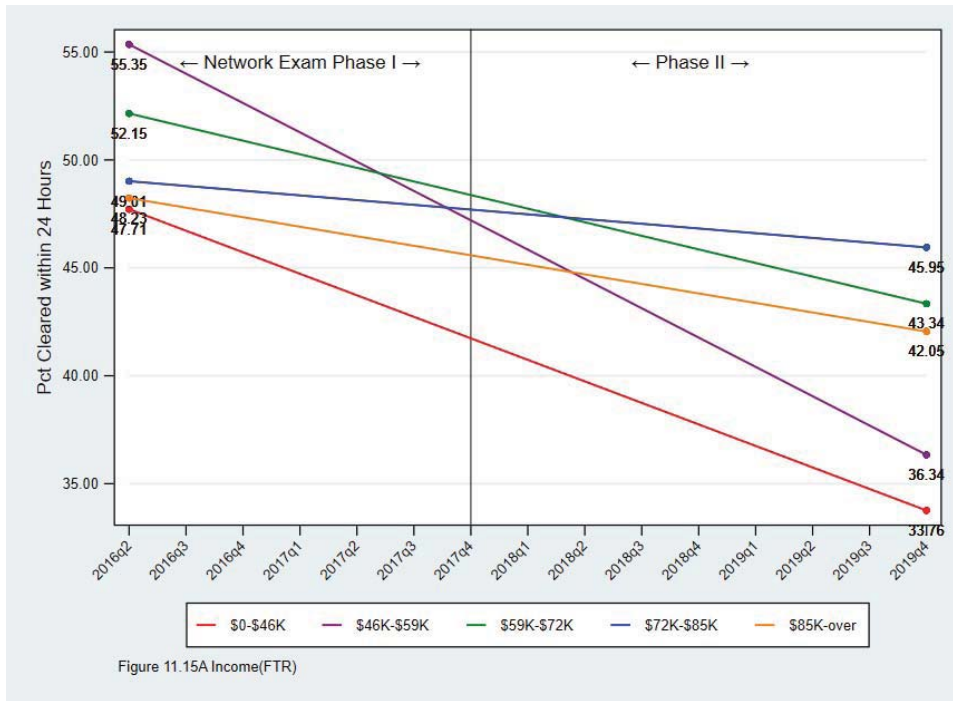


Figure 11.15. Frontier California Percent of Service Outages Restored Within 24 Hours, Long-term trends for the Five Median Household Income Quintiles, 2010-2019.

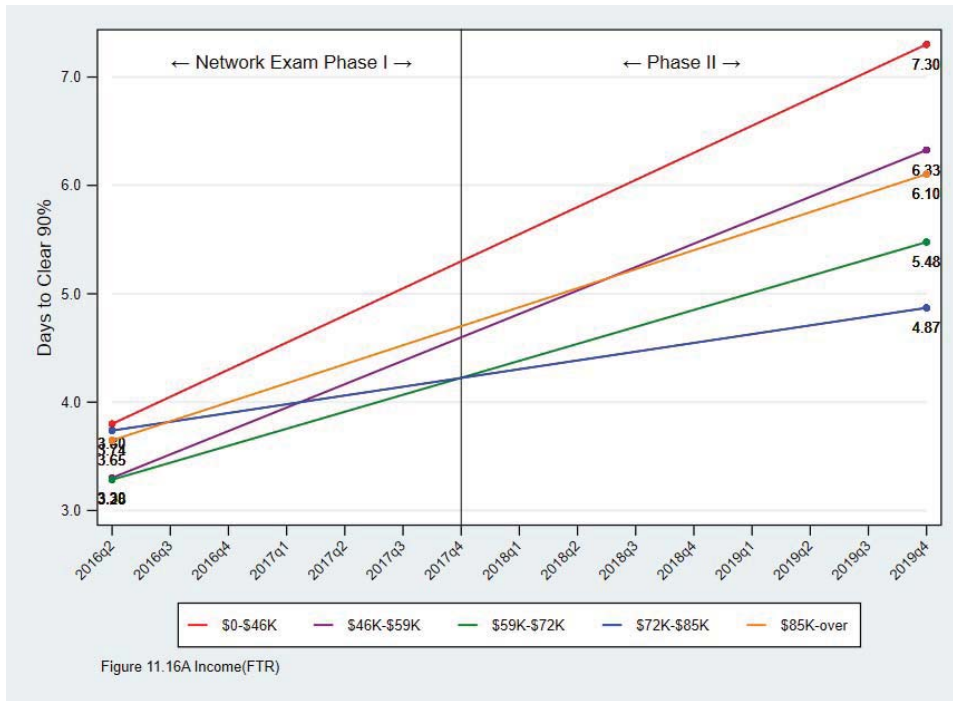


Figure 11.16A Income(FTR)

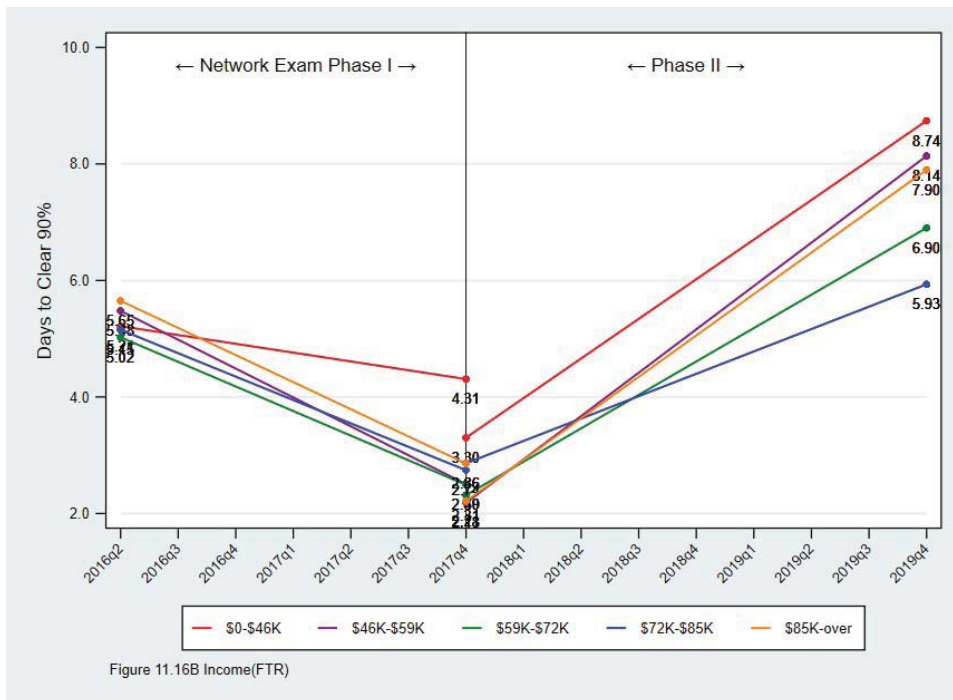


Figure 11.16B Income(FTR)

Figure 11.16. Frontier California Average Number of Days Required to Restore 90% of Service Outages, Long-term trends for the Five Median Household Income Quintiles, 2010-2019.

Racial characteristics of the population being served and service quality

ETI was also tasked with examining whether there is any discernable pattern or relationship between ILEC service quality and the racial characteristics of individual ILEC service areas. To undertake this analysis, we utilized data from the US Census Bureau’s 2010 *American Community Survey* (“ACS”), the most current source of this type of information. ACS compiles racial and nationality data at the individual Census Block level, which we aggregated to AT&T and Frontier wire center serving areas as described above. This was necessary because the most granular level of ILEC service quality data that is available is at the wire center level. While we have attempted to compile this information, we caution the Commission as to both its precision and usefulness. Individual wire centers typically serve populations ranging from a few thousand in rural areas to 100,000 or more in urban areas. These serving areas typically embrace a large variety of diverse populations, both residential and nonresidential. Our aggregations necessarily obscure the details of individual communities within a given wire center serving area. In addition, there is likely some correlation between racial and income attributes, which we have not expressly examined or controlled for. Thus, it is possible that the variation in service quality metrics that appear to be linked to race may well be attributable to income differentials.

The ACS utilizes several different demographic population metrics, some of which are based upon race (e.g., “Black” and “Non-White”), whereas others are based upon nationality (e.g., “Hispanic”). Because there may be overlaps as between these two types of population metrics, they cannot be combined. We have prepared several sets of bar graphs corresponding to the ones we prepared for the median household income analysis, which are provided as Figures 11.17 through 11.28 for AT&T, and Figures 11.29 through 11.40 for Frontier.



For both AT&T and Frontier, there is no indication that wire centers that serve relatively higher percentages of Black, Hispanic or Non-White populations exhibit more frequent incidents of service outages; moreover, as with our income analysis, there does not appear to be any observable pattern associated with any of the service restoration metrics for either company.

We have found no consistent relationship between the percentage of minority populations in wire center serving areas and the incidents of service outages or any of the service restoration metrics (see Figures 11.17, 11.21, 11.25, 11.29, 11.33 and 11.37). Also, and as with our income analysis, there does not appear to be any observable pattern associated with any of the service restoration metrics and the extent of minority populations. As these graphs indicate, there is no identifiable or consistent relationship between any of the racial attributes and either the frequency of service outages or the rapidity with which restorations occur, for either of the two ILECs.

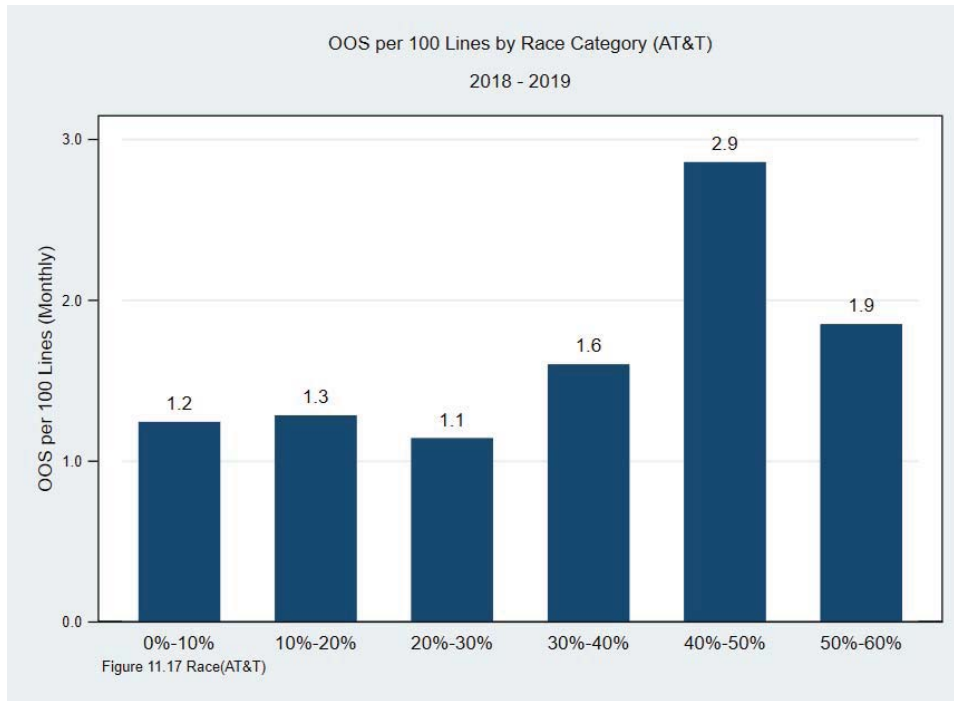


Figure 11.17. AT&T California Service Outages per 100 Access Lines per Month by Racial Population Characteristics – Percent Black, 2018-2019.

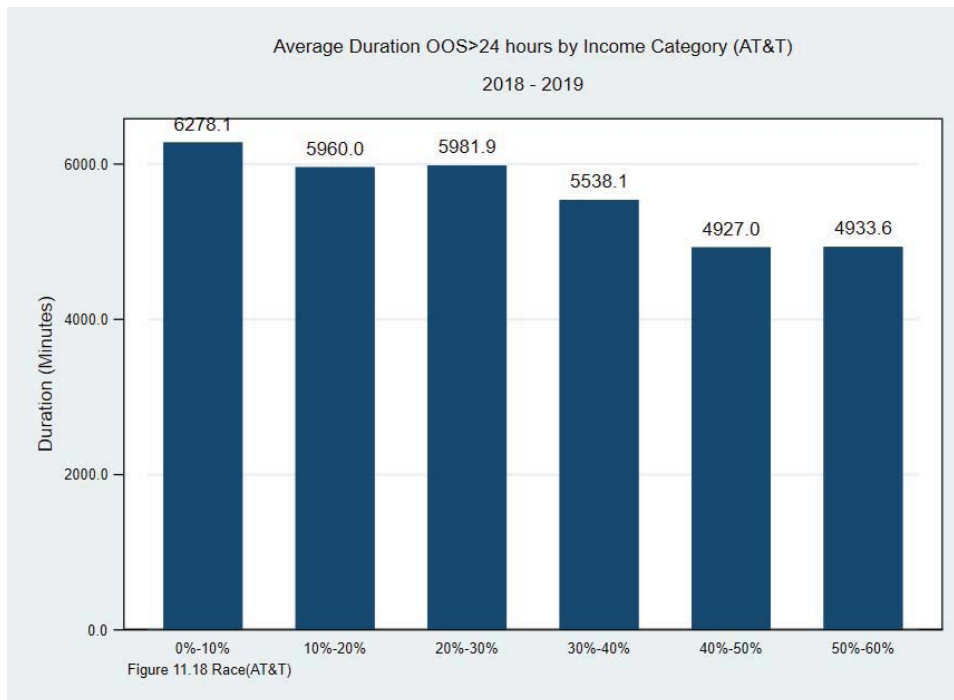


Figure 11.18. AT&T California Average Duration of Service Outages by Racial Population Characteristics – Percent Black, 2018-2019.

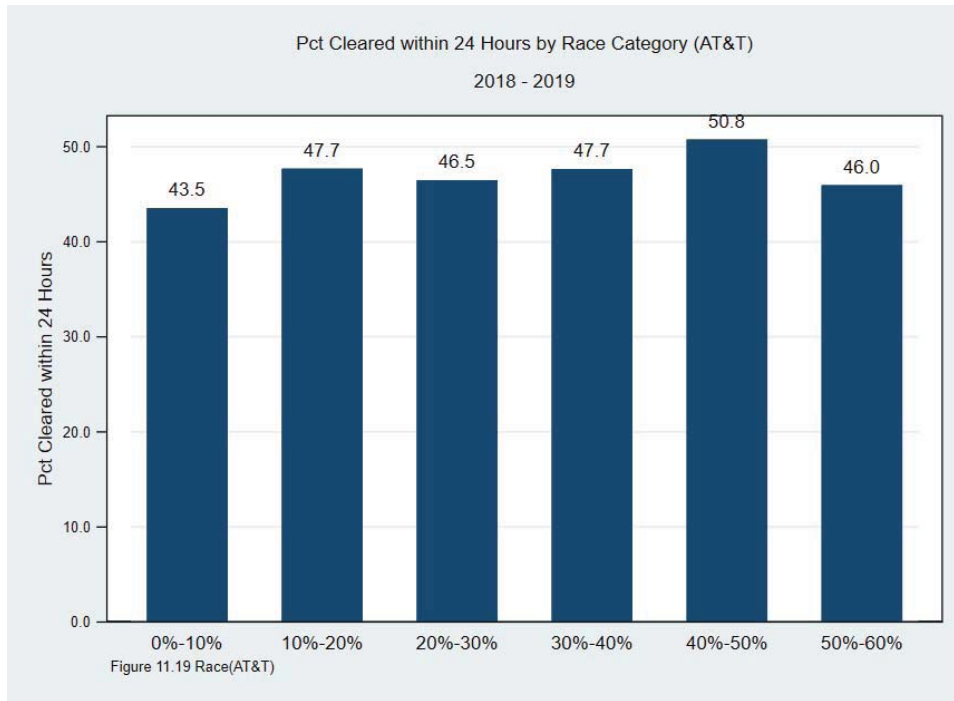


Figure 11.19. AT&T California Percent of Service Outages Restored Within 24 Hours by Racial Population Characteristics – Percent Black, 2018-2019.

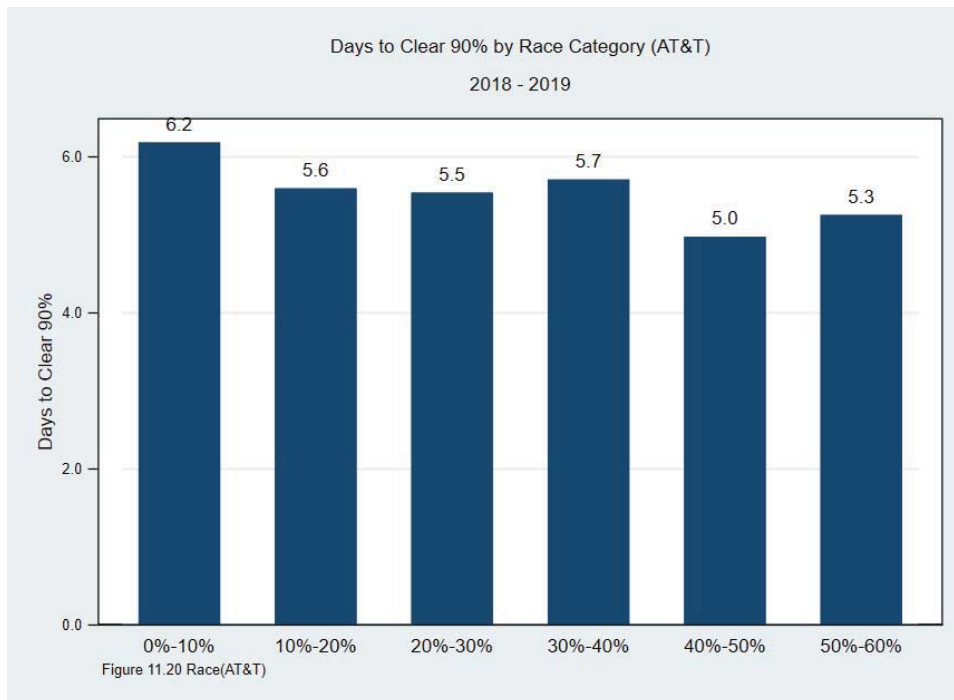


Figure 11.20. AT&T California Average Number of Days Required to Restore 90% of Service Outages by Racial Population Characteristics – Percent Black, 2018-2019.

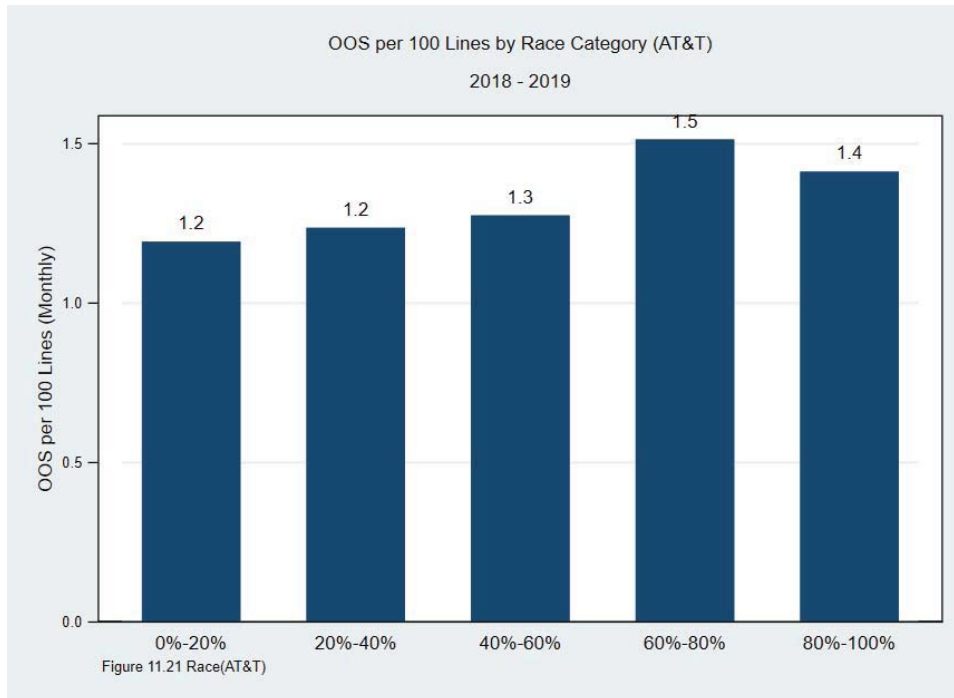


Figure 11.21. AT&T California Service Outages per 100 Access Lines per Month by Racial Population Characteristics – Percent Hispanic, 2018-2019.

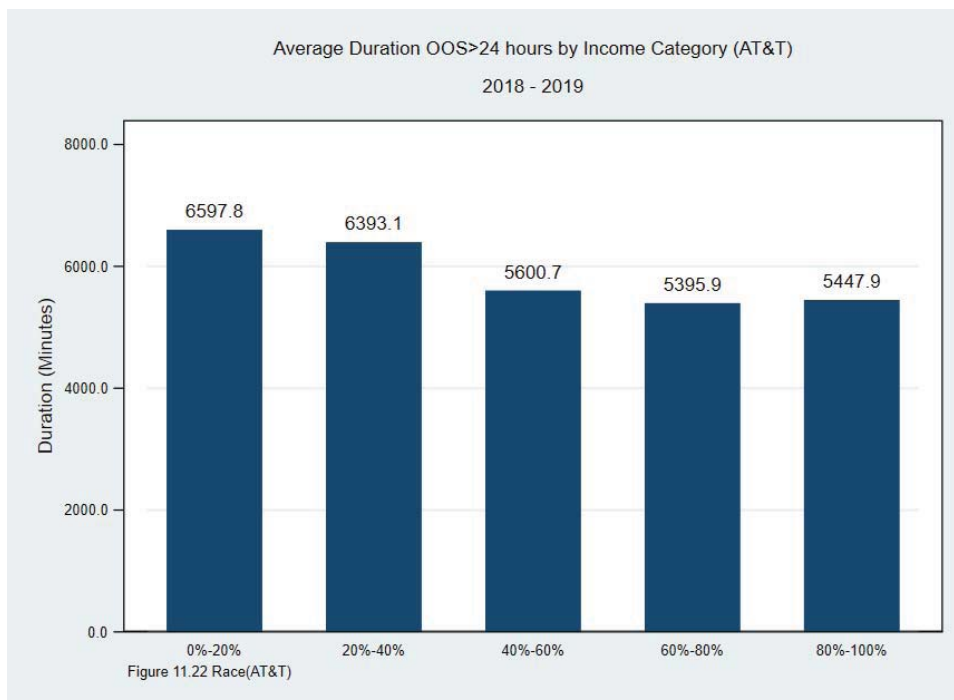


Figure 11.22. AT&T California Average Duration of Service Outages by Racial Population Characteristics – Percent Hispanic, 2018-2019.

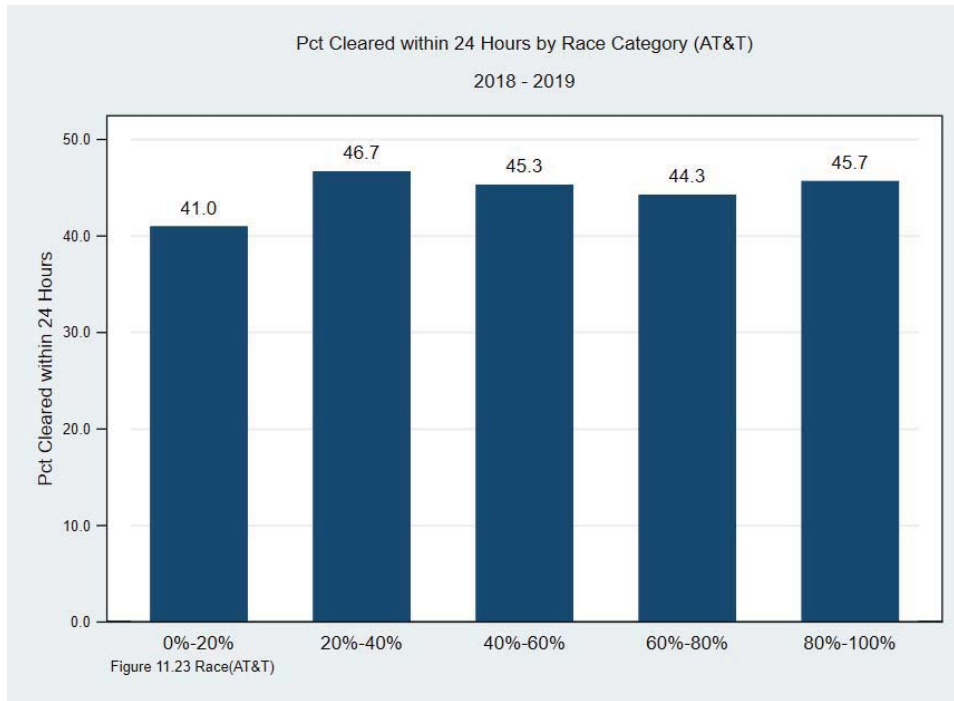


Figure 11.23. AT&T California Percent of Service Outages Restored Within 24 Hours by Racial Population Characteristics – Percent Hispanic, 2018-2019.

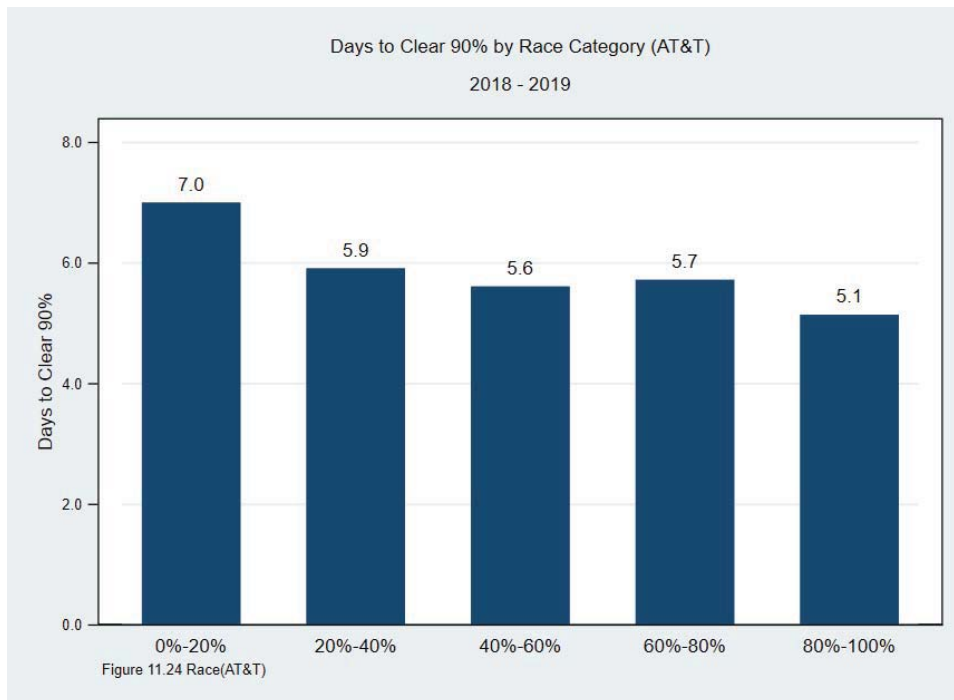


Figure 11.24. AT&T California Average Number of Days Required to Restore 90% of Service Outages by Racial Population Characteristics – Percent Hispanic, 2018-2019.

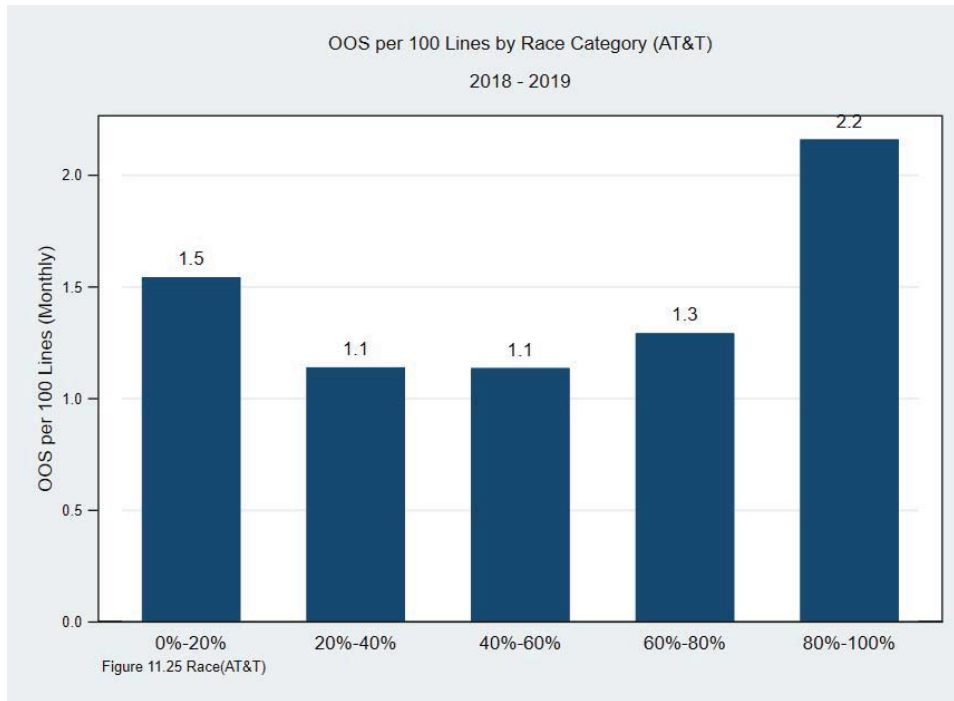


Figure 11.25. AT&T California Service Outages per 100 Access Lines per Month by Racial Population Characteristics – Percent Non-White, 2018-2019.

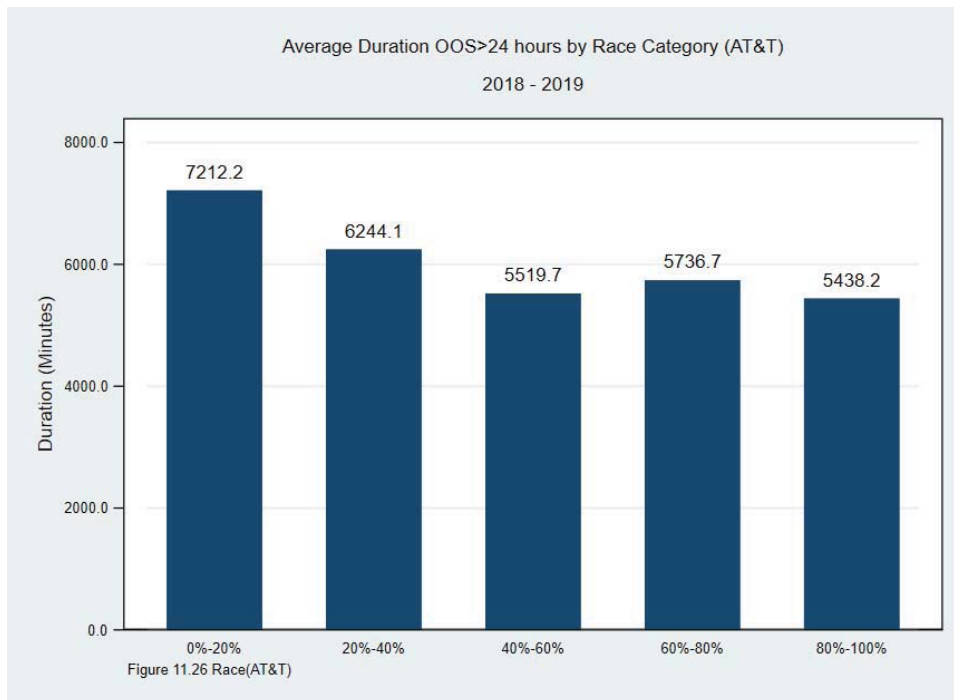


Figure 11.26. AT&T California Average Duration of Service Outages by Racial Population Characteristics – Percent Non-White, 2018-2019.

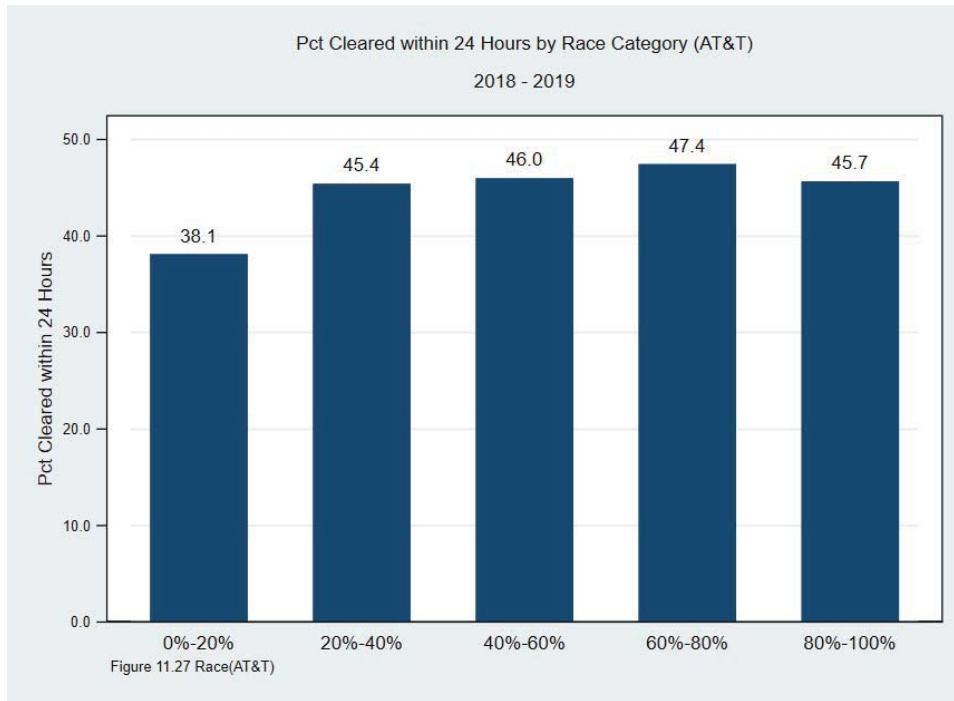


Figure 11.27. AT&T California Percent of Service Outages Restored Within 24 Hours by Racial Population Characteristics – Percent Non-White, 2018-2019.

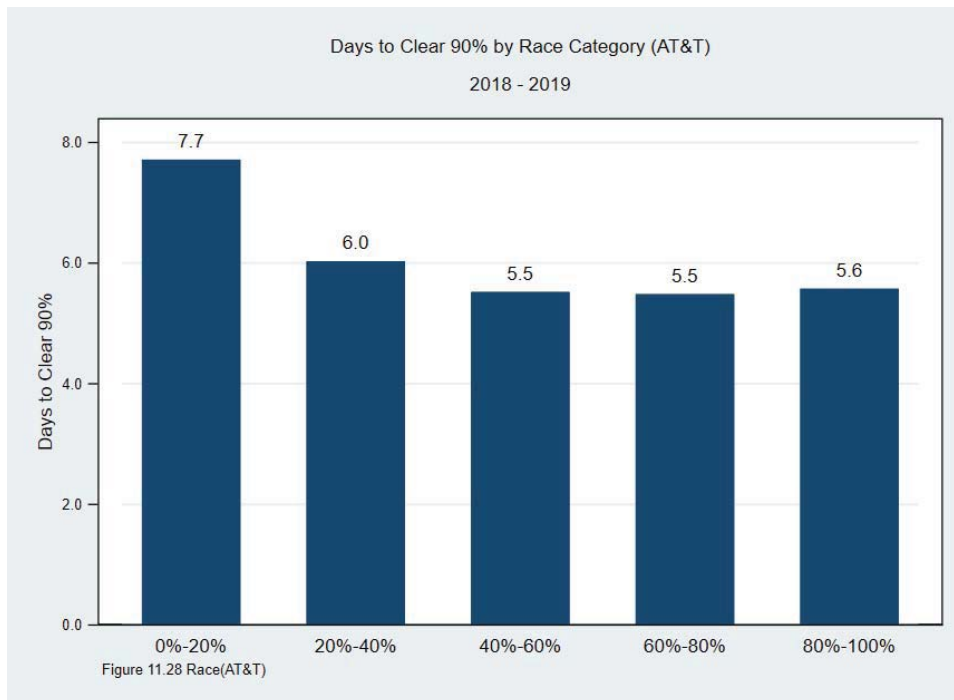


Figure 11.28. AT&T California Average Number of Days Required to Restore 90% of Service Outages by Racial Population Characteristics – Percent Non-White, 2018-2019.

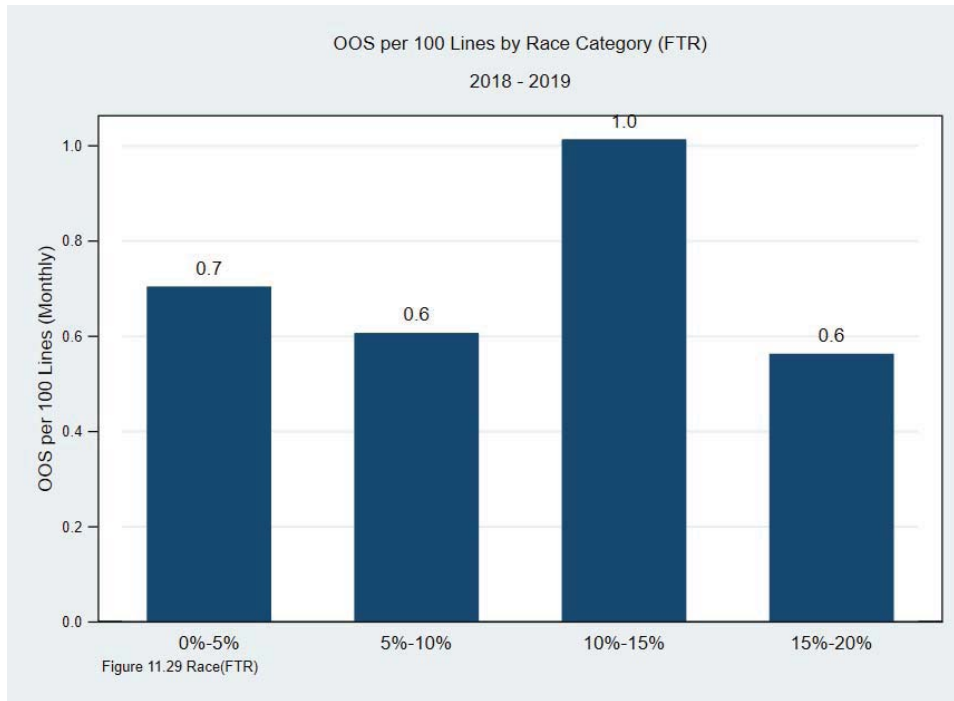


Figure 11.29. Frontier California Service Outages per 100 Access Lines per Month by Racial Population Characteristics – Percent Black, 2018-2019.

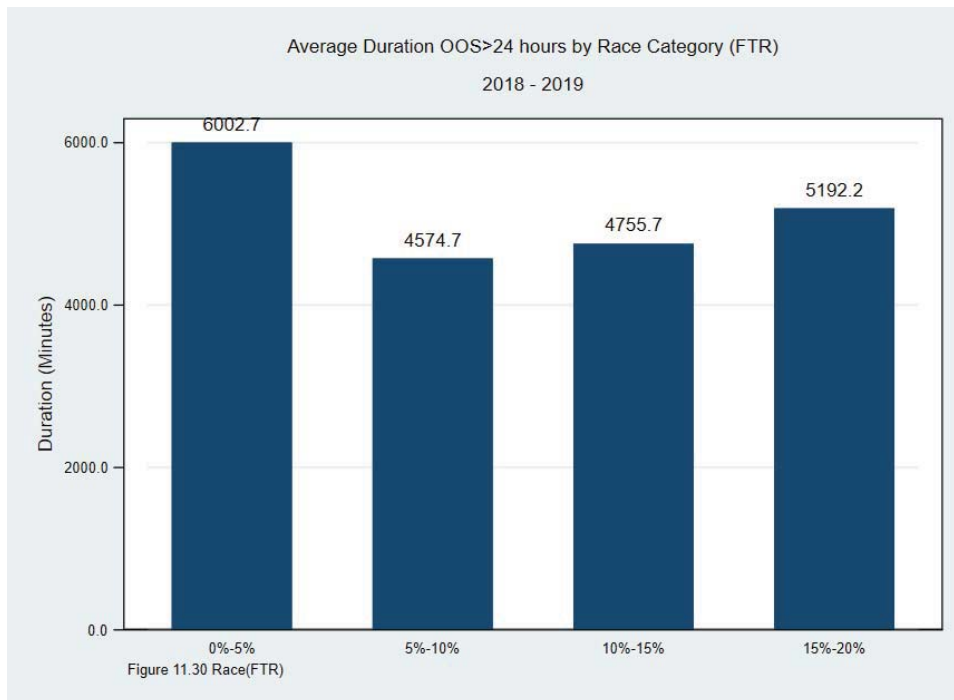


Figure 11.30. Frontier California Average Duration of Service Outages by Racial Population Characteristics – Percent Black, 2018-2019.

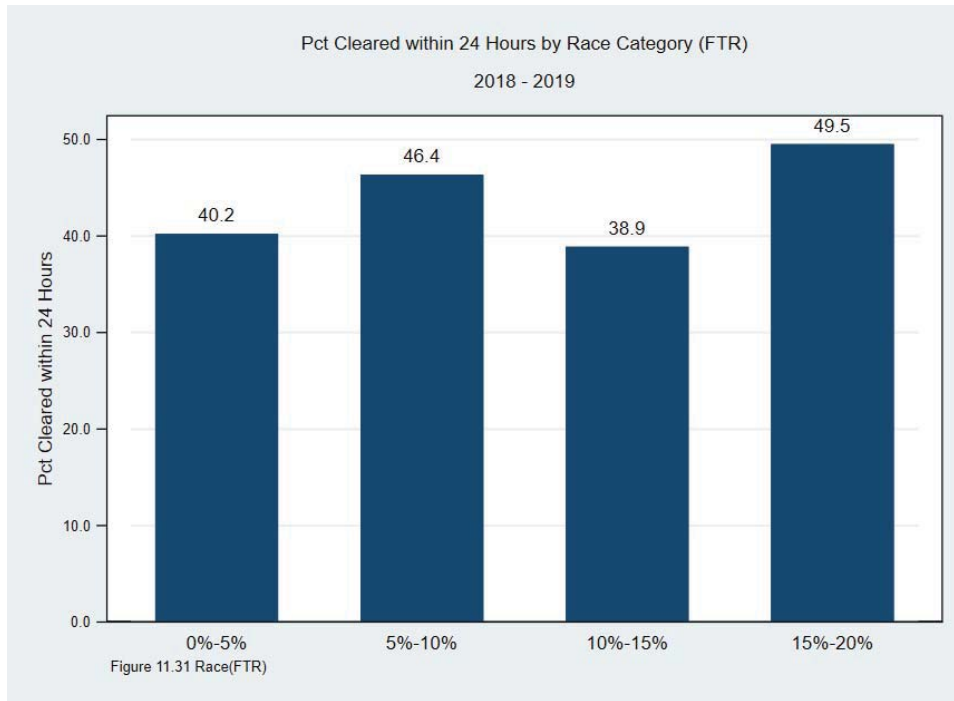


Figure 11.31. Frontier California Percent of Service Outages Restored Within 24 Hours by Racial Population Characteristics – Percent Black, 2018-2019.

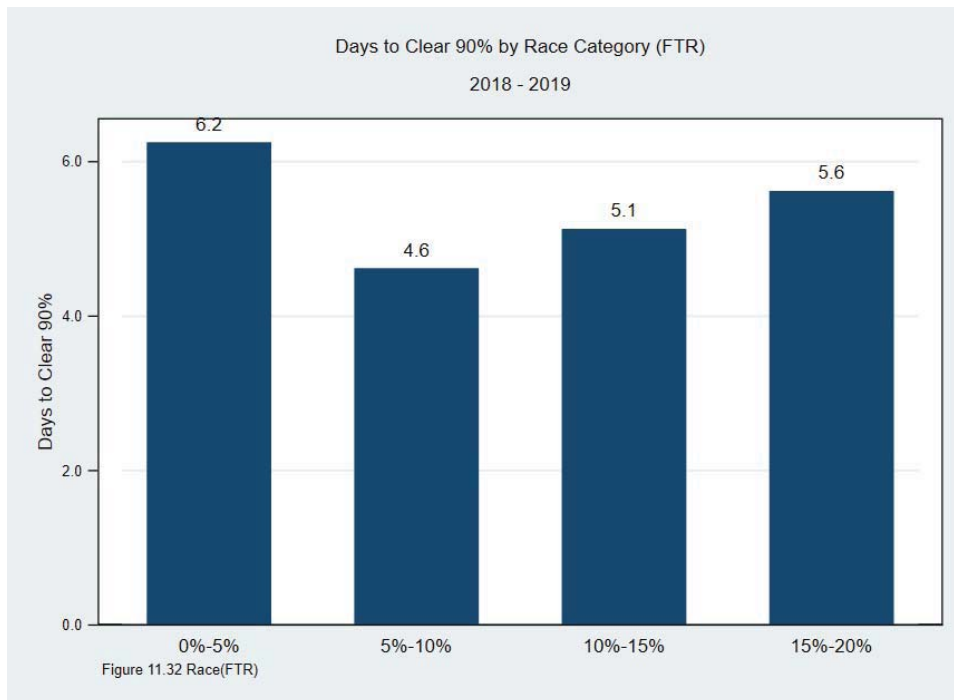


Figure 11.32. Frontier California Average Number of Days Required to Restore 90% of Service Outages by Racial Population Characteristics – Percent Black, 2018-2019.

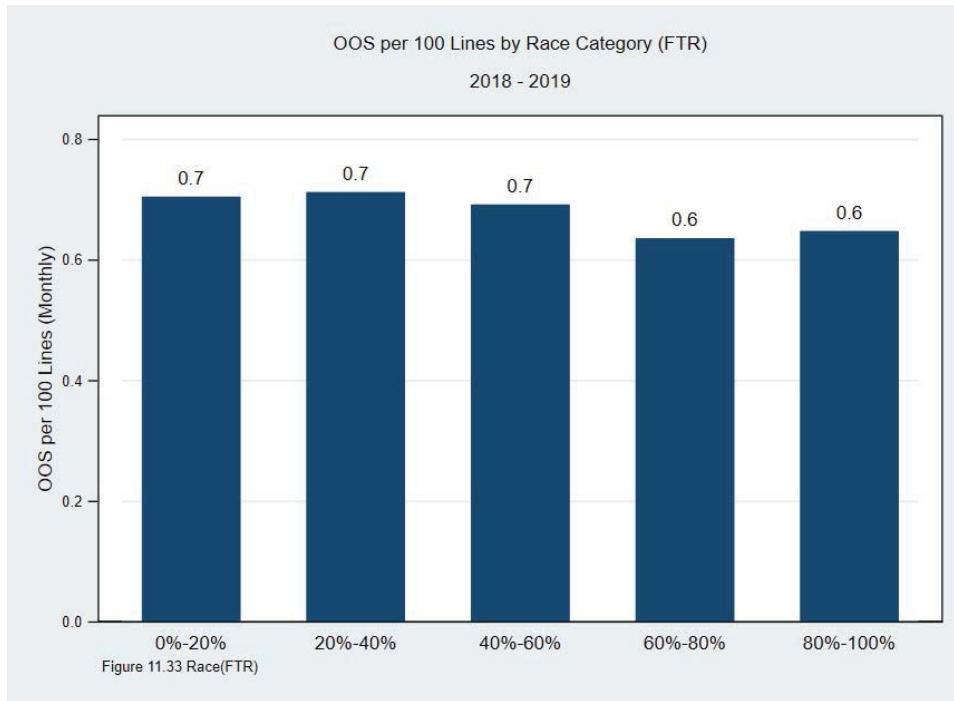


Figure 11.33. Frontier California Service Outages per 100 Access Lines per Month by Racial Population Characteristics – Percent Hispanic, 2018-2019.

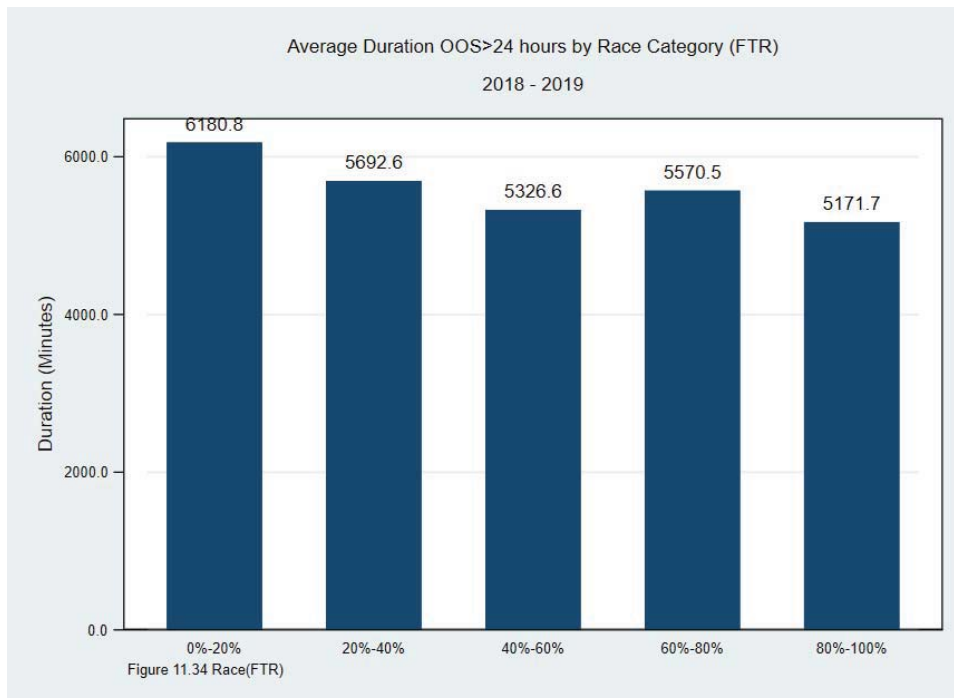


Figure 11.34. Frontier California Average Duration of Service Outages by Racial Population Characteristics – Percent Hispanic, 2018-2019.

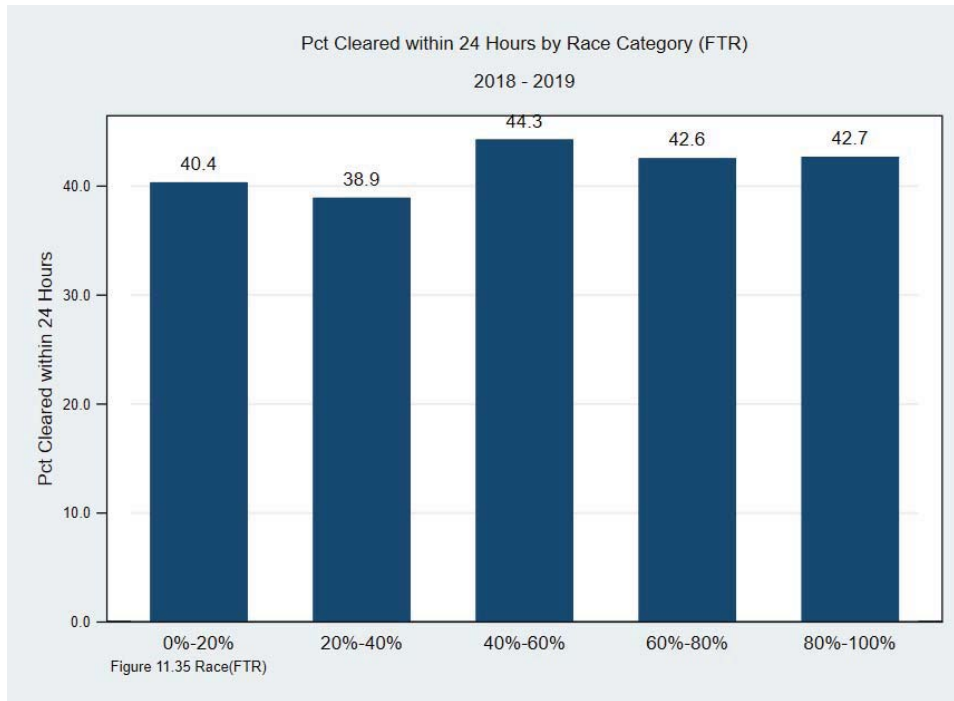


Figure 11.35. Frontier California Percent of Service Outages Restored Within 24 Hours by Racial Population Characteristics – Percent Hispanic, 2018-2019.

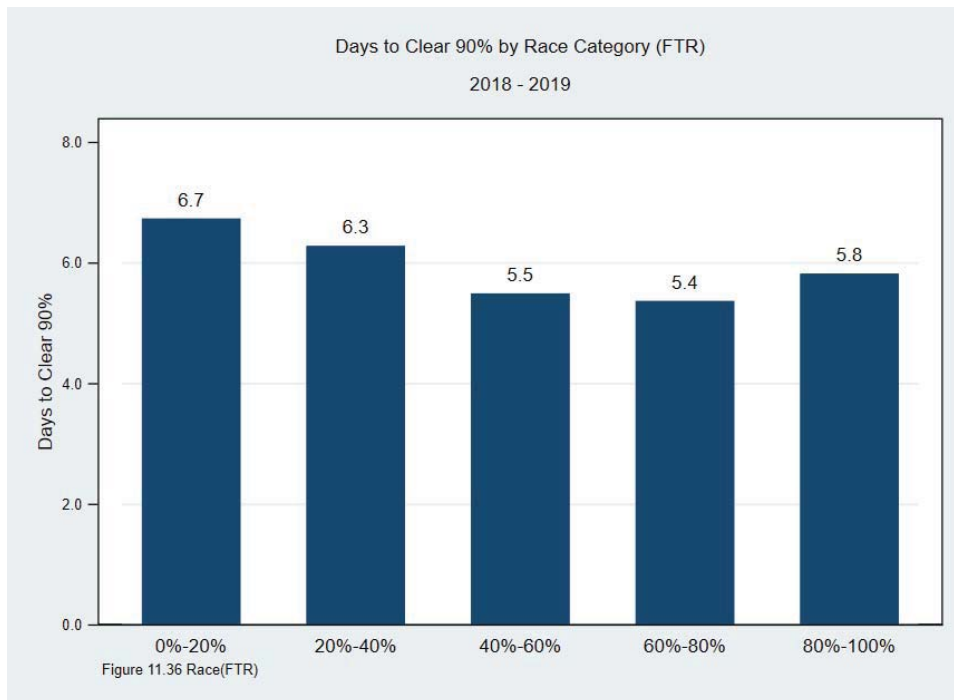


Figure 11.36. Frontier California Average Number of Days Required to Restore 90% of Service Outages by Racial Population Characteristics – Percent Hispanic, 2018-2019.

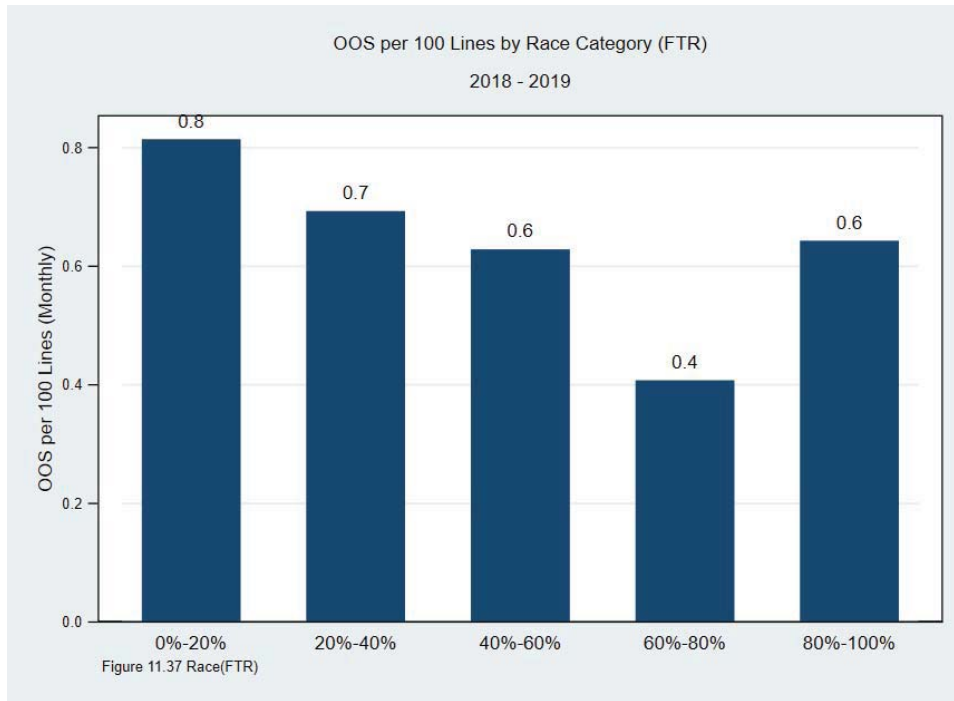


Figure 11.37. Frontier California Service Outages per 100 Access Lines per Month by Racial Population Characteristics – Percent Non-White, 2018-2019.

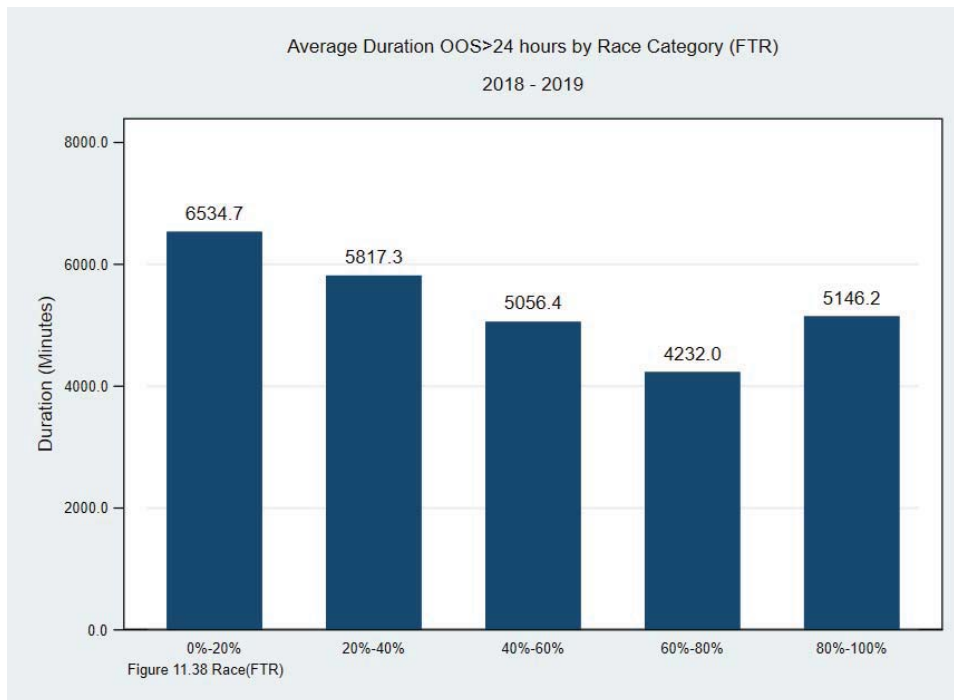


Figure 11.38. Frontier California Average Duration of Service Outages by Racial Population Characteristics – Percent Non-White, 2018-2019.

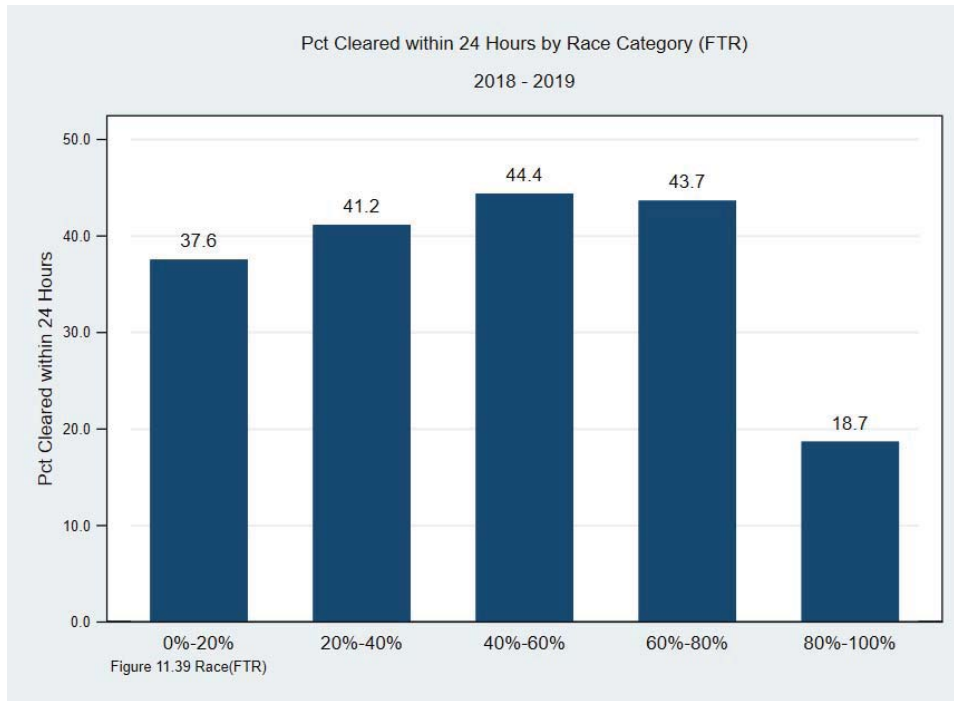


Figure 11.39. Frontier California Percent of Service Outages Restored Within 24 Hours by Racial Population Characteristics – Percent Non-White, 2018-2019.

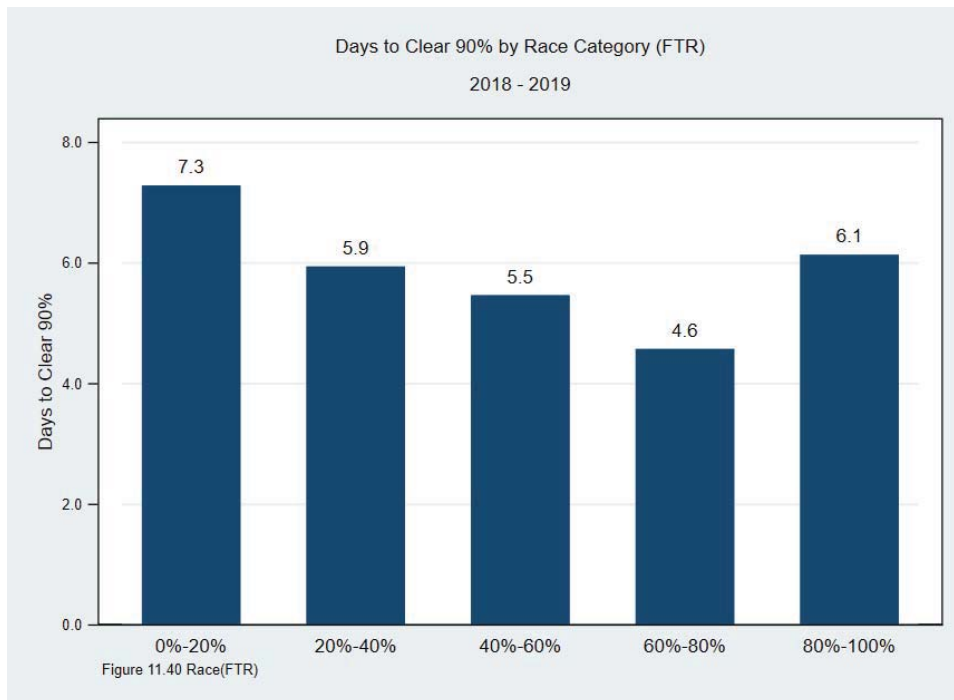


Figure 11.40. Frontier California Average Number of Days Required to Restore 90% of Service Outages by Racial Population Characteristics – Percent Non-White, 2018-2019.

Conclusion

While there is some evidence that both AT&T California and Frontier California may be devoting more attention toward the condition of their central office and distribution plant in higher income and non-minority areas, there is no evidence of any inherent racial bias or redlining, nor is there any indication that higher income or non-minority communities are receiving more favorable treatment with respect to service restorations.

As we have noted, these results are at best an indication that more detailed examination of ILEC service quality performance below the individual wire center level may be warranted. A more granular analysis of this sort is well outside the scope of this Study. We do not consider the results presented here to be conclusive, but at best suggestive of a potential concern that could require more detailed investigation.

13 | PHYSICAL AND ENVIRONMENTAL FACTORS AFFECTING ILEC SERVICE QUALITY

Principal observations and takeaways

- Telephone service outages appear to be highly dependent upon weather conditions, specifically, the amount of precipitation in the area served.
- The strong relationship between rainfall and the rate of service outages provides a strong indication that the ILEC distribution networks are not as robust as they need to be, and clearly lack the resiliency to withstand significant weather events.
- Overall, we observed little correlation between the incidence of major wild fires and ILEC service quality. Wildfires occur mainly during hot summer and fall months when rainfall is minimal, whereas OOS incidents arise during the periods of heaviest precipitation, which occurs during late fall and winter months.

PHYSICAL AND ENVIRONMENTAL FACTORS
AFFECTING ILEC SERVICE QUALITY

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Introduction

In Chapter 4, we observed that 16.8% of the roughly 5-million AT&T out-of-service conditions over the 2010-2017 Phase 1 study period had been attributed to "Heavy Rain," "Weather," "Moisture," or "Wet Plant." Over the Phase 2 2018-2019 period, that number almost doubled, to 29.6%. In our Phase 1 Report, we provided details of our preliminary examination of the potential interaction of adverse weather – principally precipitation – upon the incidence of Out of Service (OOS) Trouble Reports. We had observed a seemingly erratic pattern of out-of-service incidents that, rather than exhibiting minimal variation over time, showed instances of Trouble Reports resulting in a customer's loss of telephone service that appeared to be highly variable from one period to the next. Moreover, similar month-to-month and quarter-to-quarter variation were observed both with respect to AT&T California and Verizon/Frontier California, and across multiple wire centers, suggesting that some exogenous or outside condition or event was having a similar effect upon the ILECs' networks across a fairly broad geographic area. We hypothesized that one such exogenous source might well be weather or other environmental factors. In an attempt to explain the source of this variation, ETI compared the incidence of out-of-service trouble reports with weather conditions extant at the time, specifically, with the amount of precipitation that occurred in the area being served by a given wire center. Our analysis was, however, limited, and covered only the greater Los Angeles area.

Effects of precipitation on out-of-service incidents

In Phase 1, we examined the pattern of AT&T and Verizon/Frontier out-of-service incidents, respectively, in the greater Los Angeles area with the number of inches of precipitation experienced in the Los Angeles area on a monthly basis. We calculated the "coefficient of determination" (R^2) between these two series. R^2 represents the percentage of variation in the "dependent" variable (the number of out-of-service incidents) that can be explained by variation in the independent or "explanatory" variable (inches of precipitation). For AT&T, the R^2 was 0.4221, indicating that roughly 42.21%, of the variation in the incidence of an out-of-service condition is attributable to the amount of rainfall occurring in any given period. The t -statistic associated with the Precipitation coefficient was 8.29, placing the computed relationship between inches of precipitation and out-of-service incidents well in excess of the 99% confidence level. For Verizon/Frontier, the R^2 was almost the same, at 0.3976, and the t -statistic associated with the Precipitation coefficient was 7.75, also placing the computed relationship between precipitation and out-of-service incidents well in excess of the 99% confidence level. Weather conditions may help to explain the variations in OOS situations, but they do not explain the long-term upward trends both in numbers and average duration that the data appear to suggest.

For Phase 2, we have been asked to extend this analysis to cover the full 2010-2019 time frame, and to study a broader geographic area covering all of California. To accomplish this, we compiled precipitation statistics from the National Oceanic and Atmospheric Administration's ("NOAA") Global Summary of the Month ("GSOM") dataset. GSOM provides detailed estimates of various meteorological measurements on a monthly basis sourced from weather stations across the United States. The US Census Bureau has divided California into ten (10)

“Census Regions,” as illustrated in Figure 13.1 below. Table 13.1 identifies the individual counties that are included within each Census Region.

Table 13.1	
CALIFORNIA CENSUS REGIONS	
Census Region	Counties
1 Superior California	Butte, Calusa, El Dorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Siskiyou, Sutter, Tahama, Yolo, Yuba
2 North Coast	Del Norte, Humboldt, Lake, Mendocino, Napa, Sonoma, Trinity
3 San Francisco Bay Area	Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, Solano
4 Northern San Joaquin Valley	Alpine, Amador, Calaveras, Madera, Mariposa, Merced, Mono, San Joaquin, Stanislaus, Tuolumne
5 Central Coast	Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Ventura
6 Southern San Joaquin Valley	Fresno, Inyo, Kern, Kings, Tulare
7 Inland Empire	Riverside, San Bernardino
8 Los Angeles County	Los Angeles
9 Orange County	Orange
10 San Diego – Imperial	Imperial, San Diego
Source: NOAA GSOM dataset; ETI analysis of AT&T California Out-of-Service incidents 2010-2019	

ETI identified NOAA weather station locations first by county, then aggregated these by averaging total monthly precipitation for all of the counties included within each of the ten Census regions. We then aggregated individual wire center Trouble Report statistics by county and then by Census Region.

We prepared two graphs for each Census Region. The first graph in each set is a time-series plot of monthly inches of precipitation (blue line) and monthly out-of-service reports per 100 access lines (red line). The second graph in each set provides a scatter diagram of the independent variable (monthly inches of precipitation) on the x -axis and the dependent variable (monthly OOS per 100 access lines) on the y -axis, along with a plotted regression line. The regression equation is also provided, along with the Coefficient of Determination R^2 and t -statistic as computed for the regression. Figures 13.2 through 13.11 provide graphs for each Census Region’s monthly precipitation rate (in inches) and the monthly rate of OOS incidents per 100 access lines for AT&T California over the full 2010-2019 period (120 months). Figures 13.12 through 13.21 provide similar graphs for each Census Region for areas served by Frontier California over the 2016 through 2019 period (45 months).

Tables 13.2 and 13.3 below provide the calculated Coefficients of Determination (R^2) and t -statistics for each of the ten Census Regions and for each of AT&T California and Frontier California, respectively. For convenience, we have also indicated the Figure number for the graphs associated with each Census Region.

Figure 13.1

Census 2020 Regions

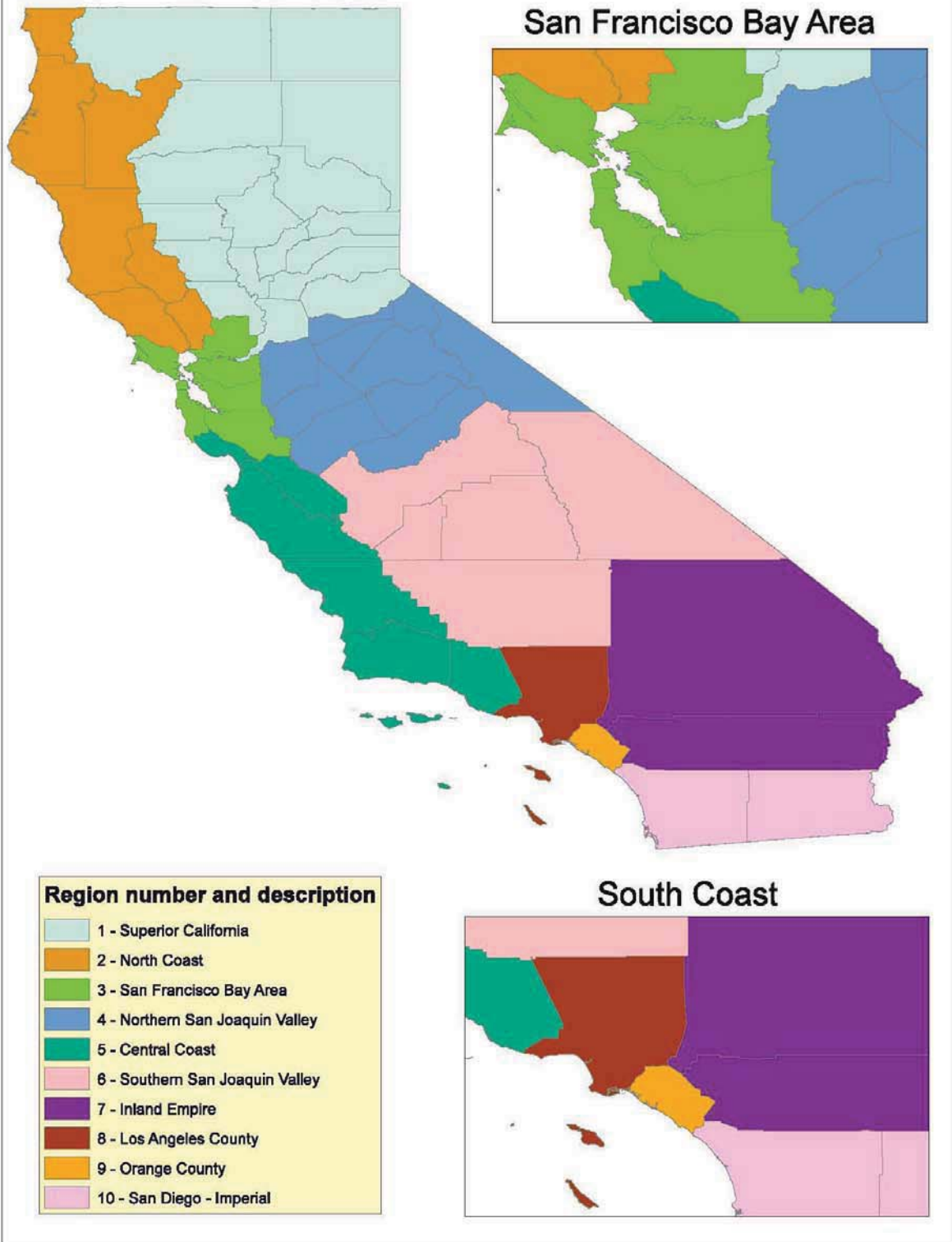


Table 13.2

**AT&T CALIFORNIA
RELATIONSHIP BETWEEN PRECIPITATION
AND OUT-OF-SERVICE INCIDENTS
2010-2019**

Census Region	Figures	No. of Wire Centers	Coefficient of Determination R^2	t -statistic
1 Superior California	13.2	107	.676	15.696
2 North Coast	13.3	58	.490	10.655
3 San Francisco Bay Area	13.4	99	.756	19.138
4 Northern San Joaquin Valley	13.5	53	.564	12.365
5 Central Coast	13.6	54	.592	13.077
6 Southern San Joaquin Valley	13.7	65	.403	8.922
7 Inland Empire	13.8	13	.378	8.477
8 Los Angeles County	13.9	69	.520	11.308
9 Orange County	13.10	32	.507	11.008
10 San Diego – Imperial	13.11	60	.466	10.154

Source: NOAA GSOM dataset; ETI analysis of AT&T California Out-of-Service incidents 2010-2019

Table 13.3

**FRONTIER CALIFORNIA
RELATIONSHIP BETWEEN PRECIPITATION
AND OUT-OF-SERVICE INCIDENTS
2016-2019**

Census Region	Figures	No. of Wire Centers	Coefficient of Determination R^2	t -statistic
1 Superior California	13.12	4	.471	3.187
2 North Coast	13.13	17	.500	6.553
3 San Francisco Bay Area	13.14	4	.652	8.969
4 Northern San Joaquin Valley	13.15	13	.206	3.343
5 Central Coast	13.16	20	.457	6.014
6 Southern San Joaquin Valley	13.17	38	.545	7.171
7 Inland Empire	13.18	53	.618	8.336
8 Los Angeles County	13.19	37	.746	11.238
9 Orange County	13.20	4	.587	7.812
10 San Diego – Imperial	13.21	2	.099	2.178

Source: NOAA GSOM dataset; ETI analysis of Frontier California Out-of-Service incidents 2016-2019

The results for both ILECs and across all ten Census Regions are both striking and consistent. For AT&T California, the Coefficients of Determination R^2 varied between a low of .378 for the Inland Empire Region to a high of .756 for the San Francisco Bay Area Region. The high t -statistics for all ten Census Regions confirm that these correlations are statistically significant at the 99.9% confidence level. As noted, the Coefficient of Determination is interpreted as the percentage of variation in the Dependent Variable (OOS Incidents in this case) that is explained by variations in the Independent Variable (Inches of Precipitation). Thus, for the Bay Area, 75.6% of all AT&T California Out-of-Service incidents can be attributed to the effects of precipitation. Even in the largely desert Inland Empire Region, 37.8% of AT&T California OOS incidents are attributable to precipitation.

For Frontier California, the Coefficients of Determination R^2 varied between a low of .099 for the San Diego / Imperial Region to a high of .746 for the Los Angeles County Region. The high t -statistics for seven of the Census Regions are statistically significant at the 99.9% confidence level; two others are statistically significant at the 99% level, and one at the 97.5% level. Note, however, that four of the ten Frontier Census Regions each have 4 or fewer wire centers, thus reducing the statistical significance of the calculated results. The Region with the lowest R^2 – San Diego – has only two Frontier wire centers, such that no statistical significance can legitimately be ascribed to this result. It is difficult to draw meaningful statistical inferences where the number of observations is as small as four or less, so for these four Census Regions the results are at best inconclusive.

The calculated regression lines for each Census Region identify the mathematical relationship extant between Inches of Precipitation and OOS per 100 Access Lines. For example, the regression equation for the San Francisco Bay Area is computed as:

$$y = 0.741 + 0.147 x$$

where

$$y = \text{OOS per 100 Access Lines}$$

$$x = \text{Monthly Inches of Precipitation}$$

The “ y -intercept” value here is 0.741, which is interpreted as estimating that in a month with zero inches of precipitation, the predicted number of OOS per 100 Access Lines would be 0.741. In a month with, for example, three (3) inches of precipitation, the predicted number of OOS per 100 Access Lines would be $0.741 + 3 \times 0.147$, or 1.182 OOS incidents per 100 Access Lines.

From a visual inspection of the scatter points on each of these graphs, it is also evident that the calculated relationship is essentially linear over the typical range of precipitation.

In certain cases, out-of-service incidents attributable to adverse weather conditions may be deemed beyond ILEC management’s control, resulting in such events being “excluded” for purposes of GO 133-C/D service quality measurements and tracking. But while the precise dates

and extent of such conditions cannot be known in advance, *this analysis confirms that the observed relationships extant between precipitation and OOS incidents is consistent both over time and across a broad spectrum of geographic areas. The fact that these events will arise at some point over time is thus well known and highly predictable, and certainly should be a major consideration in the engineering and construction of telecommunications distribution networks.*

The strong relationship between rainfall and the rate of service outages provides compelling evidence that both ILECs' California distribution networks are not as robust as they need to be to account for local weather conditions over time. Weather or any other environmental factors that "caused" a particular out-of-service incident may (arguably) make that event "beyond management's *immediate* control," but the design and construction of the distribution network should certainly account for these types of weather conditions. And that is certainly well within the scope of "management's control" and responsibilities.

From a cost/benefit standpoint, there is an economic tradeoff between the up-front investment in constructing robust and weather-resistant network facilities and the ongoing amount of money that will need to be spent on maintenance for service restoration in the event of a weather-related outage. While the quantification of that tradeoff is outside of the scope of this study, the Commission may want to consider developing an engineering economic assessment of that relationship as a basis for establishing some minimum outage rates associated with adverse weather conditions. In that regard, the "public interest" in that economic trade-off likely differs considerably from that of the ILEC. The ILEC's decision process is limited to its own internalized costs and benefits – what ongoing maintenance savings will it realize for each additional amount spent on network construction. From the public's perspective, the trade-off must necessarily include broader economic and public safety considerations that fall outside of the economic trade-offs confronting the carriers..



Telephone service outages appear to be highly dependent upon weather conditions, specifically, the amount of precipitation in the area served.



The strong relationship between rainfall and the rate of service outages provides a strong indication that the ILEC distribution networks are not as robust as they need to be, and clearly lack the resiliency to withstand significant weather events.

Figure 13.2. REGION 1 SUPERIOR CALIFORNIA (AT&T)

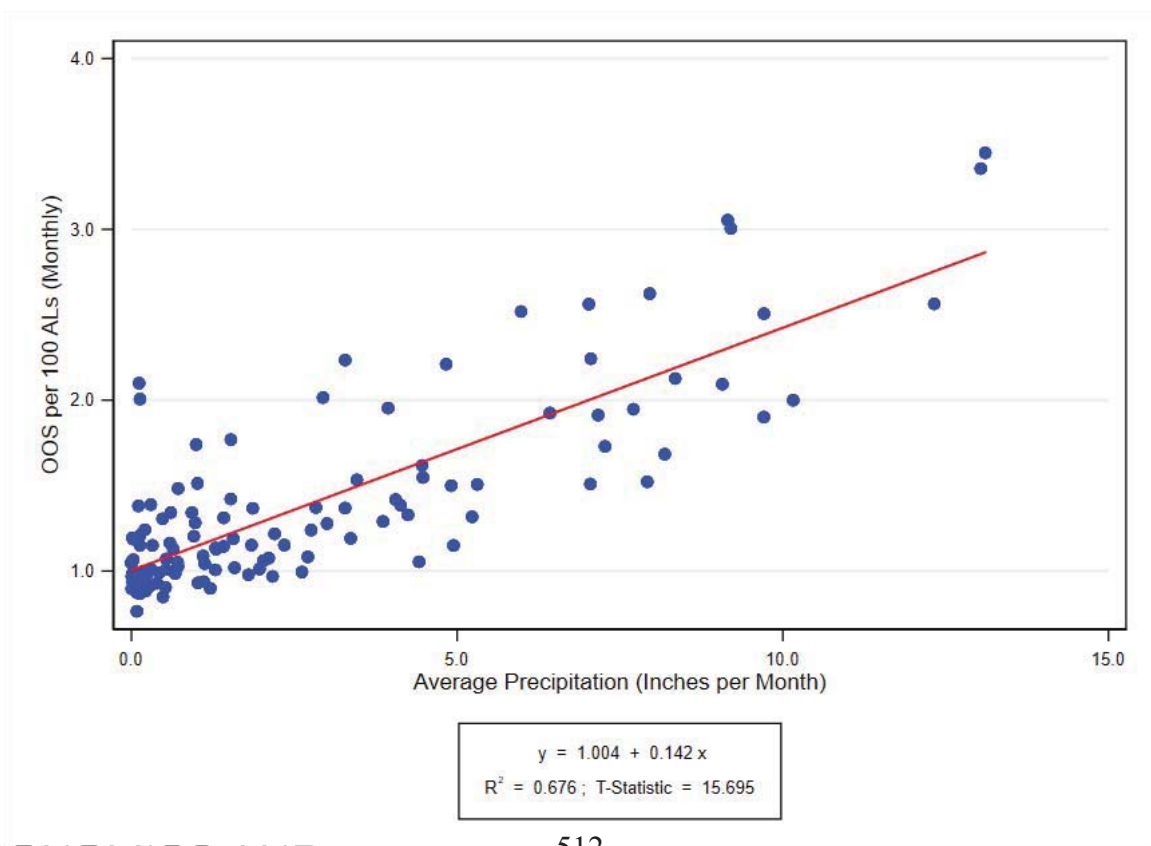
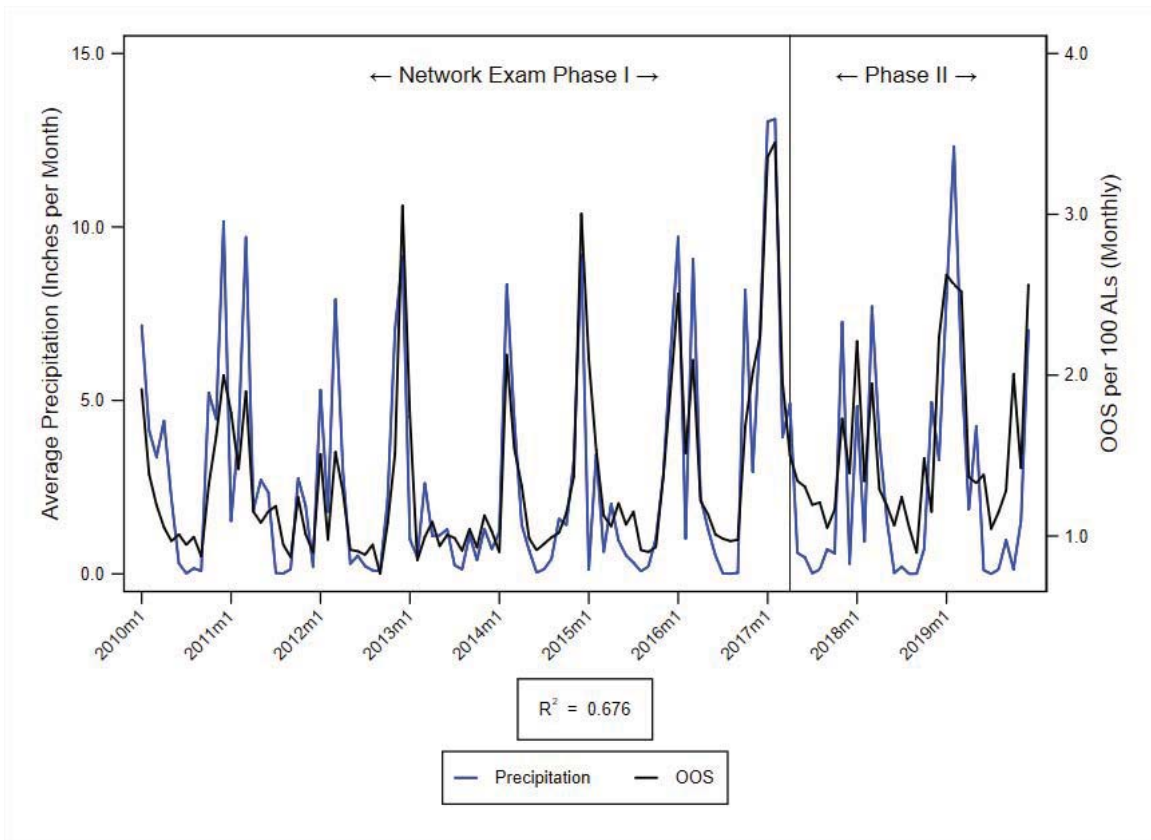


Figure 13.3. REGION 2 NORTH COAST (AT&T)

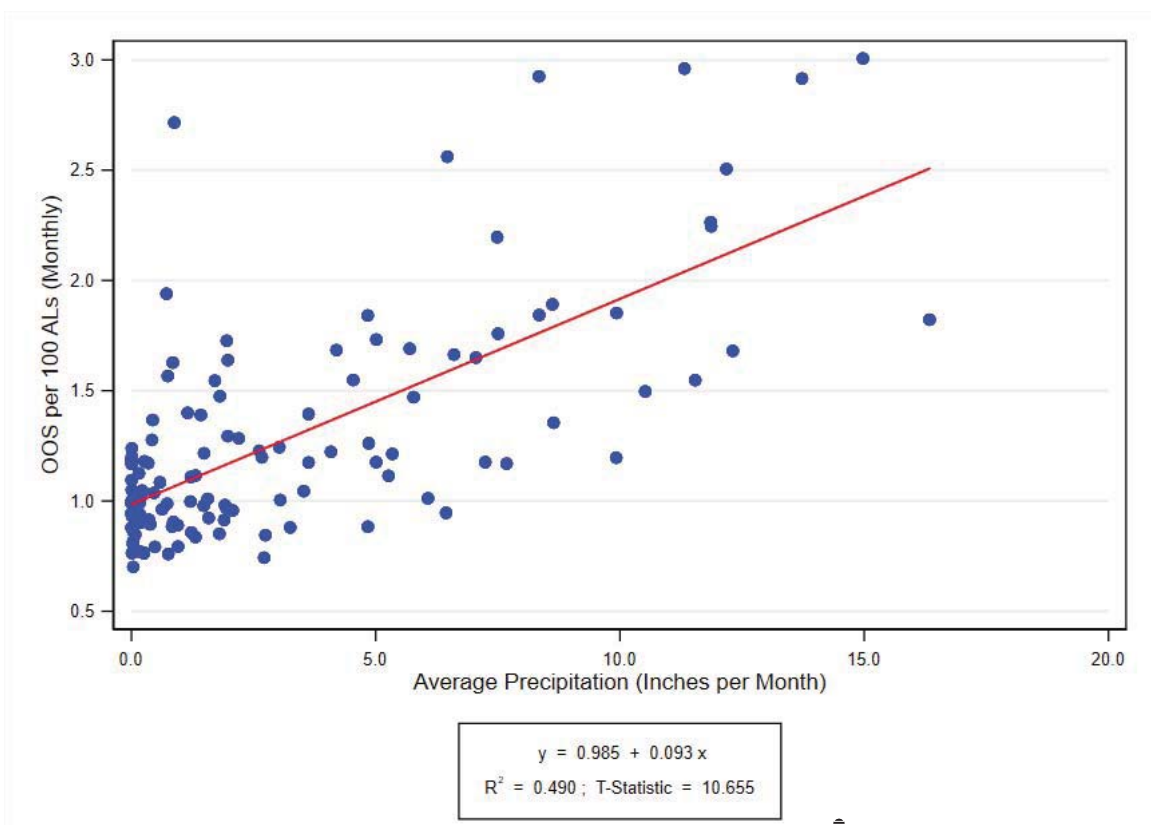
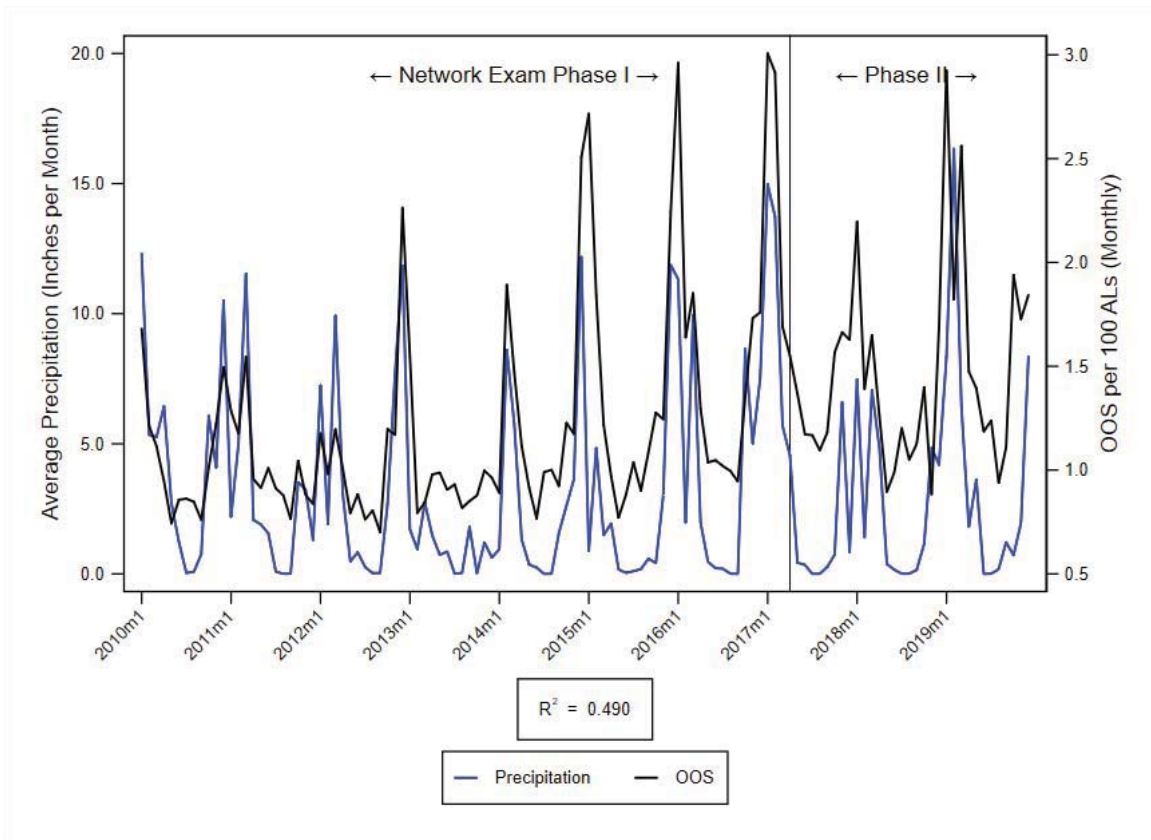


Figure 13.4. REGION 3 SAN FRANCISCO BAY AREA (AT&T)

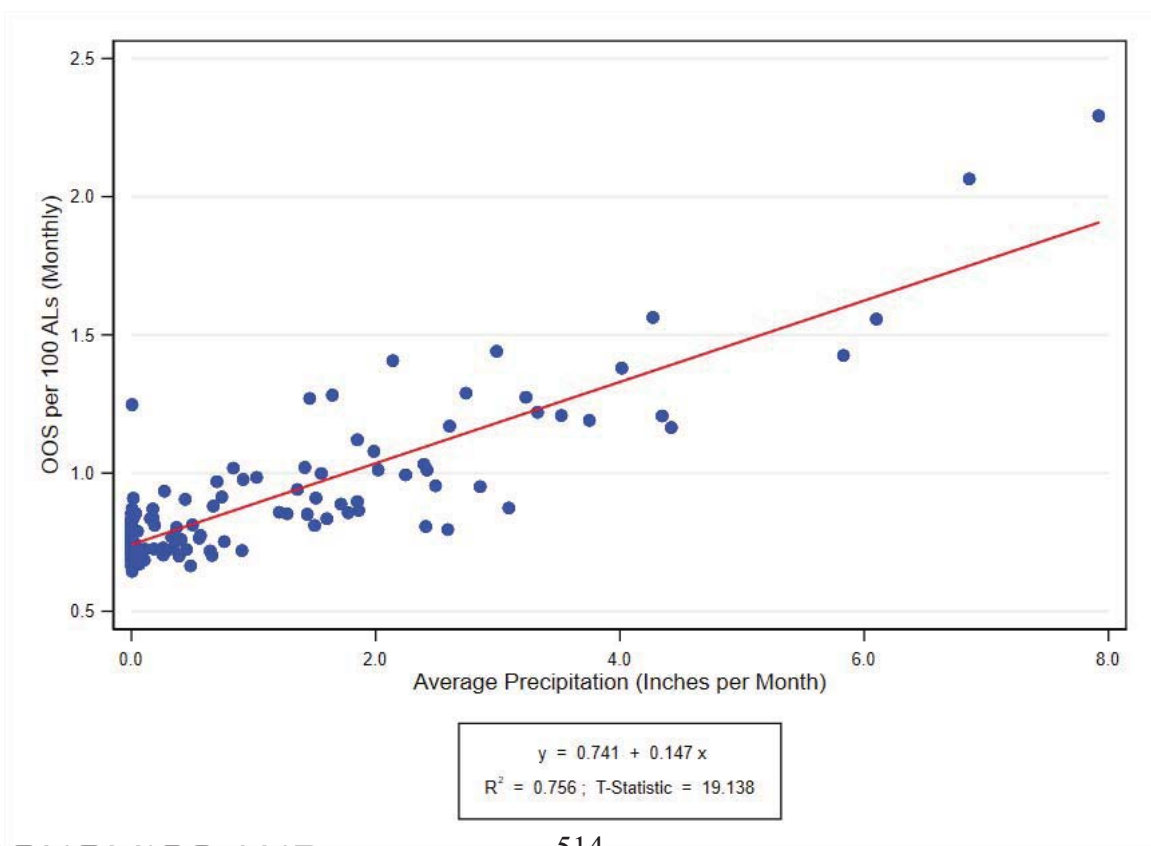
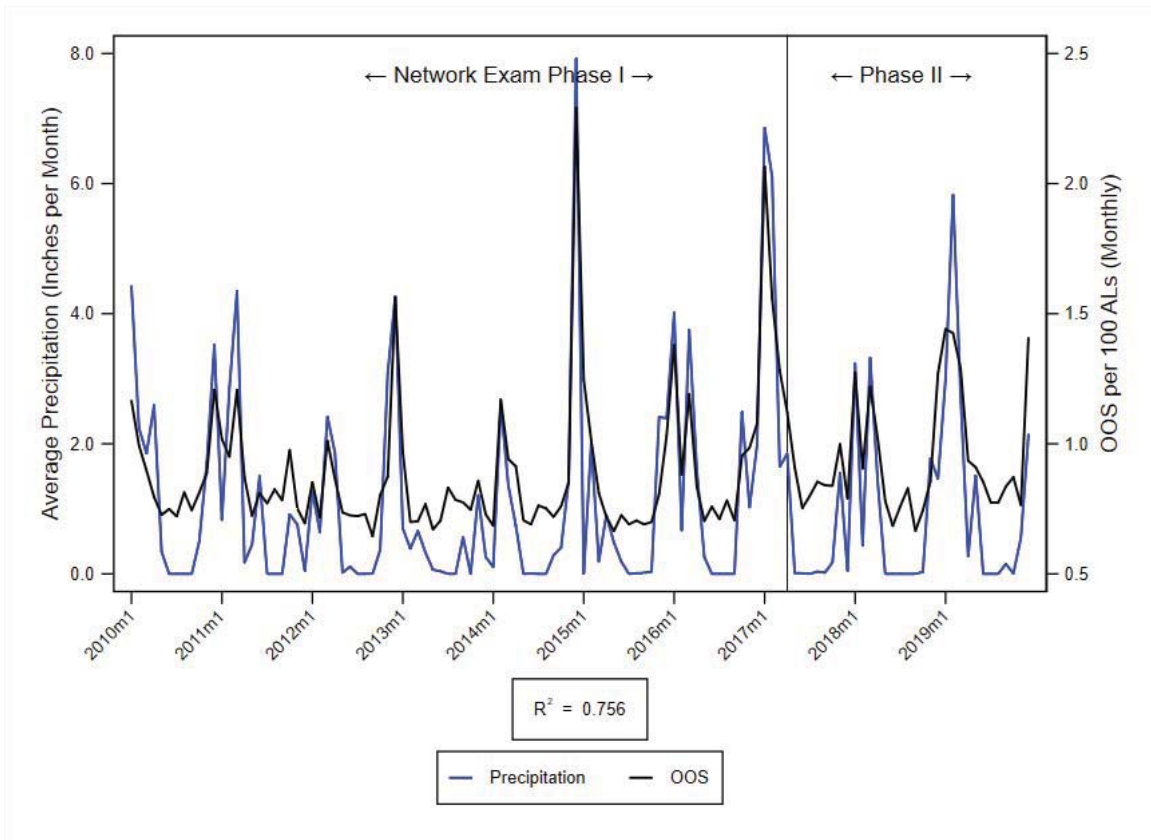


Figure 13.5. REGION 4 NORTHERN SAN JOAQUIN VALLEY (AT&T)

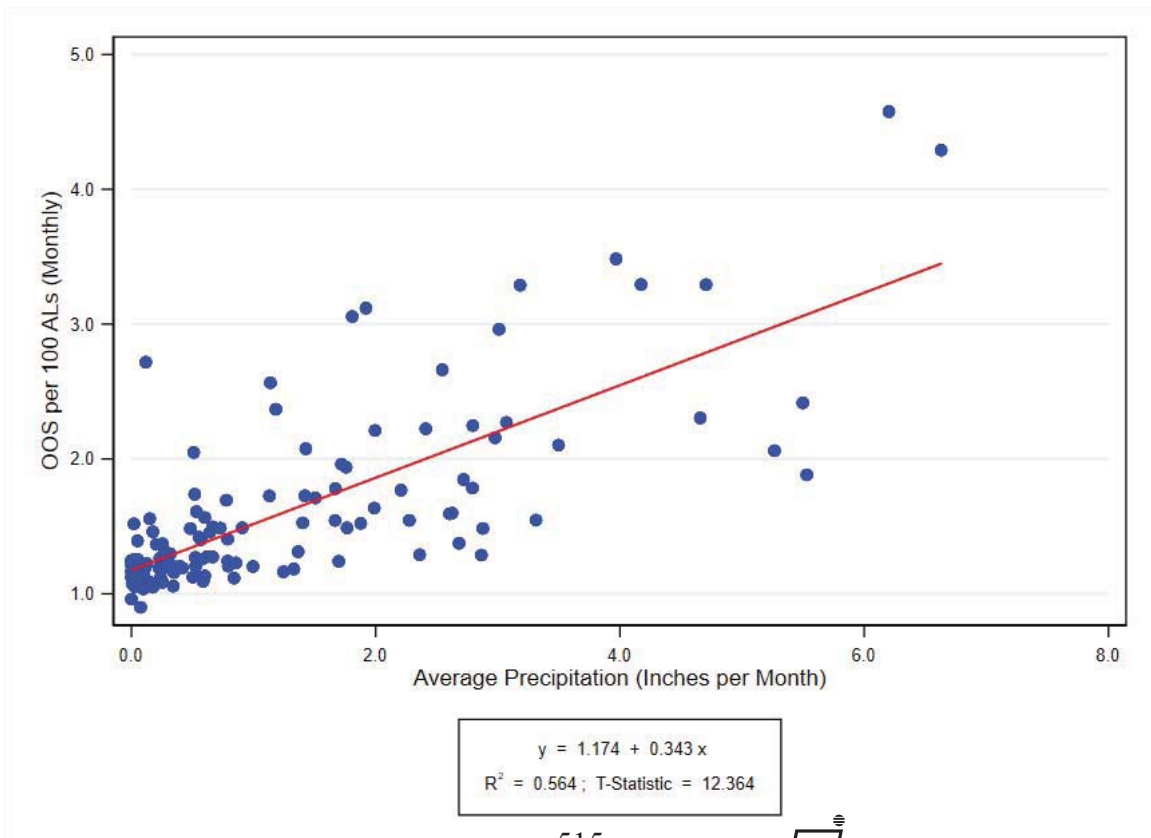
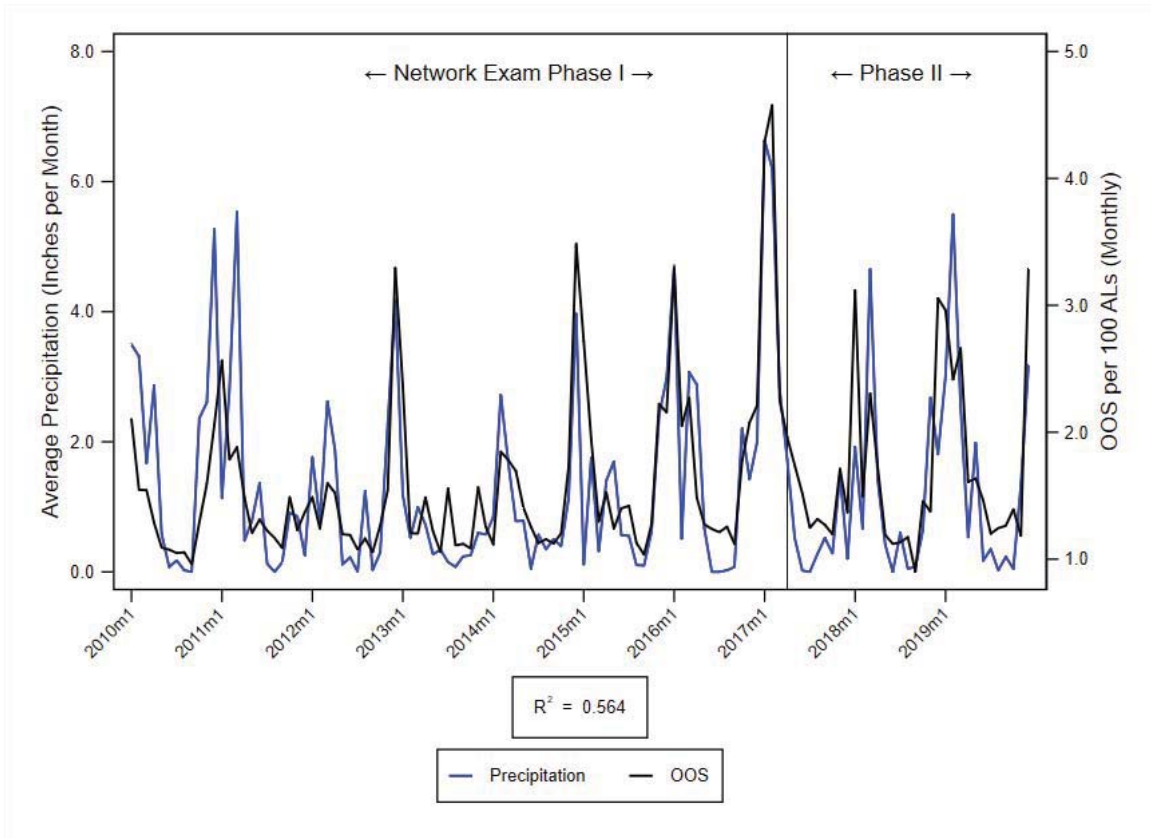


Figure 13.6. REGION 5 CENTRAL COAST (AT&T)

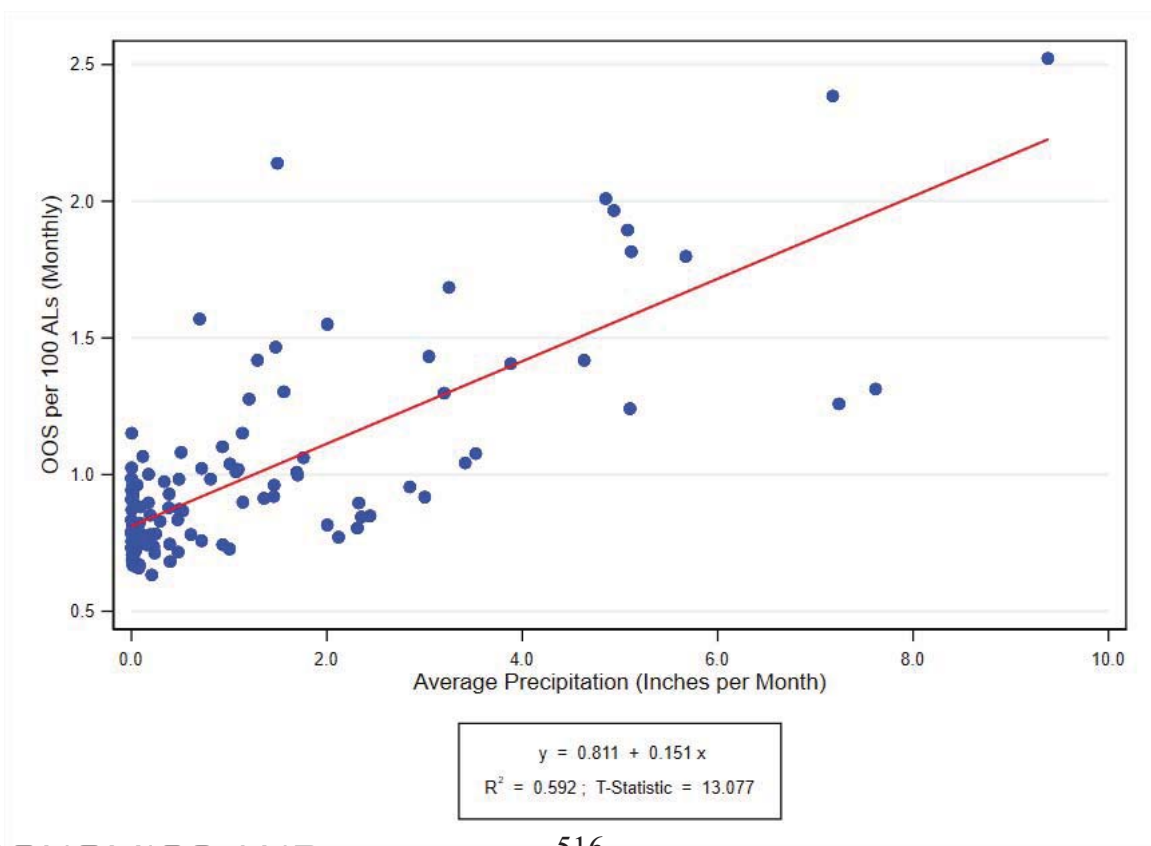
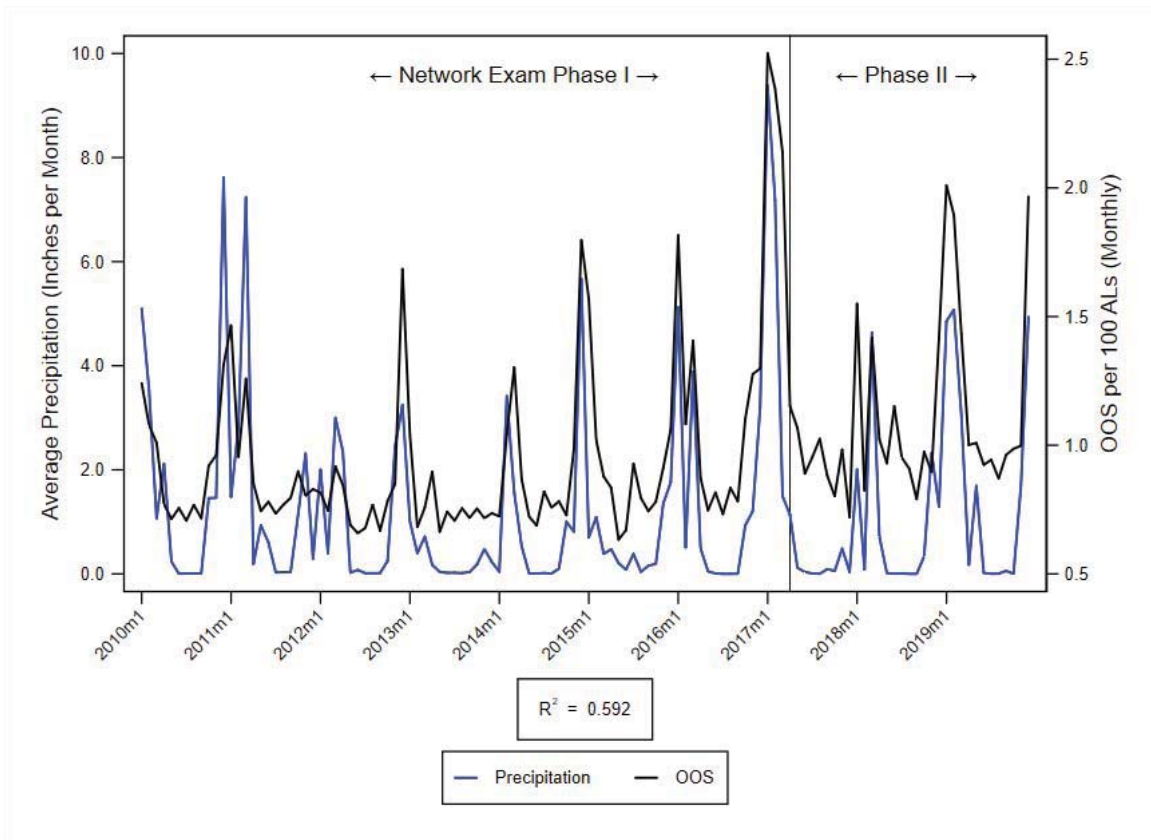


Figure 13.7. REGION 6 SOUTHERN SAN JOAQUIN VALLEY (AT&T)

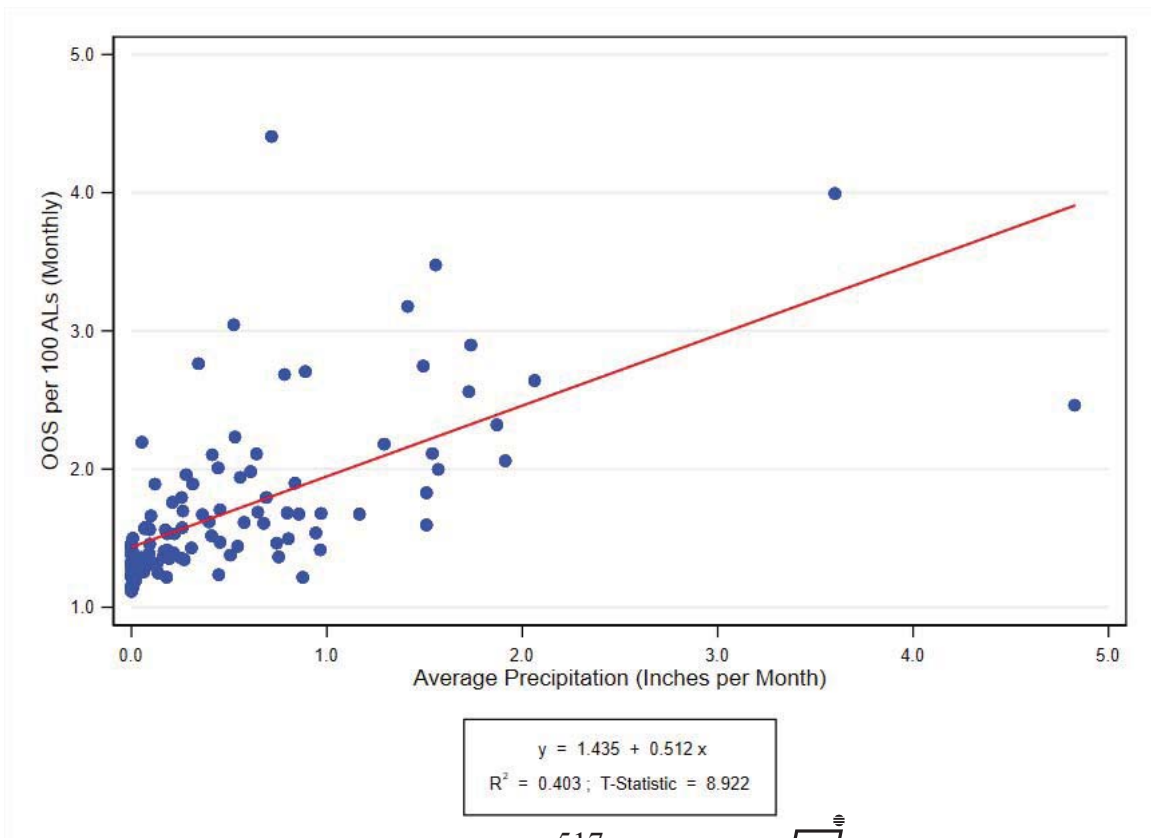
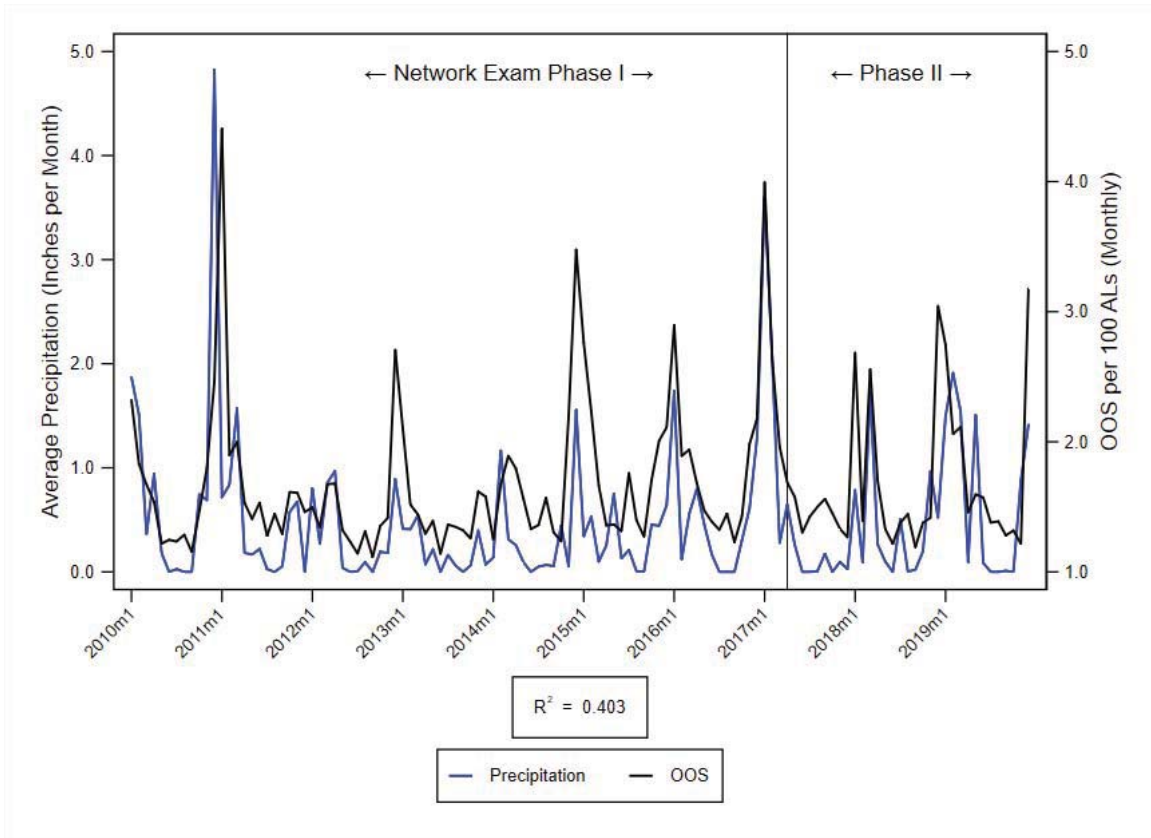


Figure 13.8. REGION 7 INLAND EMPIRE (AT&T)

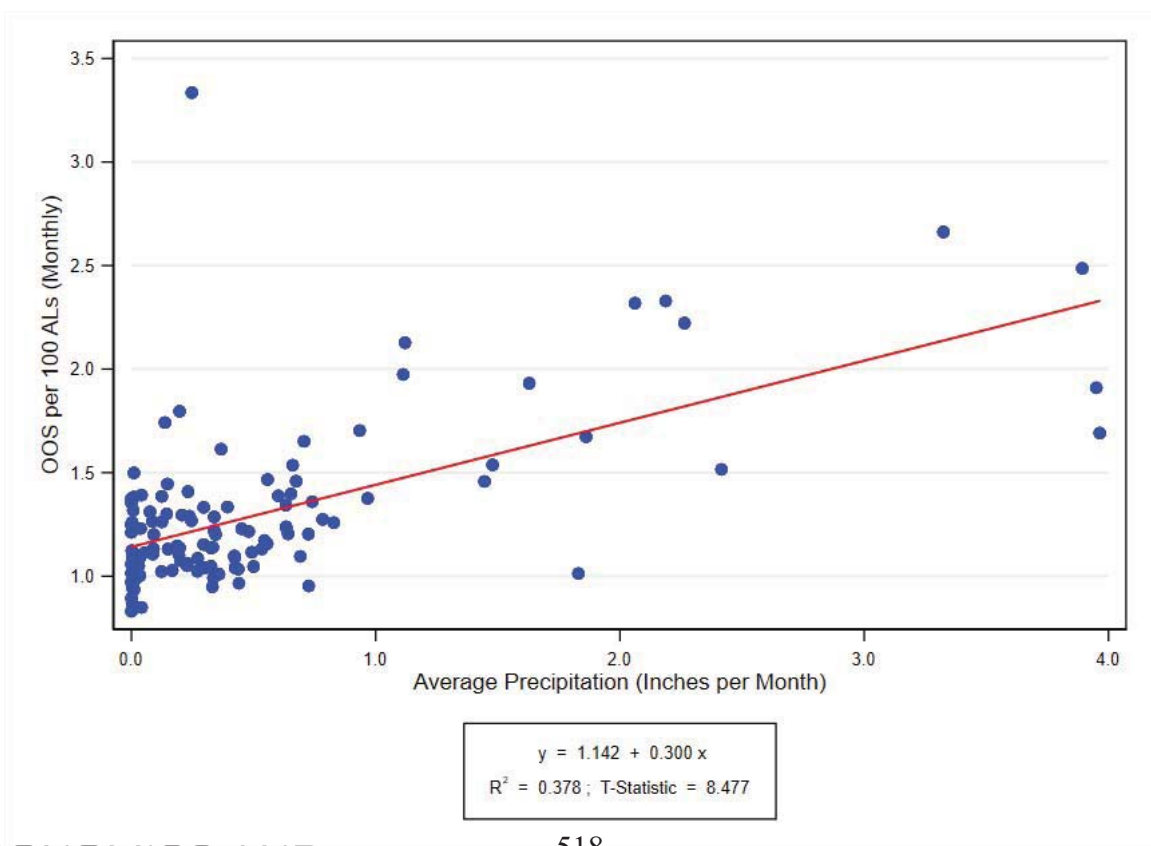
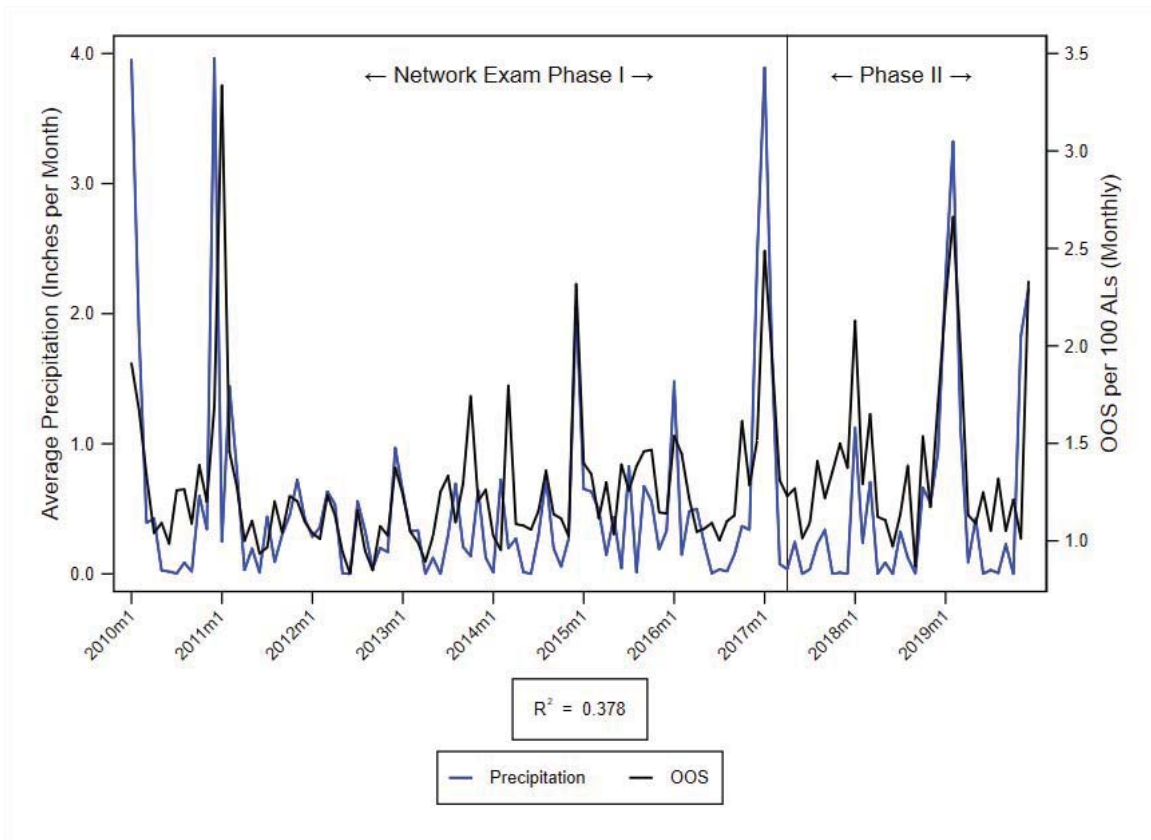


Figure 13.9. REGION 8 LOS ANGELES (AT&T)

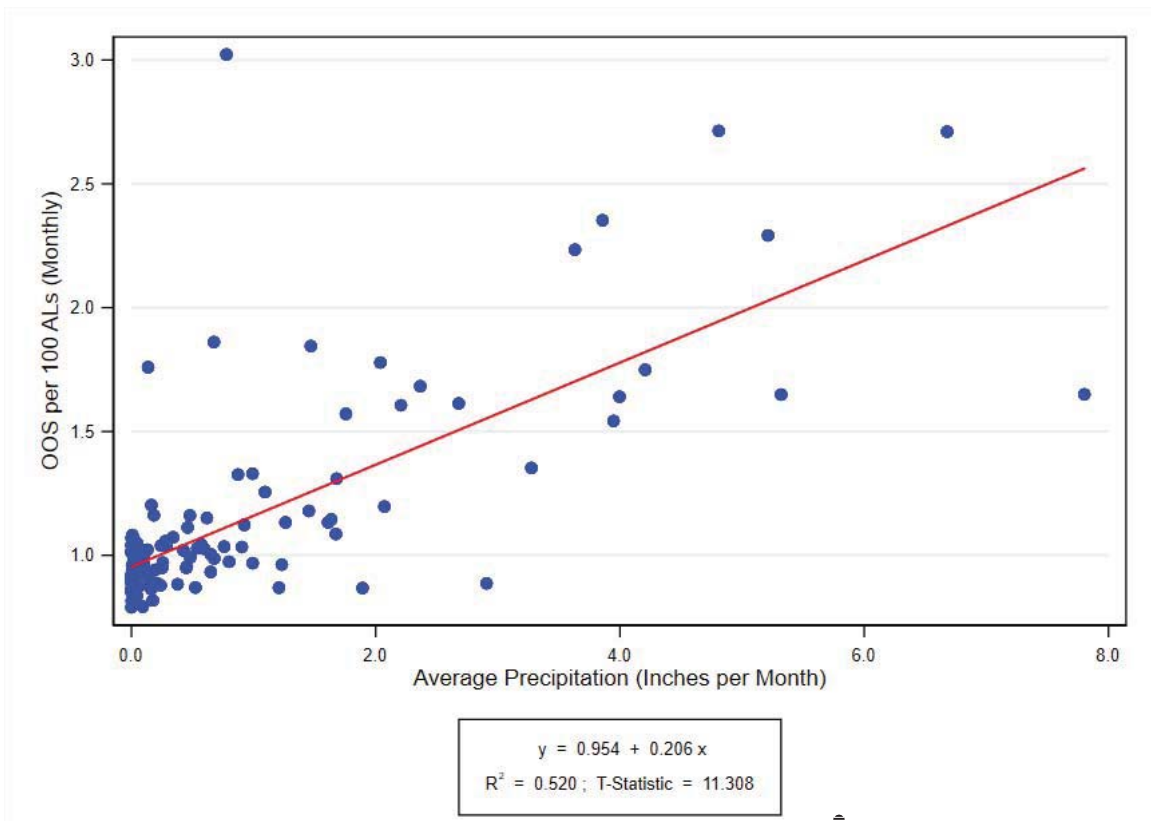
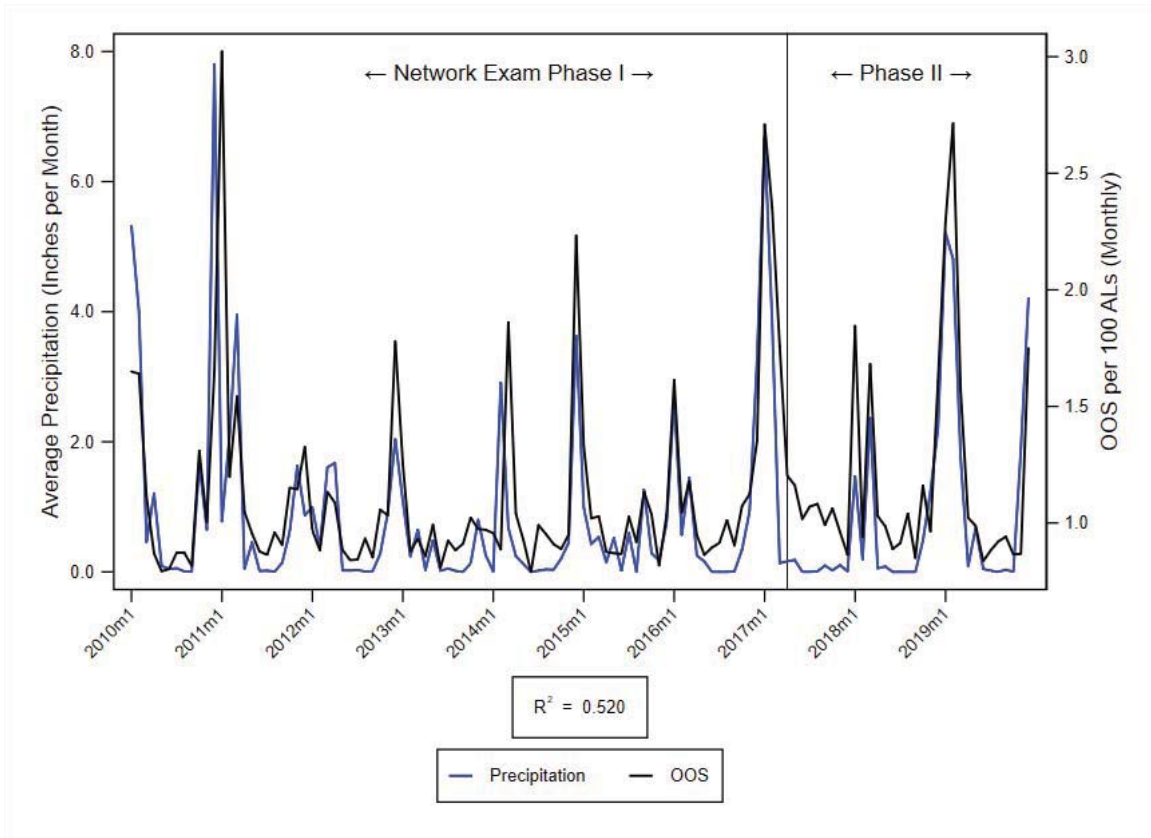


Figure 13.10. REGION 9 ORANGE (AT&T)

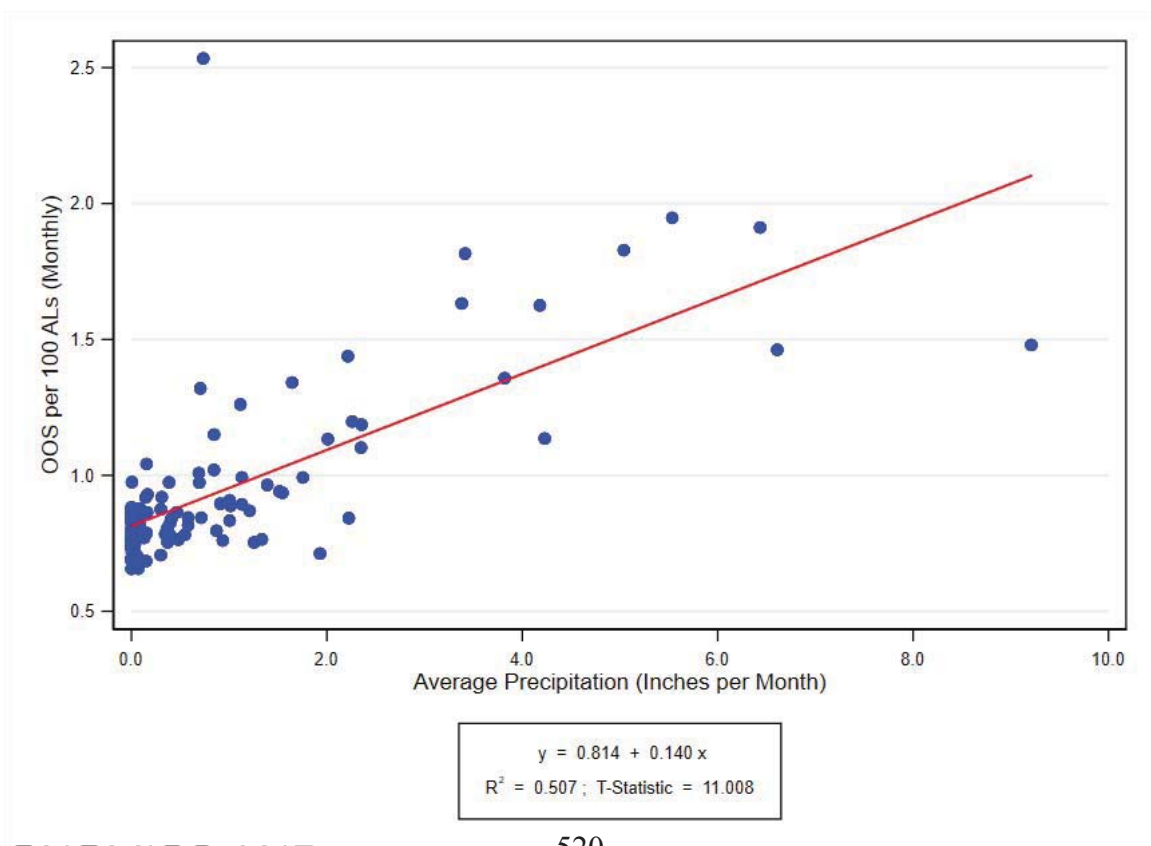
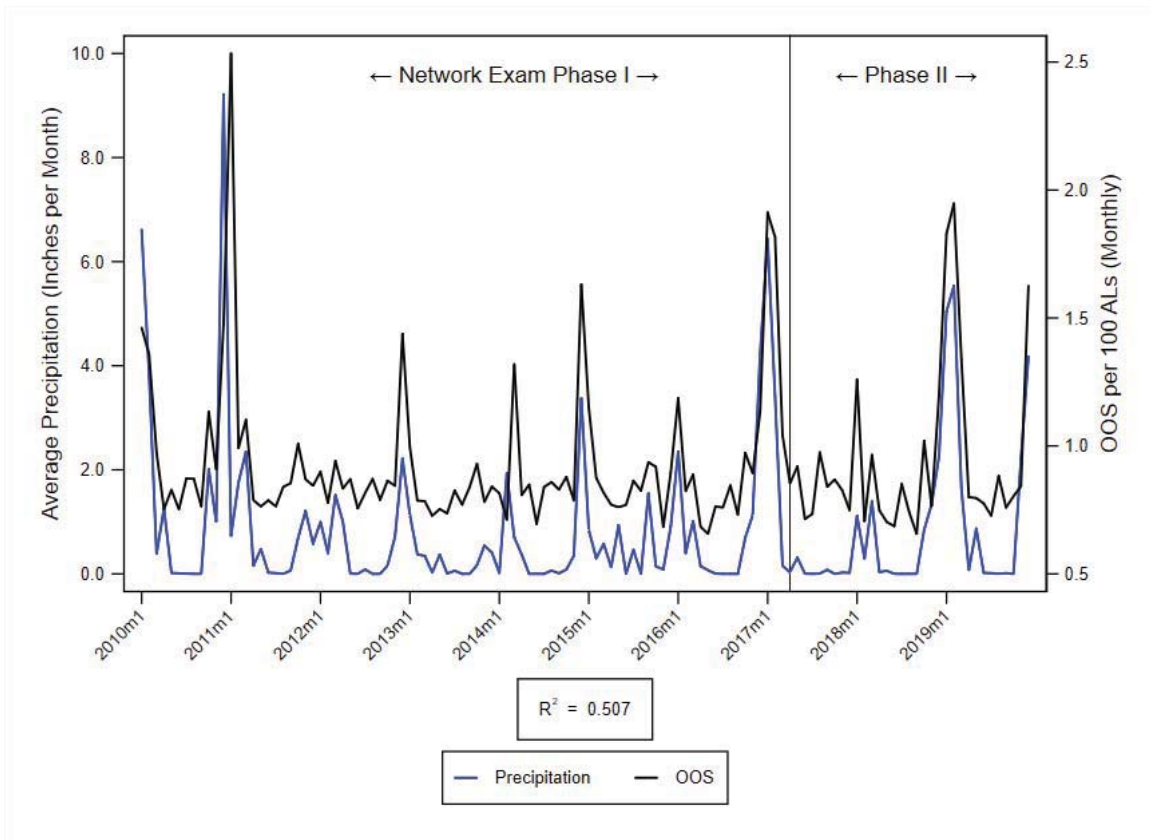


Figure 13.11. REGION 10 SAN DIEGO-IMPERIAL (AT&T)

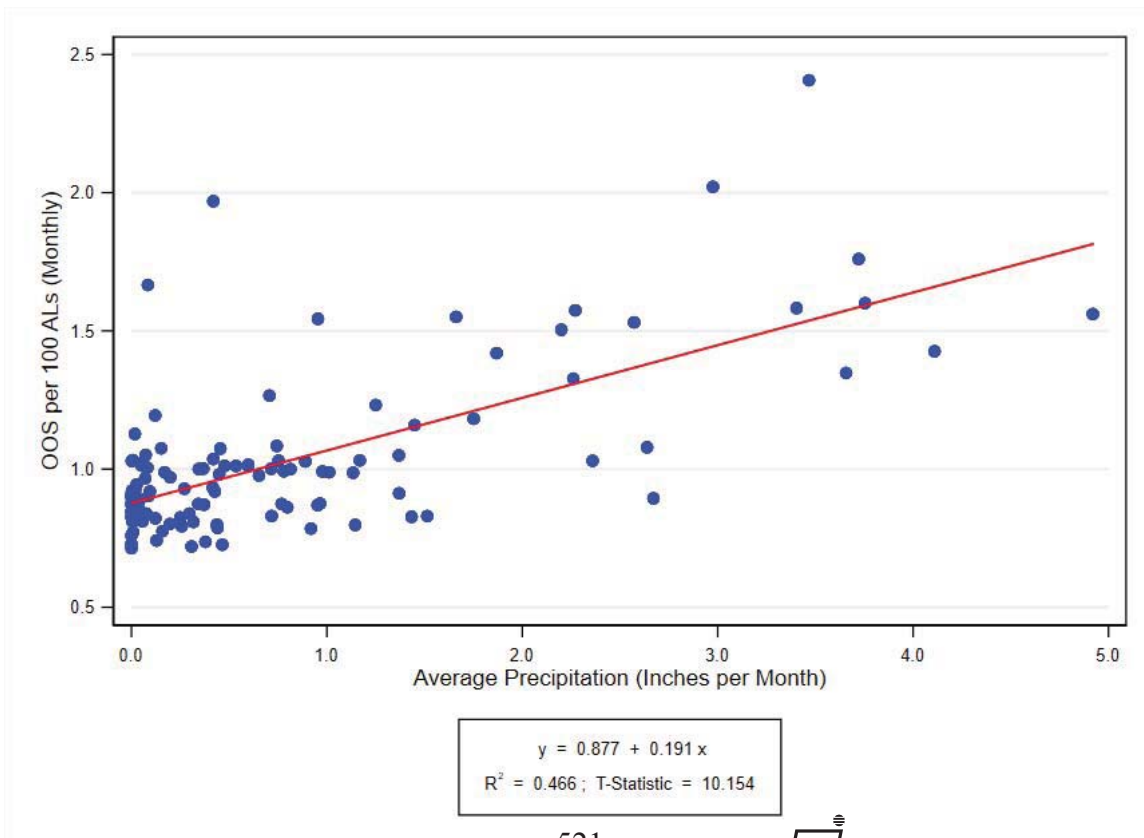
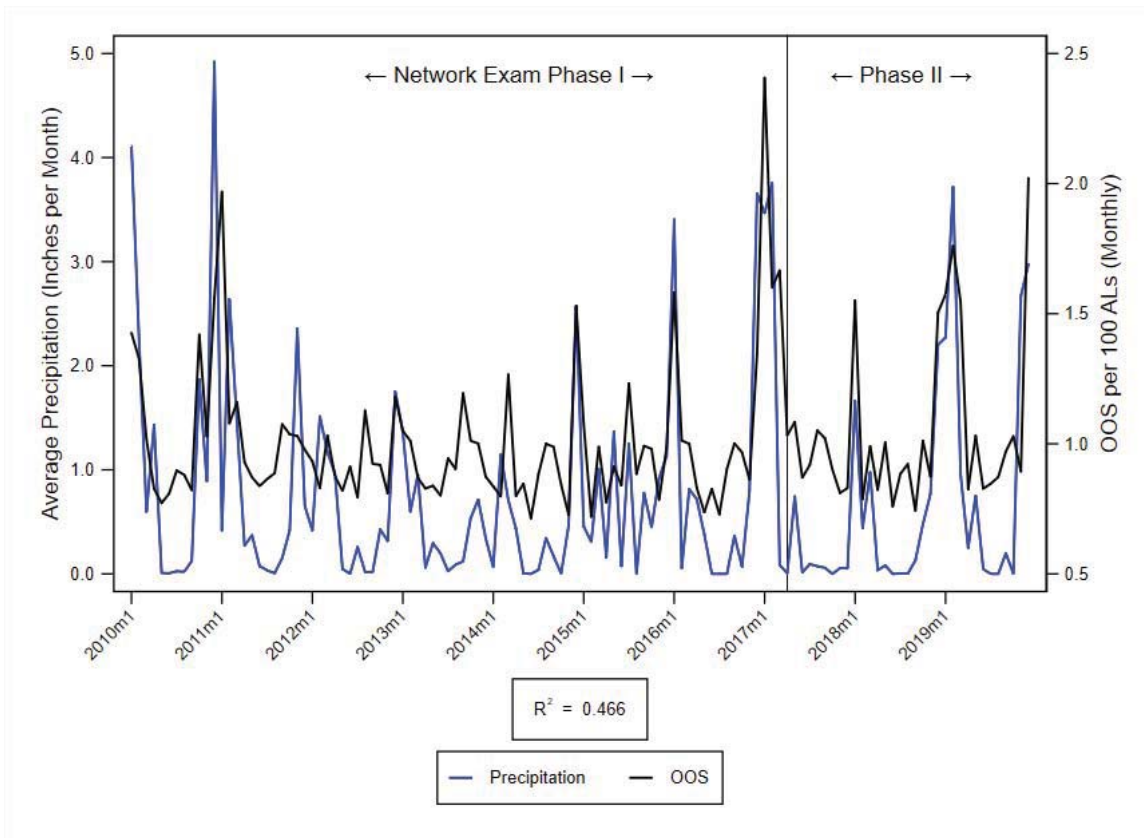


Figure 13.12. REGION 1 SUPERIOR CALIFORNIA (FTR)

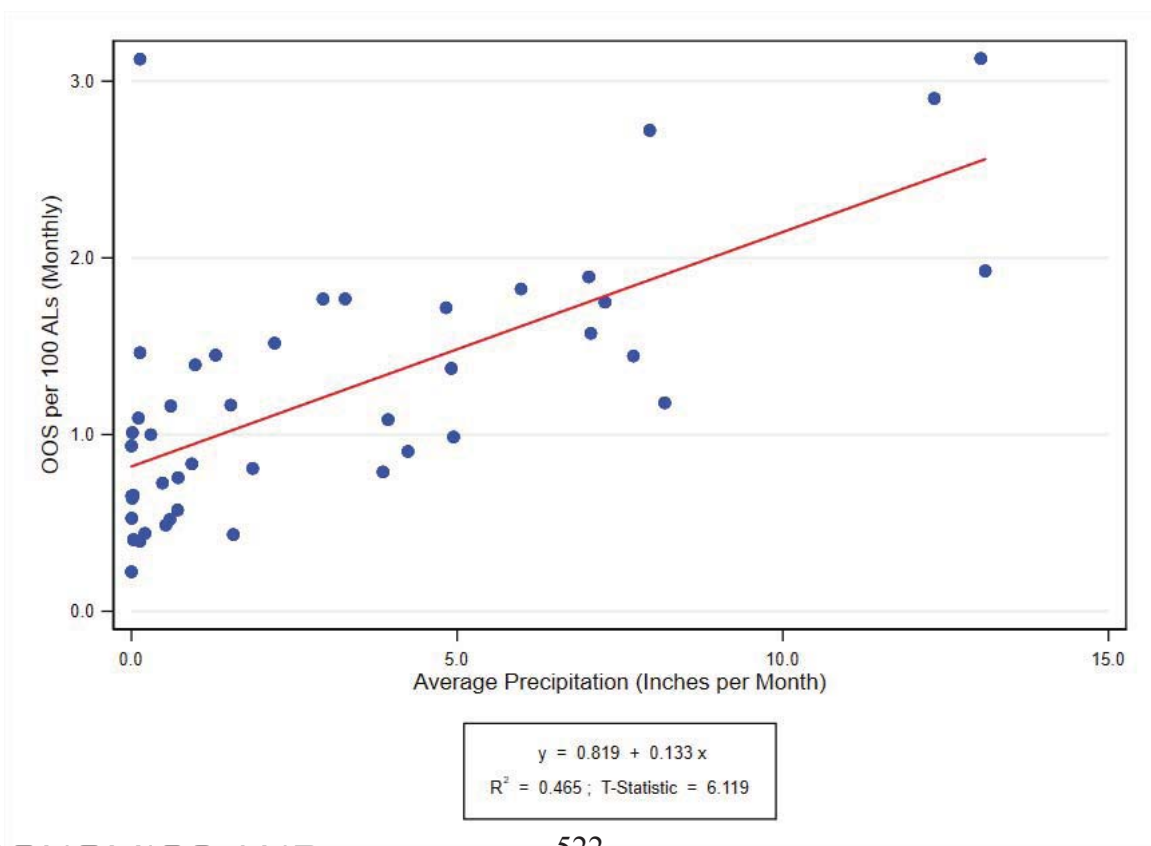
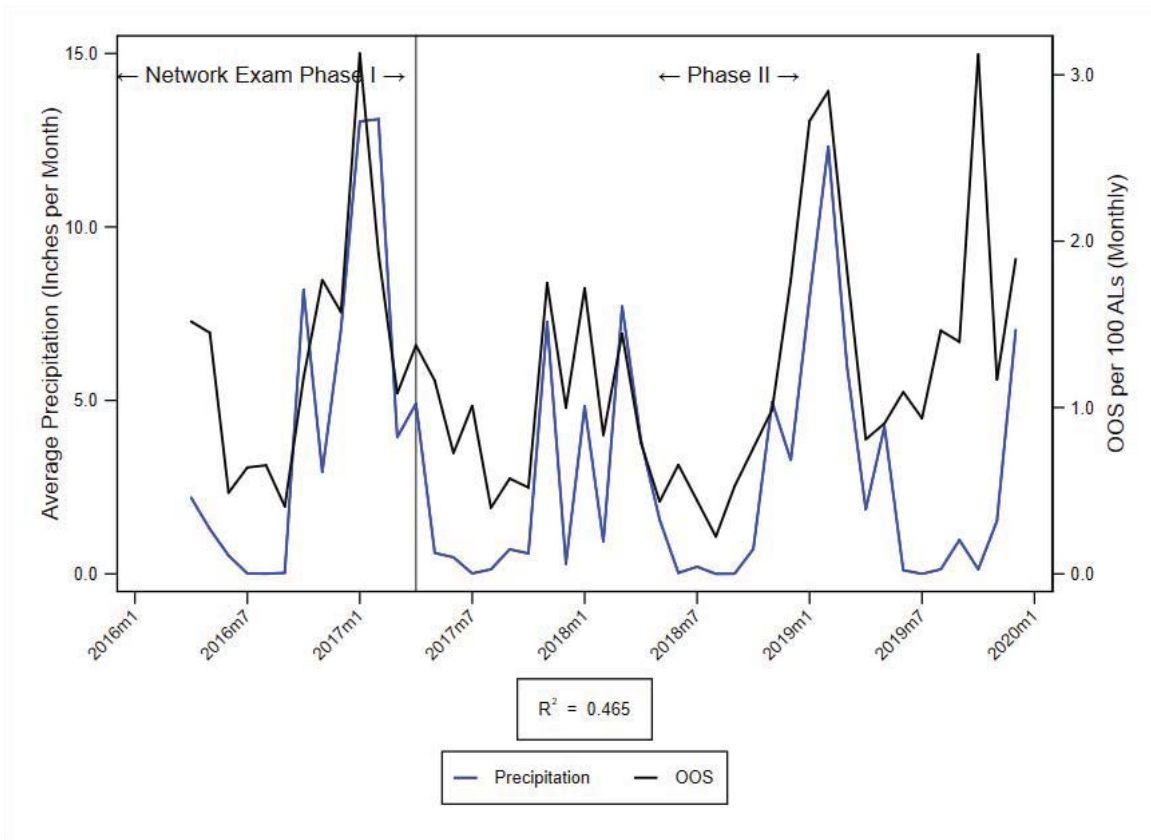


Figure 13.13. REGION 2 NORTH COAST (FTR)

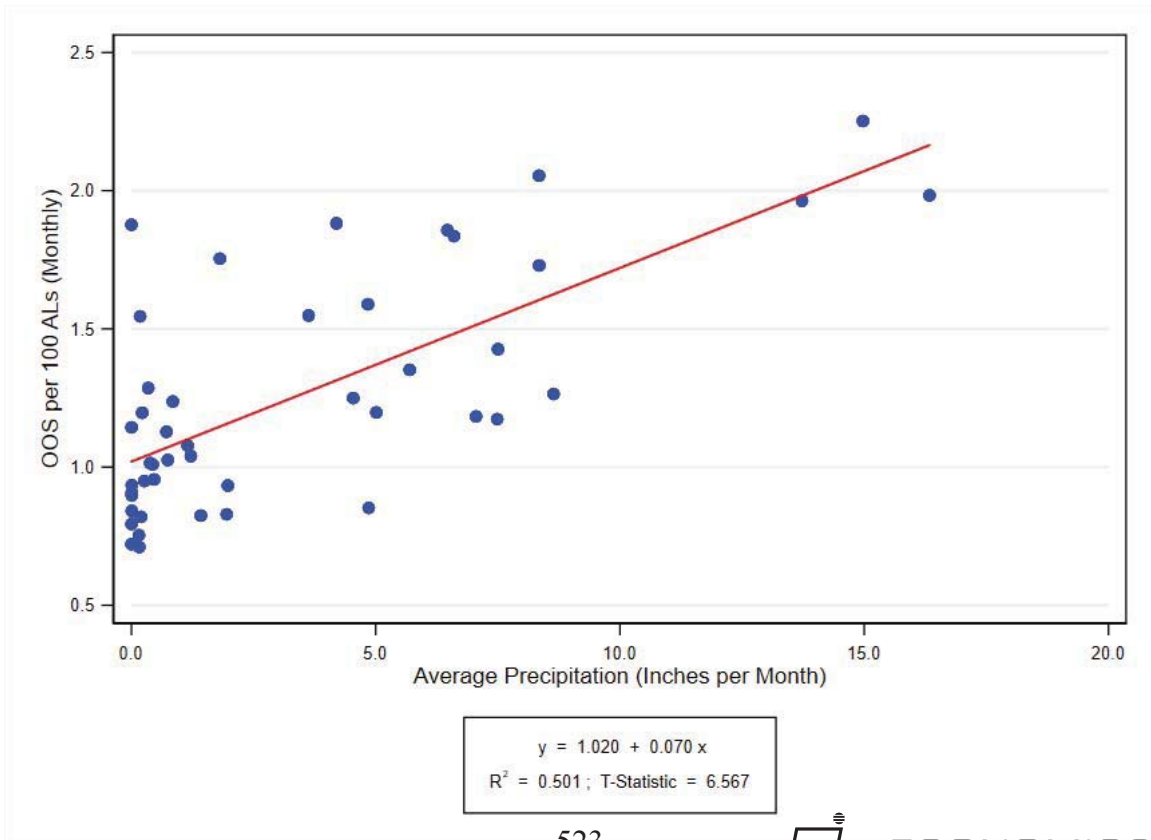
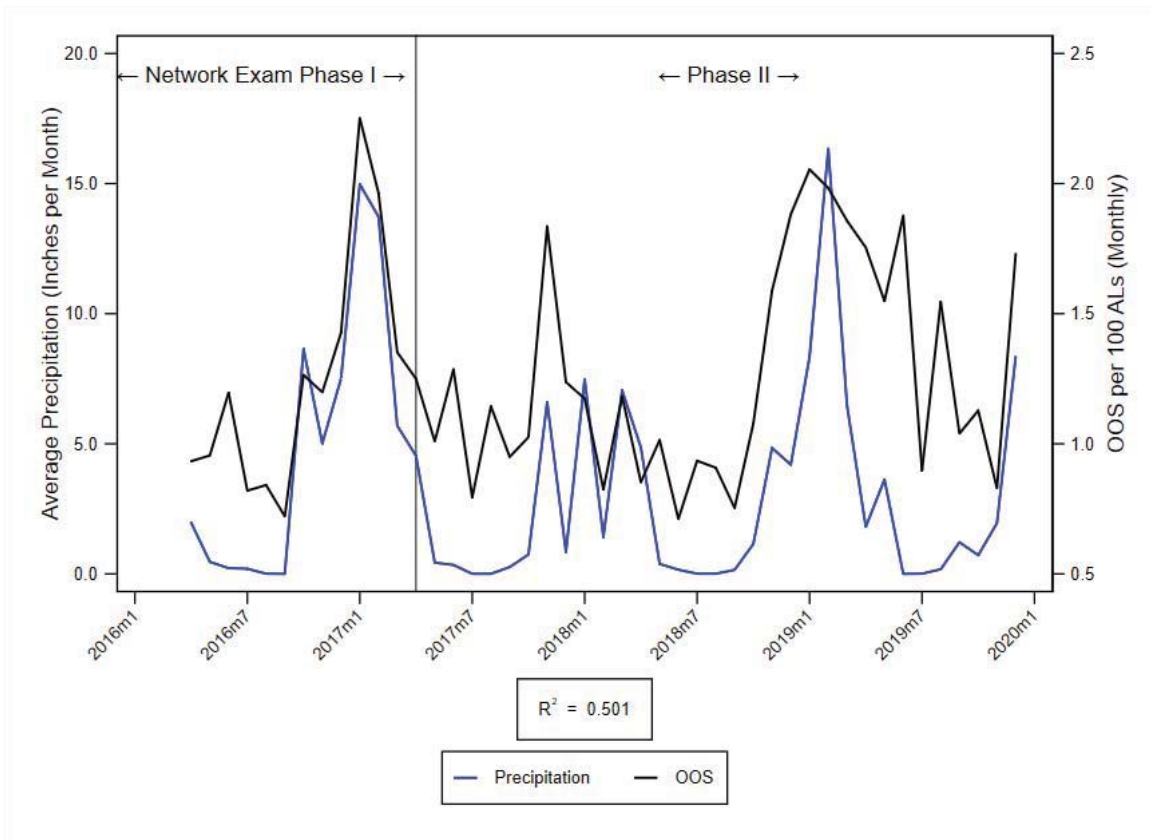


Figure 13.14. REGION 3 SAN FRANCISCO BAY AREA (FTR)

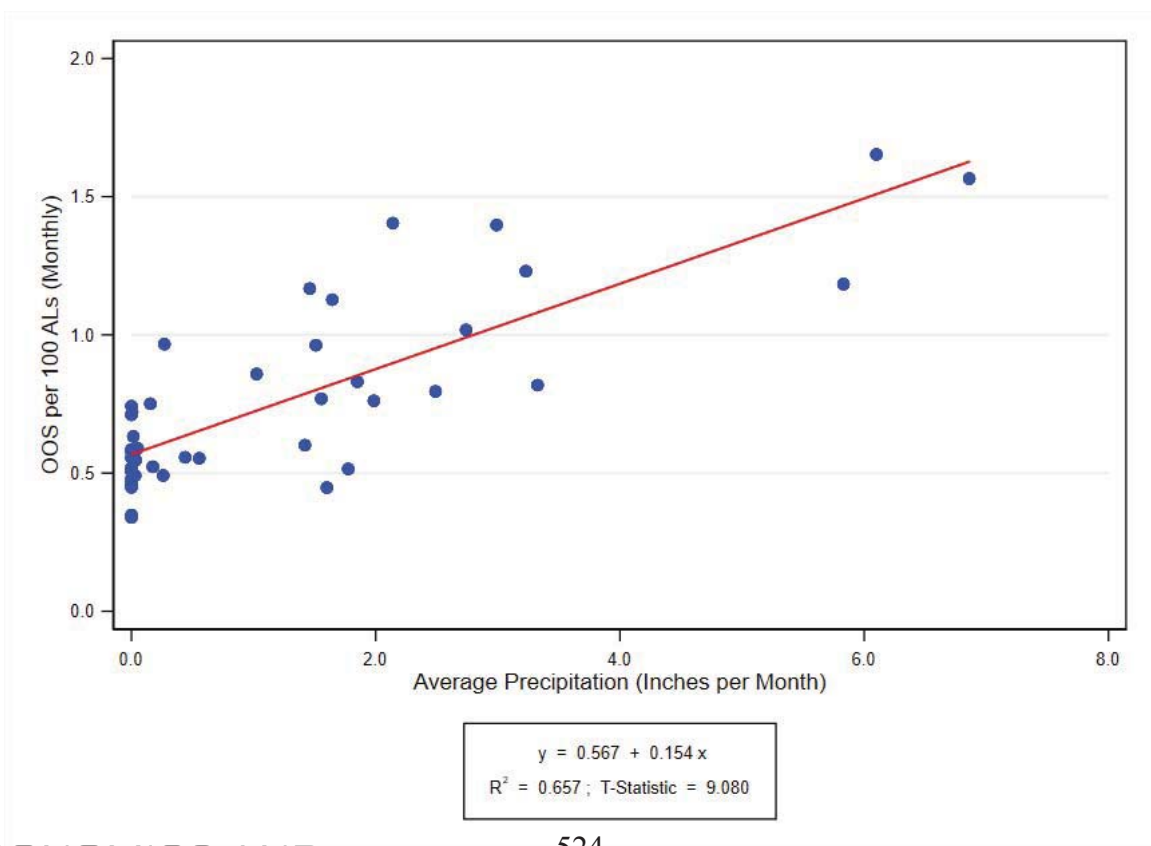
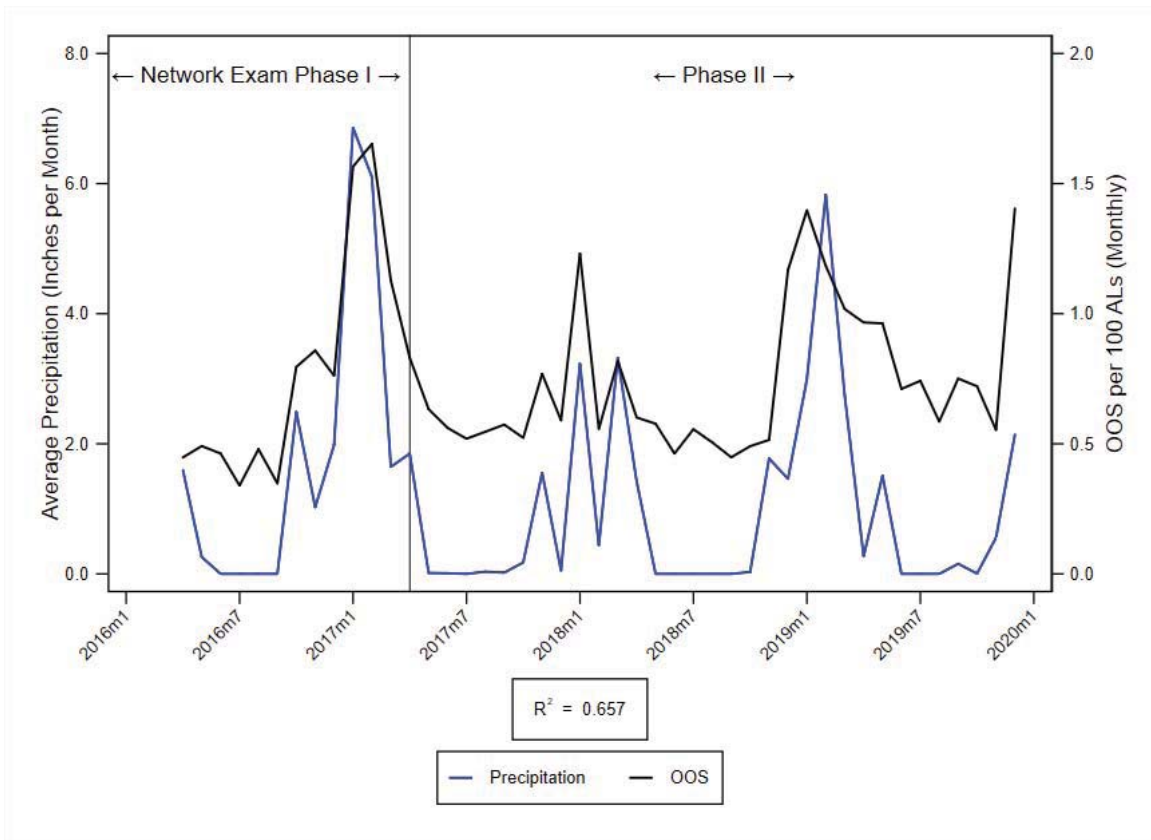


Figure 13.15. REGION 4 NORTHERN SAN JOAQUIN VALLEY (FTR)

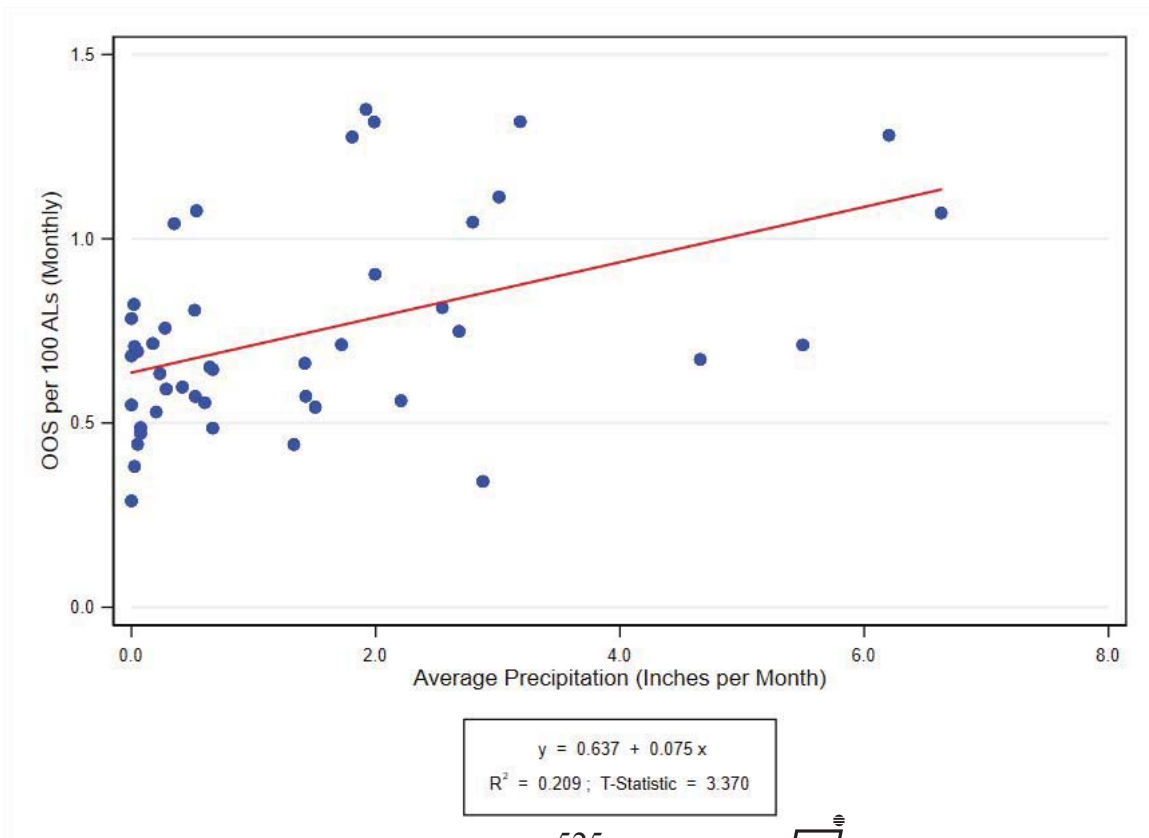
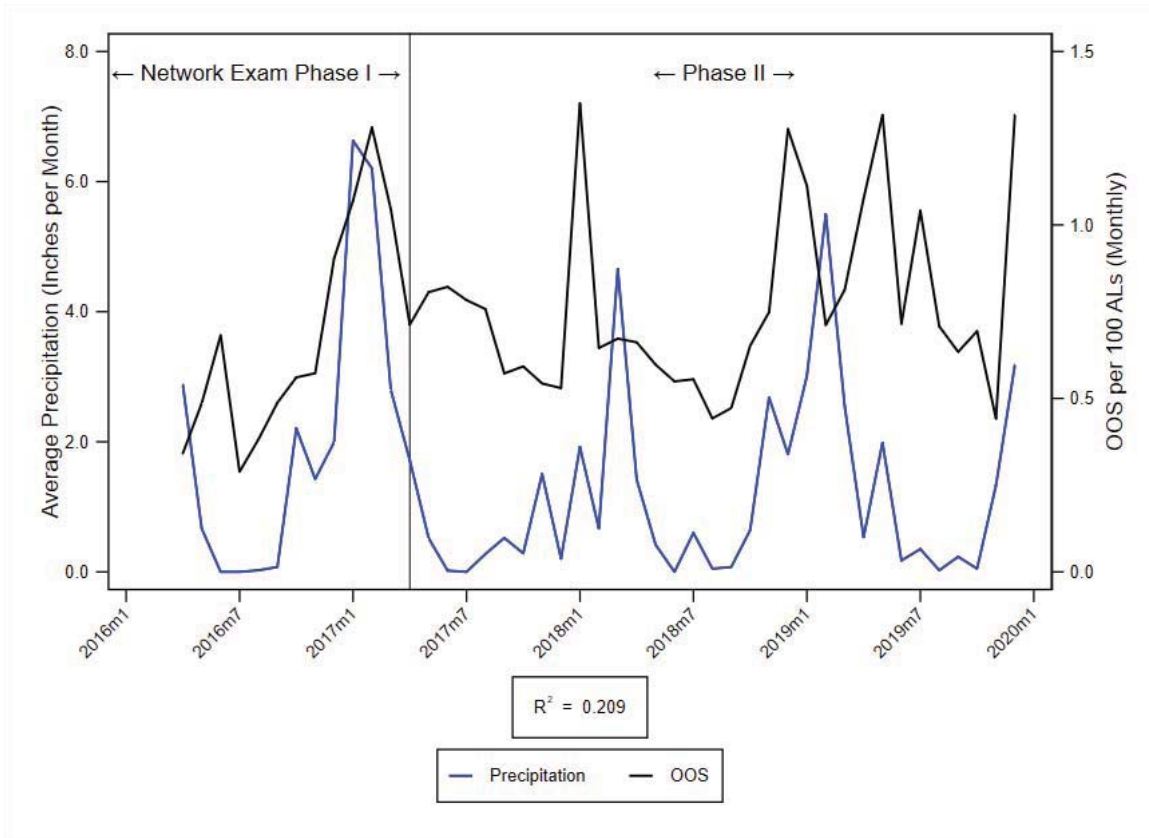


Figure 13.16. REGION 5 CENTRAL COAST (FTR)

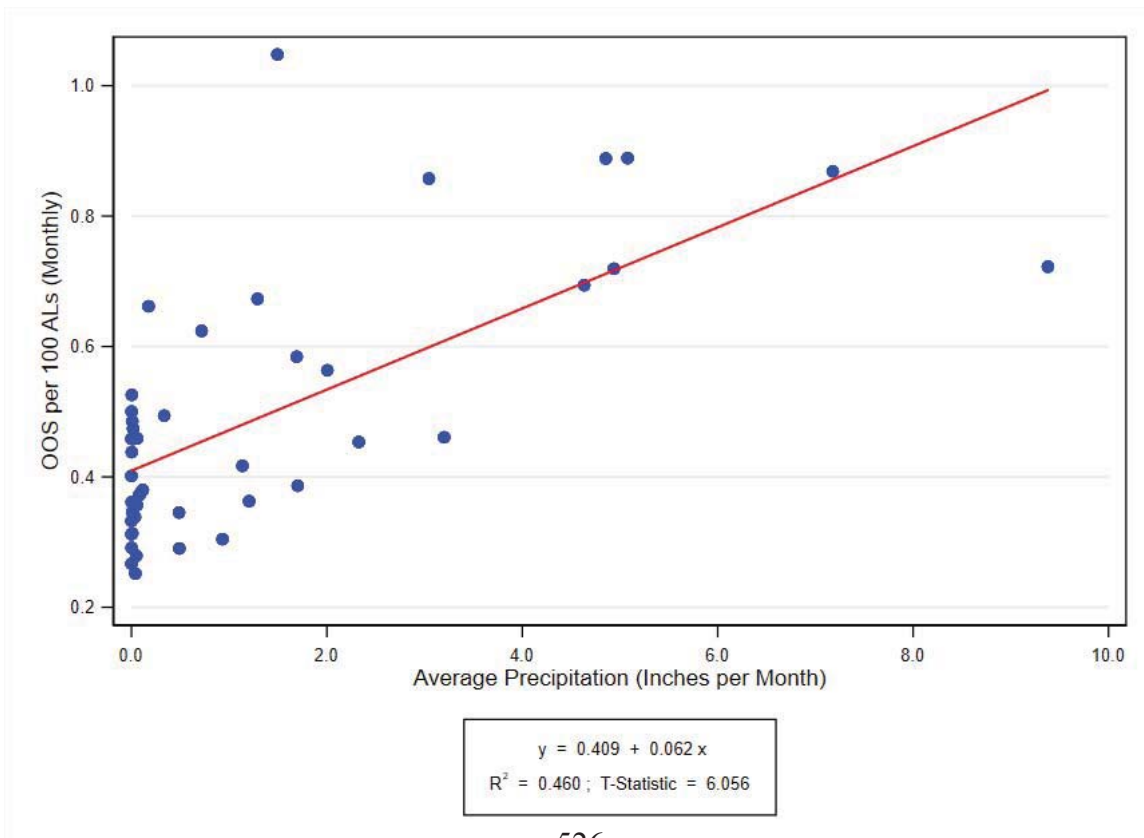
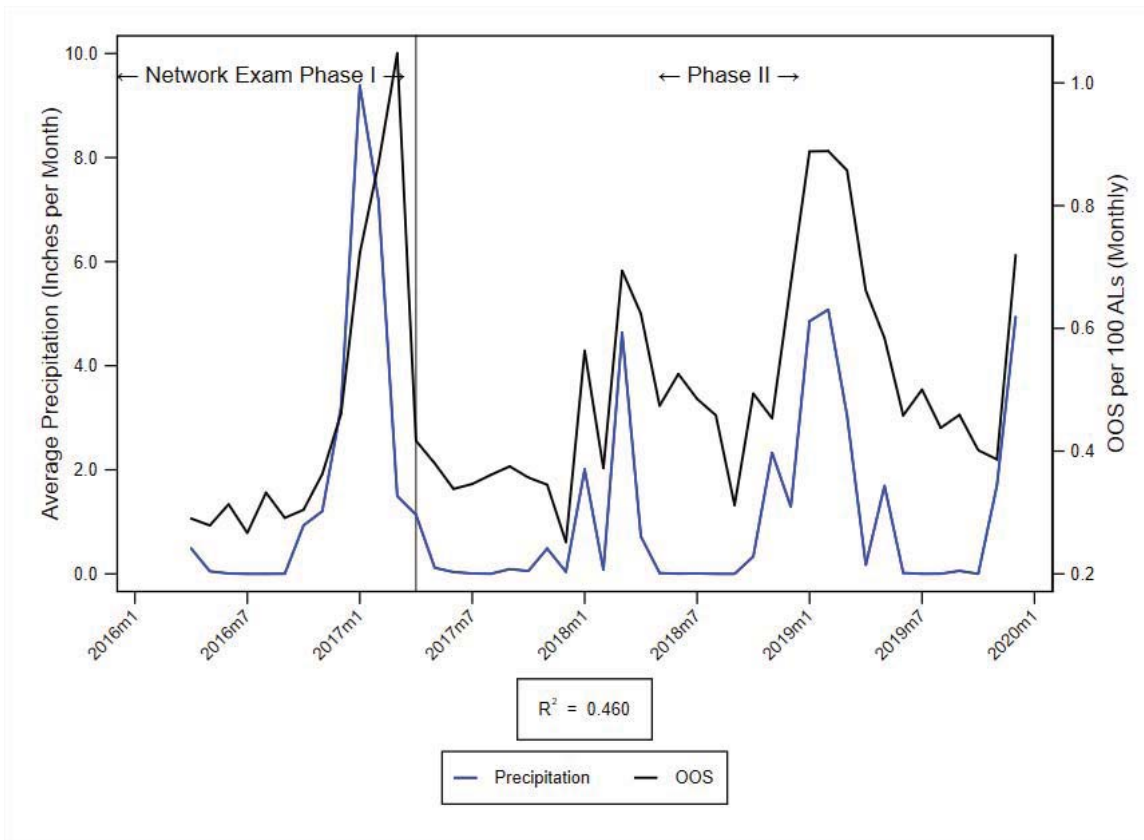


Figure 13.17. REGION 6 SOUTHERN SAN JOAQUIN VALLEY (FTR)

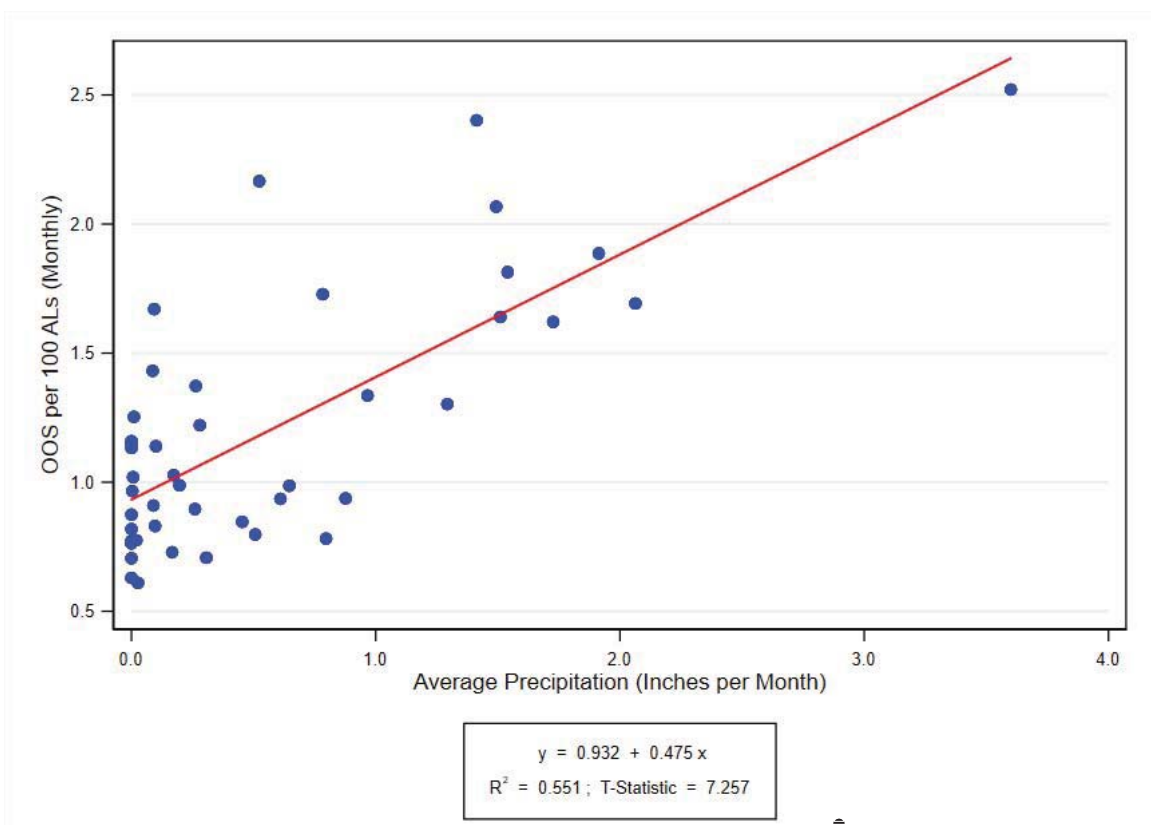
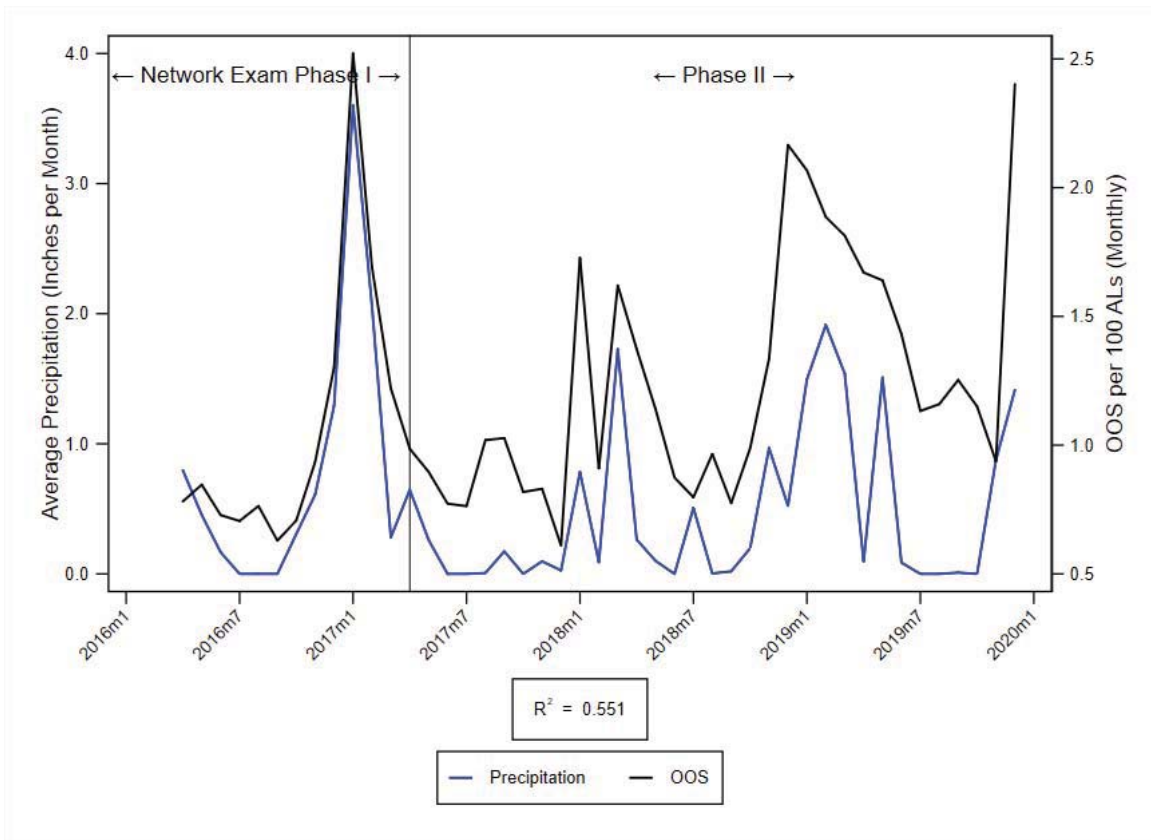


Figure 13.18. REGION 7 INLAND EMPIRE (FTR)

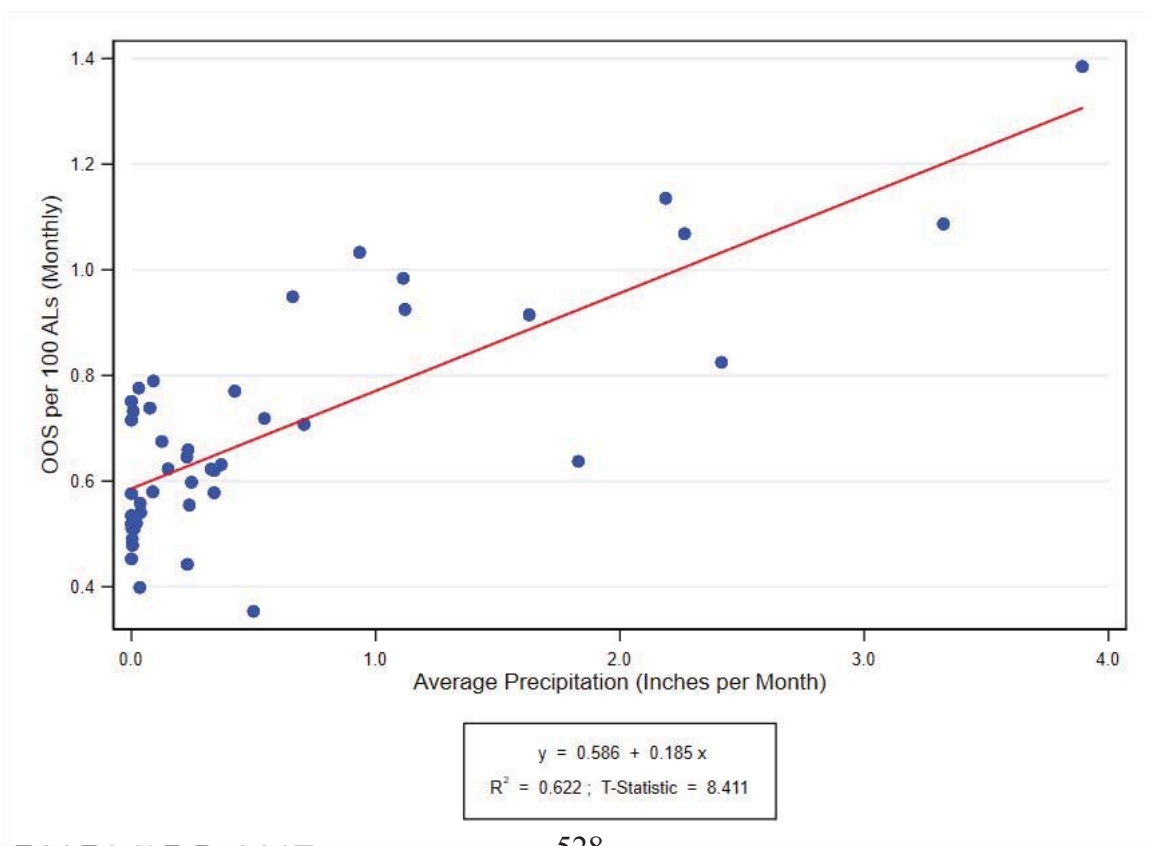
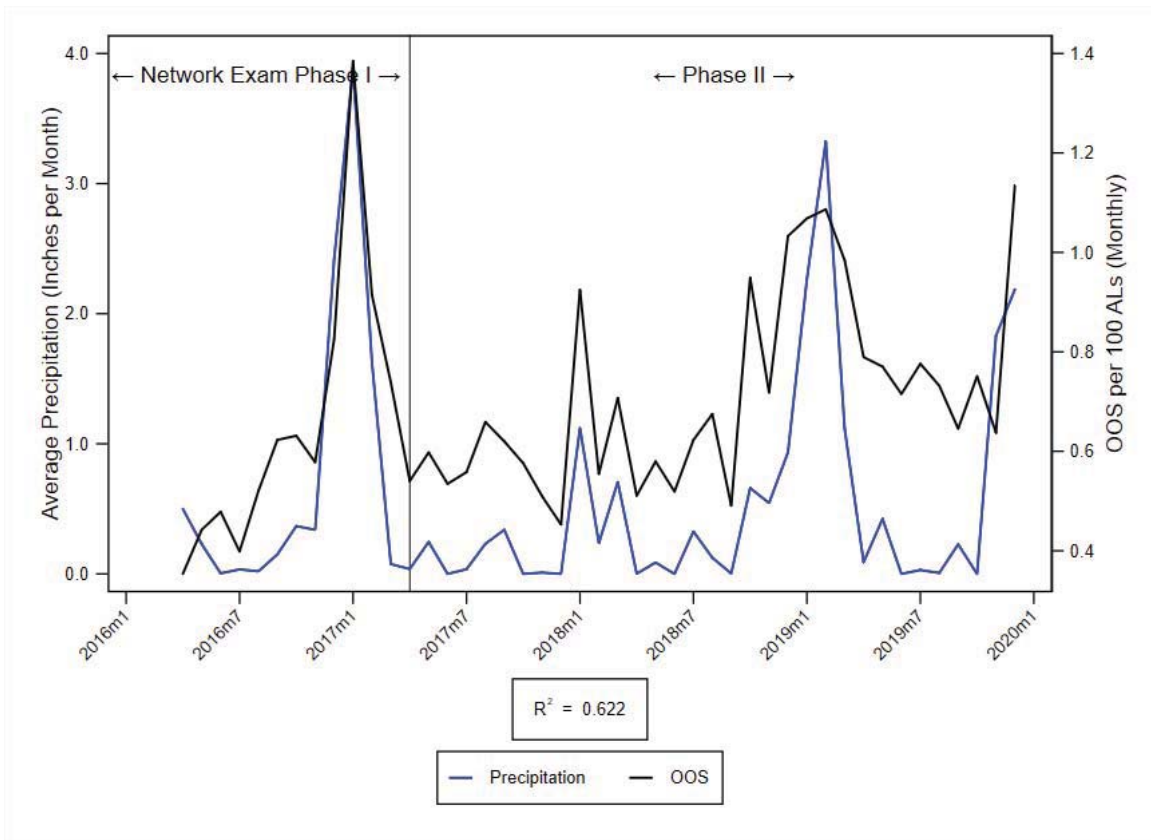


Figure 13.19. REGION 8 LOS ANGELES (FTR)

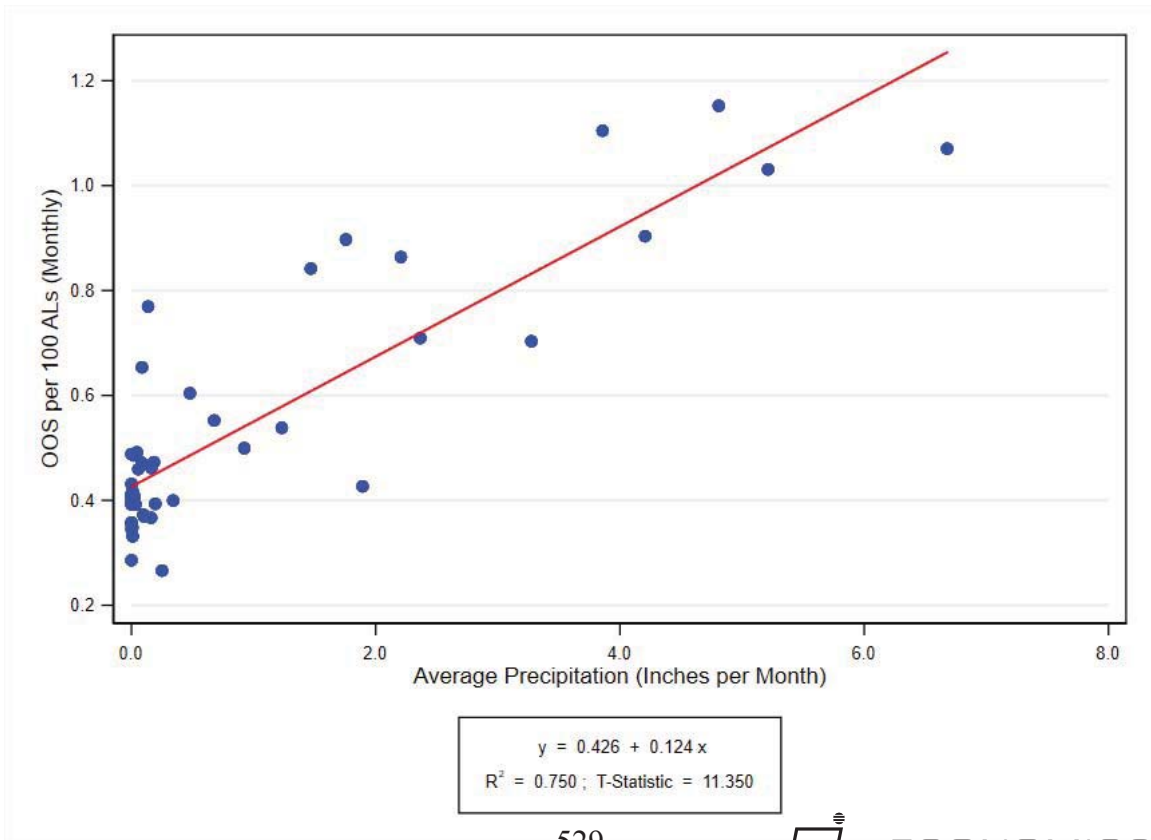
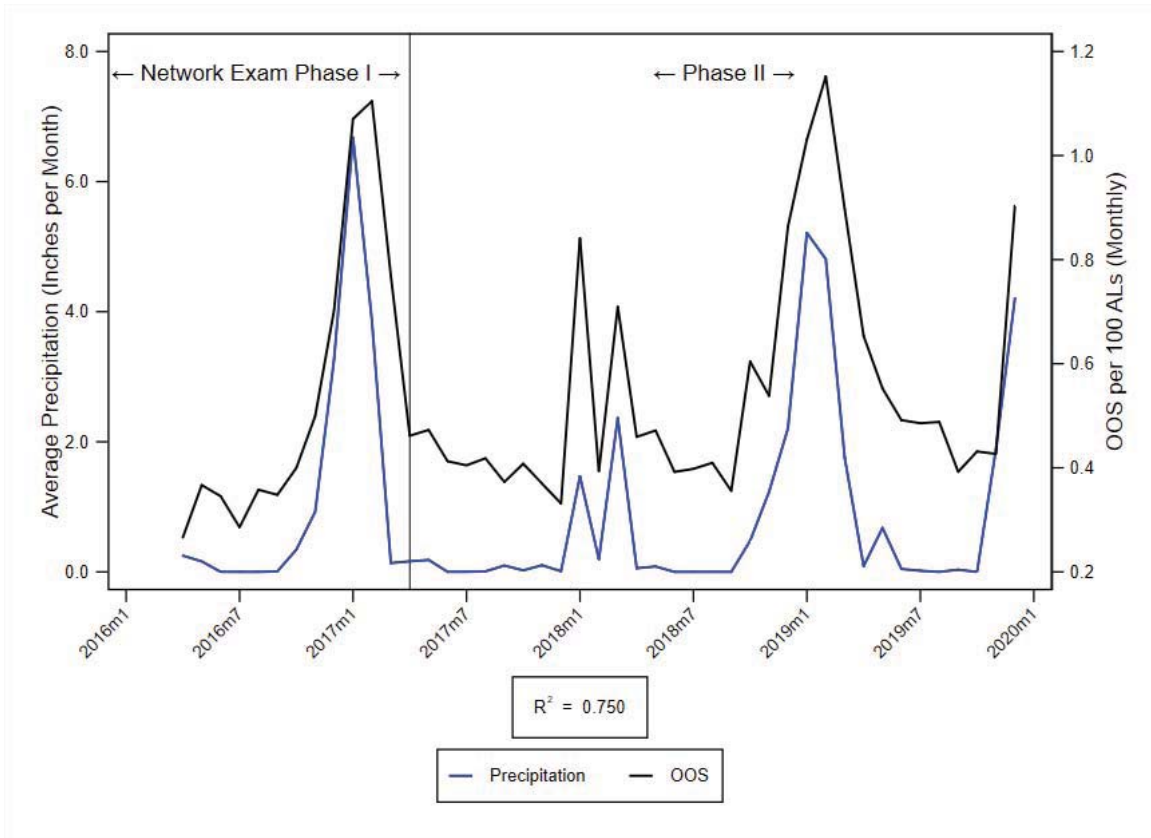


Figure 13.20. REGION 9 ORANGE (FTR)

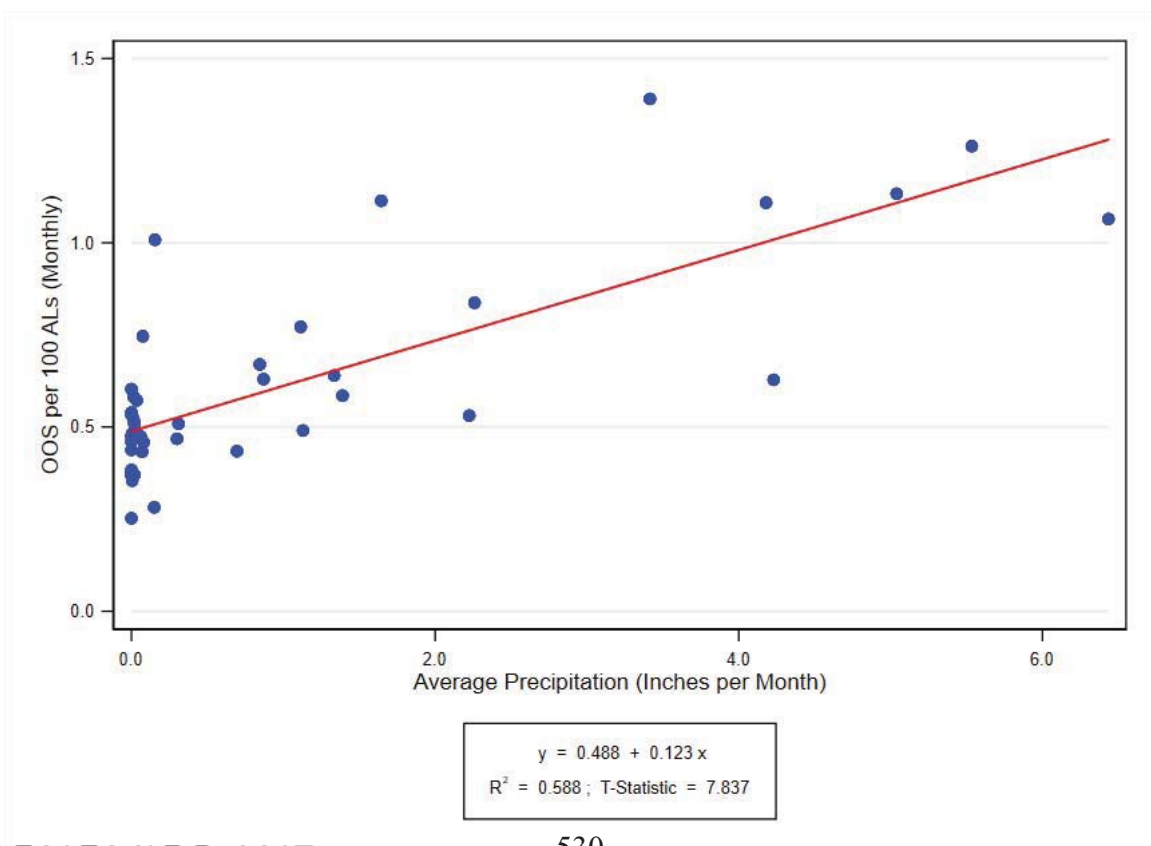
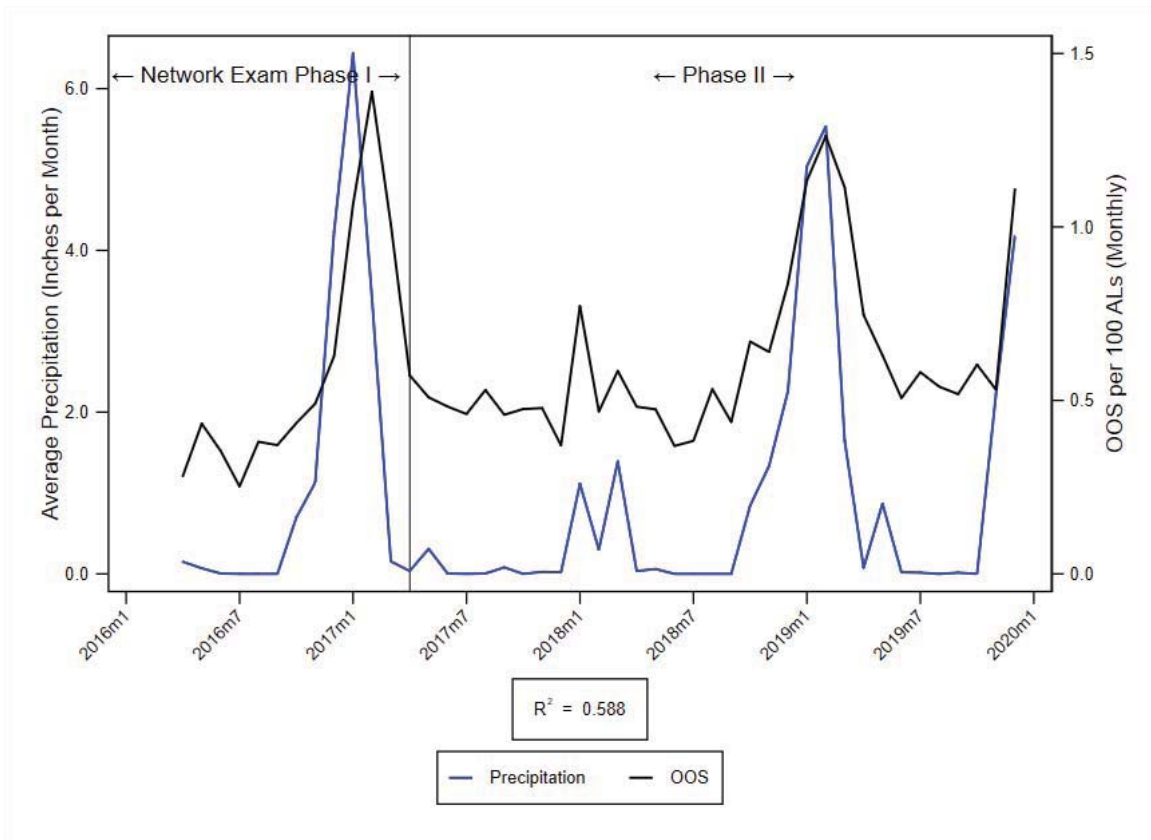
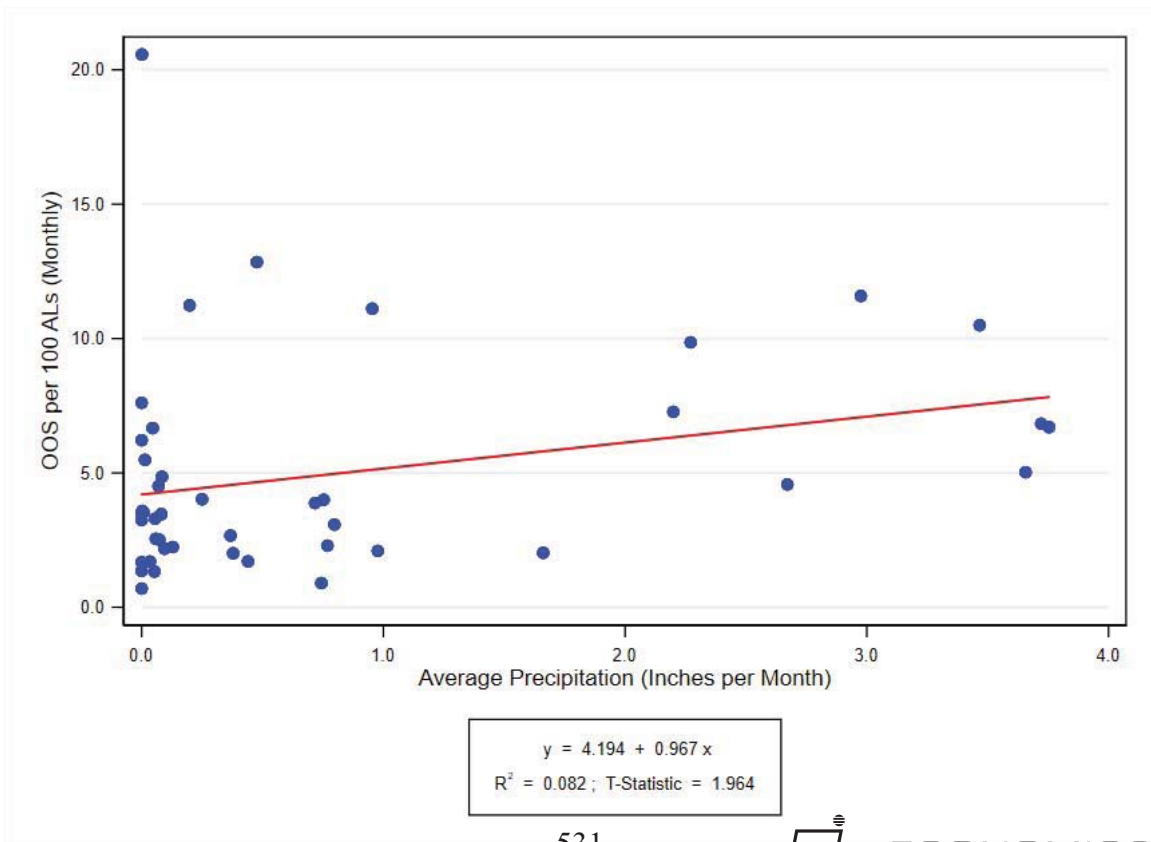
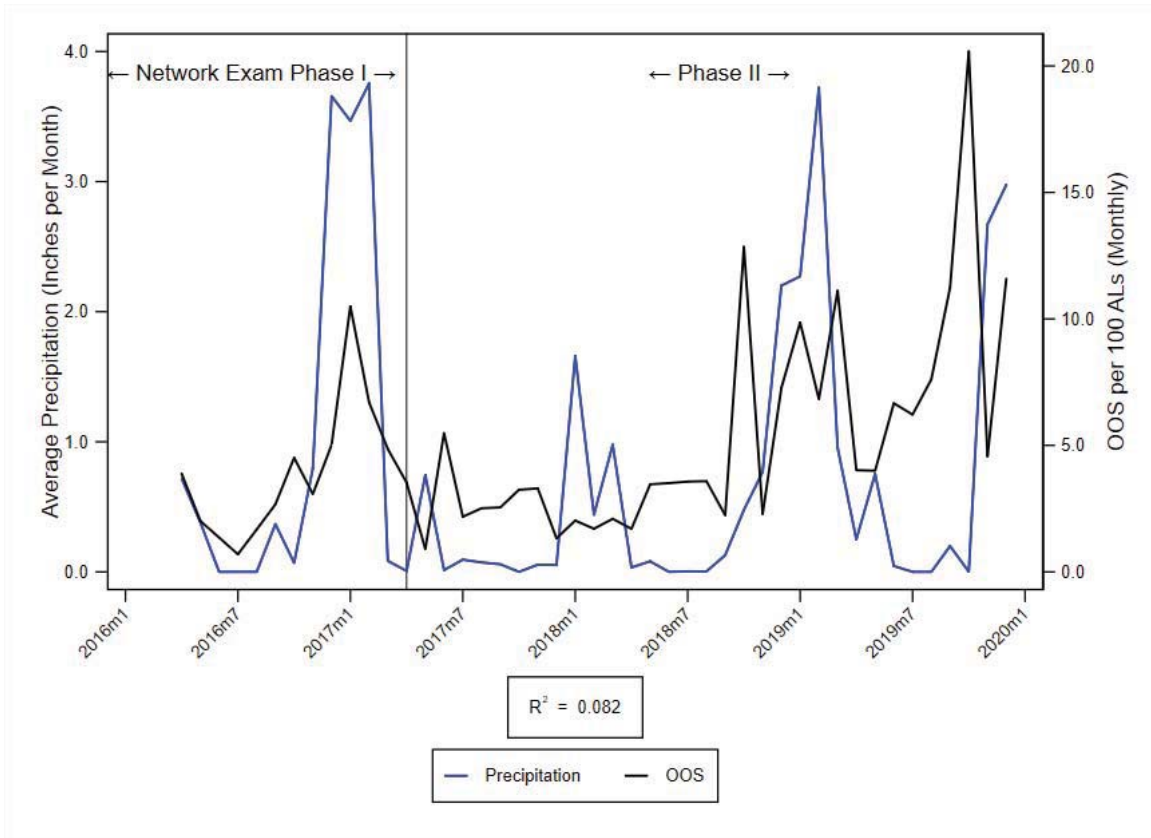


Figure 13.21. REGION 10 SAN DIEGO-IMPERIAL (FTR)



Effects of major wildfires on out-of-service incidents

The massive wildfires that have plagued California in recent years have prompted the Communications Division to include, within the scope of Phase 2 of the Network Examination, the following areas of additional inquiry:

- (a) Was service quality worse overall in areas that are prone to wildfires and in areas that had major wildfires during the time period of 2010- 2019?
- (b) Has service quality improved or deteriorated in areas that suffered severe wildfire damage?
- (c) Analysis of Investment and infrastructure technology in high risk fire areas (both rebuild and existing).

In order to analyze the relationship between major wildfire incidents and OOS incidents, we collected and analyzed wildfire statistics maintained by the California Department of Forestry and Fire Protection (CALFIRE). The CALFIRE data includes dates and locations of major wildfire incidents from 2013 to 2020, as well as the number of acres burned in each incident. Initially, we directed our examination to the same ten Census Regions that we had utilized in examining the effects of precipitation on service outages. To calculate the monthly number of wildfire incidents by Census Region, we identified the county (or counties) in which each major fire occurred, then aggregated the number of incidents in each county within each of the ten California Census Regions. We performed a similar aggregation for the monthly number of acres burned for each Census Region. Unlike the strong relationship identified in our precipitation analysis, the correlation between wildfire incidents or wildfire acres burned and OOS per 100 Access Lines proved to be extremely weak, as summarized in Tables 13.4 and 13.5 below.

We prepared two graphs for each Census Region for each of the two ILECs. Each of the graphs tracks the wildfire metric (incidents or acres burned) against the same service quality metric that we had used in the precipitation analysis above. Each set of graphs provides the wildfire metric vs. OOS per 100 Access Lines for Incidents and for Acres Burned. Figures 13.22 through 13.31 provide graphs for AT&T California covering the period 2013 (the year that CALFIRE began compiling this data) through 2019. Figures 13.32 through 13.41 provide corresponding graphs for Frontier California for the 2016-2019 period.



Overall, we observed little correlation between the incidence of major wild fires and ILEC service quality. Wildfires occur mainly during hot summer and fall months when rainfall is minimal, whereas OOS incidents arise during the periods of heaviest precipitation, which occurs during late fall and winter months.

Table 13.4

**AT&T CALIFORNIA
RELATIONSHIP BETWEEN WILDFIRE EVENTS
AND OUT-OF-SERVICE INCIDENTS
2013-2019**

Census Region	No. of Wire Centers	Total Incidents	Total Acres Burned	Figures	Incidents R^2	Acres Burned R^2
1 Superior California	107	408	2,023,686	13.22	.106	.020
2 North Coast	58	144	1,321,172	13.23	.071	.002
3 San Francisco Bay Area	99	114	76,487	13.24	.066	.003
4 No. San Joaquin Valley	53	154	599,885	13.25	.154	.027
5 Central Coast	54	169	697,306	13.26	.041	.021
6 So. San Joaquin Valley	65	157	490,002	13.27	.093	.008
7 Inland Empire	13	183	172,143	13.28	.065	.010
8 Los Angeles County	69	40	188,407	13.29	.047	.008
9 Orange County	32	10	36,764	13.30	.017	.006
10 San Diego – Imperial	60	83	48,915	13.31	.041	.020

Source: CALFIRE data; ETI analysis of AT&T California Out-of-Service incidents 2013-2019

Table 13.5

**FRONTIER CALIFORNIA
RELATIONSHIP BETWEEN WILDFIRE EVENTS
AND OUT-OF-SERVICE INCIDENTS
2016-2019**

Census Region	No. of Wire Centers	Total Incidents	Total Acres Burned	Figures	Incidents R^2	Acres Burned R^2
1 Superior California	4	408	2,023,686	13.32	.197	.069
2 North Coast	17	144	1,321,172	13.33	.149	.036
3 San Francisco Bay Area	4	114	76,487	13.34	.141	.020
4 No. San Joaquin Valley	13	154	599,885	13.35	.086	.018
5 Central Coast	20	169	697,306	13.36	.150	.089
6 So. San Joaquin Valley	38	157	490,002	13.37	.188	.104
7 Inland Empire	53	183	172,143	13.38	.086	.034
8 Los Angeles County	37	40	188,407	13.39	.123	.004
9 Orange County	4	10	36,764	13.40	.069	.006
10 San Diego – Imperial	2	83	48,915	13.41	.000	.074

Source: CALFIRE data; ETI analysis of Frontier California Out-of-Service incidents 2016-2019

Figure 13.22. REGION 1 SUPERIOR CALIFORNIA (AT&T)

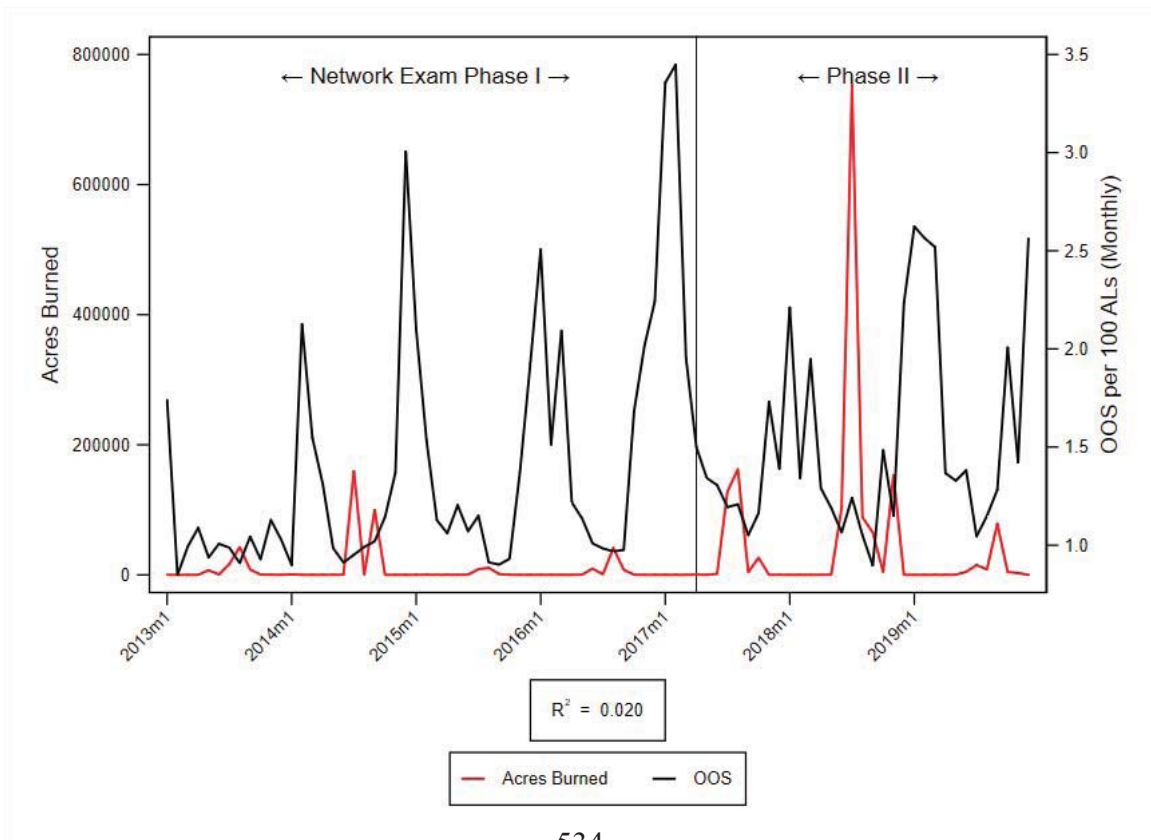
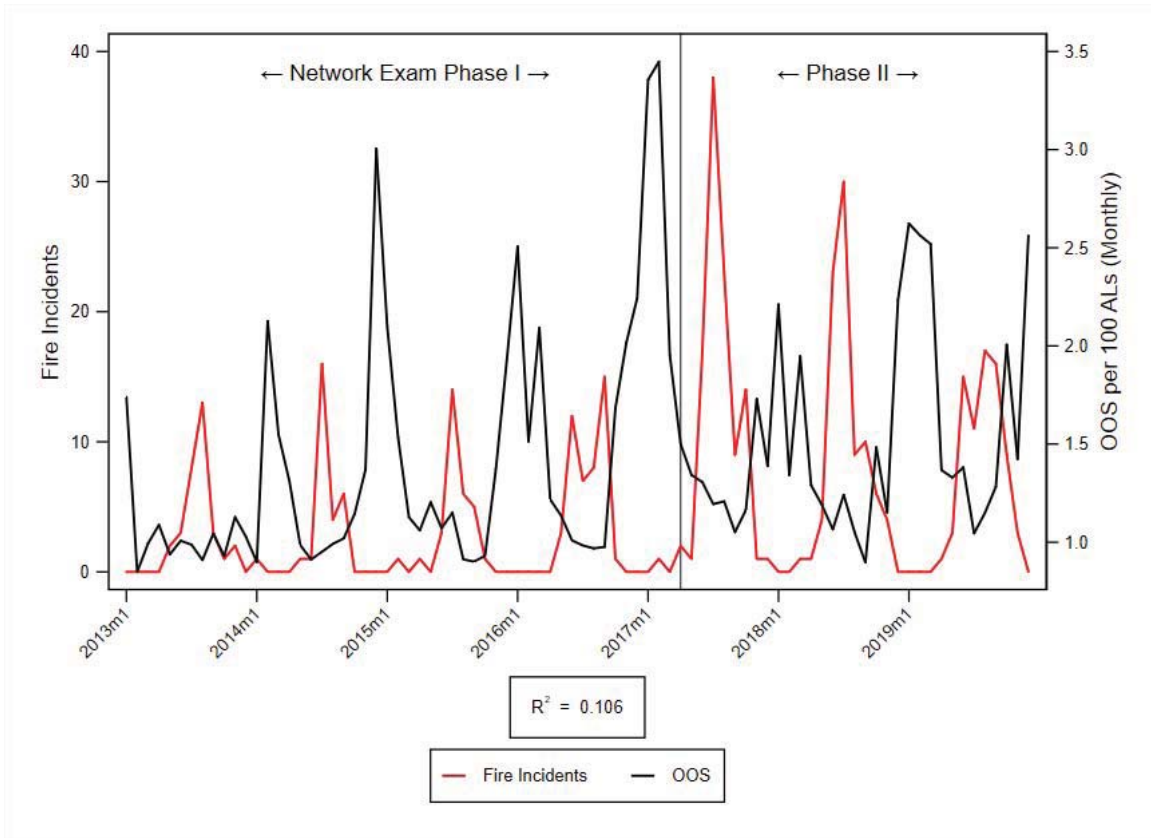


Figure 13.23. REGION 2 NORTH COAST (AT&T)

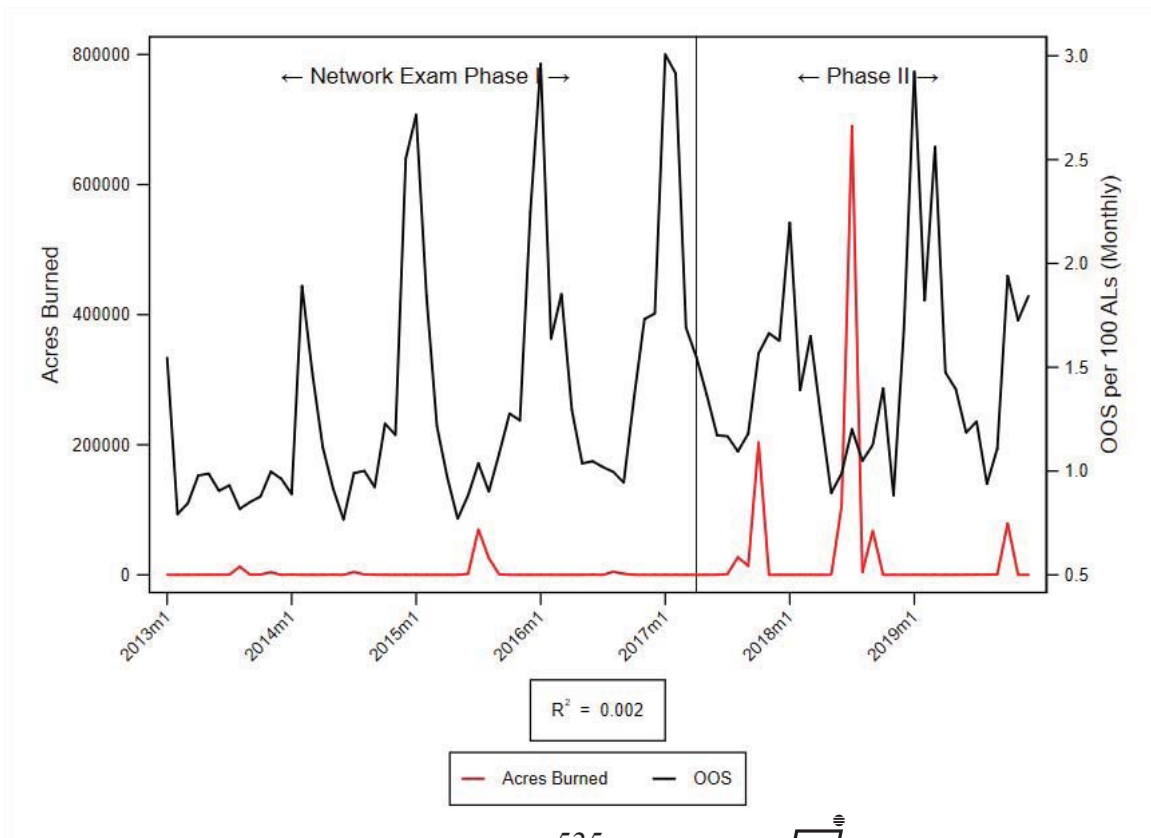
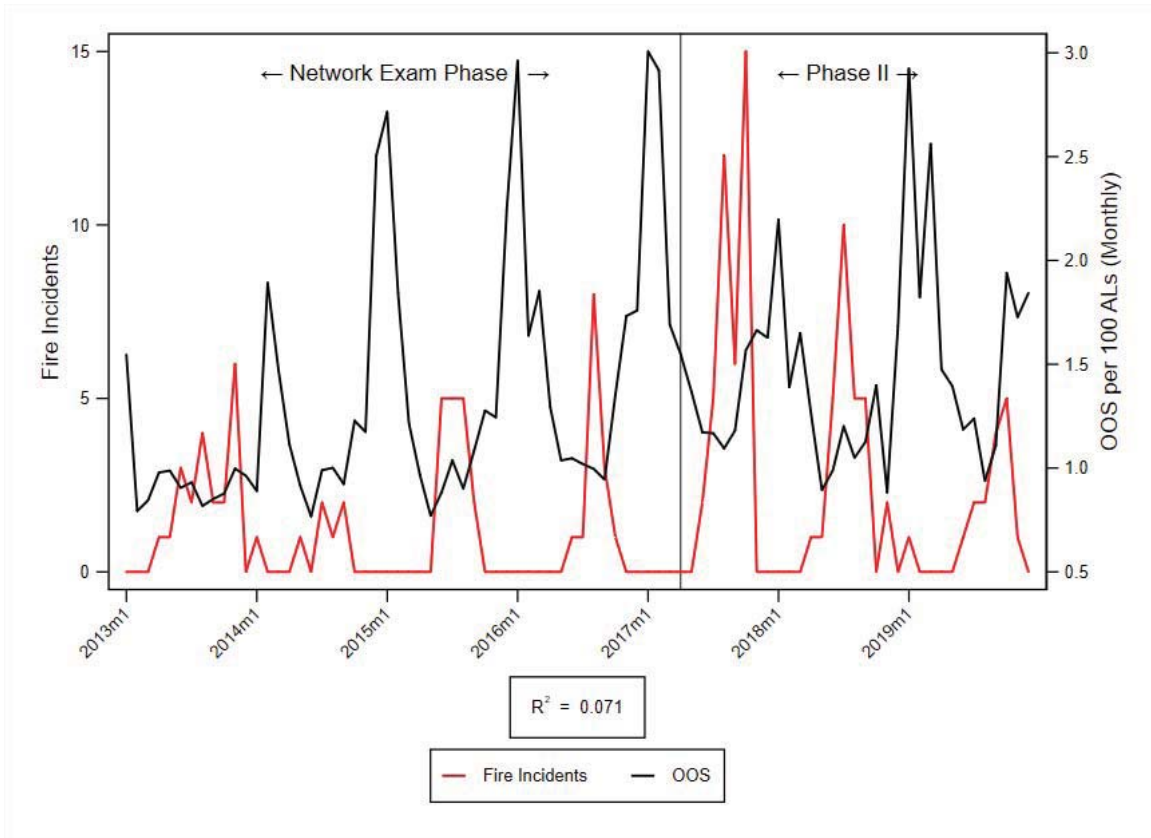


Figure 13.24. REGION 3 SAN FRANCISCO BAY AREA (AT&T)

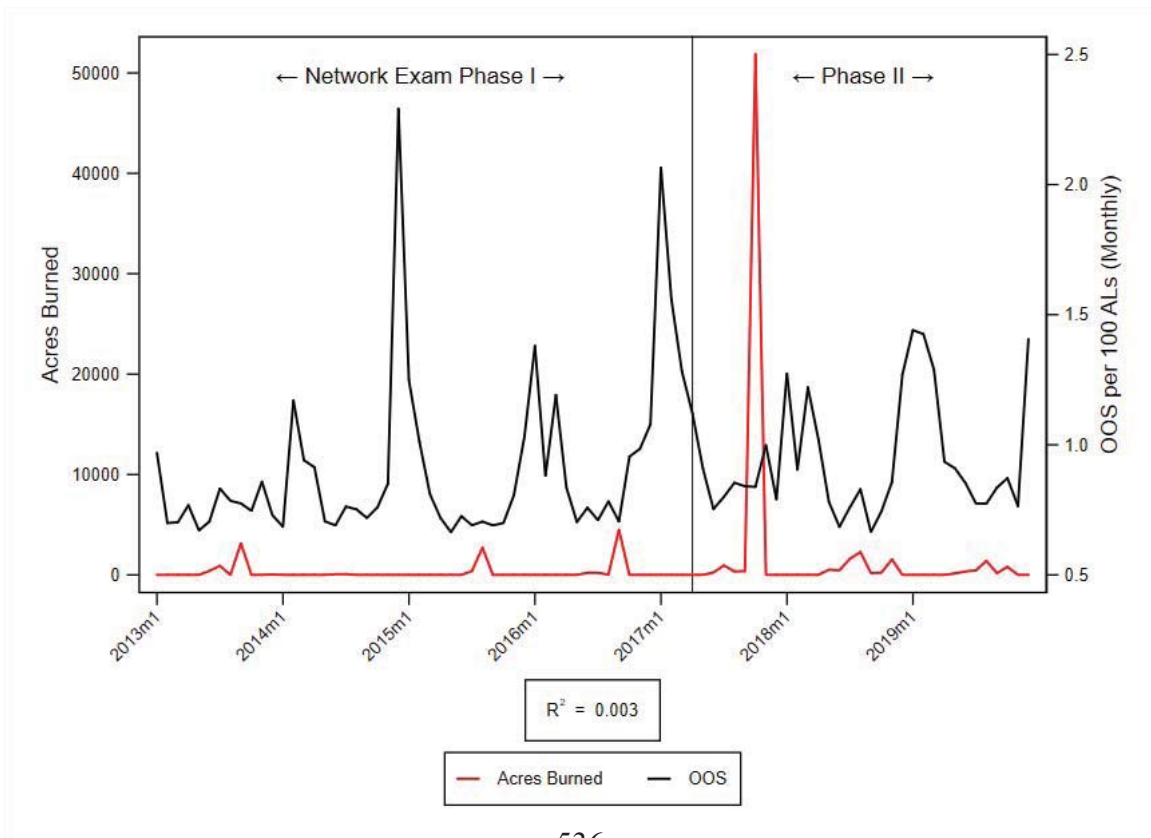
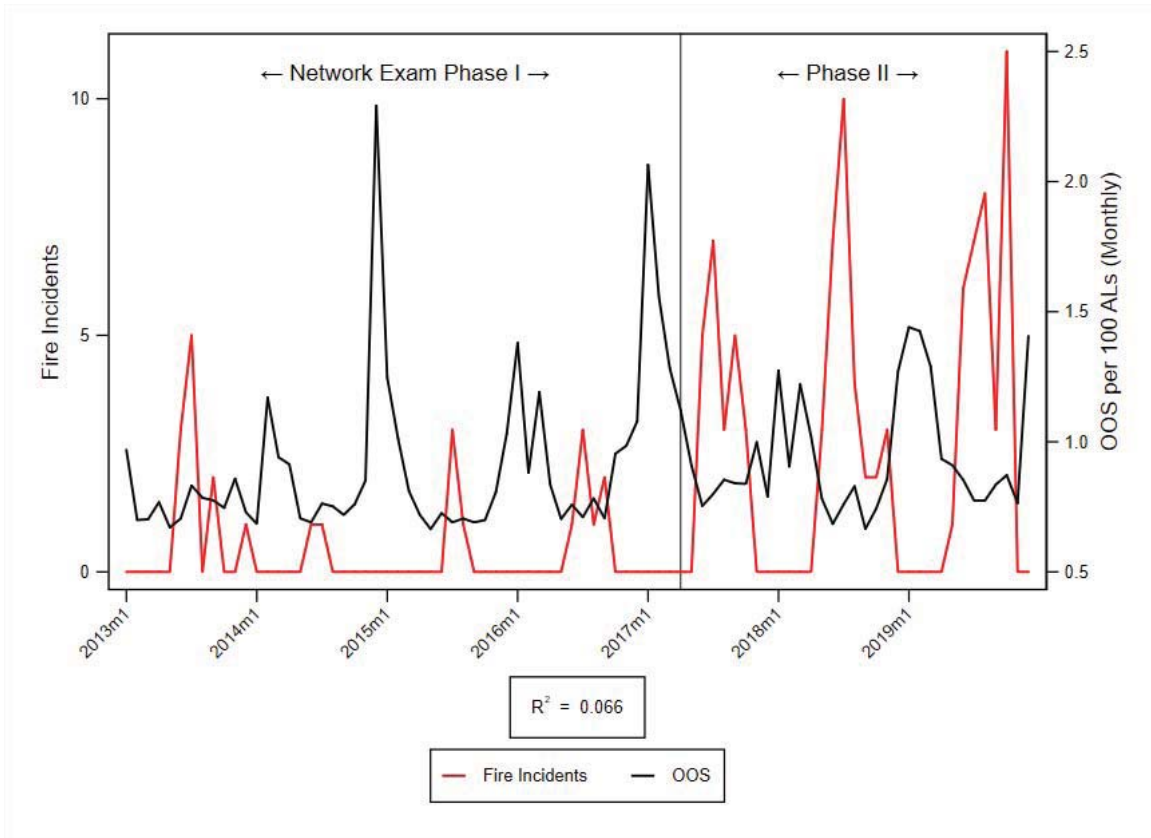


Figure 13.25. REGION 4 NORTHERN SAN JOAQUIN VALLEY (AT&T)

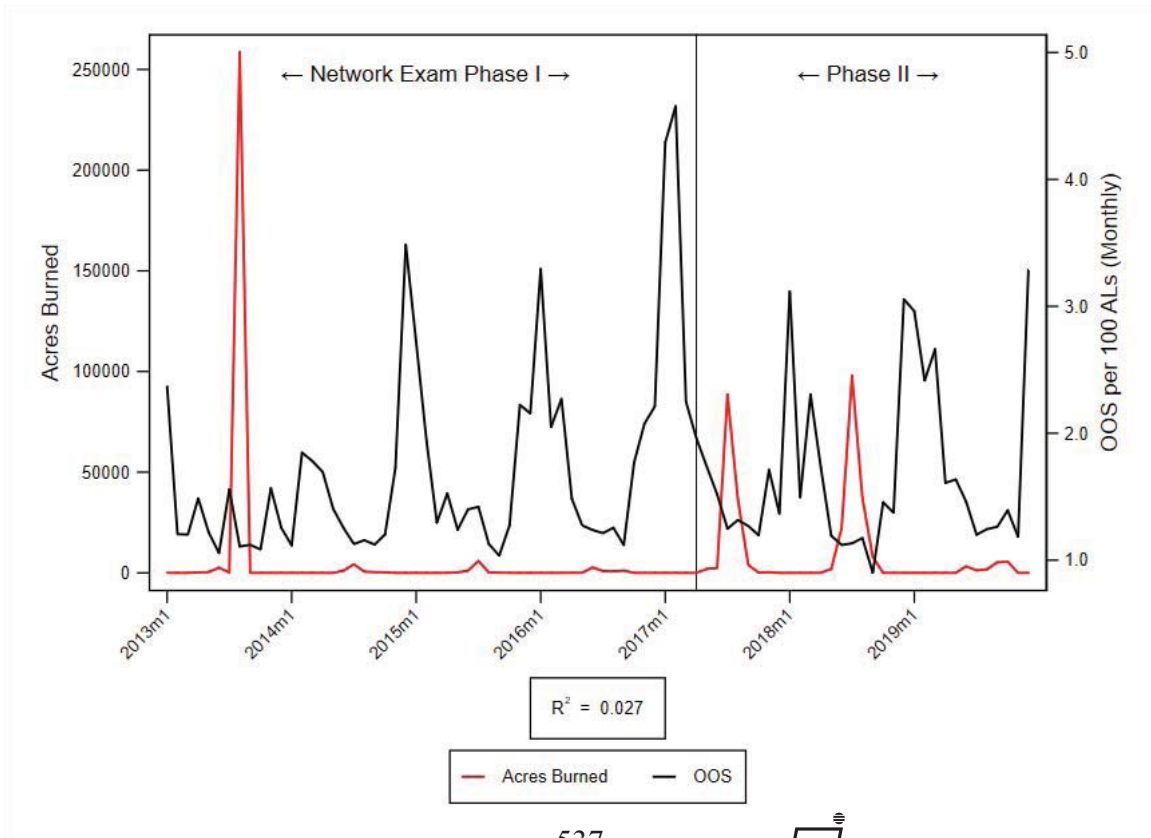
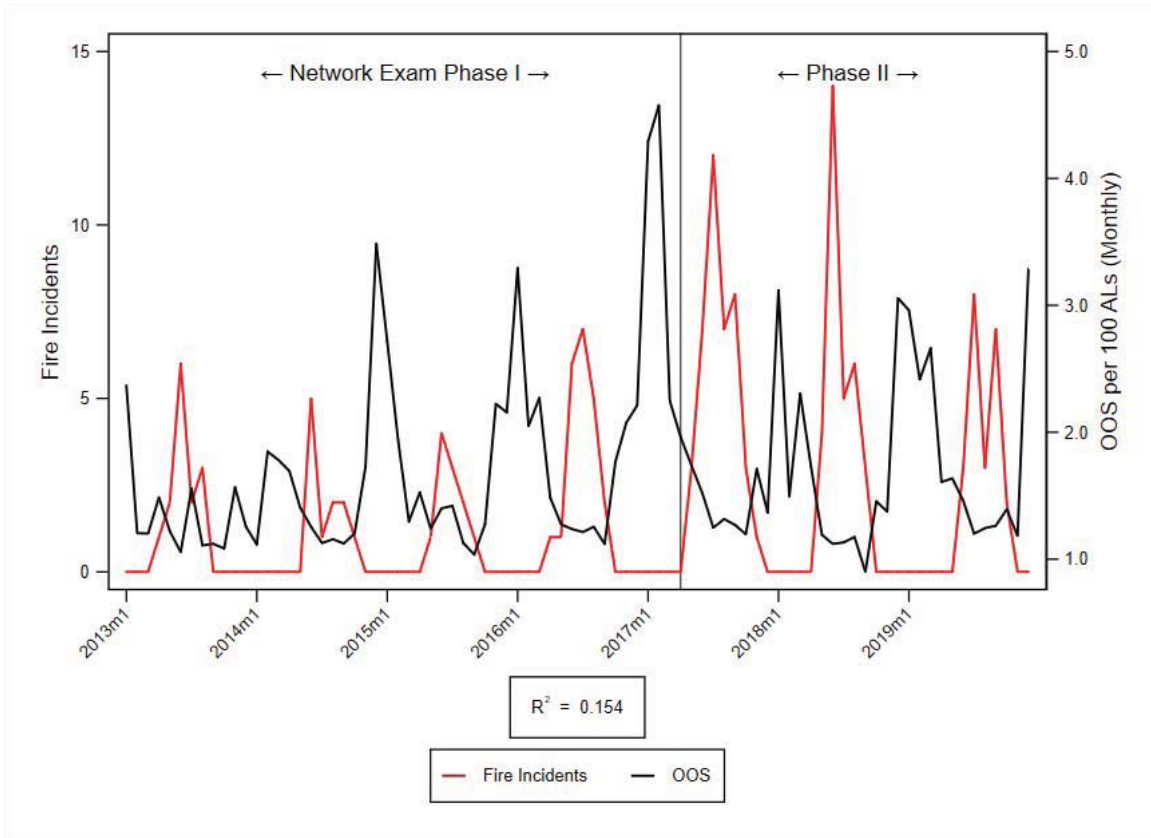


Figure 13.26. REGION 5 CENTRAL COAST (AT&T)

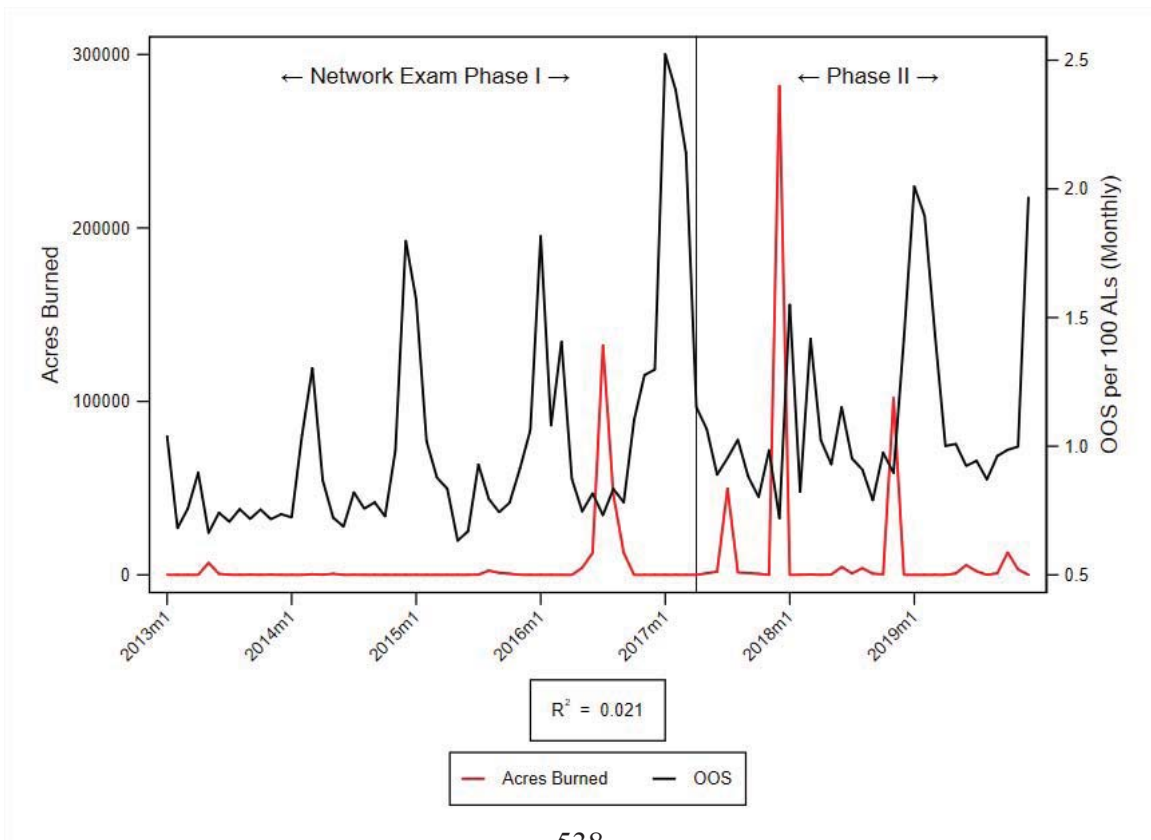
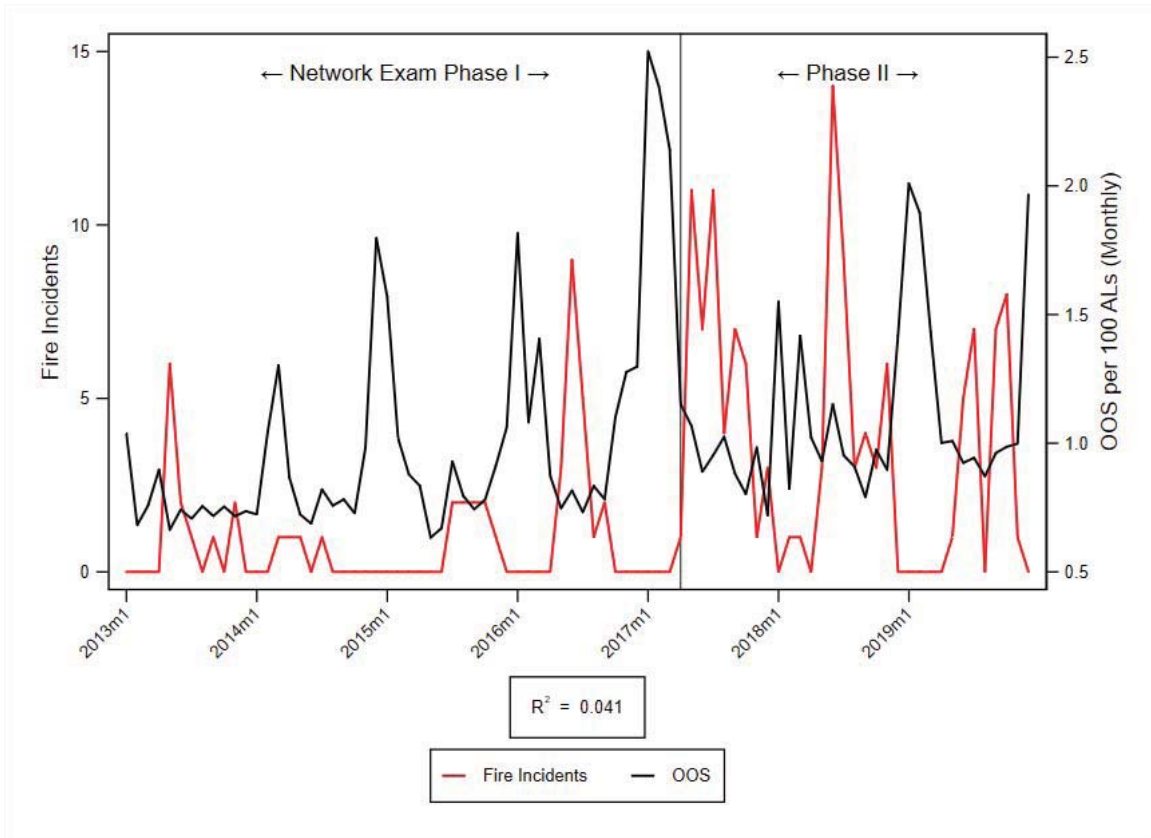


Figure 13.27. REGION 6 SOUTHERN SAN JOAQUIN VALLEY (AT&T)

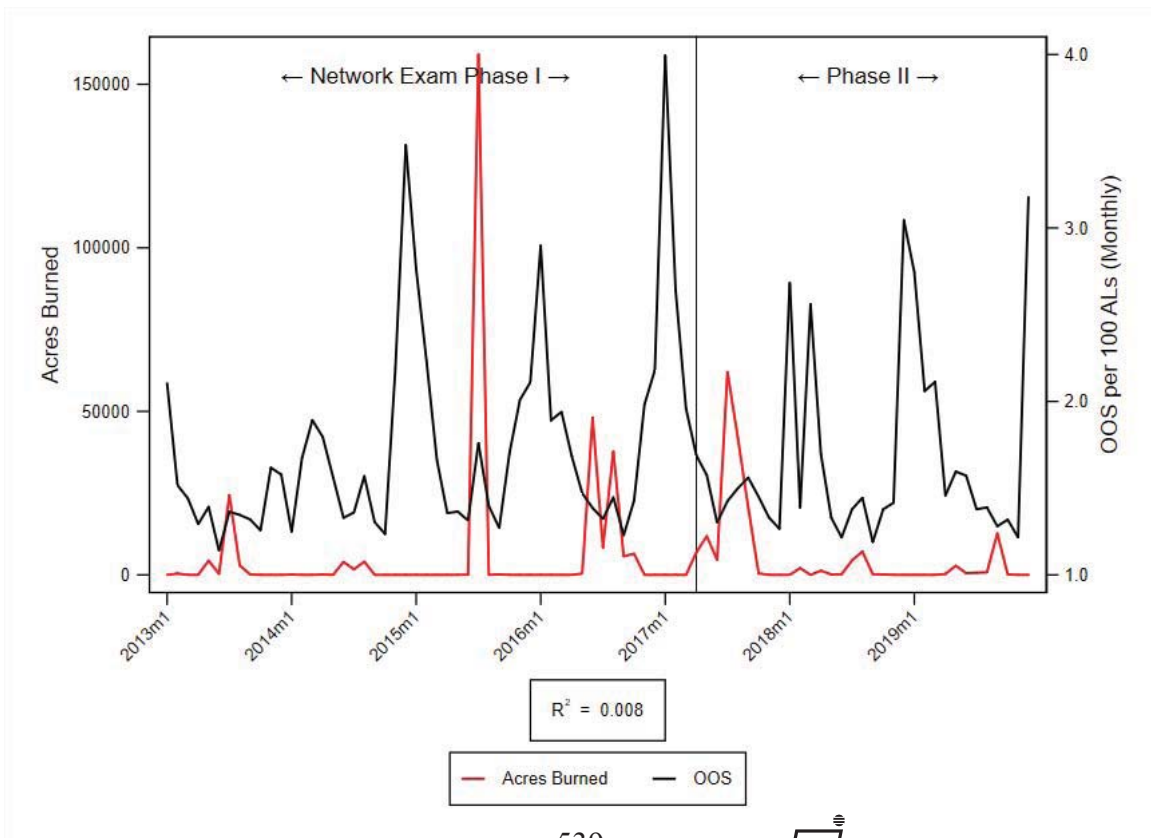
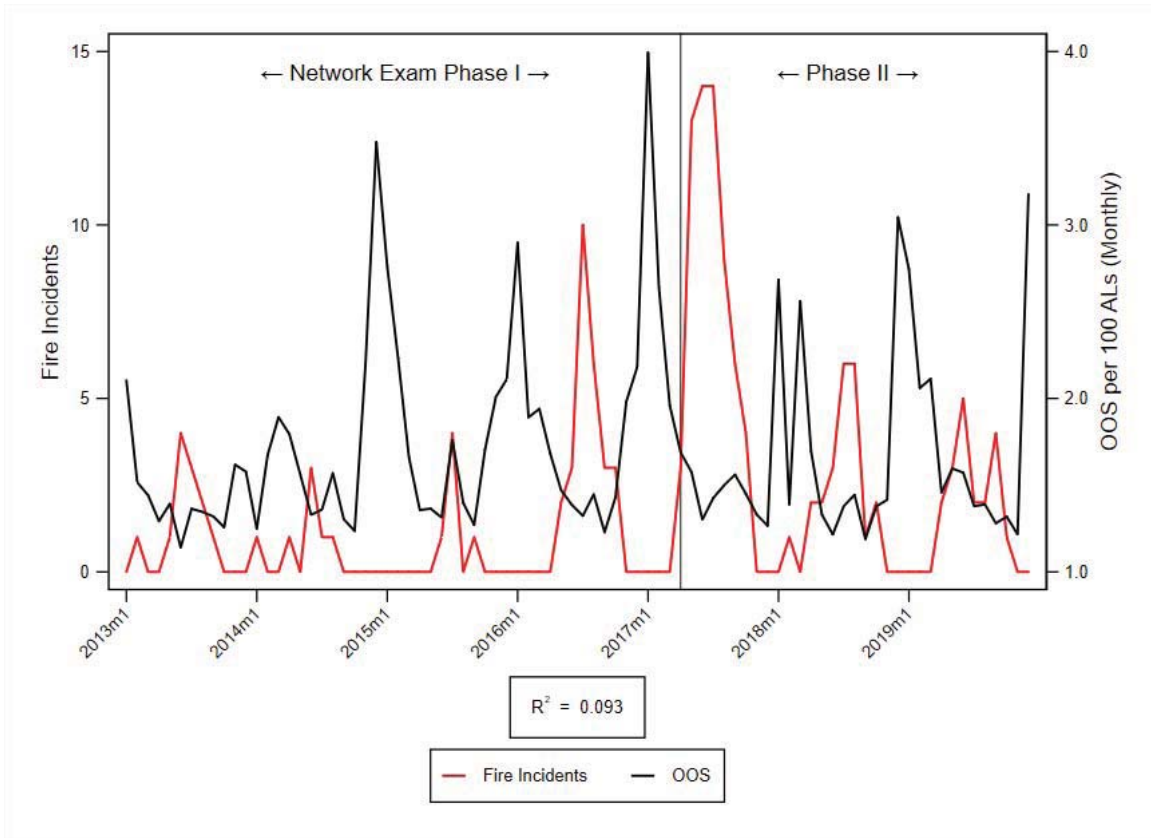


Figure 13.28. REGION 7 INLAND EMPIRE (AT&T)

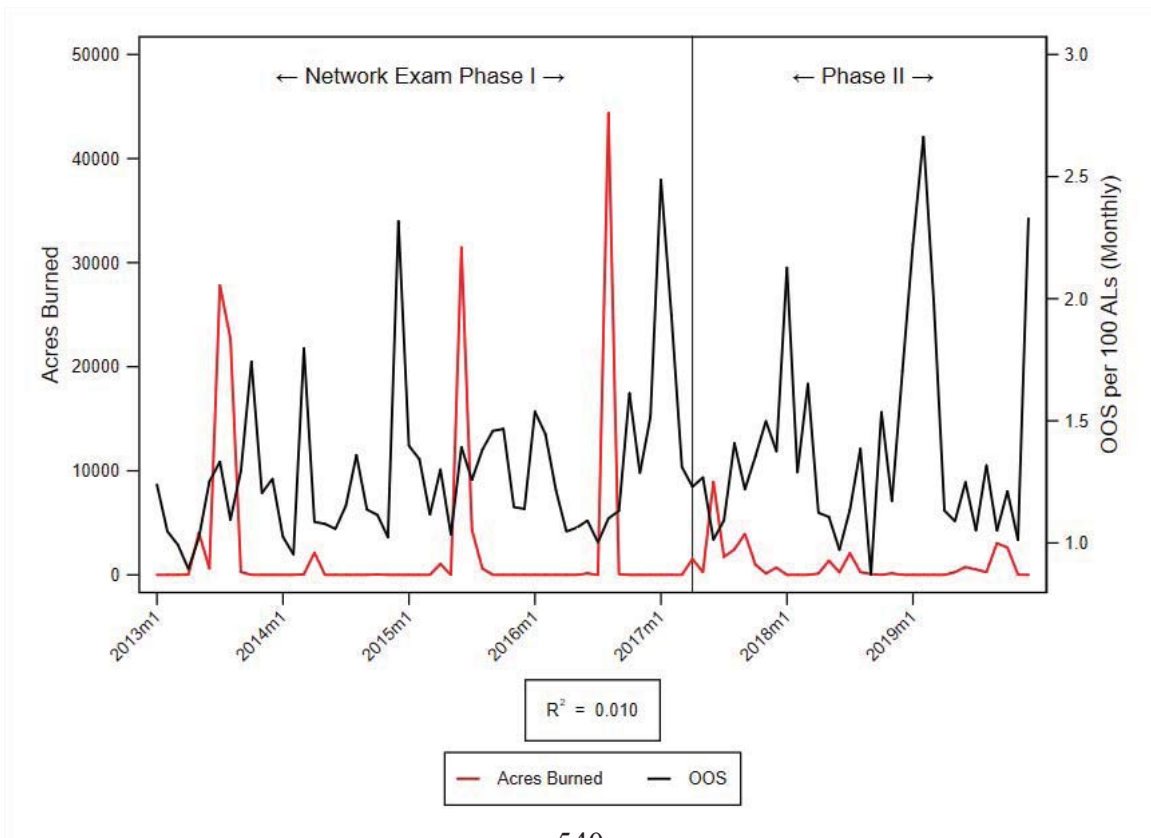
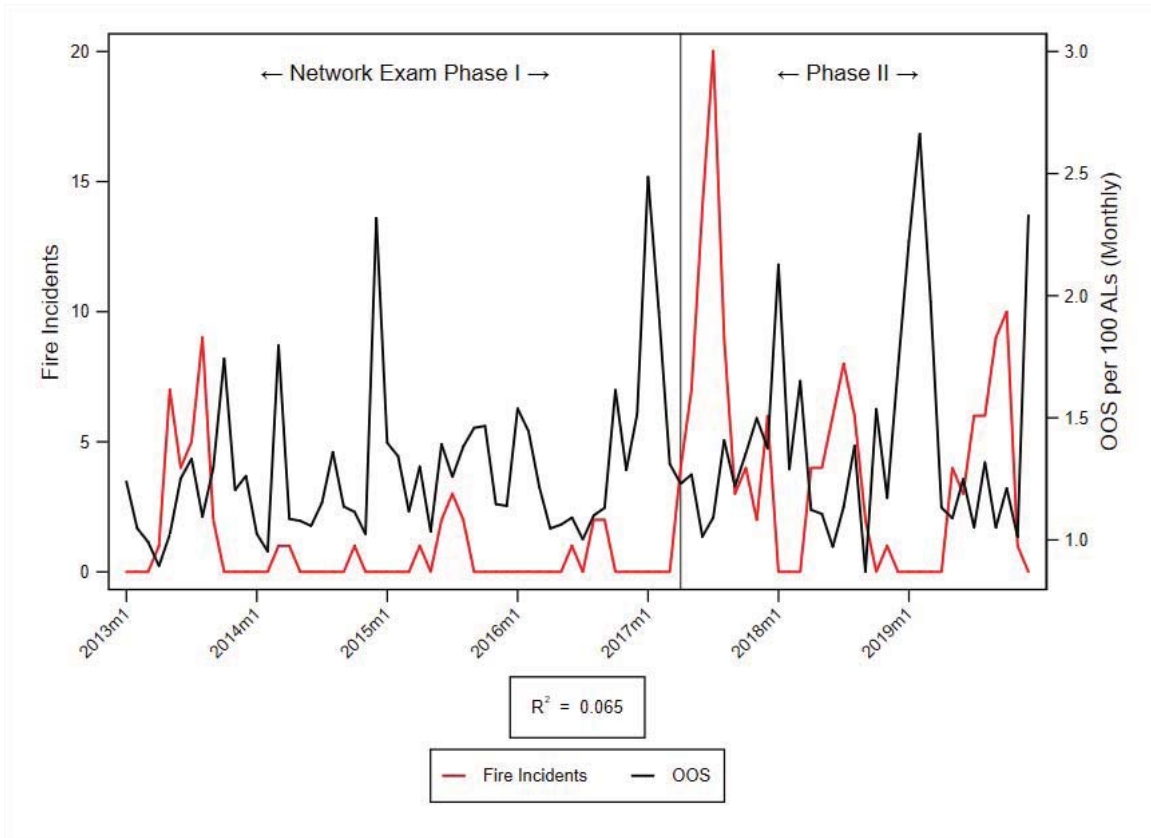


Figure 13.29. REGION 8 LOS ANGELES (AT&T)

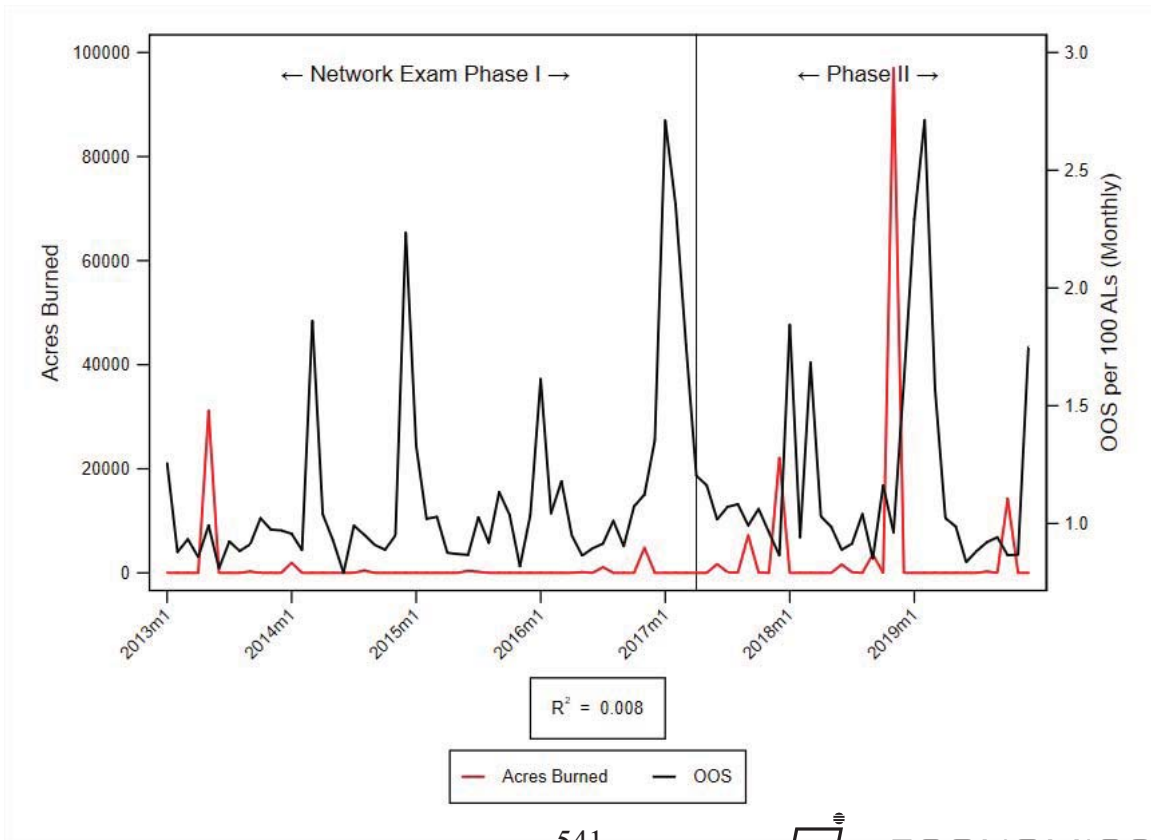
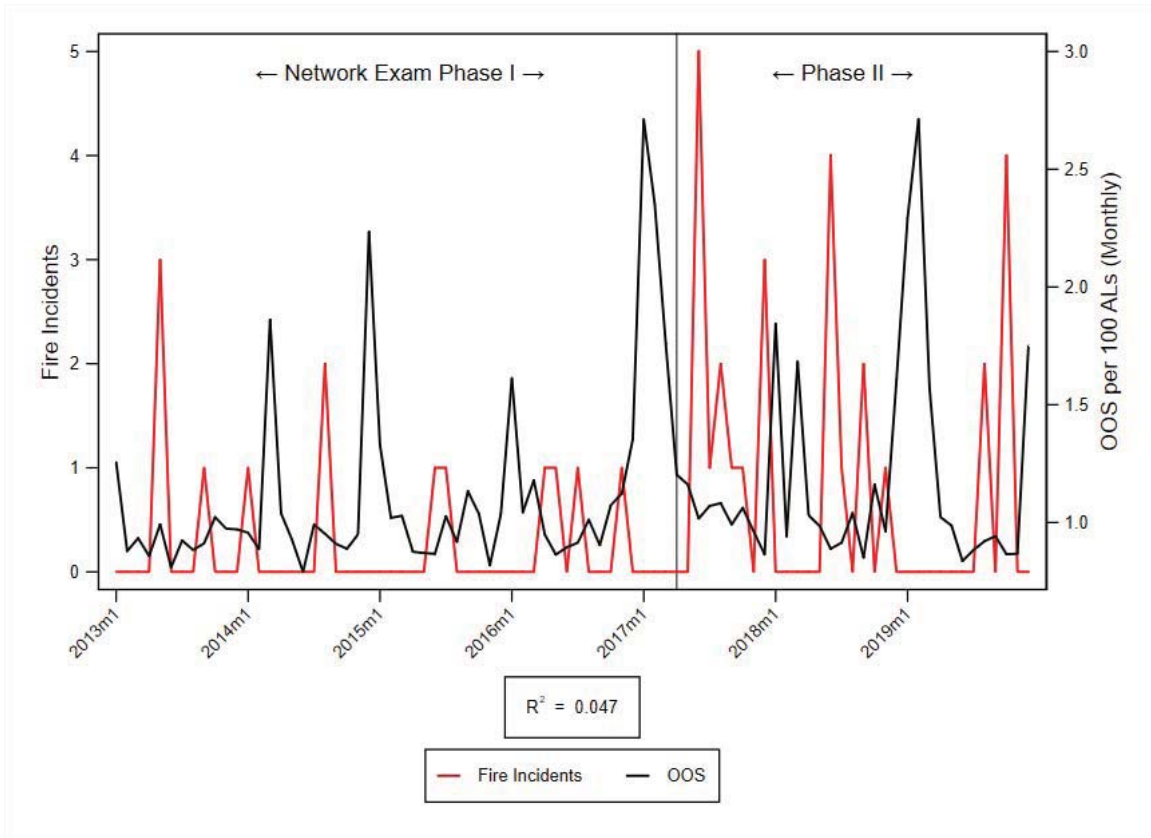


Figure 13.30. REGION 9 ORANGE (AT&T)

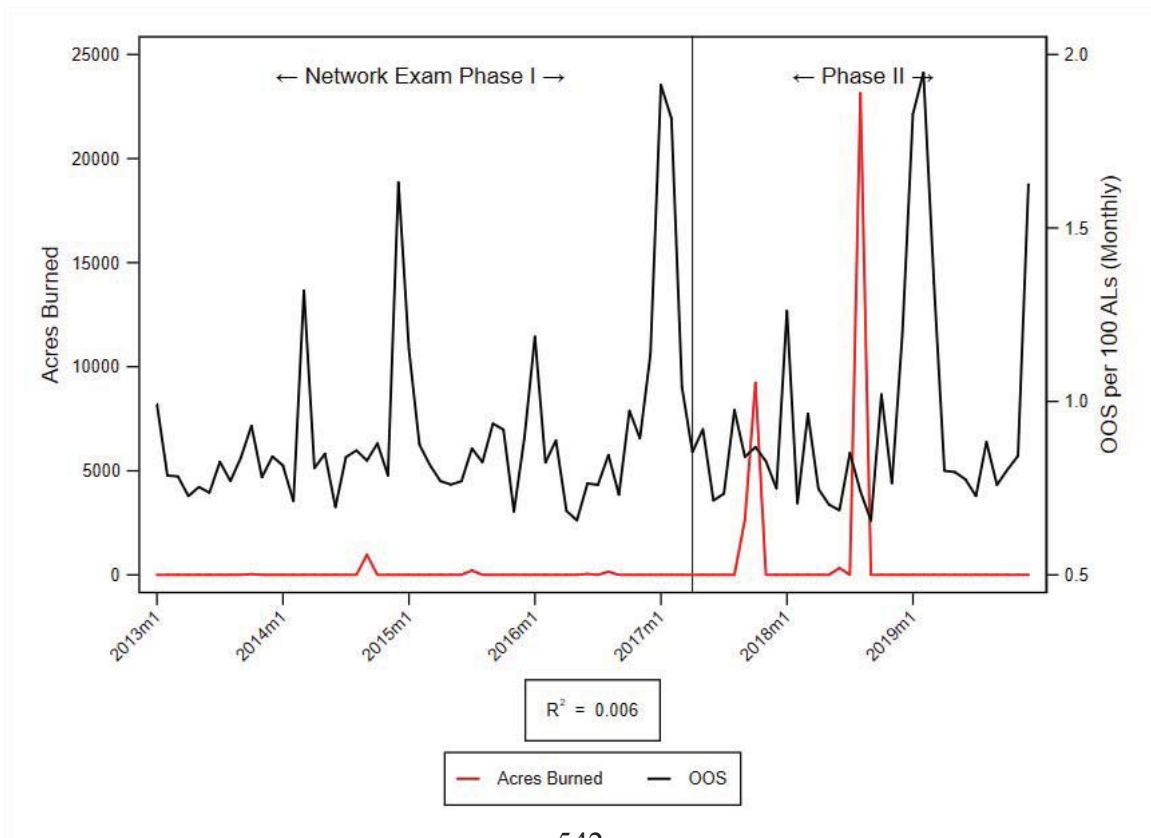
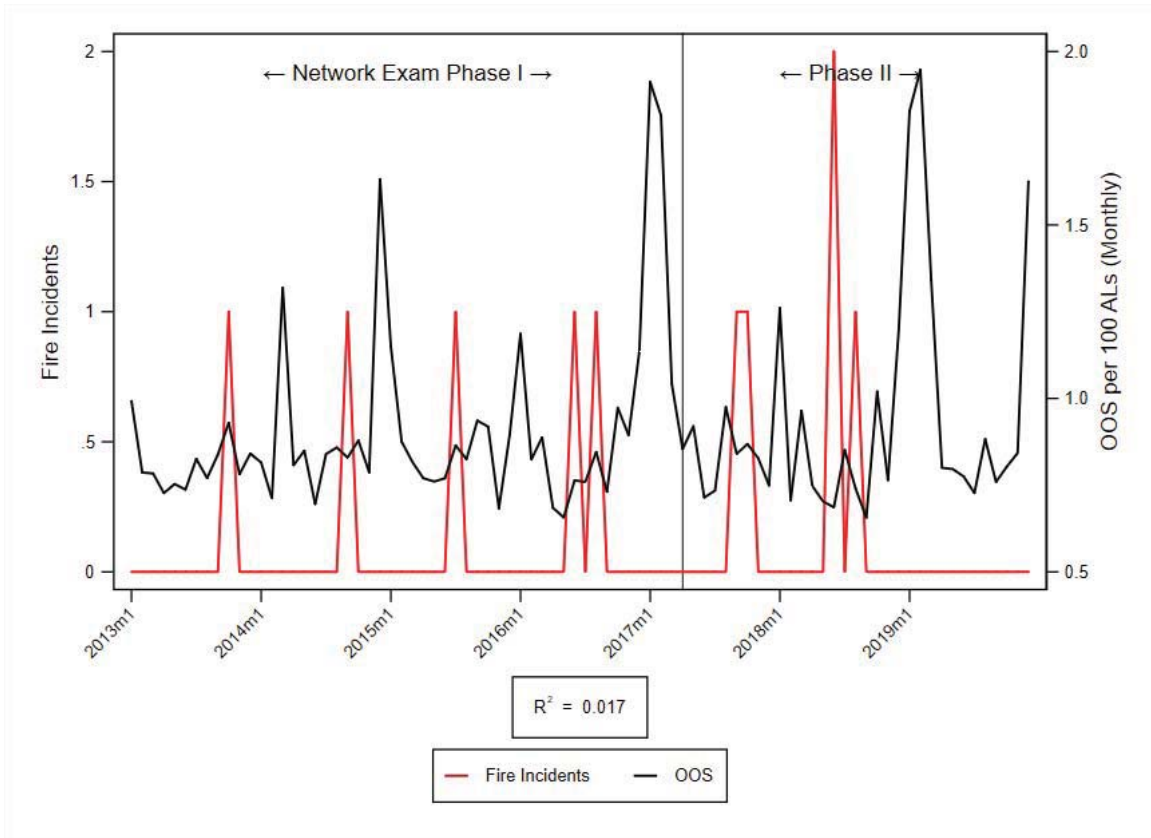


Figure 13.31. REGION 10 SAN DIEGO-IMPERIAL (AT&T)

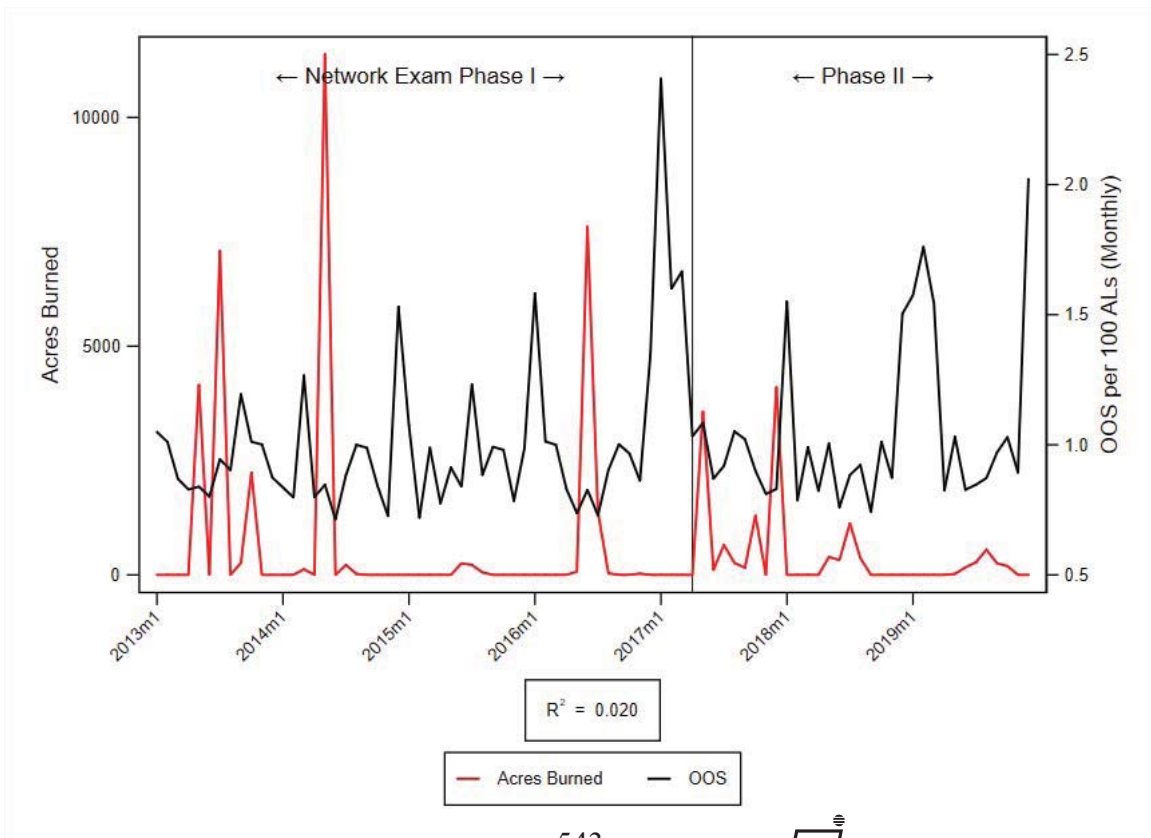
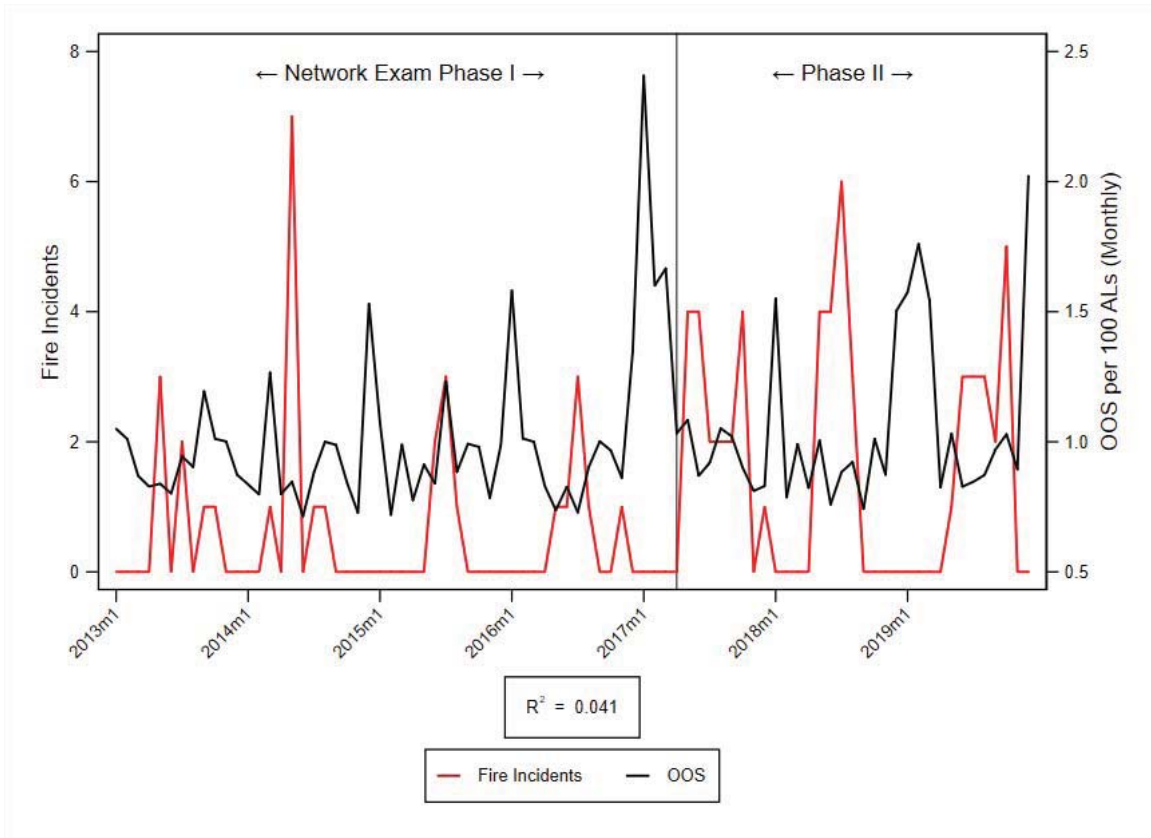


Figure 13.32. REGION 1 SUPERIOR CALIFORNIA (FTR)

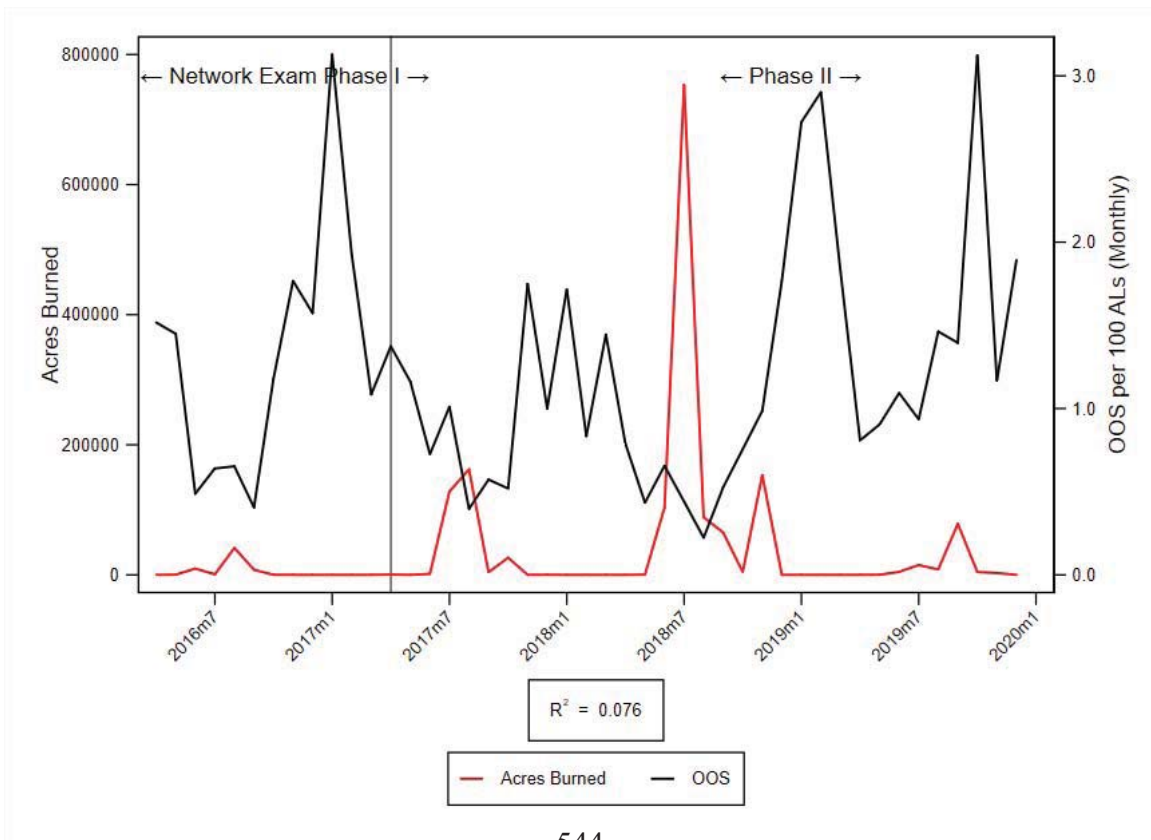
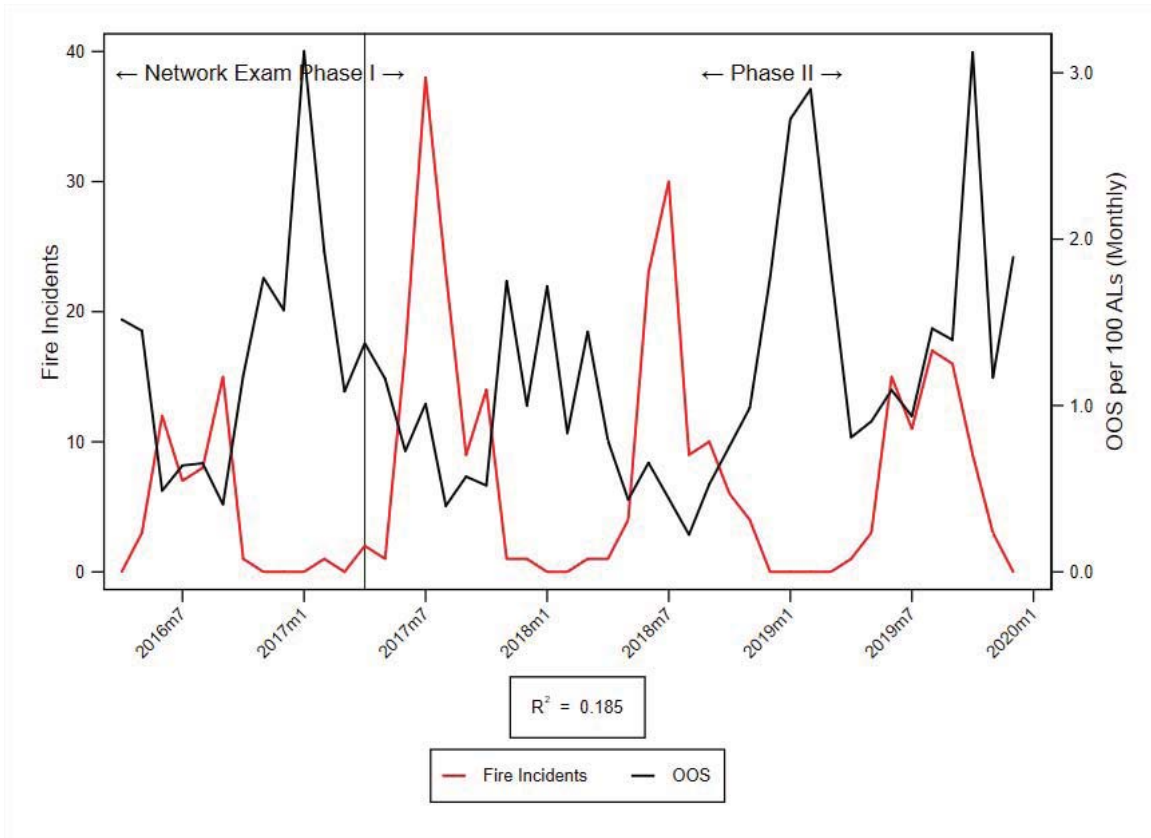


Figure 13.33. REGION 2 NORTH COAST (FTR)

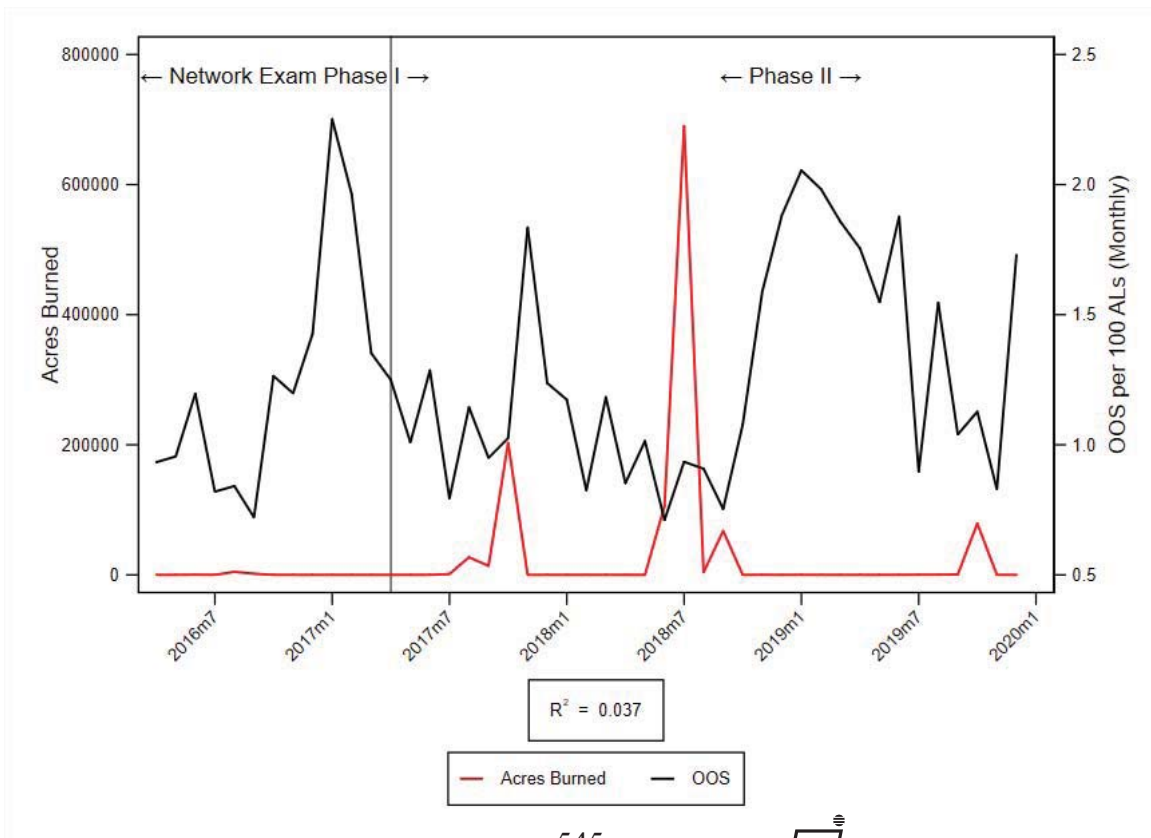
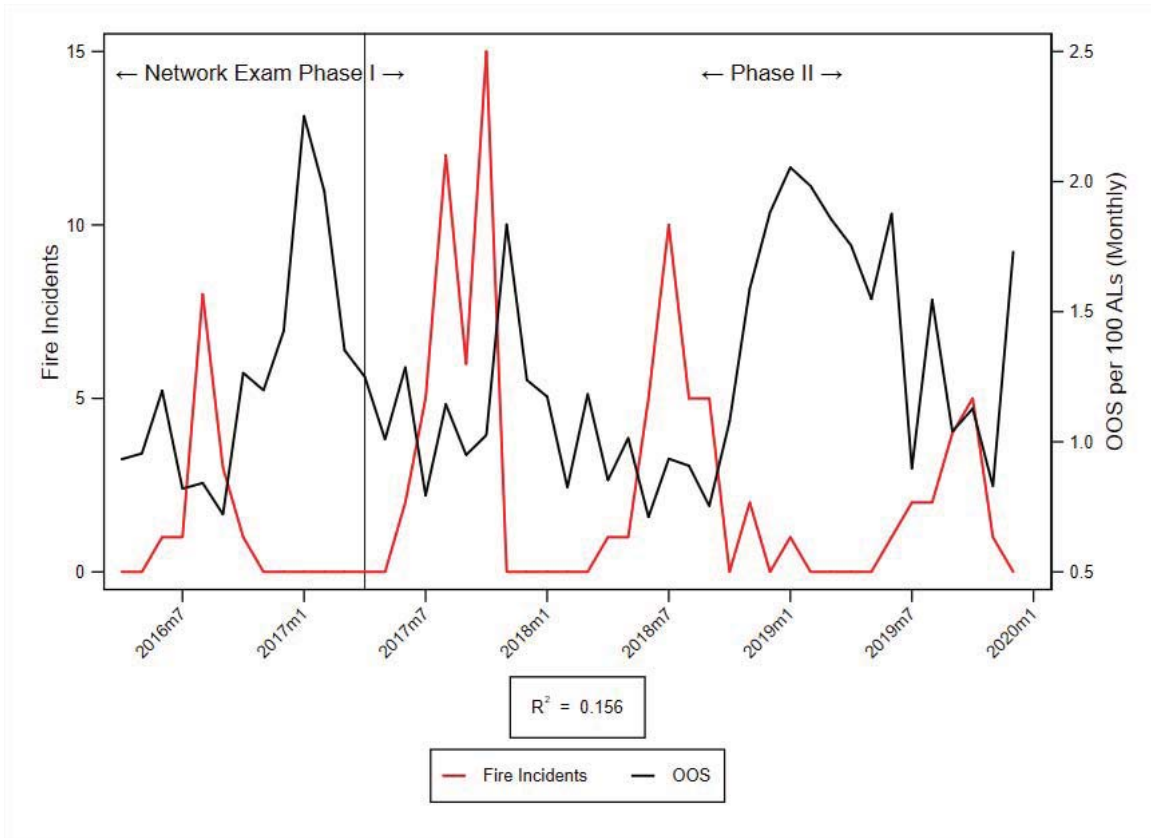


Figure 13.34. REGION 3 SAN FRANCISCO BAY AREA (FTR)

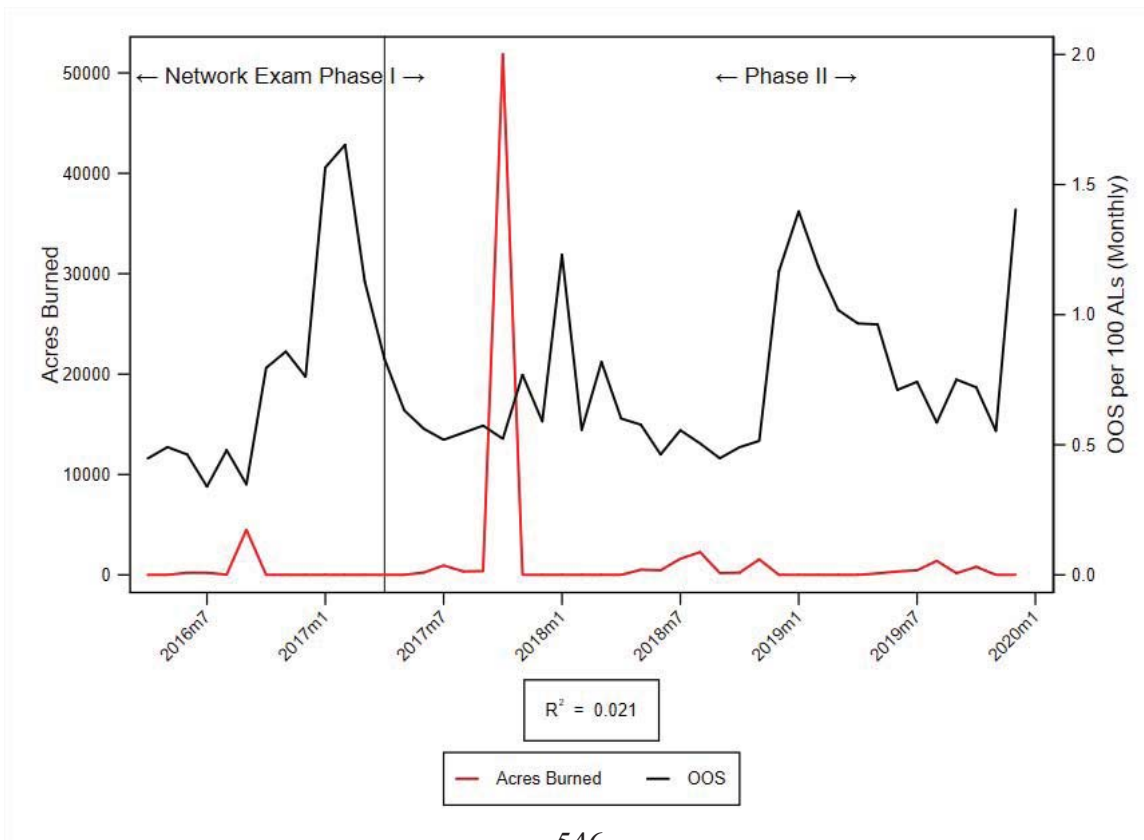
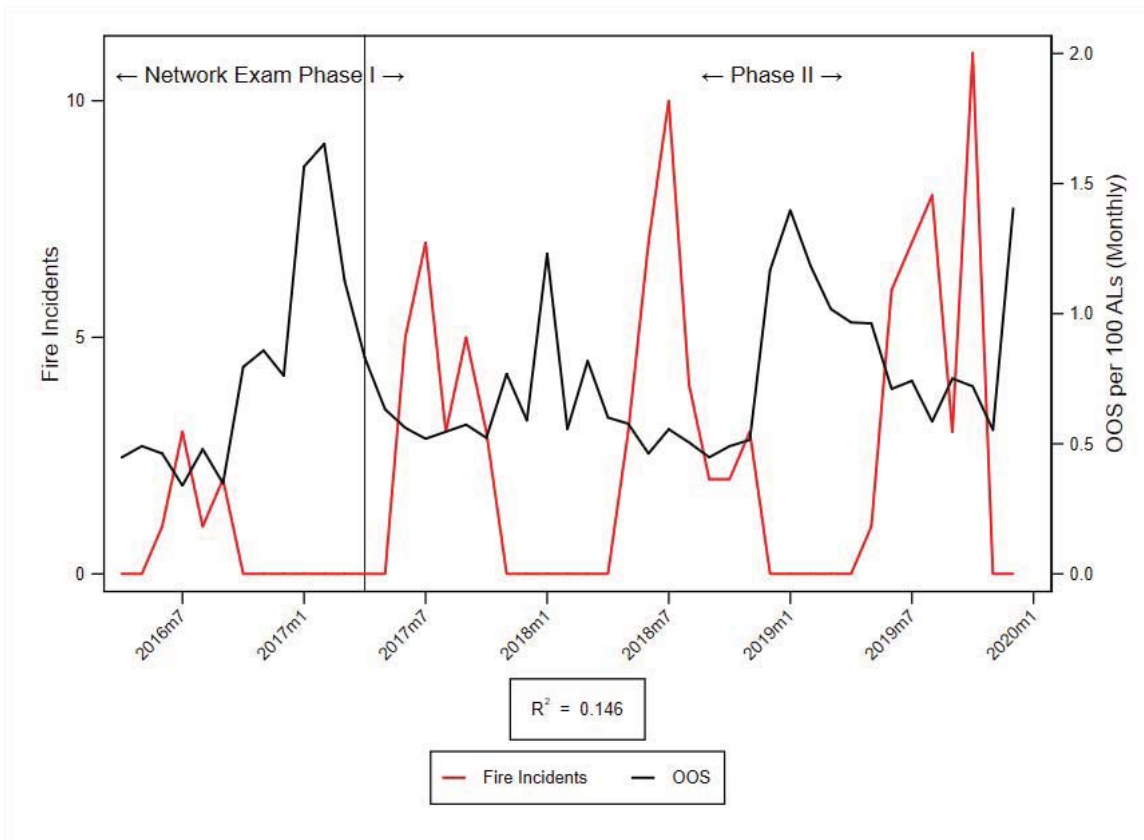


Figure 13.35. REGION 4 NORTHERN SAN JOAQUIN VALLEY (FTR)

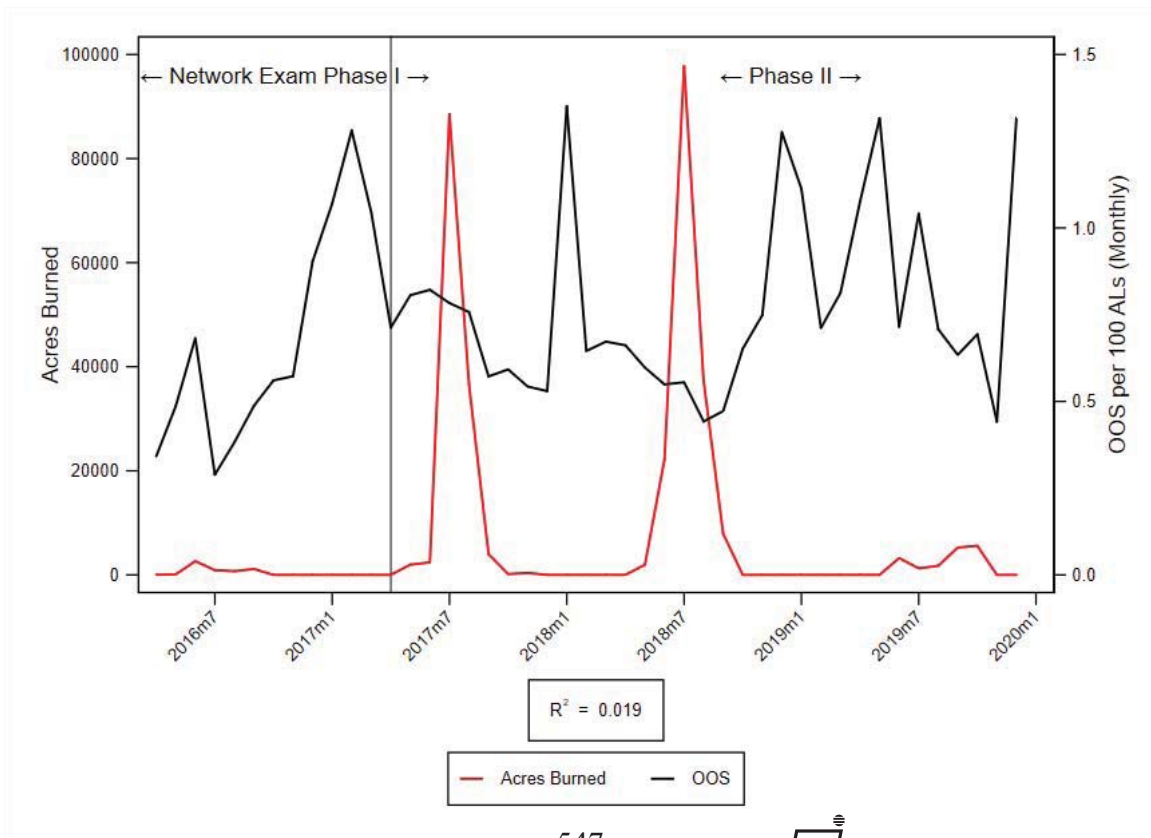
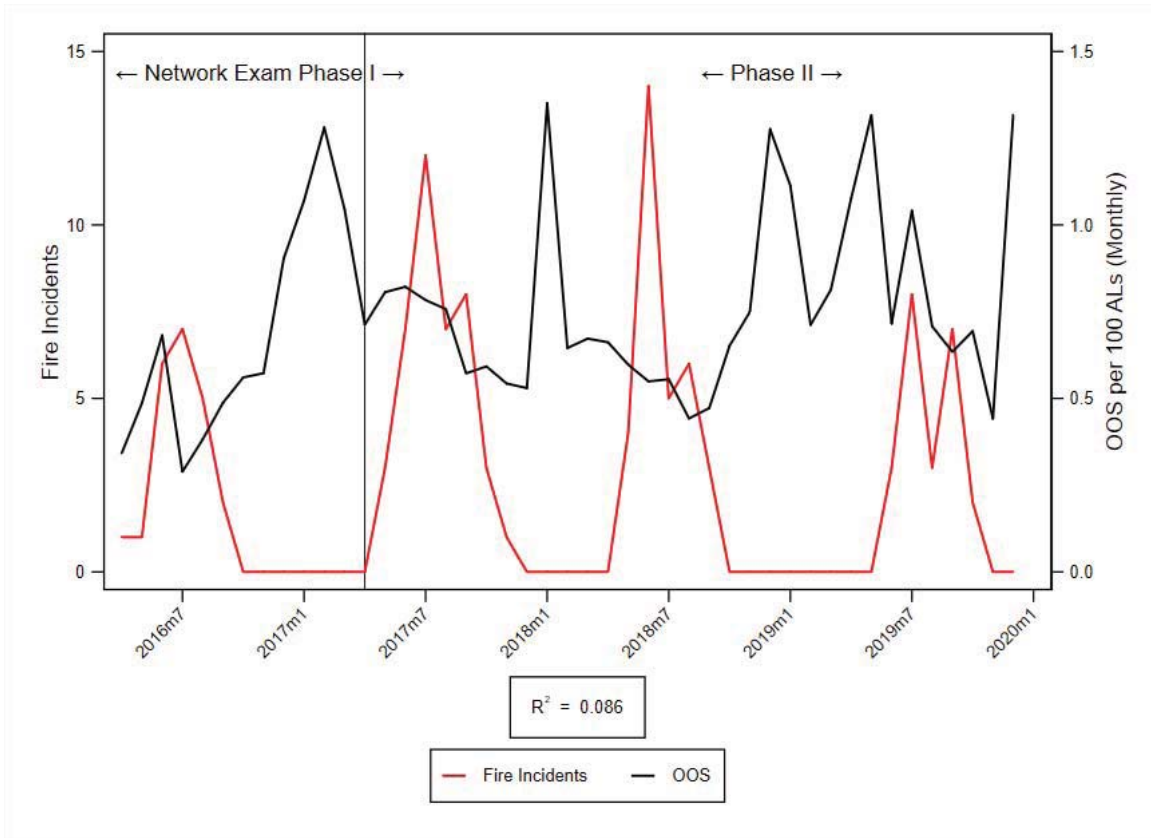


Figure 13.36. REGION 5 CENTRAL COAST (FTR)

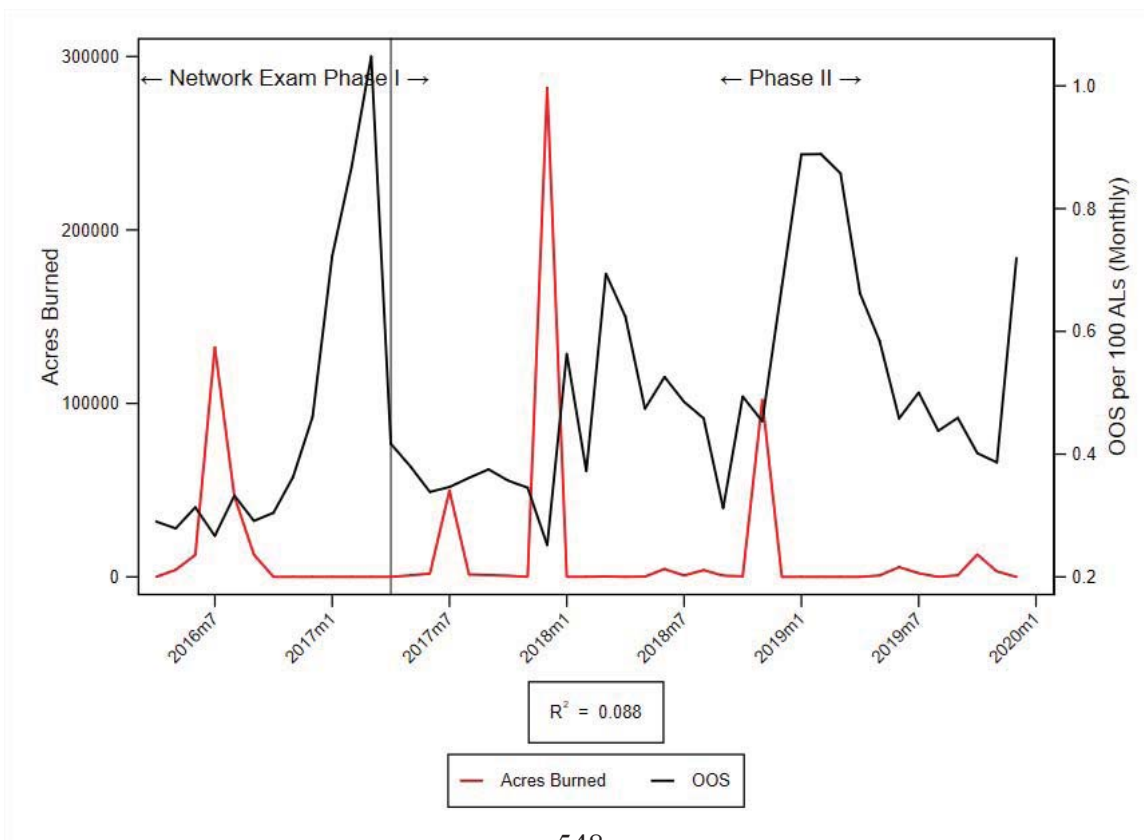
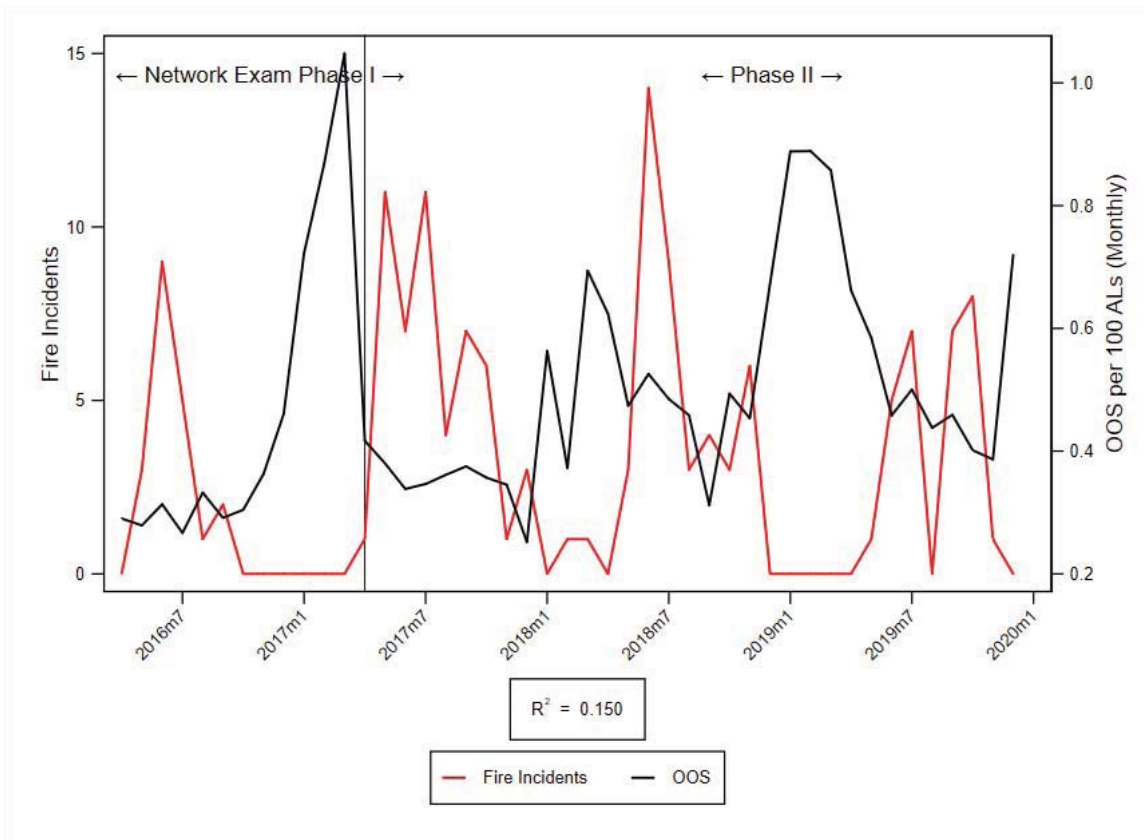


Figure 13.37. REGION 6 SOUTHERN SAN JOAQUIN VALLEY (FTR)

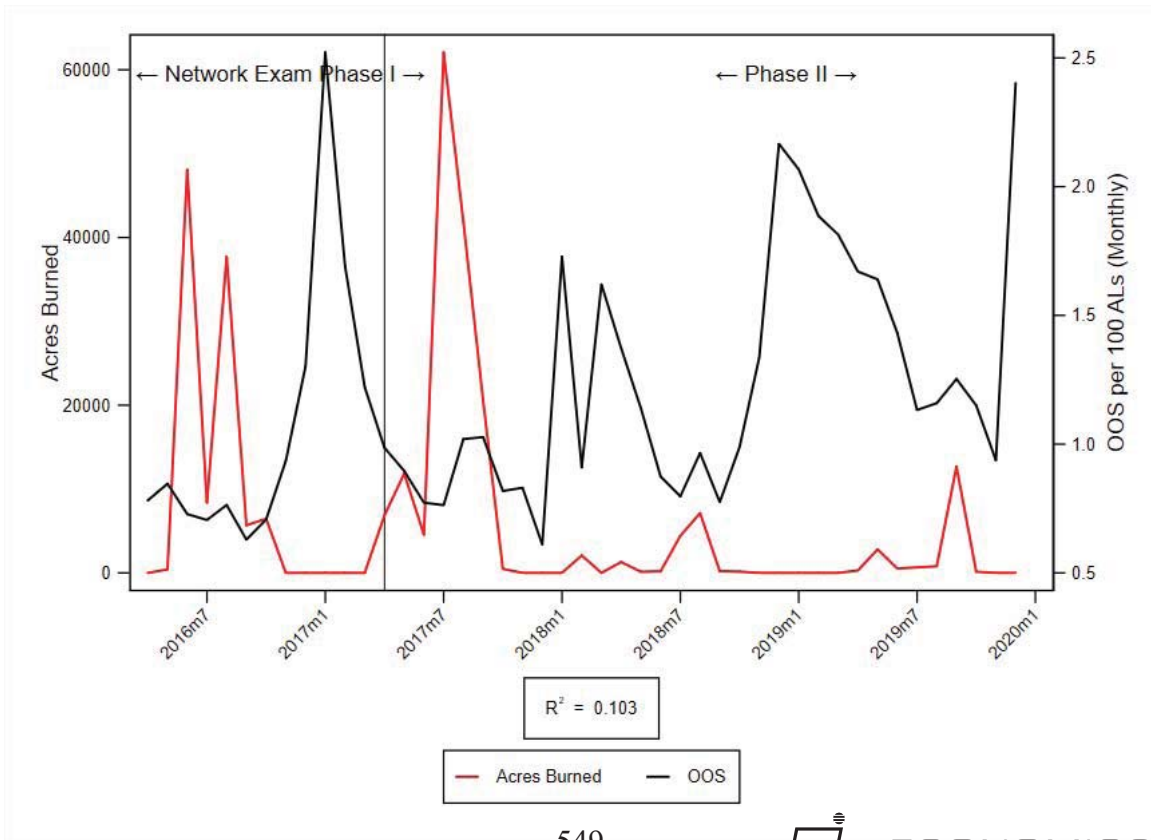
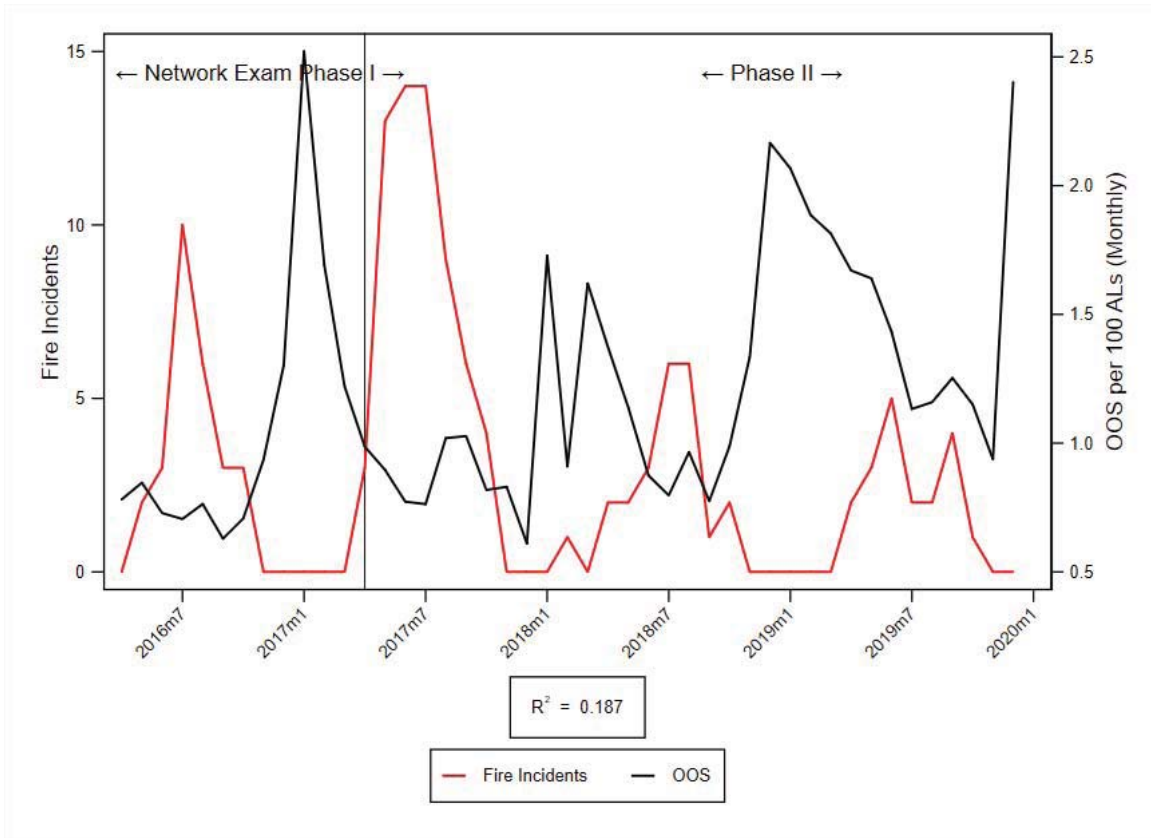


Figure 13.38. REGION 7 INLAND EMPIRE (FTR)

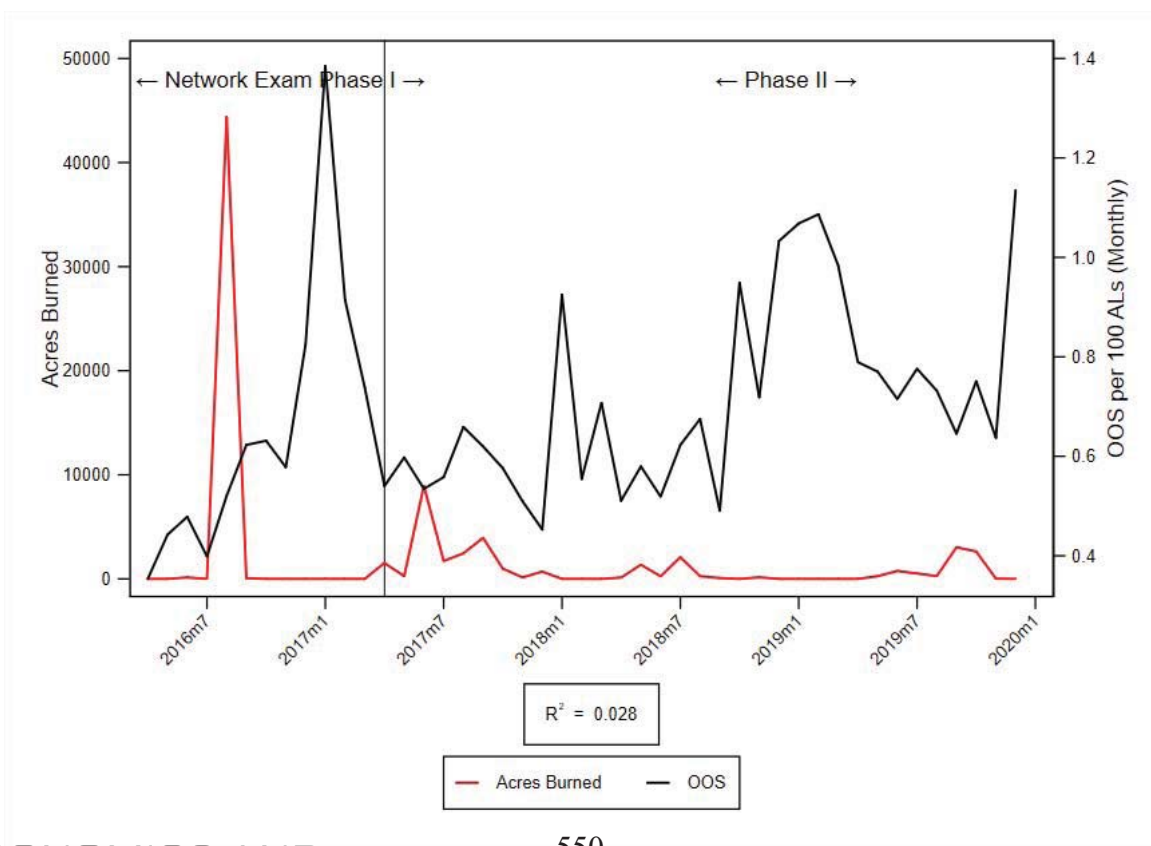
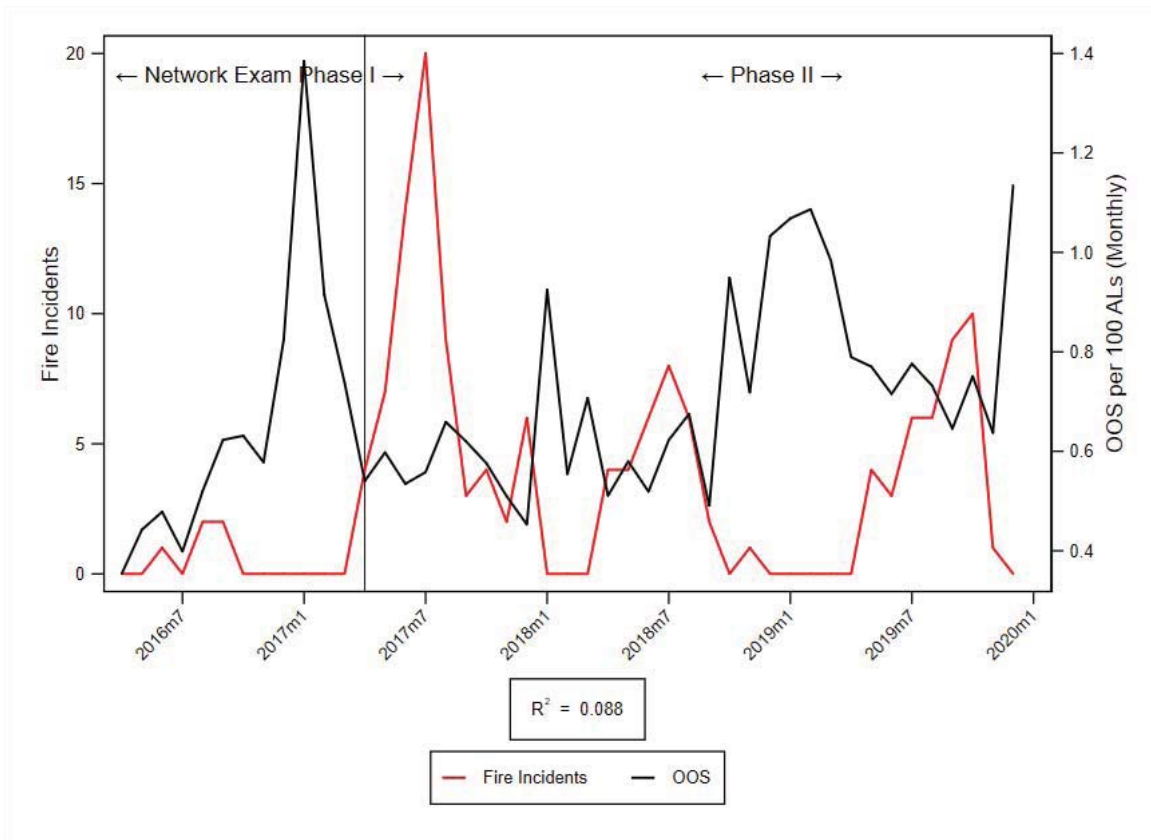


Figure 13.39. REGION 8 LOS ANGELES (FTR)

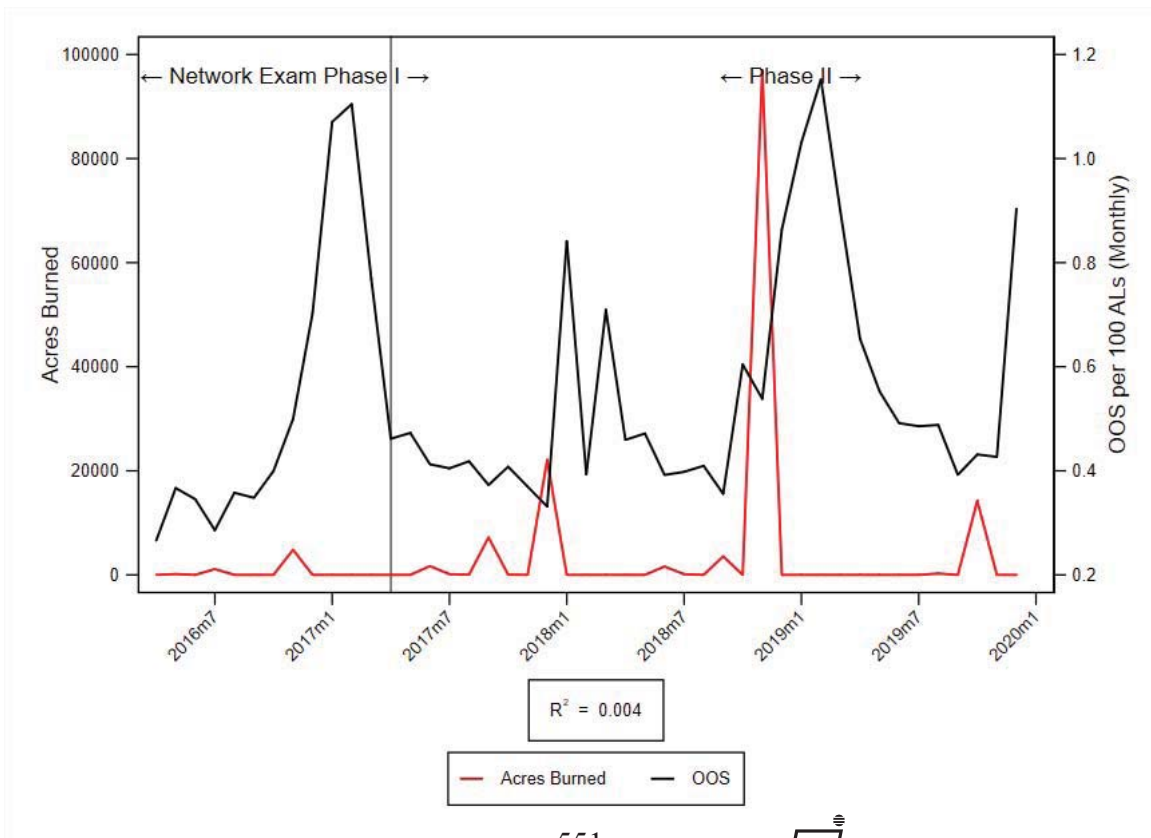
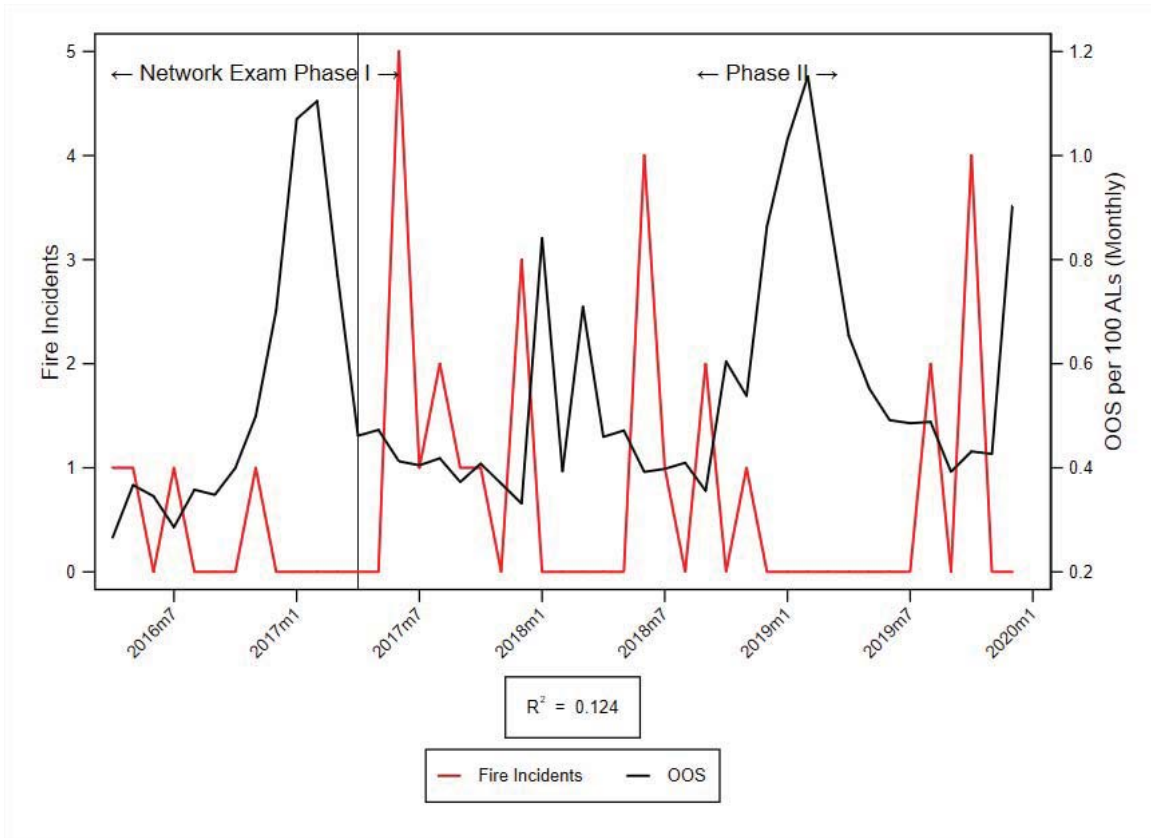


Figure 13.40. REGION 9 ORANGE (FTR)

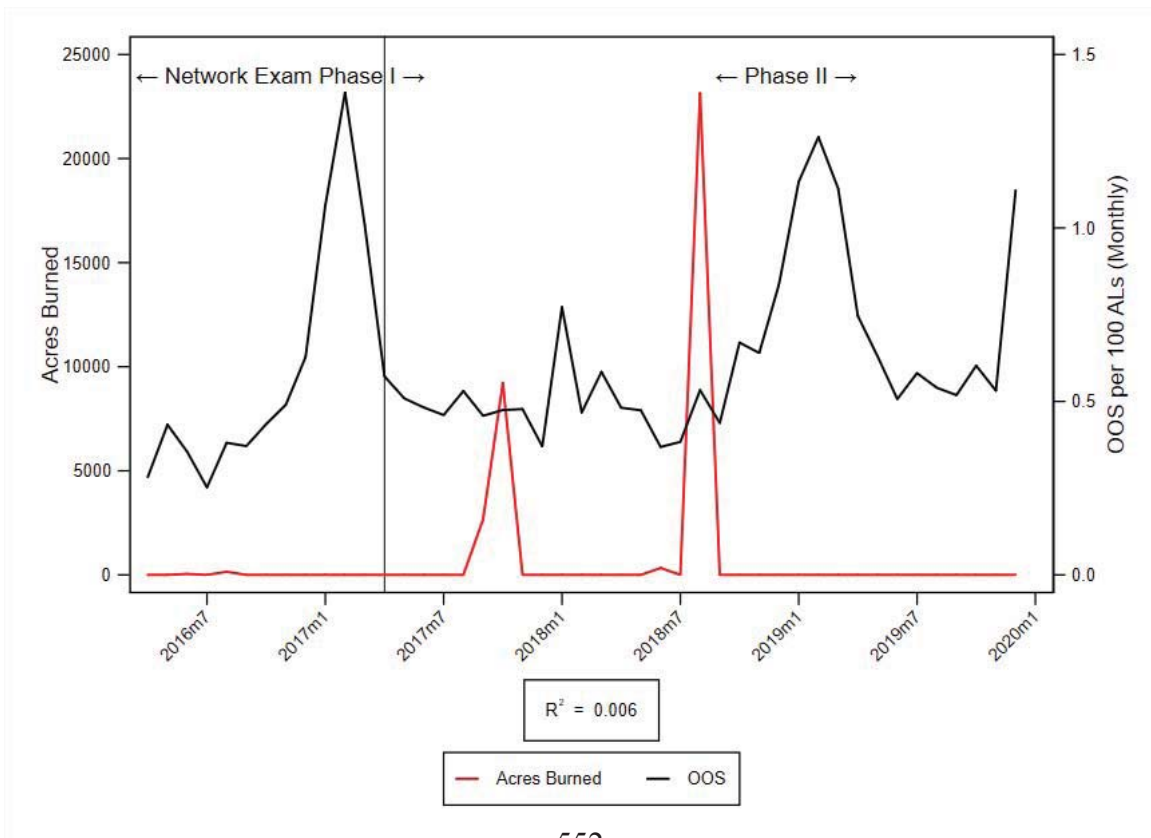
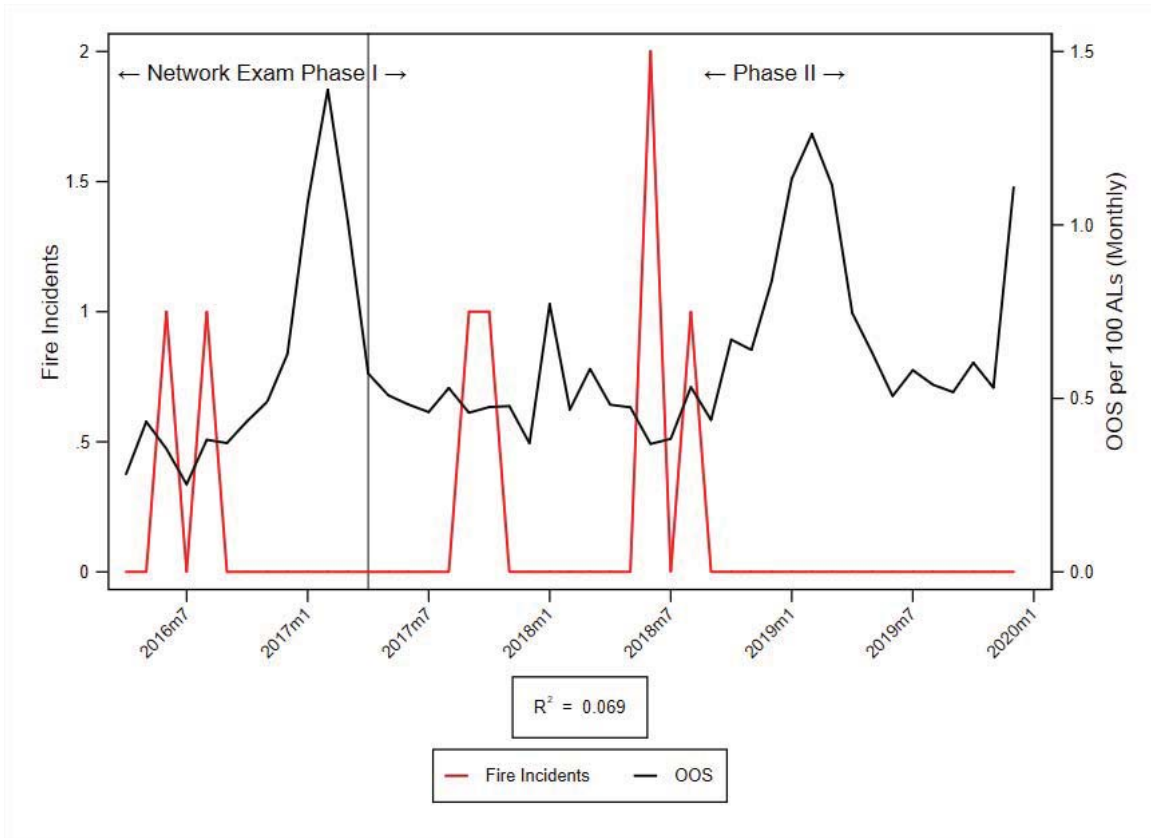
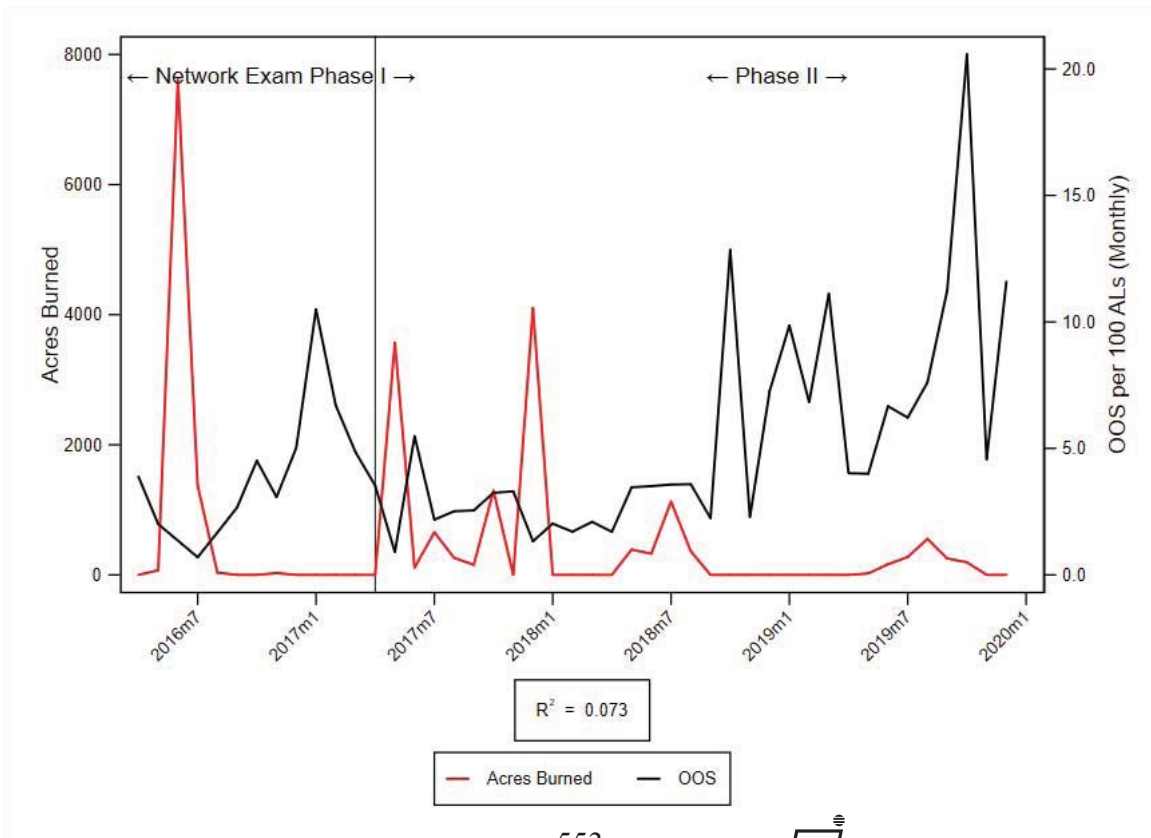
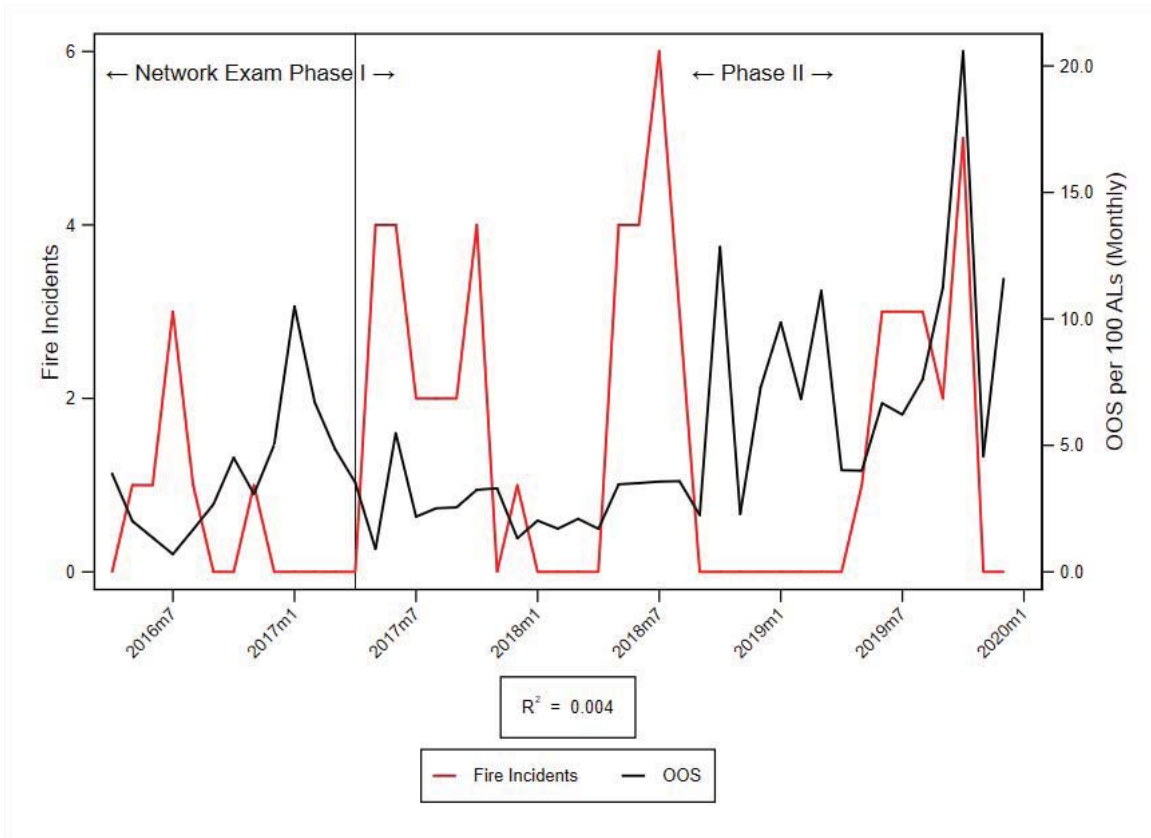


Figure 13.41. REGION 10 SAN DIEGO-IMPERIAL (FTR)



The overall absence of correlation can be observed by an inspection of these graphs. Notably, for a number of them, the peak wildfire incidents and OOS incidents appear to arise around six months apart. Wildfires appear to peak mainly during summer months, while OOS incidents appear to peak in the late fall and early winter. The high correlation between precipitation and OOS incidents suggests at least one plausible explanation for this: Wildfires occur mainly during hot summer months when rainfall is minimal, whereas OOS incidents arise during the periods of heaviest precipitation, which occurs during late fall and winter months. We considered running a regression model in which the wildfire data was lagged by six months, but to have any validity such a model would need to be premised upon some observable *causal* relationship that would, for example, account for service outages arising six months after a major wildfire. We do not believe that any such causal relationship exists, and thus did not pursue this approach.

While the R^2 s that were calculated at the Census Region level for wildfire incidents vs. OOS incidents are considerably lower than those associated with precipitation, we noted that at least some are sufficiently high (i.e., in the 0.10 to 0.18 range) – particularly in areas that have been heavily impacted by destructive wildfires – that some additional examination might be warranted. On the possibility that the geographic extent of entire Census Regions might overshadow the more localized impact of individual wildfire incidents, we prepared a similar set of regression analyses at the individual county level. We did this for each of the 51 counties in which AT&T California provides service, and for each of the 26 counties where Frontier California operates. We surmised that, by studying the interactions between wildfires and service outages across smaller geographic units, it might be possible to identify correlations that would be masked at the full Census Region level. However, we did not observe any greater correlation at the individual county level than at the full Census Region level. Tables 13.6 and 13.7 provide the correlations between wildfire incidents or wildfire acres burned and OOS per 100 Access Lines at the individual county level for each of the two ILECs. Appendices 13-1 and 13-2 provide the results of these county-level studies for the AT&T California and Frontier California service areas, respectively.

The lack of any increase in observable correlation when examined across the geographically smaller areas covered within individual counties serves to corroborate our initial finding that wildfires are not a specific source of individual telephone service outages. This is, of course, not to suggest that such events do not wreak extensive damage to the telecommunications infrastructure in the affected areas. But the destruction of infrastructure likely corresponds to the broader destruction of homes and businesses that result from wildfires, and from the available data it does not appear that the restoration of telephone service lags behind the broader reconstruction of the affected communities.

Table 13.6

AT&T CALIFORNIA
COUNTY-LEVEL RELATIONSHIPS BETWEEN WILDFIRE EVENTS
AND OUT-OF-SERVICE INCIDENTS
2013-2019

County	Census Region	No. of Wire Centers	Total Incidents	Total Acres Burned	Incidents R^2	Acres Burned R^2
ALAMEDA	SAN FRANCISCO BAY AREA	19	27	5,597	0.042	0.020
AMADOR	NORTH SAN JOAQUIN VLY	4	11	5,911	0.046	0.009
BUTTE	SUPERIOR CALIFORNIA	9	59	189,061	0.094	0.015
CALAVERAS	NORTH SAN JOAQUIN VLY	8	21	2,565	0.022	0.010
COLUSA	SUPERIOR CALIFORNIA	1	6	459,316	0.021	0.020
CONTRA COSTA	SANFRANCISCOBAYAREA	20	27	6,884	0.009	0.009
EL DORADO	SUPERIOR CALIFORNIA	9	34	114,326	0.046	0.005
FRESNO	SOUTH SAN JOAQUIN VLY	21	53	214,075	0.083	0.001
GLENN	SUPERIOR CALIFORNIA	5	6	2,772	0.015	0.002
HUMBOLDT	NORTH COAST	13	22	17,987	0.037	0.007
IMPERIAL	SANDIEGO-IMPERIAL	9	0	0		
KERN	SOUTH SAN JOAQUIN VLY	21	56	118,540	0.053	0.008
KINGS	SOUTH SAN JOAQUIN VLY	5	5	54,377	0.006	0.000
LAKE	NORTH COAST	8	44	578,038	0.059	0.003
LOS ANGELES	LOS ANGELES	69	40	188,407	0.047	0.008
MADERA	NORTH SAN JOAQUIN VLY	3	32	30,072	0.066	0.006
MARIN	SAN FRANCISCO BAY AREA	12	5	304	0.008	0.006
MARIPOSA	NORTH SAN JOAQUIN VLY	4	25	205,665	0.011	0.004
MENDOCINO	NORTH COAST	11	21	40,346	0.052	0.000
MERCED	NORTH SAN JOAQUIN VLY	6	12	10,546	0.025	0.017
MONTEREY	CENTRAL COAST	20	42	150,596	0.033	0.008
NAPA	NORTH COAST	6	22	243,788	0.012	0.005
NEVADA	SUPERIOR CALIFORNIA	7	17	4,201	0.051	0.001
ORANGE	ORANGE	32	10	36,764	0.017	0.006
PLACER	SUPERIOR CALIFORNIA	12	12	30,979	0.028	0.009
PLUMAS	SUPERIOR CALIFORNIA	4	11	63,817	0.000	0.039
RIVERSIDE	INLAND EMPIRE	5	131	81,311	0.063	0.001
SACRAMENTO	SUPERIOR CALIFORNIA	19	9	1,712	0.030	0.010
SAN BENITO	CENTRAL COAST	4	18	4,022	0.006	0.002
SAN BERNARDINO	INLAND EMPIRE	8	52	90,832	0.057	0.014
SAN DIEGO	SANDIEGO-IMPERIAL	51	83	48,915	0.036	0.019
SAN FRANCISCO	SAN FRANCISCO BAY AREA	8	0	0		
SAN JOAQUIN	NORTH SAN JOAQUIN VLY	9	7	13,229	0.023	0.006
SAN LUIS OBISPO	CENTRAL COAST	13	60	91,149	0.010	0.003
SAN MATEO	SAN FRANCISCO BAY AREA	14	3	153	0.004	0.003
SANTA CLARA	SAN FRANCISCO BAY AREA	19	34	6,982	0.047	0.013
SANTA CRUZ	CENTRAL COAST	8	4	428	0.012	0.007
SHASTA	SUPERIOR CALIFORNIA	6	61	448,461	0.076	0.008

Table 13.6 (continued)

AT&T CALIFORNIA
COUNTY-LEVEL RELATIONSHIPS BETWEEN WILDFIRE EVENTS
AND OUT-OF-SERVICE INCIDENTS
2013-2019

County	Census Region	No. of Wire Centers	Total Incidents	Total Acres Burned	Incidents R^2	Acres Burned R^2
SIERRA	SUPERIOR CALIFORNIA	4	2	915	0.254	0.161
SISKIYOU	SUPERIOR CALIFORNIA	8	50	285,123	0.018	0.002
SOLANO	SAN FRANCISCO BAY AREA	7	18	56,567	0.053	0.007
SONOMA	NORTH COAST	19	14	102,428	0.001	0.037
STANISLAUS	NORTH SAN JOAQUIN VLY	14	17	11,006	0.039	0.010
SUTTER	SUPERIOR CALIFORNIA	5	3	2,850	0.001	0.002
TEHAMA	SUPERIOR CALIFORNIA	7	49	51,889	0.035	0.018
TRINITY	NORTH COAST	1	17	338,048	0.028	0.015
TULARE	SOUTH SAN JOAQUIN VLY	18	33	78,191	0.035	0.009
TUOLUMNE	NORTH SAN JOAQUIN VLY	5	22	299,132	0.094	0.010
VENTURA	CENTRAL COAST	9	19	121,360	0.007	0.000
YOLO	SUPERIOR CALIFORNIA	5	12	108,681	0.024	0.008
YUBA	SUPERIOR CALIFORNIA	6	14	11,910	0.001	0.087

Source: CALFIRE data; ETI analysis of AT&T California Out-of-Service incidents 2013-2019

Table 13.7

**FRONTIER CALIFORNIA
COUNTY-LEVEL RELATIONSHIPS BETWEEN WILDFIRE EVENTS
AND OUT-OF-SERVICE INCIDENTS
2016-2019**

County	Census Region	No. of Wire Centers	Total Incidents	Total Acres Burned	Incidents R^2	Acres Burned R^2
FRESNO	SOUTH SAN JOAQUIN VLY	9	53	214,075	0.219	0.094
HUMBOLDT	NORTH COAST	6	22	17,987	0.000	0.020
IMPERIAL	SAN DIEGO-IMPERIAL	2				
INYO	SOUTH SAN JOAQUIN VLY	6	10	24,819	0.008	0.008
KERN	SOUTH SAN JOAQUIN VLY	16	56	118,540	0.106	0.039
KINGS	SOUTH SAN JOAQUIN VLY	1	5	54,377	0.003	0.012
LOS ANGELES	LOS ANGELES	37	40	188,407	0.123	0.004
MARIN	SAN FRANCISCO BAY AREA	1	5	304	0.042	0.014
MENDOCINO	NORTH COAST	4	21	40,346	0.139	0.002
MERCED	NORTH SAN JOAQUIN VLY	2	12	10,546	0.007	0.002
MONO	NORTH SAN JOAQUIN VLY	6	5	21,759	0.004	0.015
MONTEREY	CENTRAL COAST	2	42	150,596	0.003	0.017
ORANGE	ORANGE	4	10	36,764	0.069	0.006
PLACER	SUPERIOR CALIFORNIA	2	12	30,979	0.029	0.046
RIVERSIDE	INLAND EMPIRE	19	131	81,311	0.061	0.022
SAN BERNARDINO	INLAND EMPIRE	33	52	90,832	0.074	0.016
SAN JOAQUIN	NORTH SAN JOAQUIN VLY	4	7	13,229	0.004	0.008
SANTA BARBARA	CENTRAL COAST	9	26	329,751	0.071	0.039
SANTA CLARA	SAN FRANCISCO BAY AREA	3	34	6,982	0.108	0.051
SONOMA	NORTH COAST	4	14	102,428	0.007	0.007
STANISLAUS	NORTH SAN JOAQUIN VLY	1	17	11,006	0.040	0.026
SUTTER	SUPERIOR CALIFORNIA	1	3	2,850	0.029	0.013
TRINITY	NORTH COAST	3	17	338,048	0.028	0.039
TULARE	SOUTH SAN JOAQUIN VLY	7	33	78,191	0.036	0.004
VENTURA	CENTRAL COAST	9	19	121,360	0.017	0.001
YOLO	SUPERIOR CALIFORNIA	1	12	108,681	0.084	0.006

Source: CALFIRE data; ETI analysis of Frontier California Out-of-Service incidents 2016-2019

Investment and infrastructure in high risk fire areas

We examined relationships between total acres burned over the 2013-2020 period based upon CALFIRE data and infrastructure investments made by each of the two ILECs. By hypothesis, if ILECs were responding to areas of high wildfire risk with large scale infrastructure investment, we would expect to see some relationship between the extent of wildfire activity and the level of investment being made in a given area. Using county-level wildfire and Gross Plant

Additions investment data, we compared Total Acres Burned with two ILEC investment indicia – TotalGross Plant additions and Gross Plant Additions per Access Line. Because infrastructure reliability and investment would be expected to lag behind the actual wildfire damage, we utilized 2018-2019 Gross Plant Additions data for this analysis.

Tables 13.8 and 13.9 summarize this data for AT&T California and Frontier California, respectively. Because we utilized county-level data for this analysis, we would not expect a perfect match between the wildfire and investment data for each ILEC because, with very few exceptions, wildfires do not affect an entire county and ILECs do not generally serve an entire county. Additionally, because California counties vary in population by a factor of around 1000-to-1 and population has, if anything, an inverse relationship with the total number of acres burned, we utilized two alternate indicia of investment activity:

- Total 2018-2019 Gross Plant Additions for each county
- County-level Gross Plant Additions per Switched Access Line (as of January 2019) for each county

All else equal, ILEC investment in any given area is driven largely by the number of customers in that area, so we would expect larger investments to be made in the more populous counties. To control for this, we also examined *unit gross plant investment* per access line in service, using the January 2019 midpoint of the 2018-2019 Phase 2 study period. We also calculated the percentage of total wildfire acres burned for each of the counties served by each ILEC, as well as the percentage of that ILEC's total Gross Plant Additions for each of the counties it serves. A visual examination of the data in Tables 13.8 and 13.9 suggests little correlation between Total Acres Burned and either Total Gross Plant Additions or Gross Plant Additions per Access Line.

In order to examine the extent of any such correlation quantitatively, we have calculated a statistic known as the Spearman Rank Correlation⁹⁴ both as between Total Acres Burned and Total Gross Plant Additions, as well as between Total Acres Burned and Gross Plant Additions per Access Line. Both Acres and Burned and Gross Plant Additions vary by orders-of-magnitude on a county-by county basis, diminishing the usefulness of traditional linear correlation analysis. Rank correlation avoids this problem. It is calculated by first ranking the individual observations for each of the two variables to be examined, in this instance, from highest (assigned the rank of "1") to lowest (assigned the rank of 51 (for AT&T) or 28 (for Frontier). These rankings are also shown on Tables 13.8 and 13.9. Table 13.10 summarizes the two Rank Correlation calculations for each of the two ILECs:

94. Yamane, Taro, *Statistics: An Introductory Analysis* (New York: Harper & Row, 1964), at 435-438.

Table 13.8

**AT&T CALIFORNIA
INFRASTRUCTURE INVESTMENT IN HIGH-RISK WILDFIRE AREAS
(sorted by Total Acres Burned - highest to lowest)**

County	Wildfire Incidents 2013-2020		Pct of Tot Acres Burned	No. of Wire Centers	Access Lines Jan 2019	2018-29 Gross Plant Additions	Pct of total 2018-29 GPA	GPA per ALs- Jan 2019	Acres Burned Rank	GPA Investment rank	GPA per AL Rank
	Total Acres Burned	Total Acres Burned									
LAKE	44	578,038	11.49%	8	7,679	5,611,885	0.28%	731	1	36	37
COLUSA	6	459,316	9.13%	1	138	35,973	0.00%	261	2	51	50
SHASTA	61	448,461	8.92%	6	11,840	34,794,138	1.75%	2,939	3	15	2
TRINITY	17	338,048	6.72%	1	508	514,098	0.03%	1,012	4	49	22
TUOLUMNE	22	299,132	5.95%	5	10,048	5,069,941	0.25%	505	5	38	47
SISKIYOU	50	285,123	5.67%	8	4,673	4,323,702	0.22%	925	6	40	29
NAPA	22	243,788	4.85%	6	12,701	12,043,604	0.61%	948	7	28	27
FRESNO	53	214,075	4.26%	21	42,153	34,258,390	1.72%	813	8	16	34
MARIPOSA	25	205,665	4.09%	4	1,758	3,167,291	0.16%	1,802	9	46	4
BUTTE	59	189,061	3.76%	9	18,842	37,990,193	1.91%	2,016	10	14	3
LOS ANGELES	40	188,407	3.75%	69	451,446	391,828,147	19.70%	868	11	1	31
MONTEREY	42	150,596	2.99%	20	30,843	26,252,051	1.32%	851	12	21	33
VENTURA	19	121,360	2.41%	9	22,576	23,449,202	1.18%	1,039	13	22	19
KERN	56	118,540	2.36%	21	34,148	42,158,617	2.12%	1,235	14	12	10
EL DORADO	34	114,326	2.27%	9	18,933	10,816,698	0.54%	571	15	30	44
YOLO	12	108,681	2.16%	5	9,662	10,740,656	0.54%	1,112	16	31	15
SONOMA	14	102,428	2.04%	19	38,850	43,900,406	2.21%	1,130	17	11	13
SAN LUIS OBISPO	60	91,149	1.81%	13	22,565	21,369,125	1.07%	947	18	24	28
SAN BERNARDINO	52	90,832	1.81%	8	15,561	27,359,437	1.38%	1,758	19	20	5
RIVERSIDE	131	81,311	1.62%	5	29,666	40,269,557	2.02%	1,357	20	13	7
TULARE	33	78,191	1.55%	18	26,281	27,533,006	1.38%	1,048	21	19	18
PLUMAS	11	63,817	1.27%	4	4,267	698,836	0.04%	164	22	48	51
SOLANO	18	56,567	1.12%	7	21,545	18,635,144	0.94%	865	23	26	32
KINGS	5	54,377	1.08%	5	5,554	5,687,790	0.29%	1,024	24	35	21
TEHAMA	49	51,889	1.03%	7	7,769	4,197,767	0.21%	540	25	41	45
SAN DIEGO	83	48,915	0.97%	51	145,740	159,693,753	8.03%	1,096	26	3	16
MENDOCINO	21	40,346	0.80%	11	15,026	7,432,464	0.37%	495	27	33	49
ORANGE	10	36,764	0.73%	32	144,937	143,966,352	7.24%	993	28	25	25
PLACER	12	30,979	0.62%	12	19,591	20,132,322	1.01%	1,028	29	25	20
MADERA	32	30,072	0.60%	3	5,319	5,241,661	0.26%	985	30	37	26
HUMBOLDT	22	17,987	0.36%	13	10,594	10,648,626	0.54%	1,005	31	32	24
SAN JOAQUIN	7	13,229	0.26%	9	29,199	29,508,463	1.48%	1,011	32	17	23
YUBA	14	11,910	0.24%	6	5,819	3,617,512	0.18%	622	33	44	40
STANISLAUS	17	11,006	0.22%	14	28,242	22,623,727	1.14%	801	34	23	36
MERCED	12	10,546	0.21%	6	10,264	17,651,102	0.89%	1,720	35	27	6
SANTA CLARA	34	6,982	0.14%	19	121,579	158,426,693	7.97%	1,303	36	4	8
CONTRA COSTA	27	6,884	0.14%	20	67,041	71,948,594	3.62%	1,073	37	9	17
AMADOR	11	5,911	0.12%	4	4,550	3,653,909	0.18%	803	38	42	35
ALAMEDA	27	5,597	0.11%	19	118,102	107,718,143	5.42%	912	39	6	30

Table 13.8: INFRASTRUCTURE INVESTMENT IN HIGH-RISK WILDFIRE AREAS (continued)

County	Wildfire Incidents 2013-2020	Total Acres Burned	Pct of Tot Acres Burned	No. of Wire Centers	Access Lines Jan 2019	2018-29 Gross Plant Additions	Pct of total 2018-29 Gross	GPA per ALs- Jan 2019	Acres Burned Rank	GPA Investment rank	GPA per AL Rank
NEVADA	17	4,201	0.08%	7	18,967	10,987,185	0.55%	579	40	29	42
SAN BENITO	18	4,022	0.08%	4	3,967	4,833,940	0.24%	1,219	41	39	11
SUTTER	3	2,850	0.06%	5	6,042	3,635,319	0.18%	602	42	43	41
GLENN	6	2,772	0.06%	5	2,743	1,588,480	0.08%	579	43	47	43
CALAVERAS	21	2,565	0.05%	8	6,920	3,578,075	0.18%	517	44	45	46
SACRAMENTO	9	1,712	0.03%	19	71,854	84,192,259	4.23%	1,172	45	7	12
SIERRA	2	915	0.02%	4	878	434,367	0.02%	495	46	50	48
SANTA CRUZ	4	428	0.01%	8	25,695	28,861,224	1.45%	1,123	47	18	14
MARIN	5	304	0.01%	12	25,042	174,673,021	8.78%	6,975	48	2	1
SAN MATEO	3	153	0.00%	14	64,370	80,943,675	4.07%	1,257	49	8	9
IMPERIAL				9	8,996	6,269,993	0.32%	697	50	34	38
SAN FRANCISCO				8	98,235	61,524,552	3.09%	626	51	10	39
TOTALS	1,352	5,030,228	100.00%	593	1,802,487	1,988,696,520	100.00%				

Table 13.9

FRONTIER CALIFORNIA
INFRASTRUCTURE INVESTMENT IN HIGH-RISK WILDFIRE AREAS
 (sorted by Total Acres Burned - highest to lowest)

County	Wildfire Incidents 2013-2020	Total Acres Burned	Pct of Tot Acres Burned	No. of Wire Centers	Access Lines Jan 2019	2018-29 Gross Plant Additions	Pct of total 2018-29 GPA	GPA per ALs- Jan 2019	Acres Burned Rank	GPA Investment rank	GPA per AL Rank
TRINITY	17	338,048		3	2,325	3,419,237	0.63%	1,470	1	12	4
SANTA BARBARA	26	329,751		13	38,859	20,939,279	3.89%	539	2	4	21
FRESNO	53	214,075		12	7,007	9,515,871	1.77%	1,358	3	7	5
LOS ANGELES	40	188,407		49	259,444	206,868,260	38.39%	797	4	1	13
MONTEREY	42	150,596		2	518	1,924,831	0.36%	3,718	5	17	1
VENTURA	19	121,360		9	40,429	10,268,917	1.91%	254	6	6	26
KERN	56	118,540		20	10,656	7,183,092	1.33%	674	7	9	18
YOLO	12	108,681		2	134	92,114	0.02%	687	8	25	17
SONOMA	14	102,428		4	1,648	1,148,564	0.21%	697	9	19	16
SAN BERNARDINO	52	90,832		44	109,474	124,884,097	23.17%	1,141	10	2	8
RIVERSIDE	131	81,311		36	107,773	99,286,754	18.42%	921	11	3	10
TULARE	33	78,191		8	4,204	3,414,297	0.63%	812	12	13	11
KINGS	5	54,377		1	760	418,516	0.08%	551	13	23	20
MENDOCINO	21	40,346		4	1,302	1,488,284	0.28%	1,143	14	18	7
ORANGE	10	36,764		6	40,652	19,654,531	3.65%	483	15	5	23
PLACER	12	30,979		2	1,102	738,427	0.14%	670	16	21	19
INYO	10	24,819		5	2,768	2,215,386	0.41%	800	17	16	12
MONO	5	21,759		6	3,126	2,260,006	0.42%	723	18	15	15
HUMBOLDT	22	17,987		5	2,476	6,533,275	1.21%	2,638	19	10	3
SAN JOAQUIN	7	13,229		5	7,891	2,392,896	0.44%	303	20	14	25
STANISLAUS	17	11,006		1	148	110,340	0.02%	744	21	24	14
MERCED	12	10,546		2	914	990,161	0.18%	1,084	22	20	9
SANTA CLARA	34	6,982		3	17,108	8,524,949	1.58%	498	23	8	22
SUTTER	3	2,850		1	74	26,990	0.01%	365	24	26	24
MARIN	5	304		1	3,335	3,926,776	0.73%	1,177	25	11	6
IMPERIAL	0	-		2	216	654,919	0.12%	3,038	26	22	2
MODOC	0	-		1	-	2,479	0.00%	-	27	27	27
SACRAMENTO	0	-		1	-	-	0.00%	-	28	28	28
TOTALS	658	2,194,168	0.00%	248	664,343	538,883,246	100.00%	-	-	-	-

Table 13.10		
RANK CORRELATIONS BETWEEN TOTAL WILDFIRE ACRES BURNED (2013-2020) AND ILEC GROSS PLANT INVESTMENTS (2018-2019)		
Rank Correlation between	AT&T California	Frontier California
Total Acres Burned and Gross Plant Additions	-0.113846154	0.551724138
Total Acres Burned and Gross Plant Additions per Access Line	0.045248869	0.241926656

Notably, the results of these calculations are decidedly different for AT&T and Frontier. In the case of AT&T, the Rank Correlation between Total Acres Burned and Total Gross Plant Additions is *negative* 0.1138, suggesting an inverse relationship between these two variables. When we look at investment on a per-access line basis, the correlation is slightly positive, but quite low at only 0.0452. The clear conclusion here is that, for AT&T, there is no obvious relationship between its investment priorities and areas of high fire risk.

For Frontier, the rank correlation between Total Acres Burned and Total Gross Plant Additions is a *positive* 0.5517, suggesting a relatively strong positive correlation. Even when viewed on a per access line basis, we still see a rank correlation of 0.2419. Of course, these calculations do not reveal any *causal* link between Frontier's investment activities and the incidence of wildfires, although the particularly high rank correlation between Acres Burned and Total Gross Plant Additions, which does *not* control for the volume of customers, could be interpreted as inferring at least some causal link in this case.

Conclusion

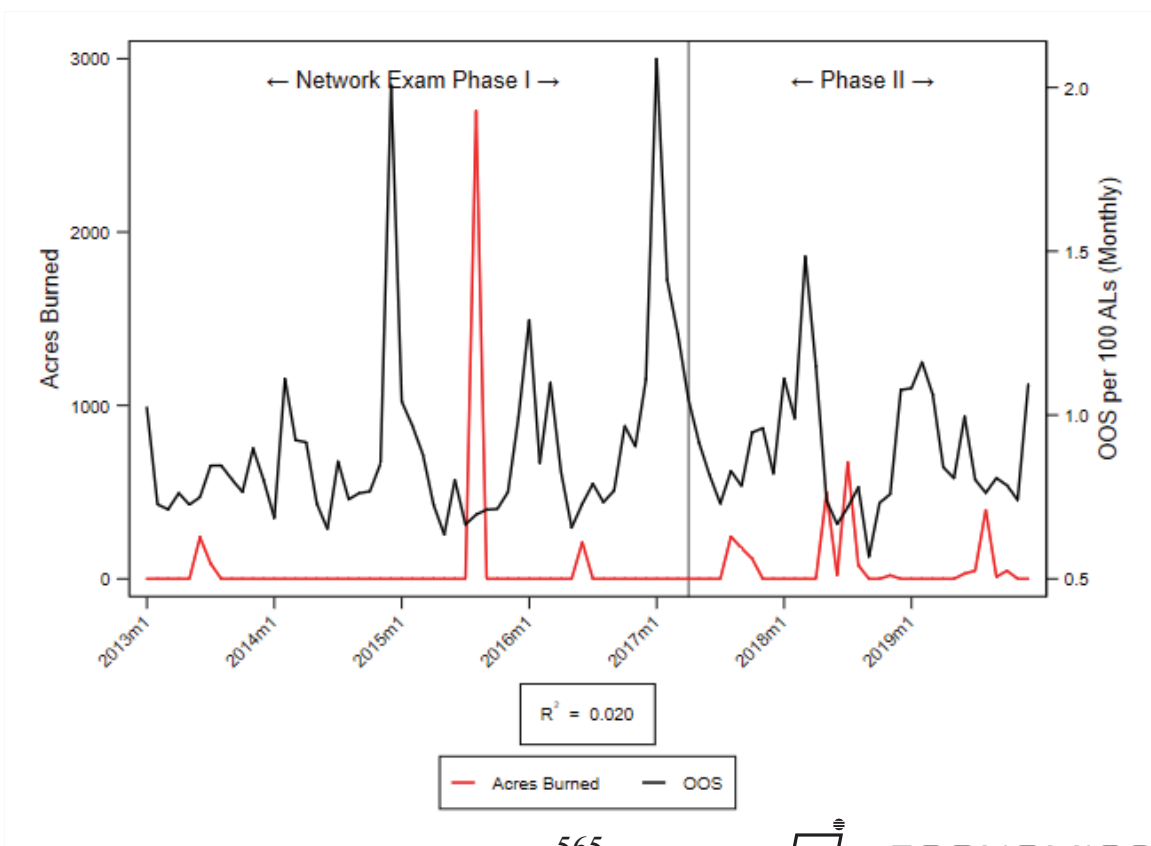
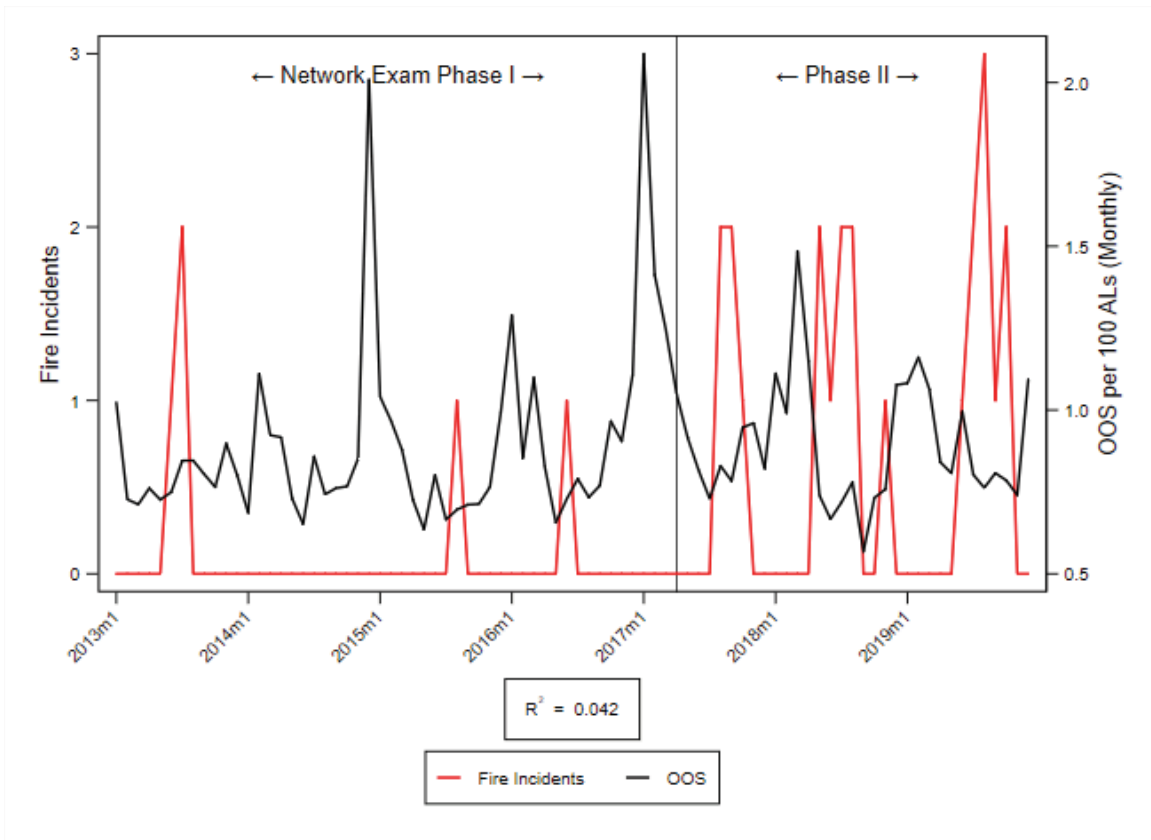
Our analysis of the effect of exogenous environmental conditions upon service quality of legacy circuit-switched telephone service has identified a strong correlation between precipitation and out-of-service incidents, but no discernable relationship between wildfires and service quality. The massive wildfires that have become all too common in California certainly destroy infrastructure as well as homes and other buildings on a grand scale, and undoubtedly have an impact upon the ability of the ILEC to furnish service in the affected area. However, if a home is destroyed along with the owner's telephone service, dealing with that type of service outage is likely a fairly low priority for the property owner, and as such does not result in a simply out-of-service trouble ticket on an individual customer basis. Frontier's plant investments, which in recent years have focused heavily upon outside plant, do appear to have some positive relationship with the extent of wildfires in a given county, but our analysis does not firmly establish a direct causal link between fires and investment overall.

Appendix 13-1

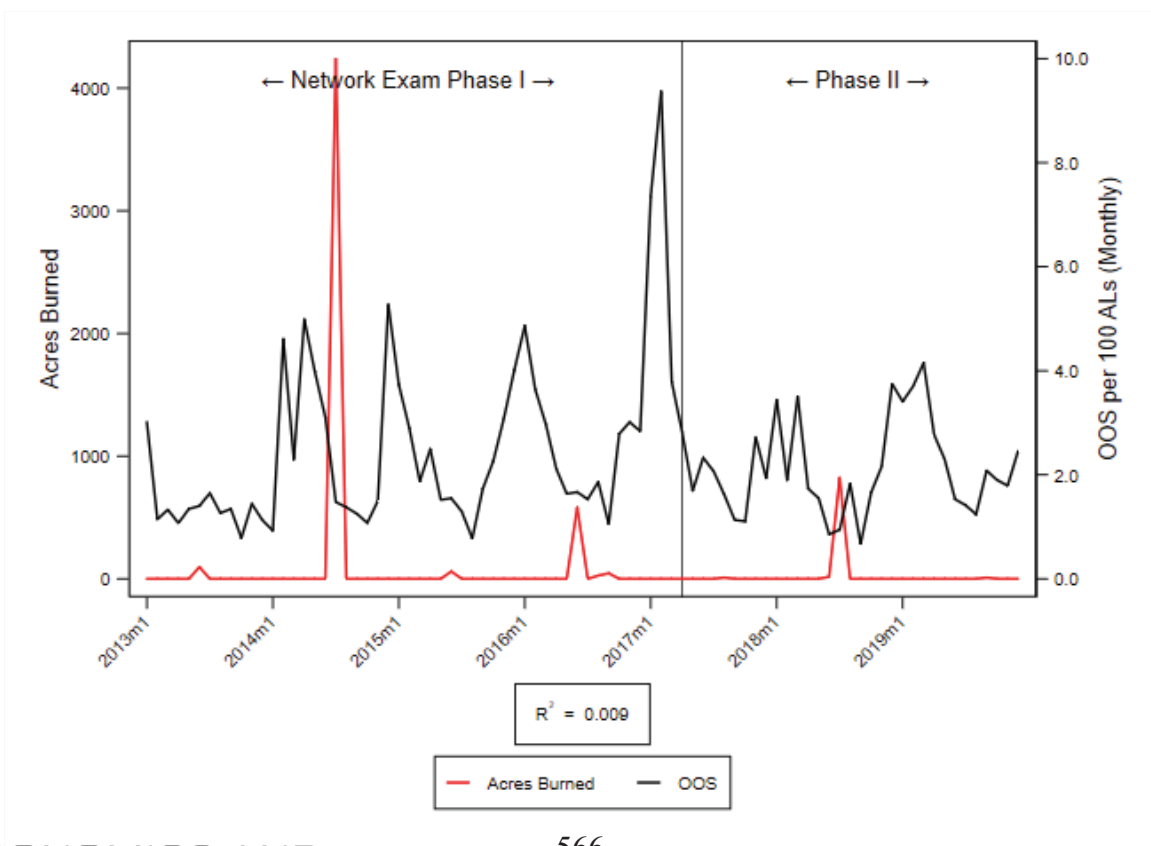
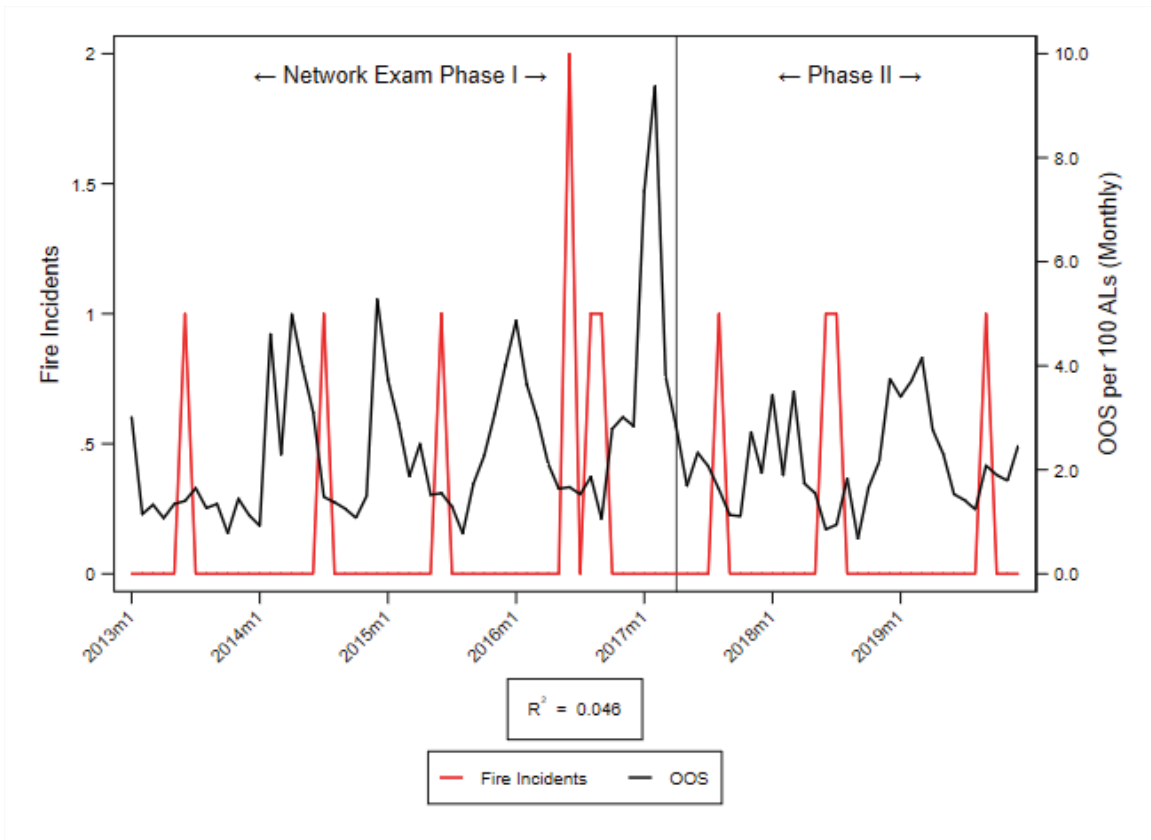
AT&T California

**County-level Regression Analyses
Wildfires vs. Telephone Service Outages**

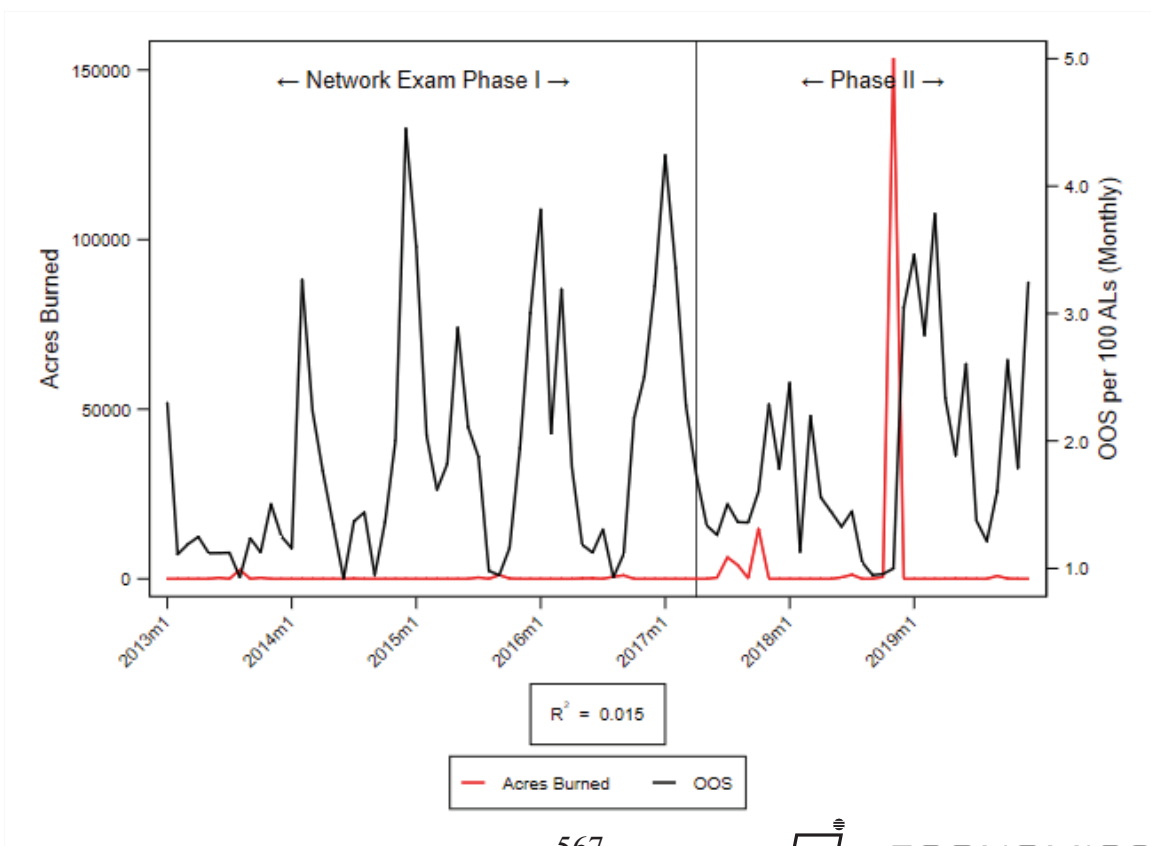
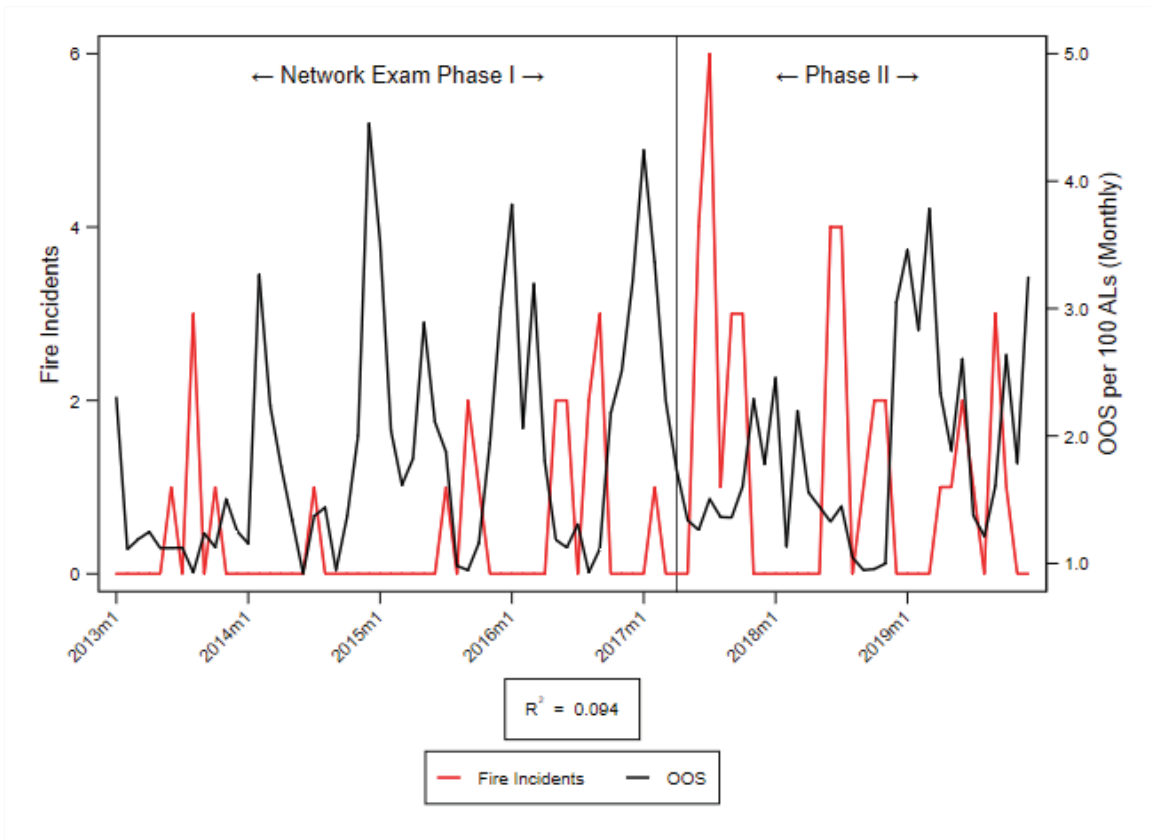
COUNTY-REGION ALAMEDA - SAN FRANCISCO BAY AREA (AT&T)



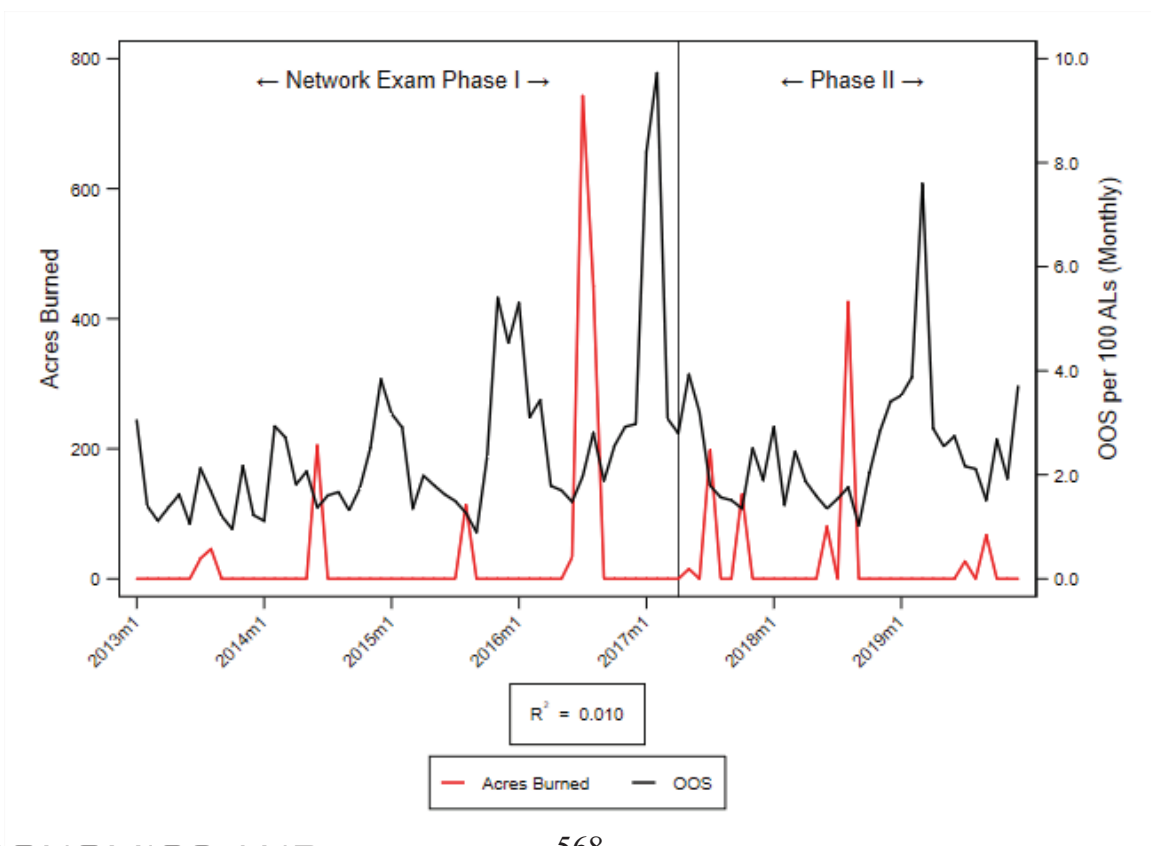
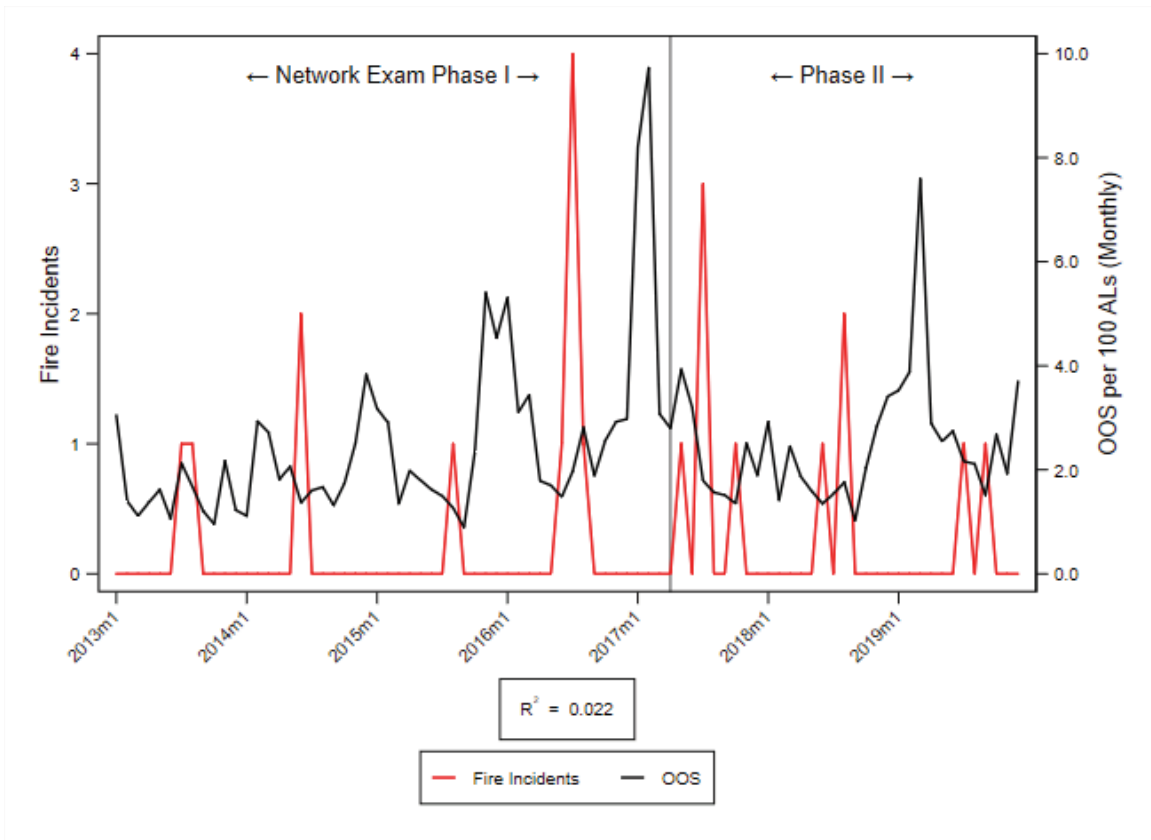
COUNTY-REGION AMADOR - NORTHERN SAN JOAQUIN VALLEY (AT&T)



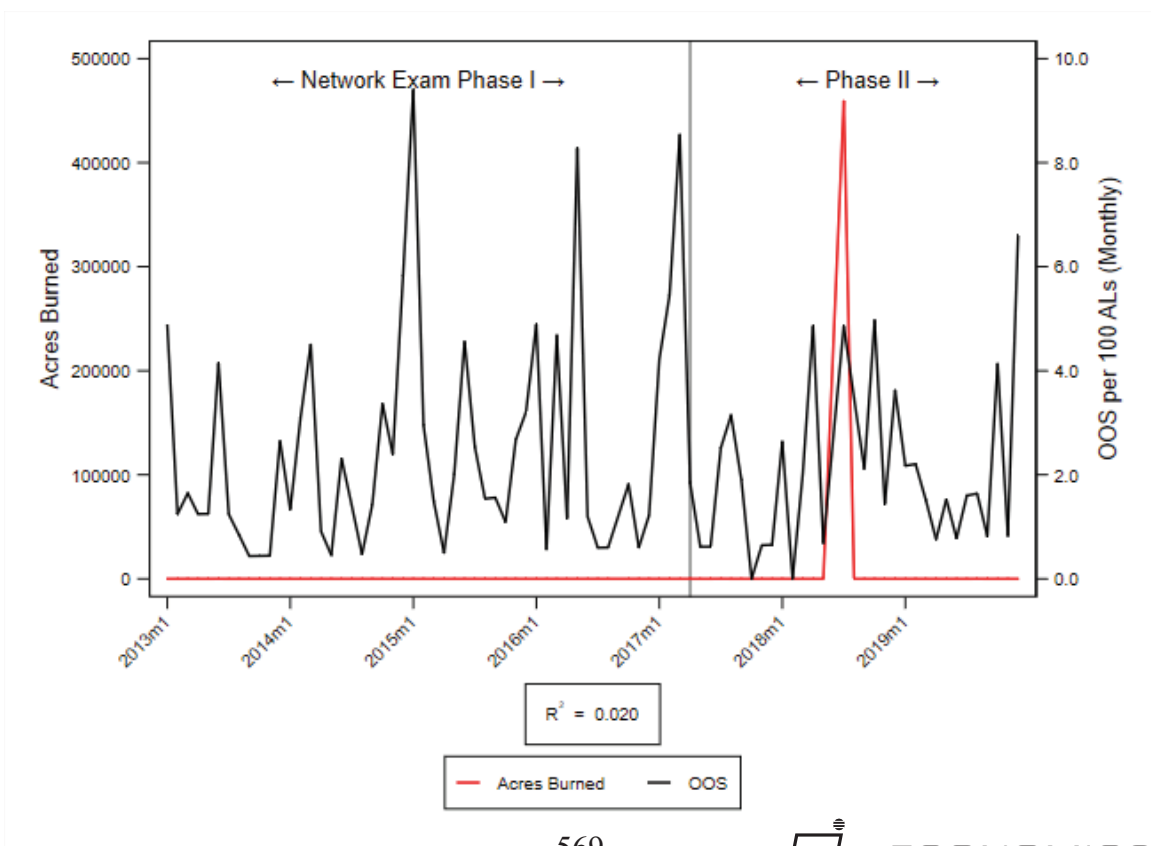
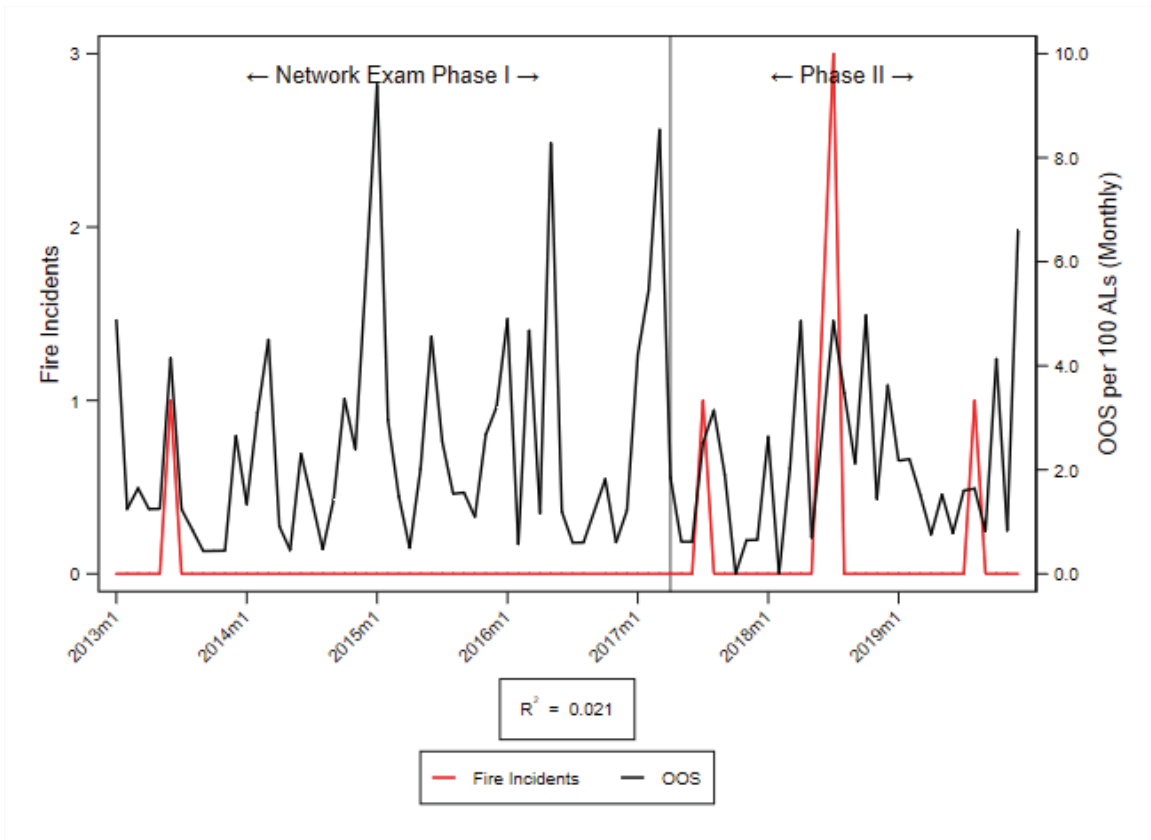
COUNTY-REGION BUTTE - SUPERIOR CALIFORNIA (AT&T)



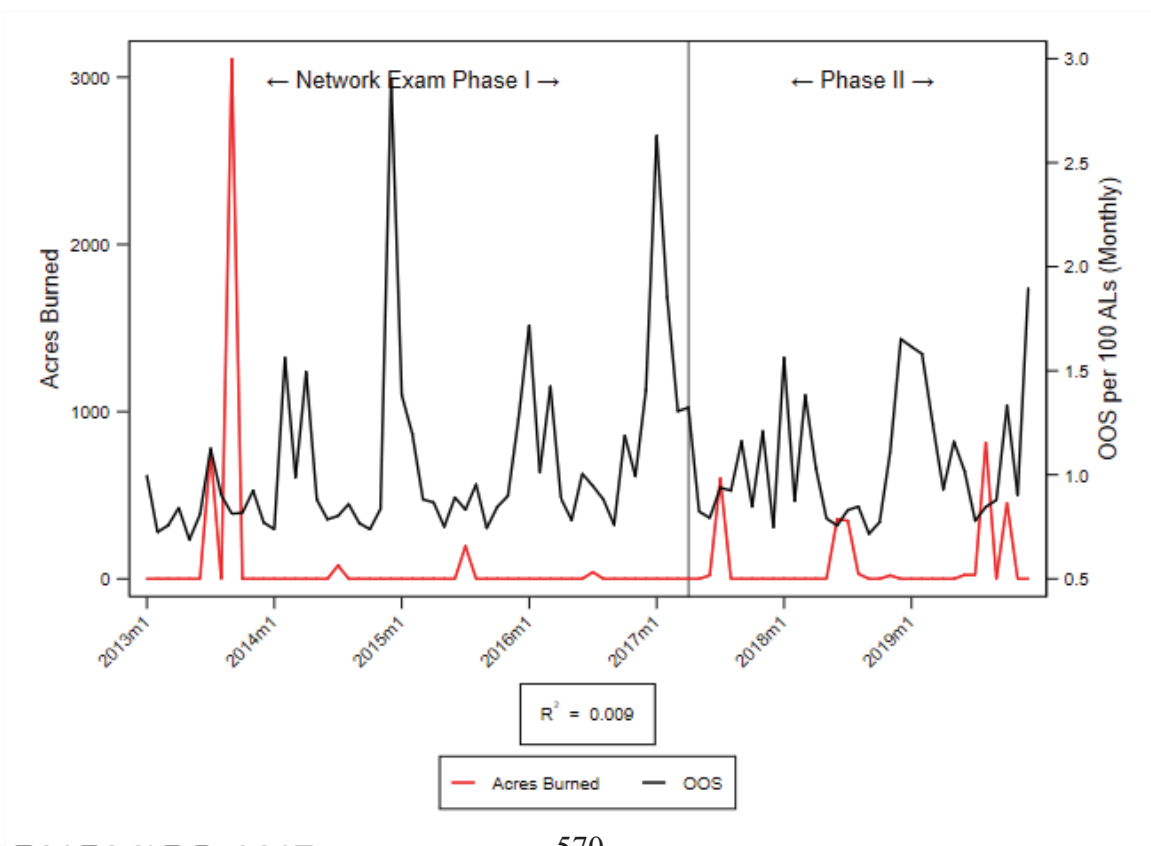
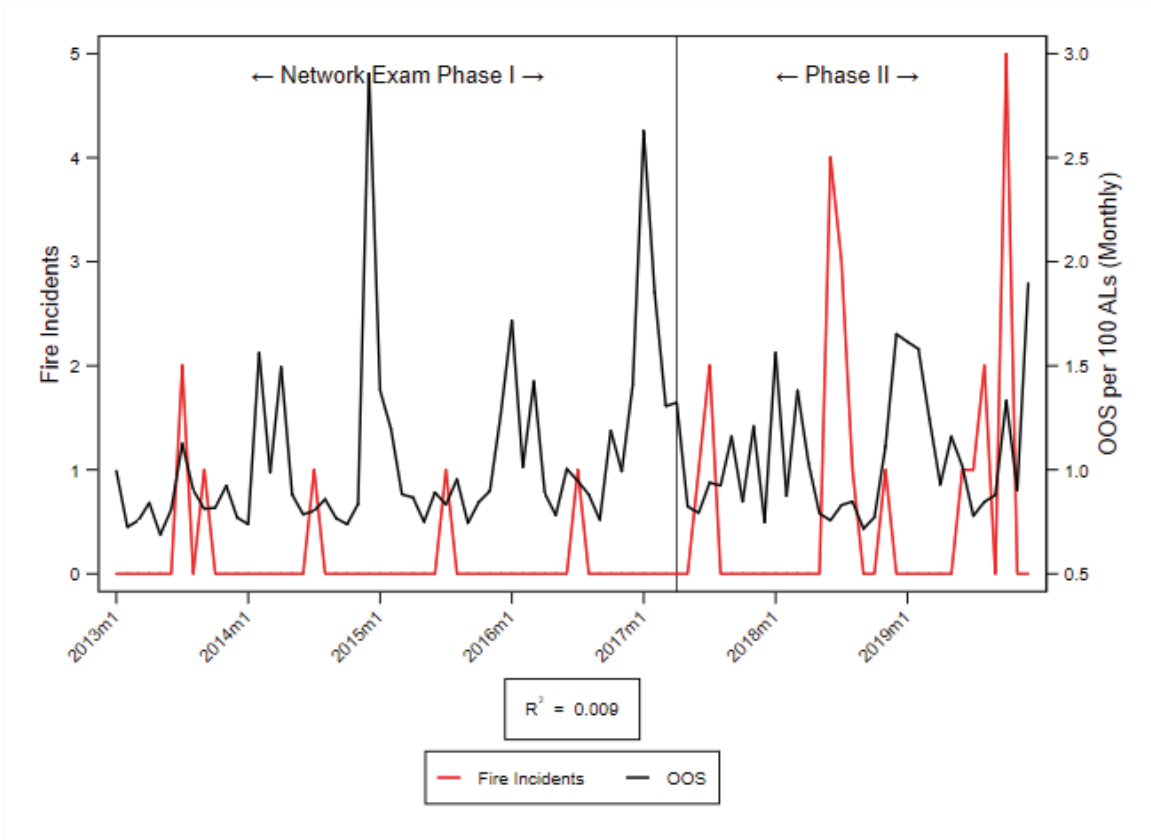
COUNTY-REGION CALAVERAS - NORTHERN SAN JOAQUIN VALLEY (AT&T)



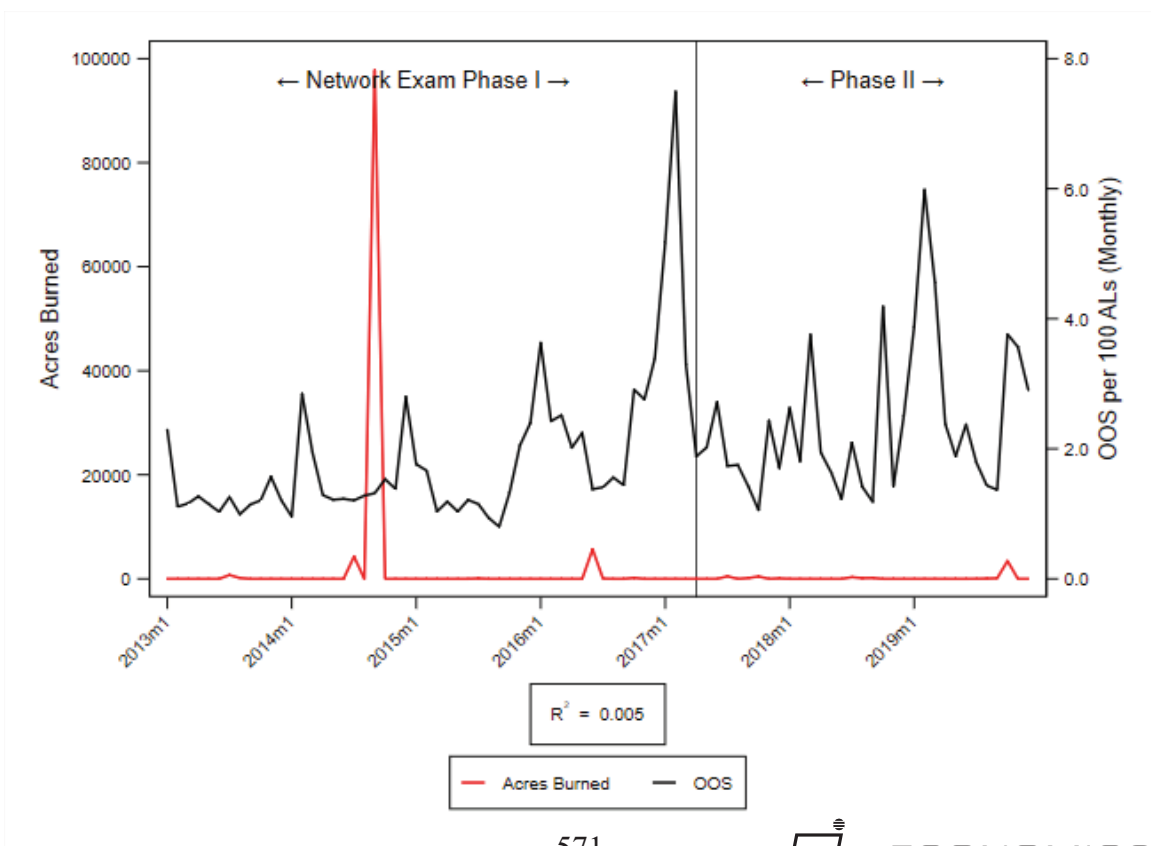
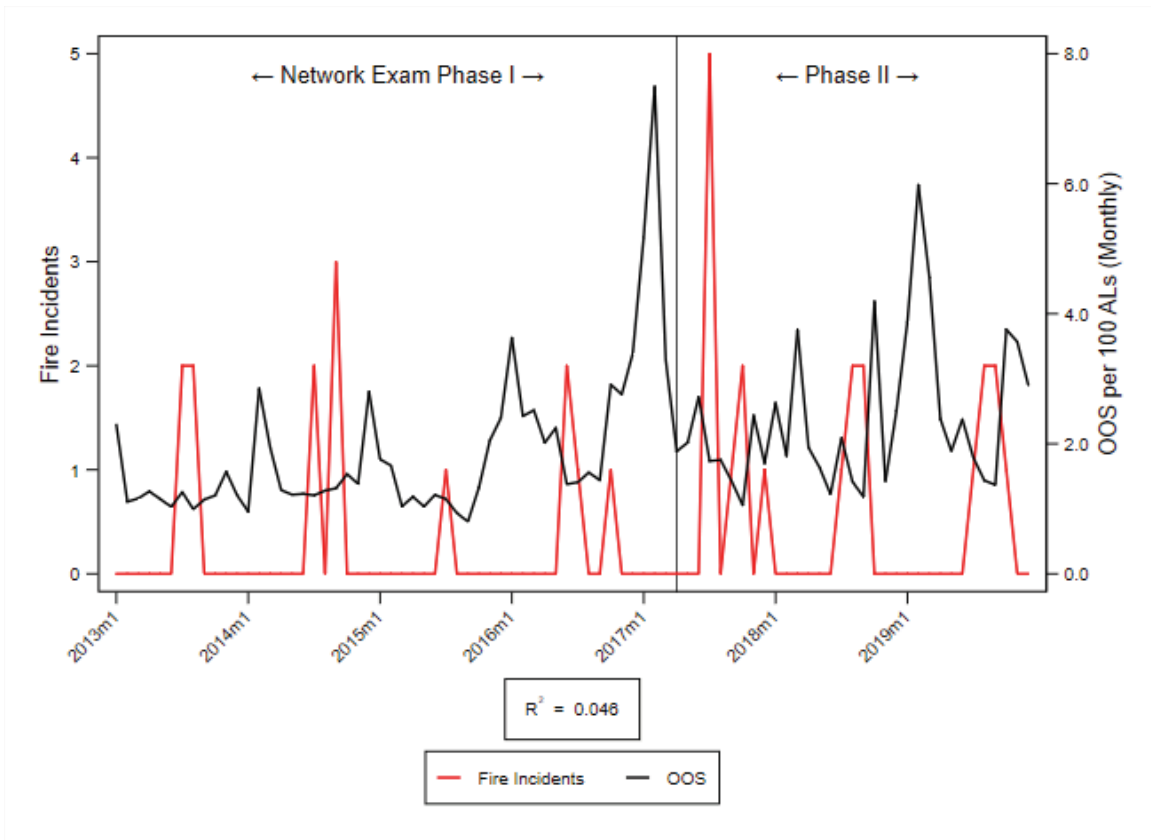
COUNTY-REGION COLUSA - SUPERIOR CALIFORNIA (AT&T)



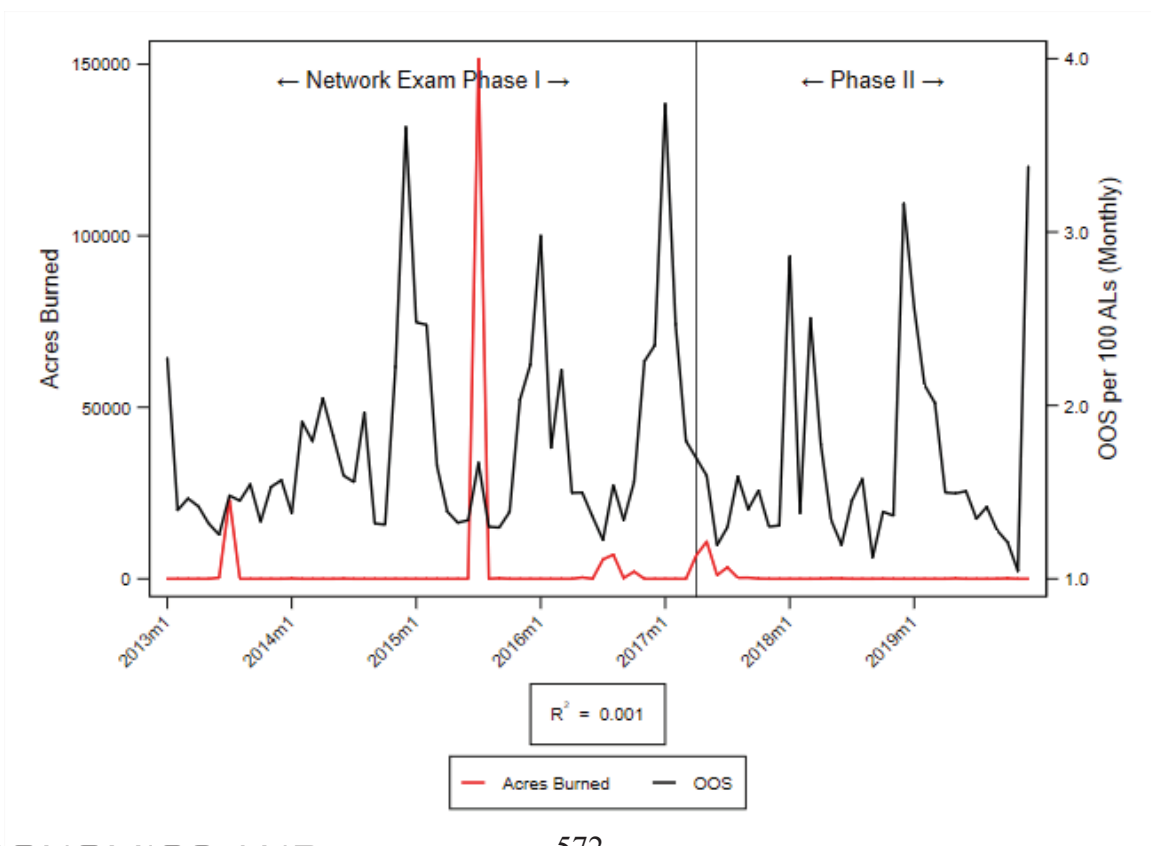
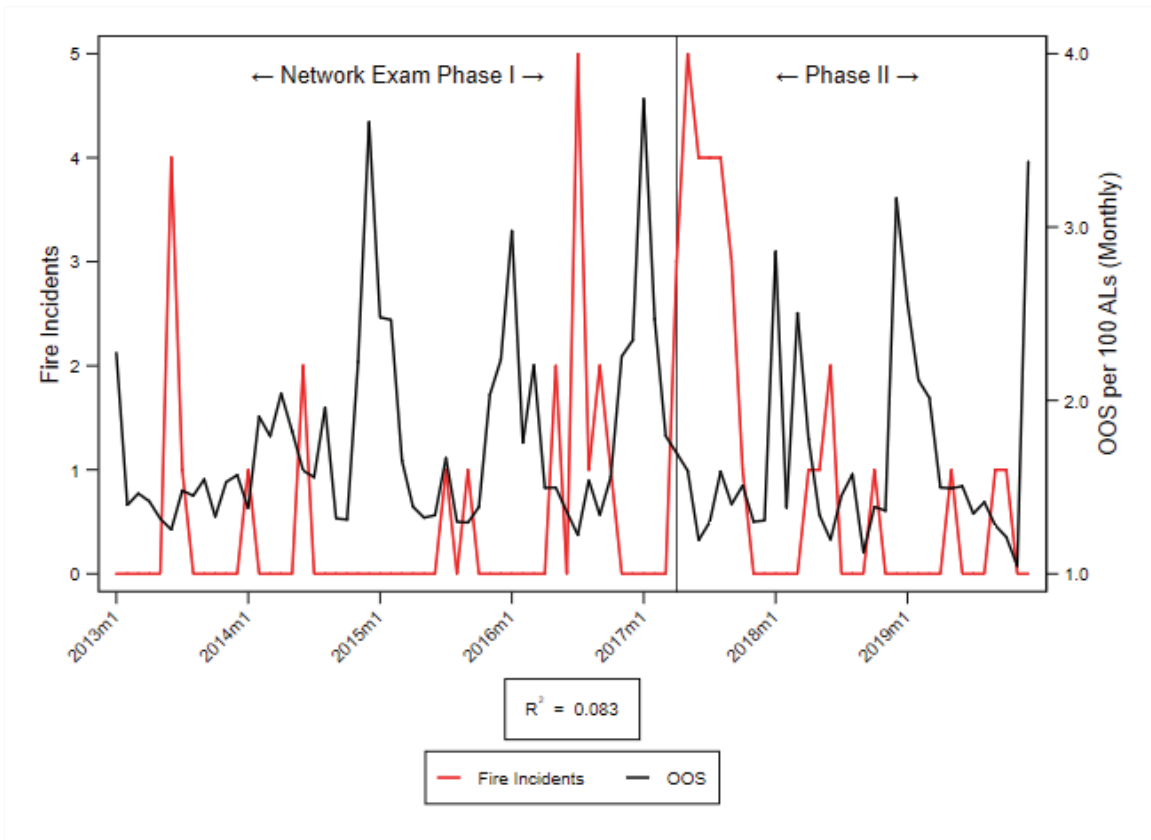
COUNTY-REGION CONTRA COSTA - SAN FRANCISCO BAY AREA (AT&T)



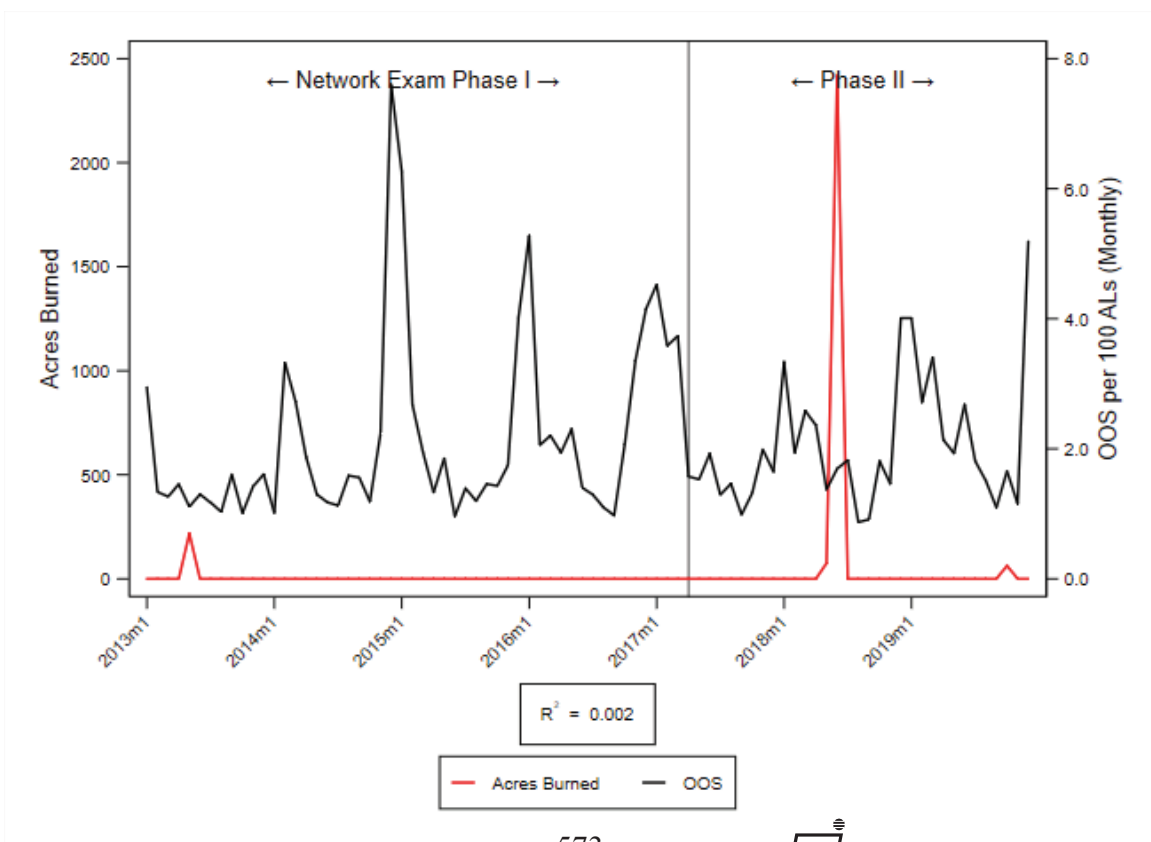
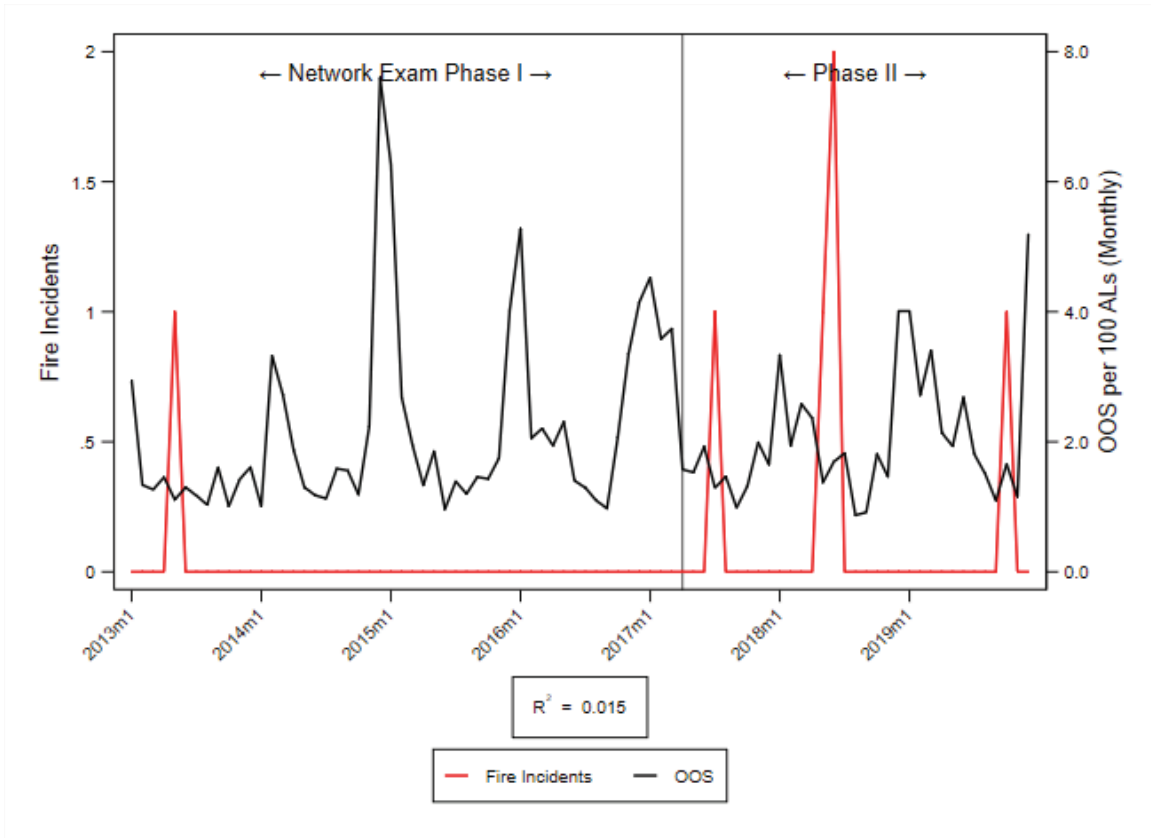
COUNTY-REGION EL DORADO - SUPERIOR CALIFORNIA (AT&T)



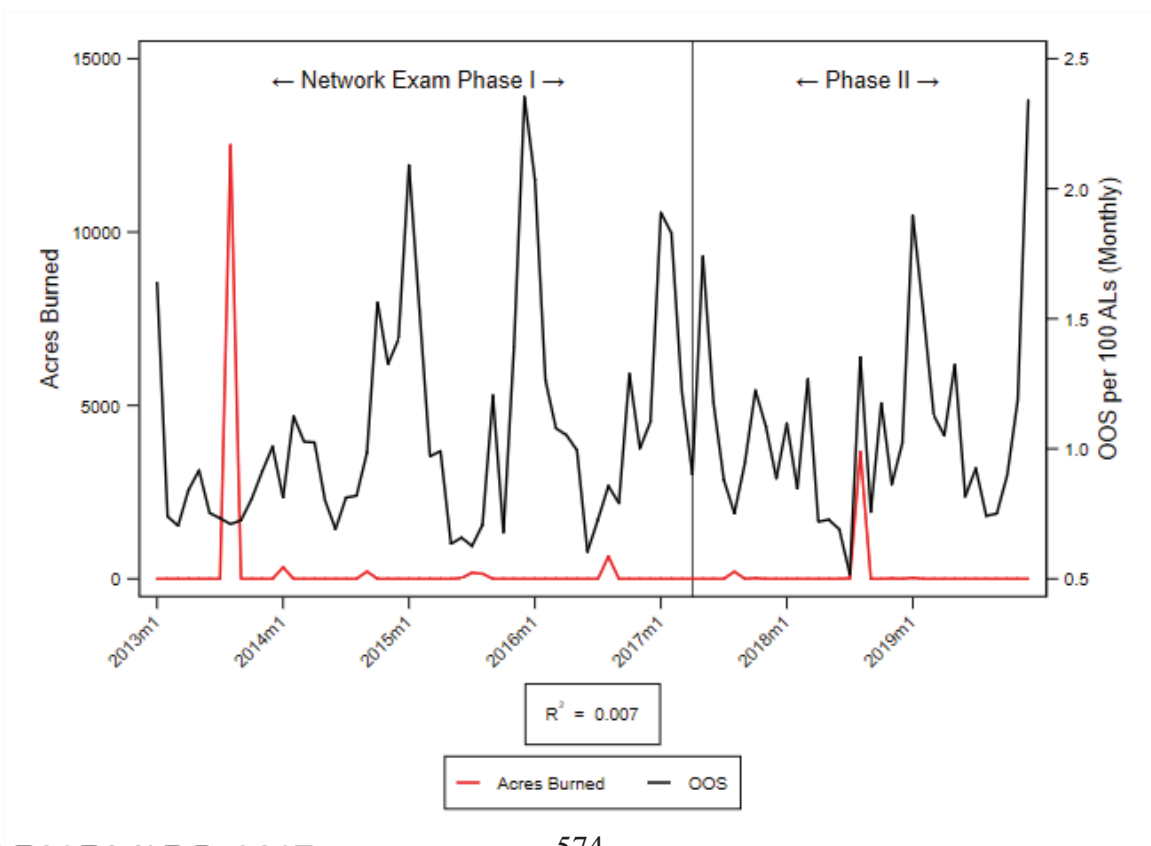
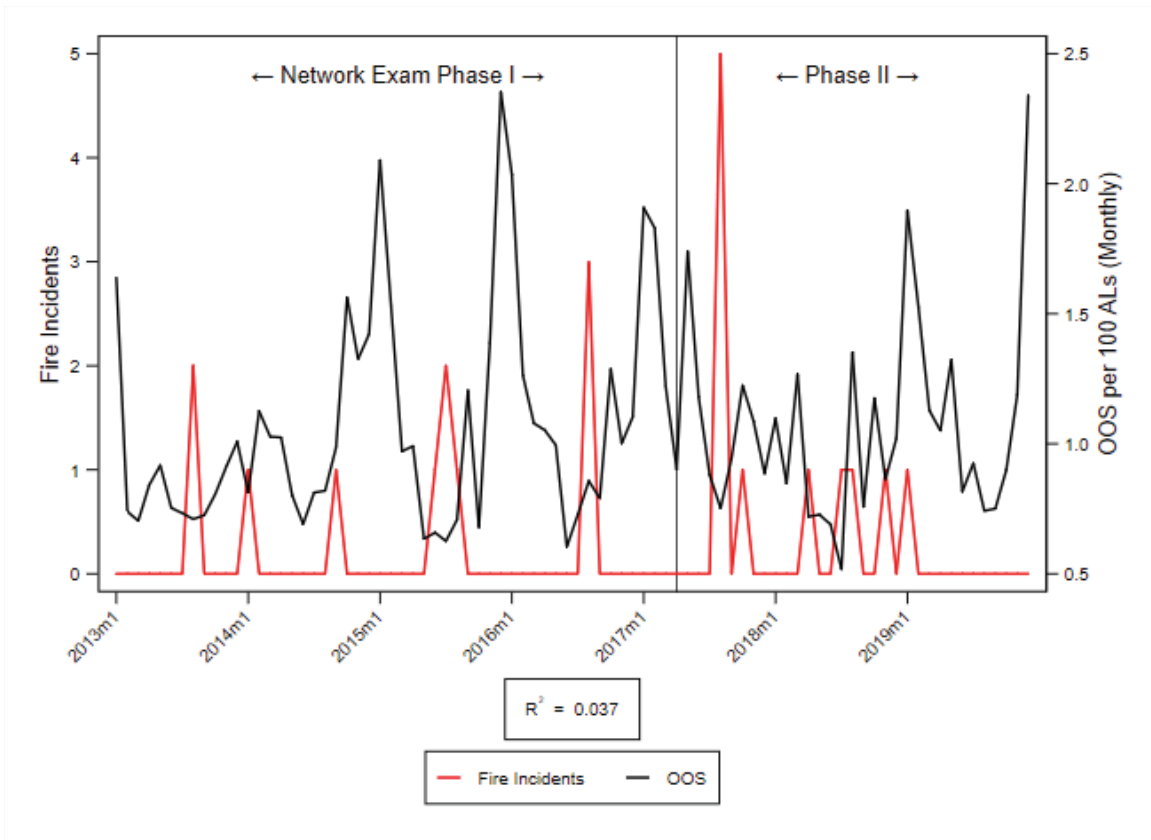
COUNTY-REGION FRESNO - SOUTHERN SAN JOAQUIN VALLEY (AT&T)



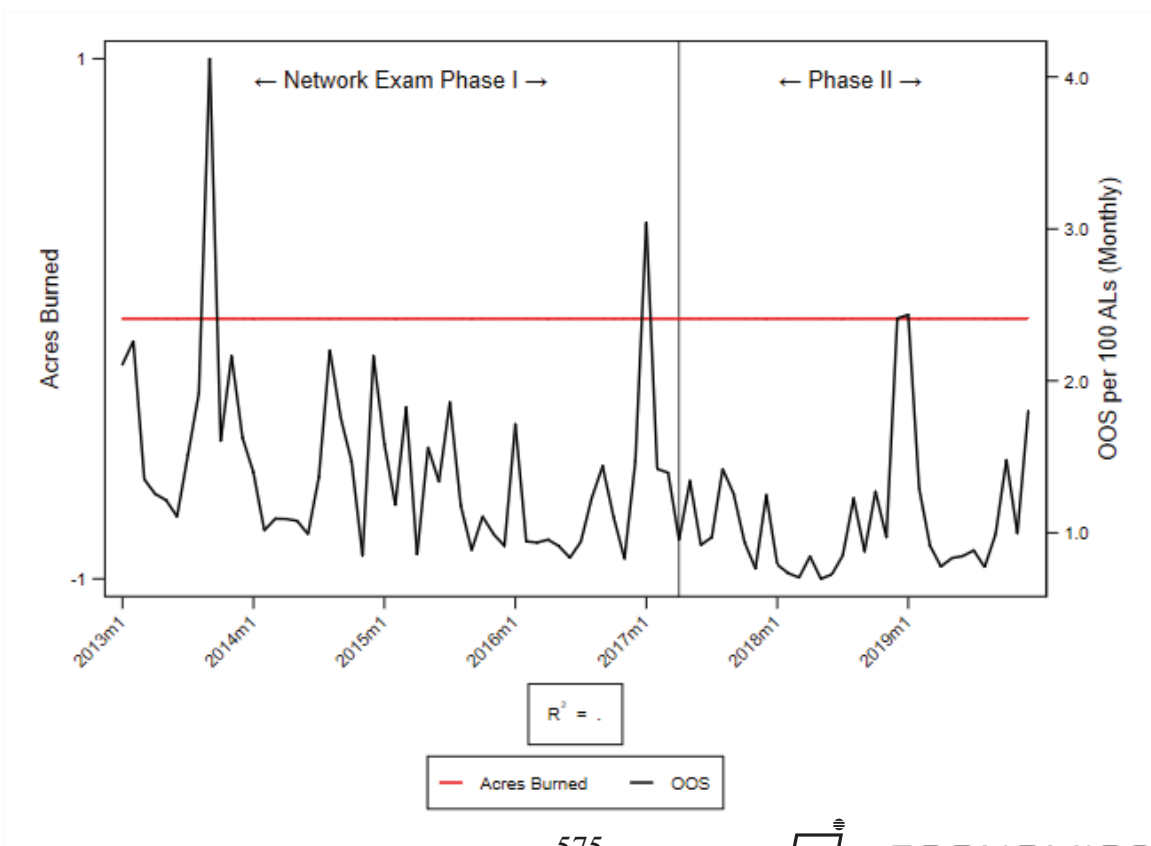
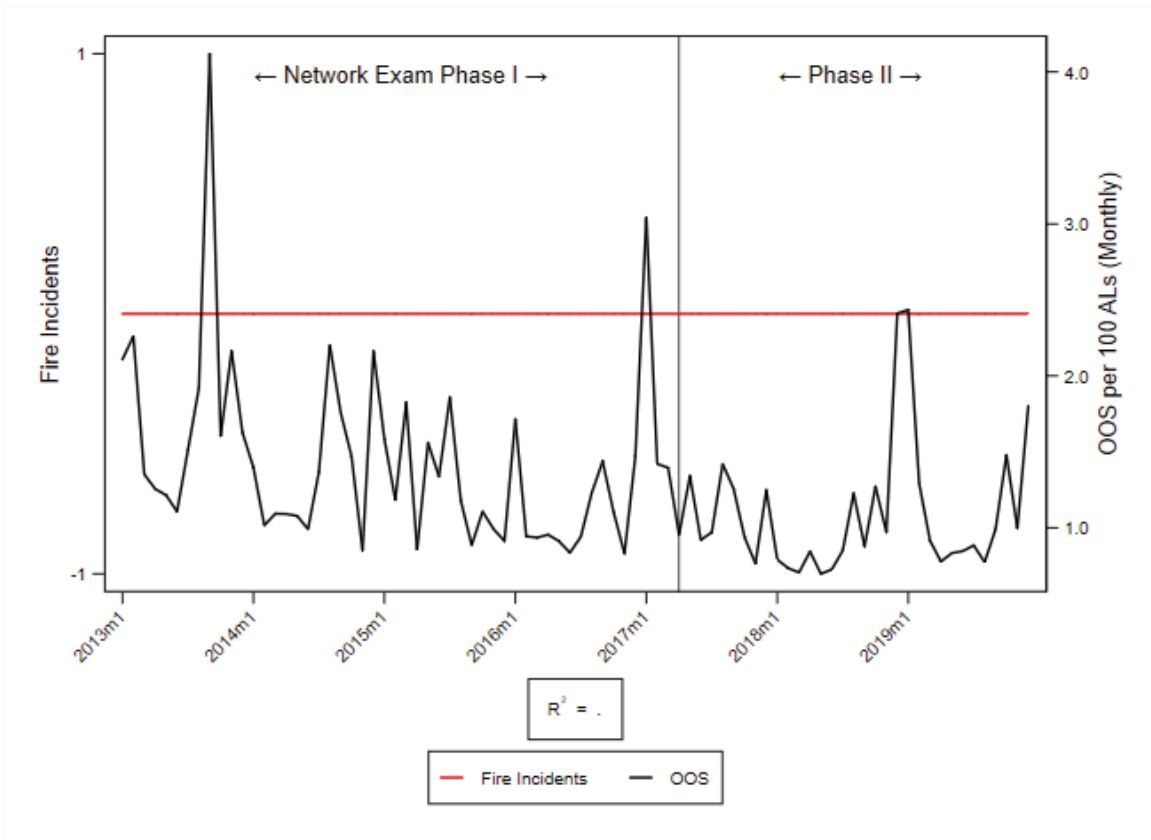
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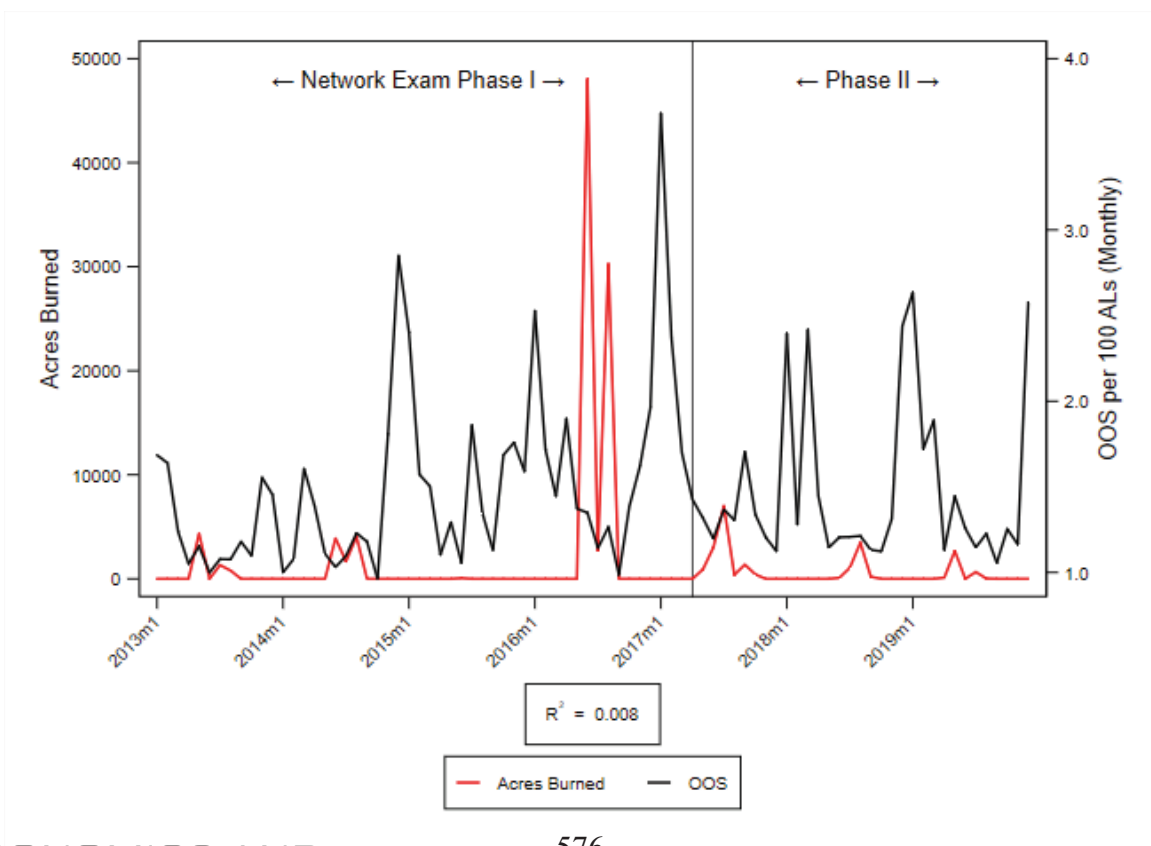
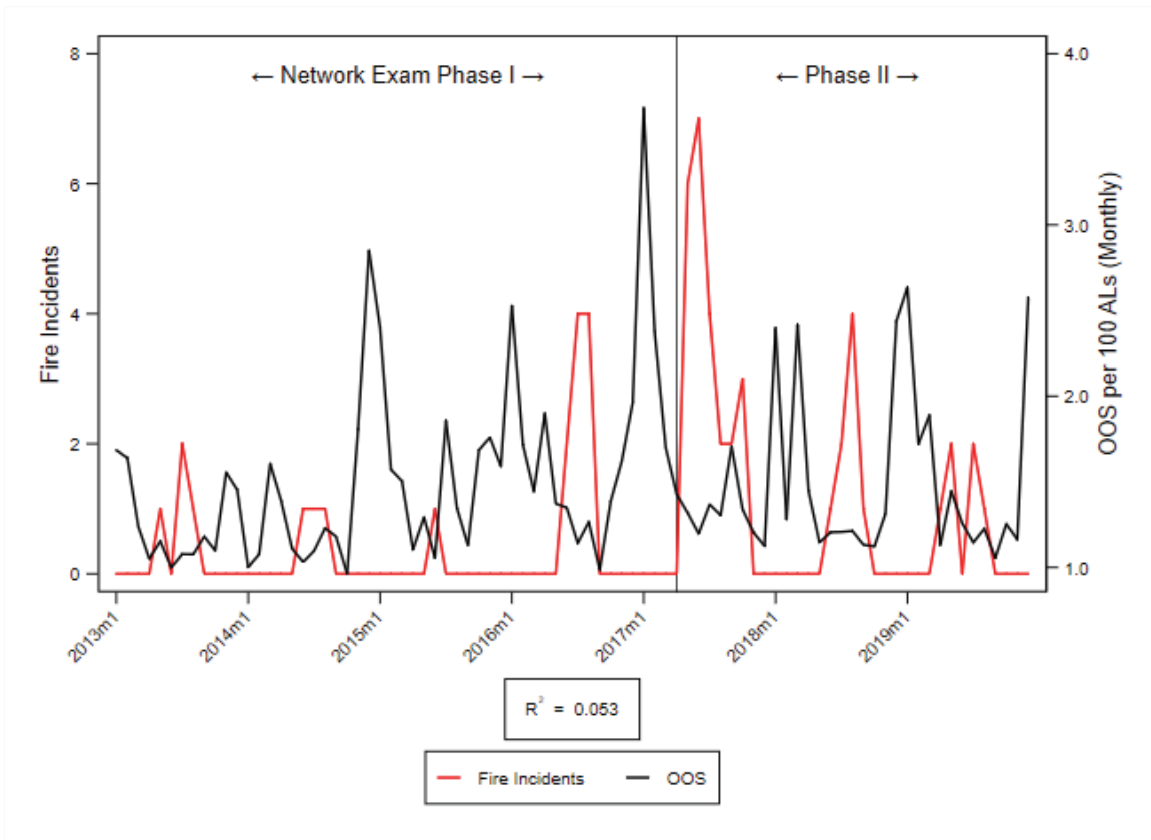
COUNTY-REGION HUMBOLDT - NORTH COAST (AT&T)



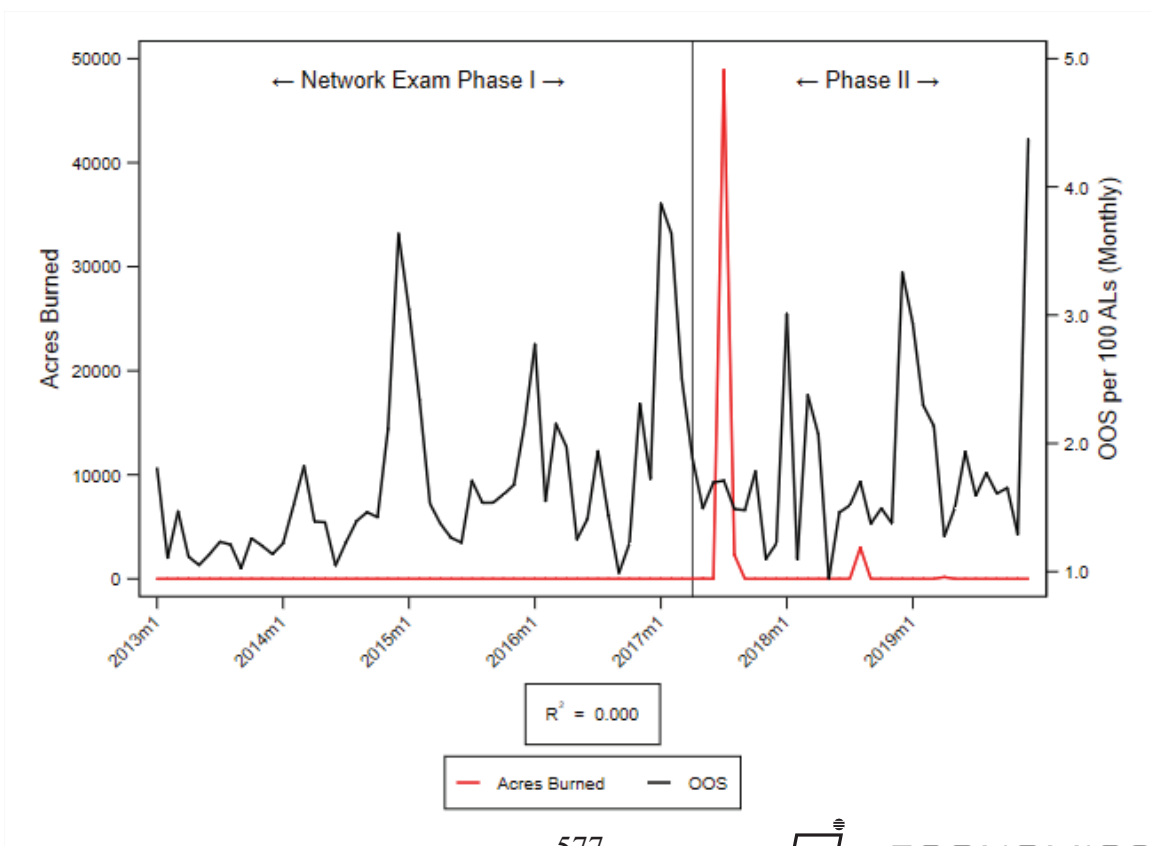
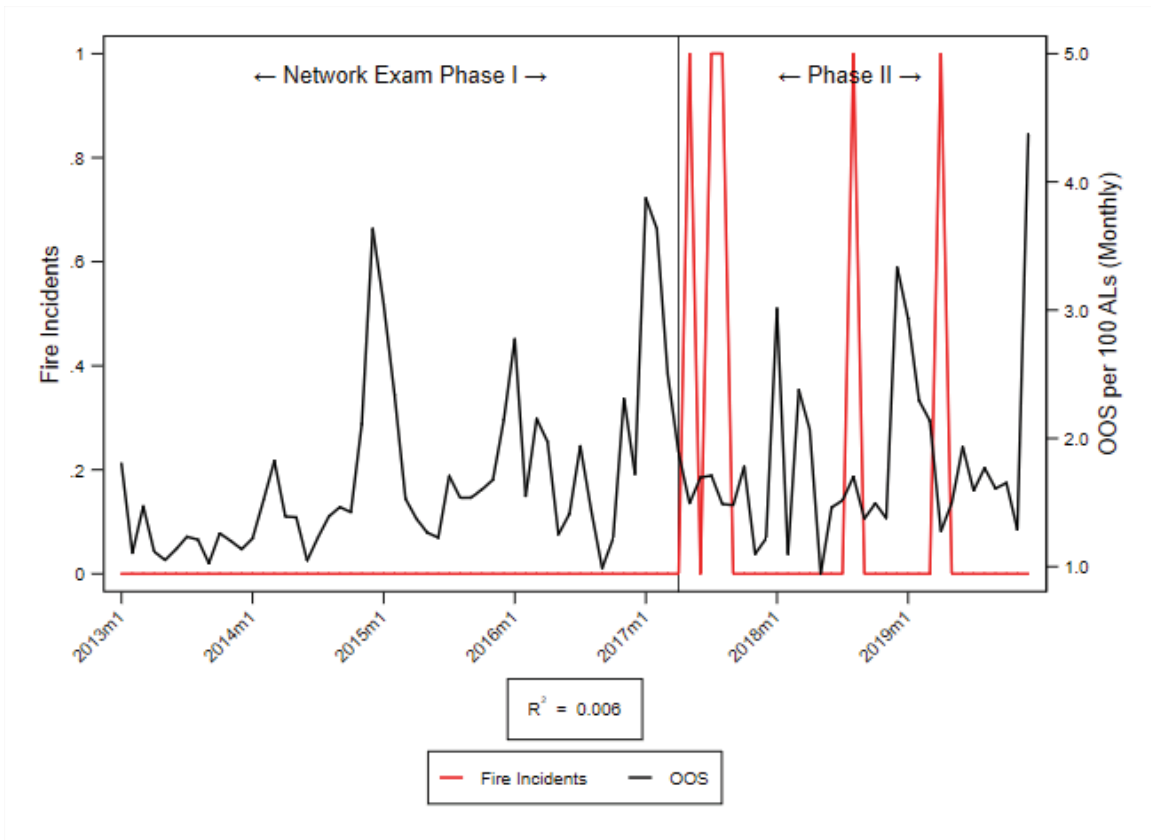
COUNTY-REGION IMPERIAL - SAN DIEGO-IMPERIAL (AT&T)



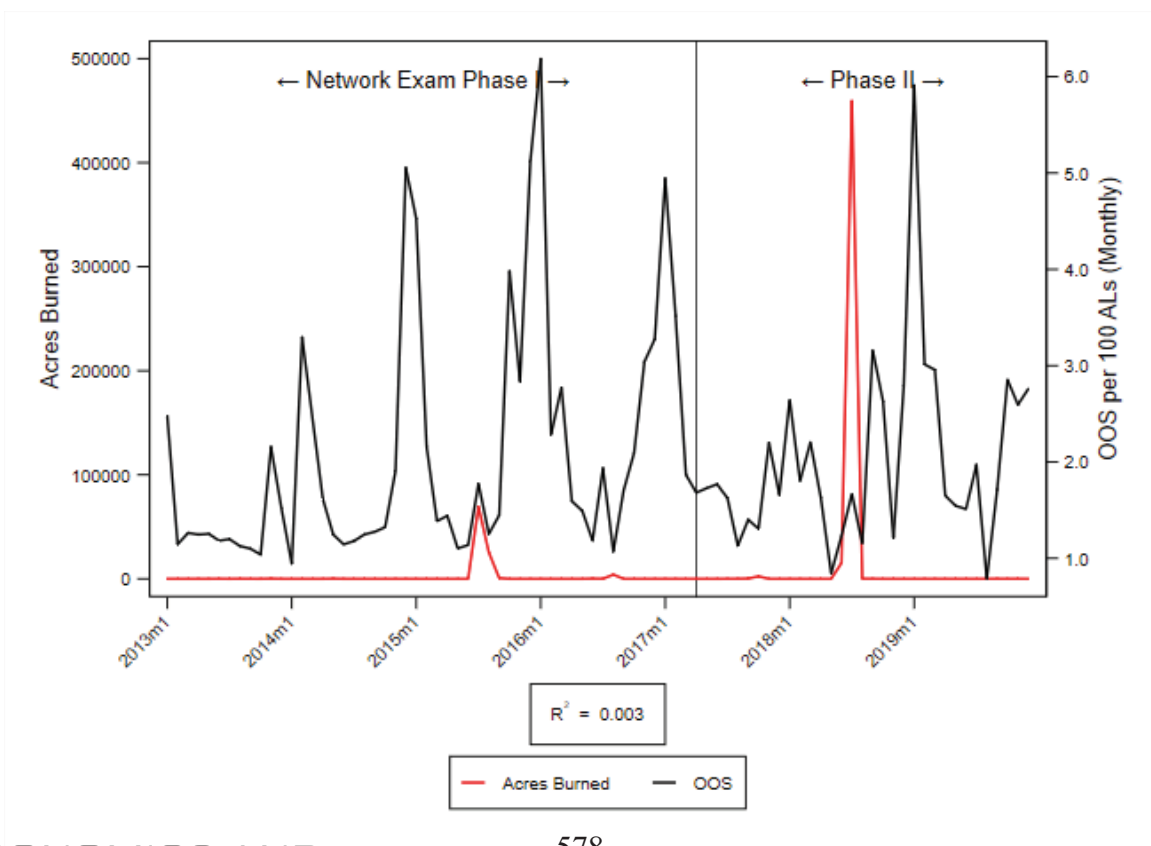
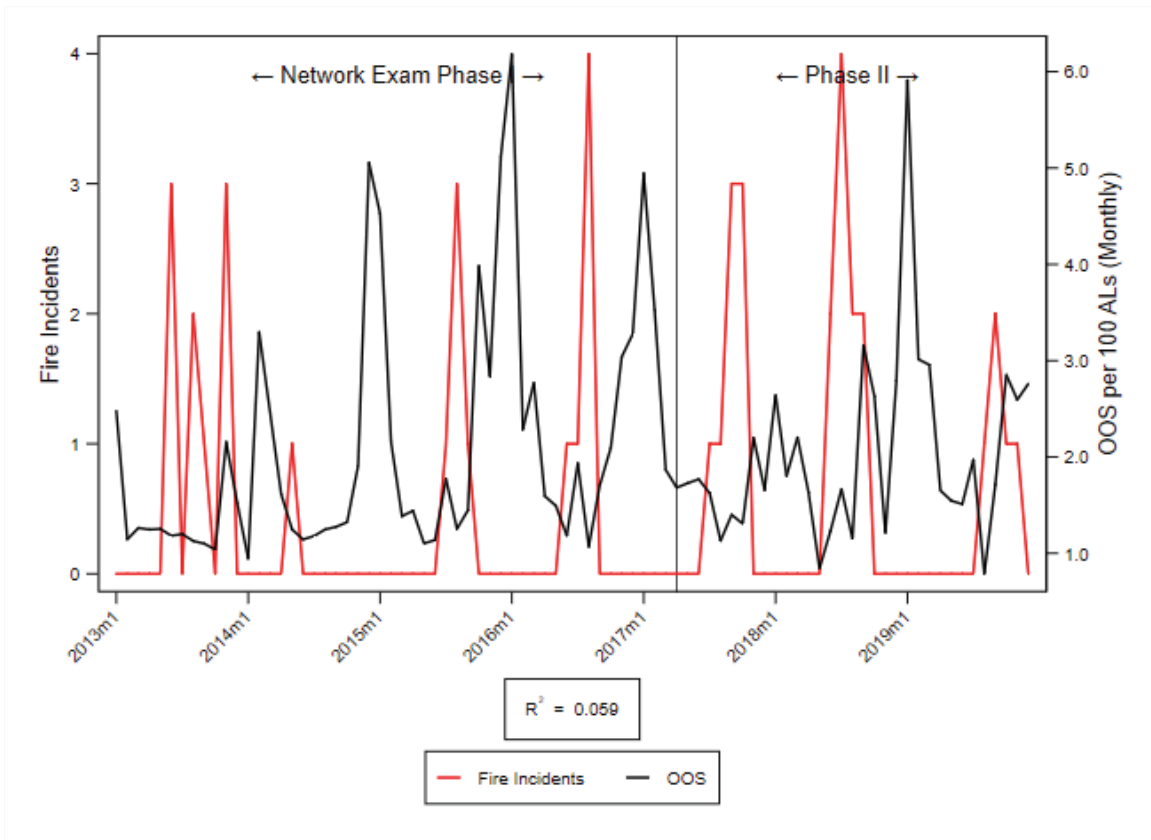
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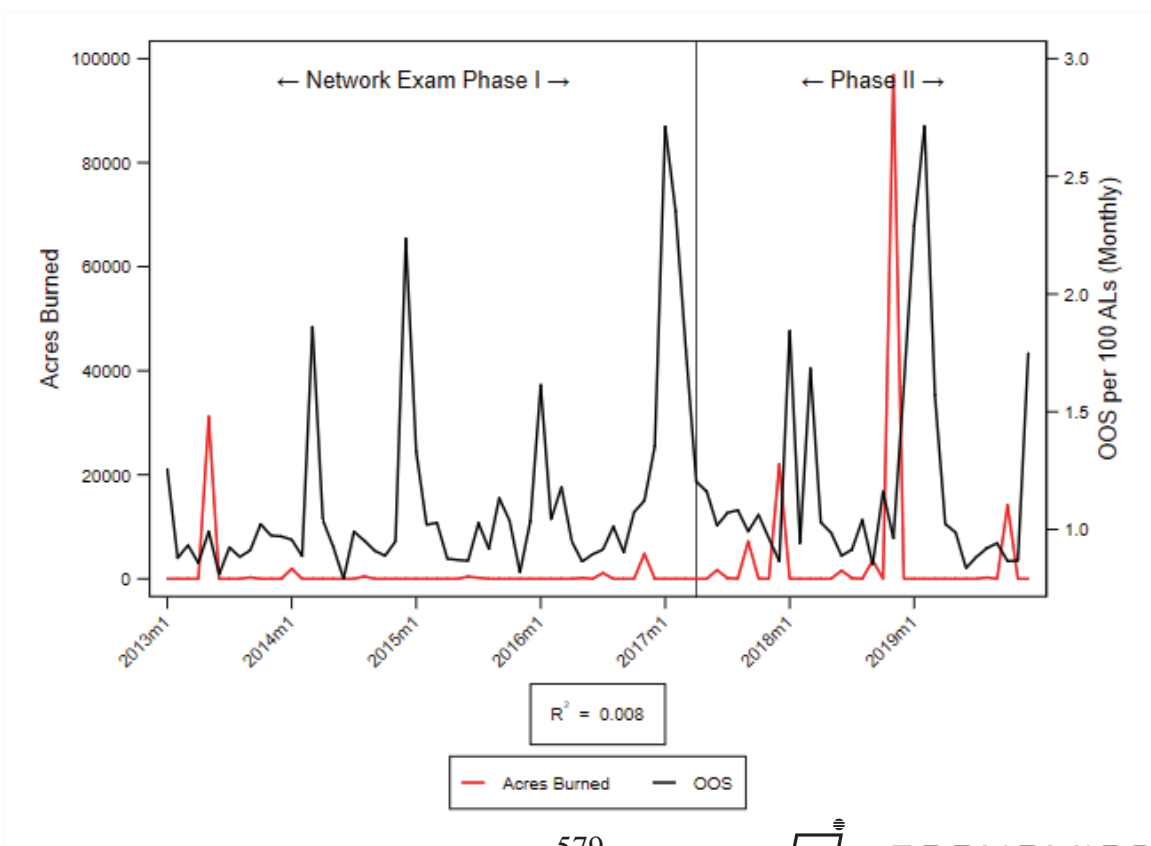
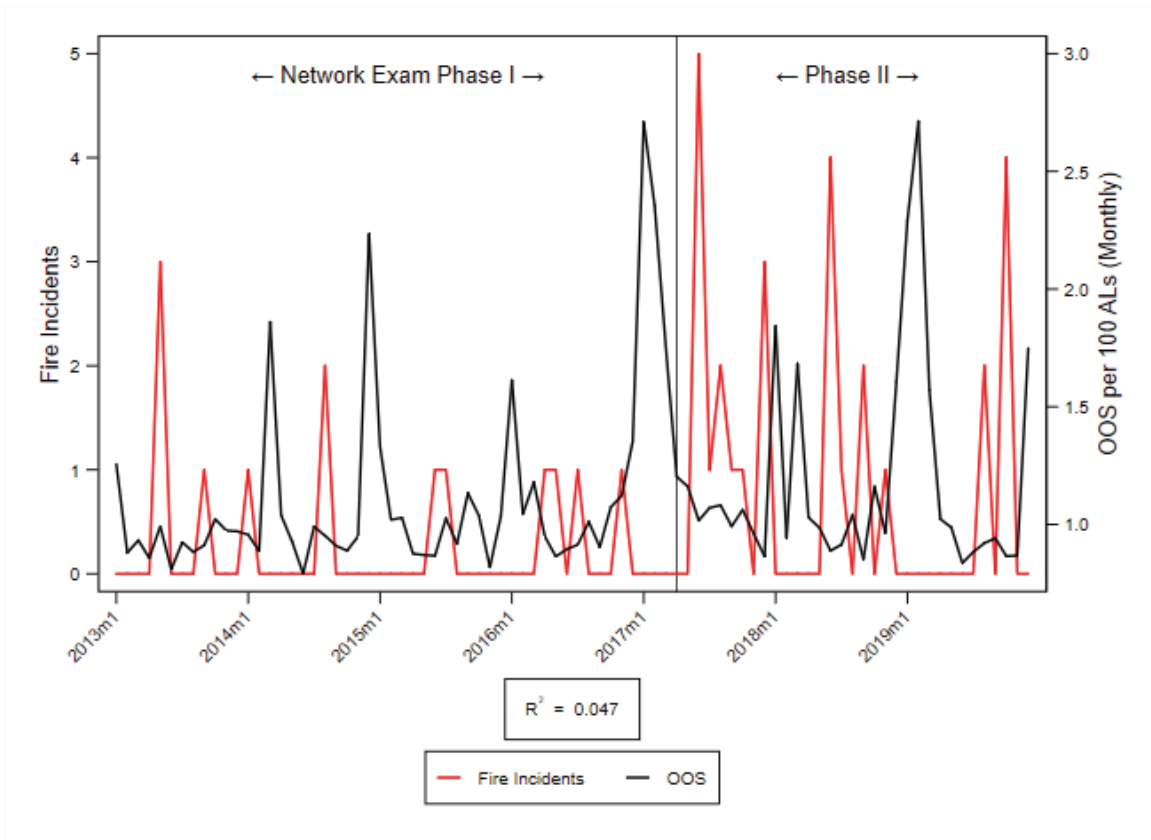
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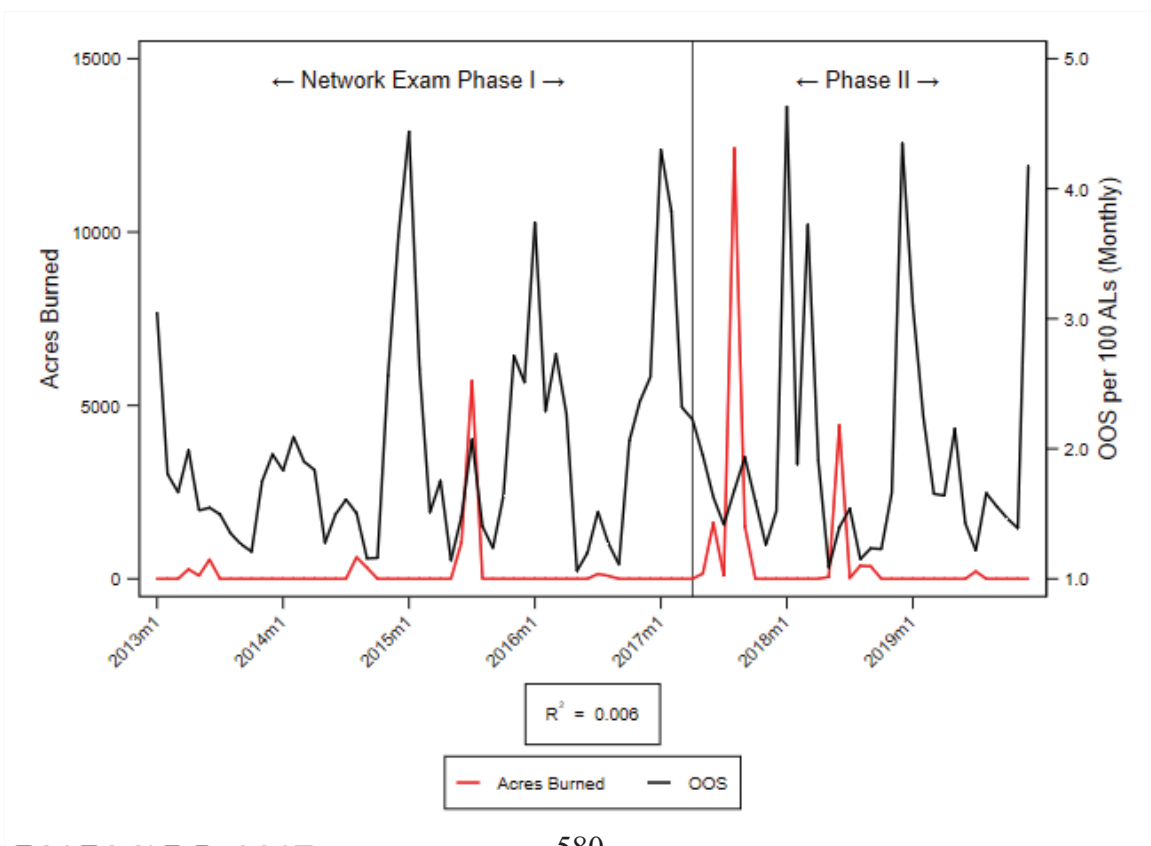
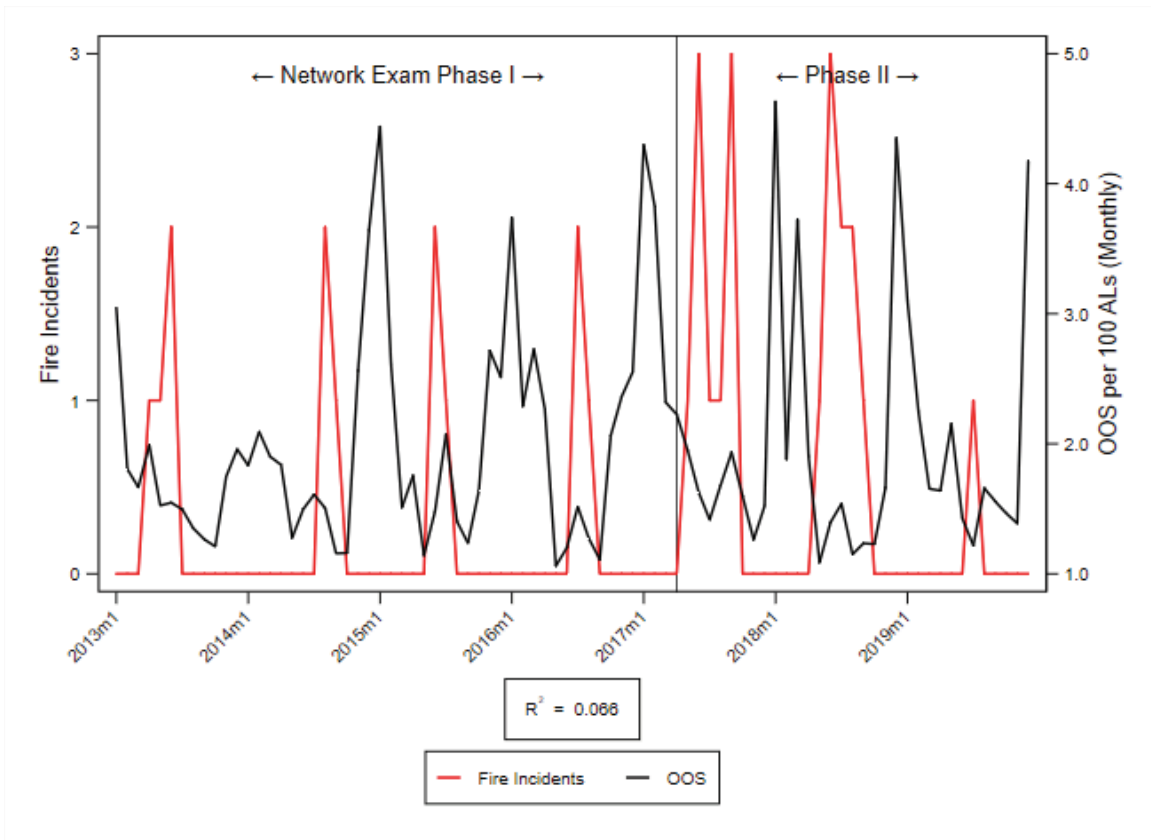
COUNTY-REGION LAKE - NORTH COAST (AT&T)



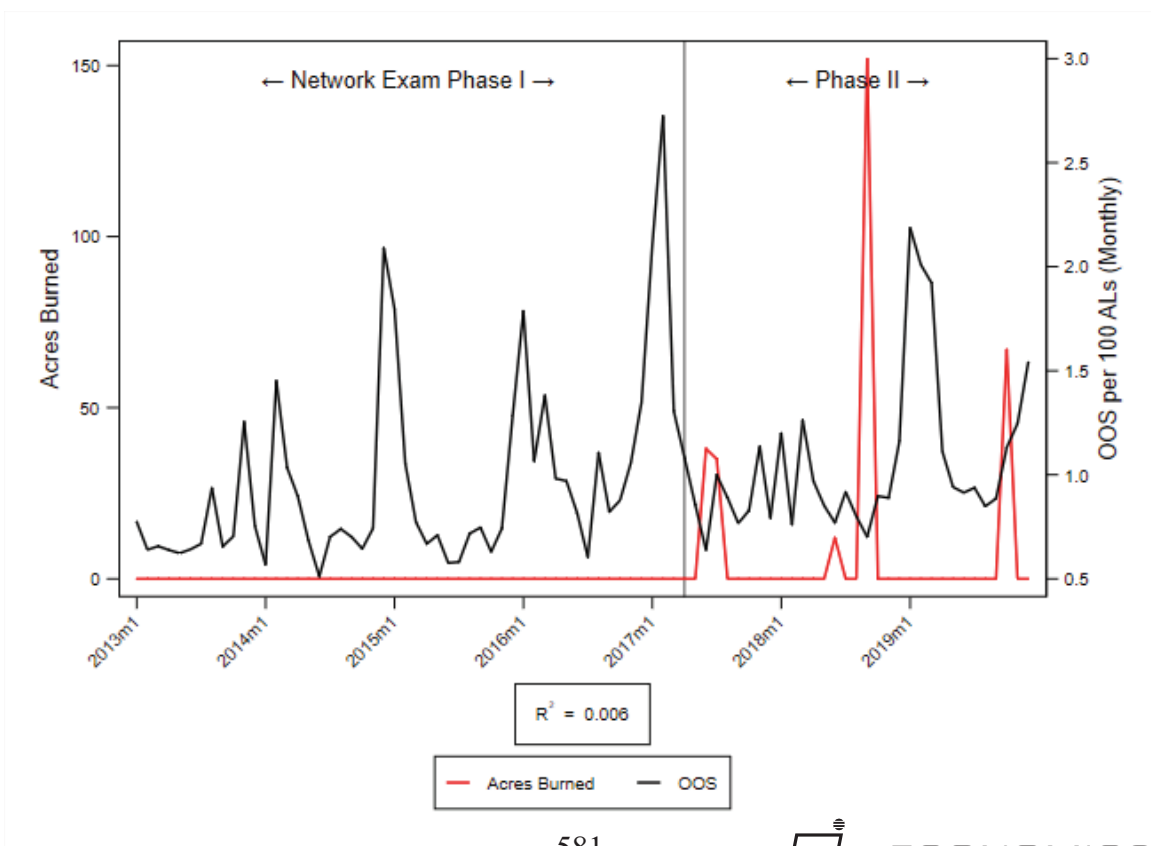
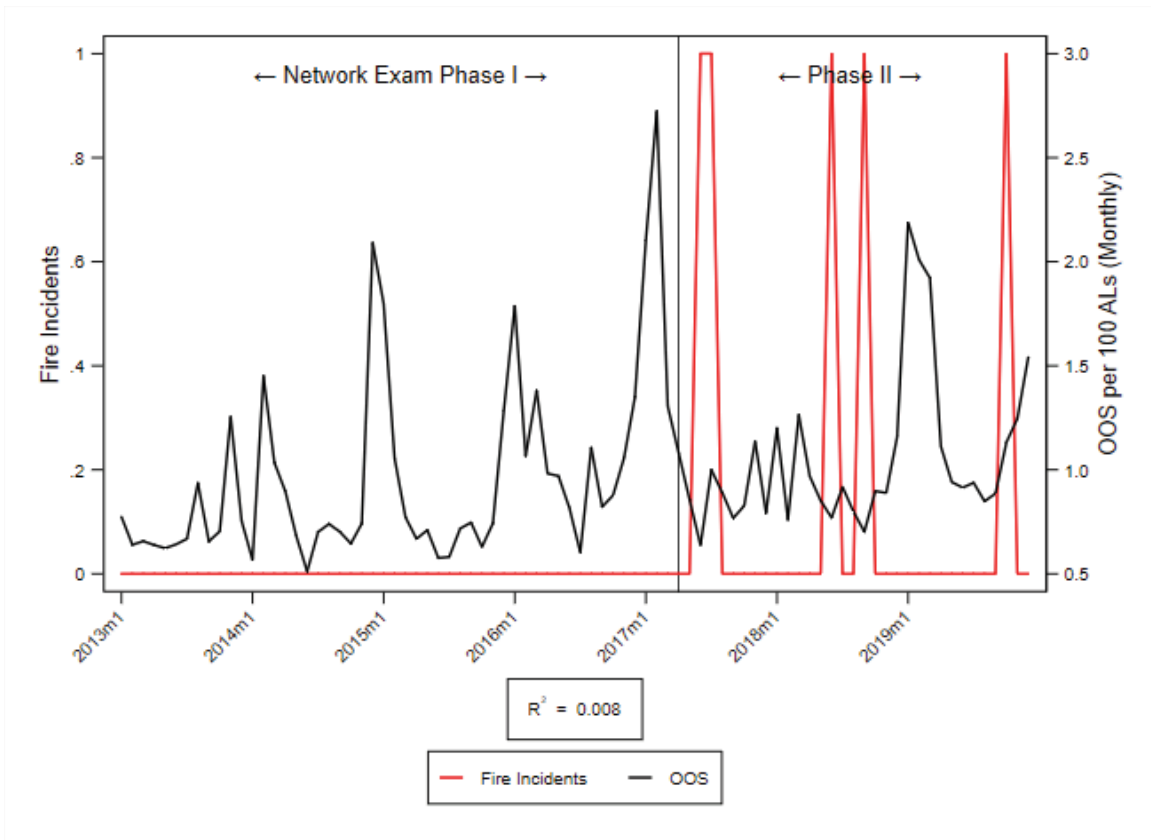
COUNTY-REGION LOS ANGELES - LOS ANGELES (AT&T)



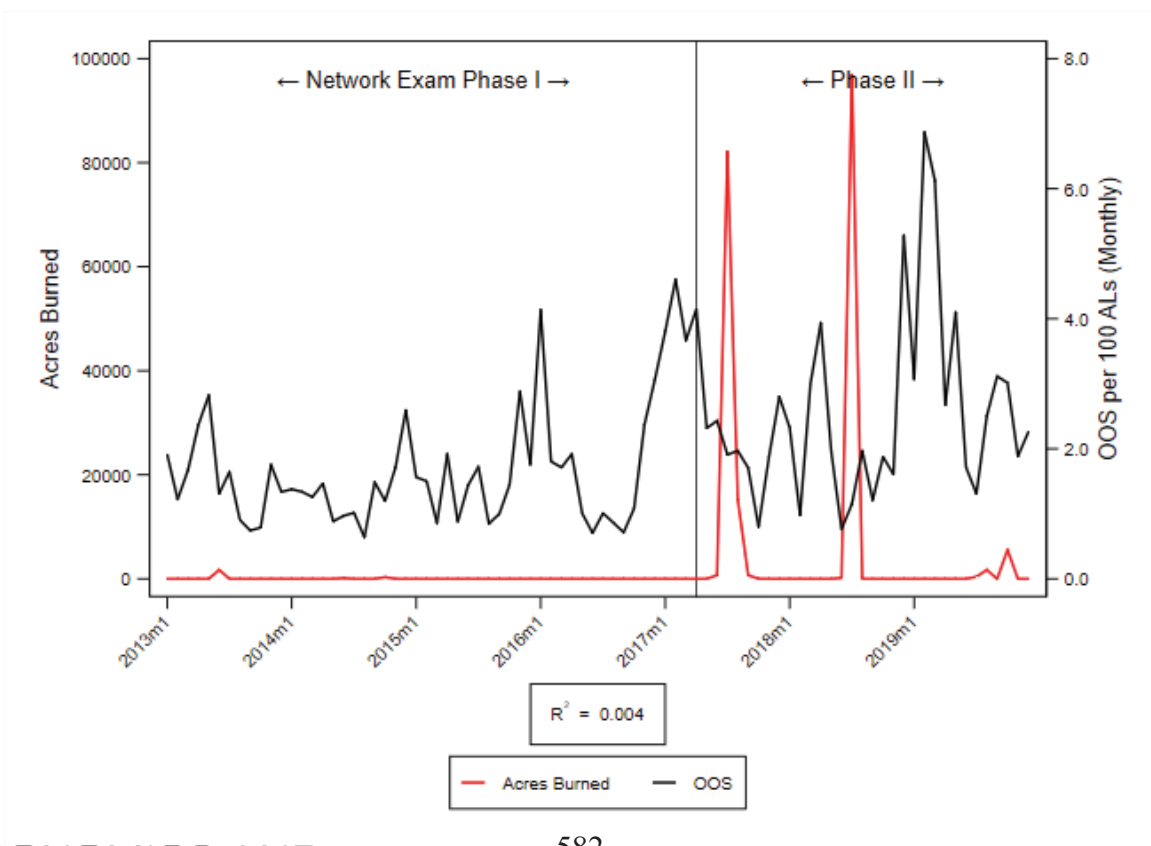
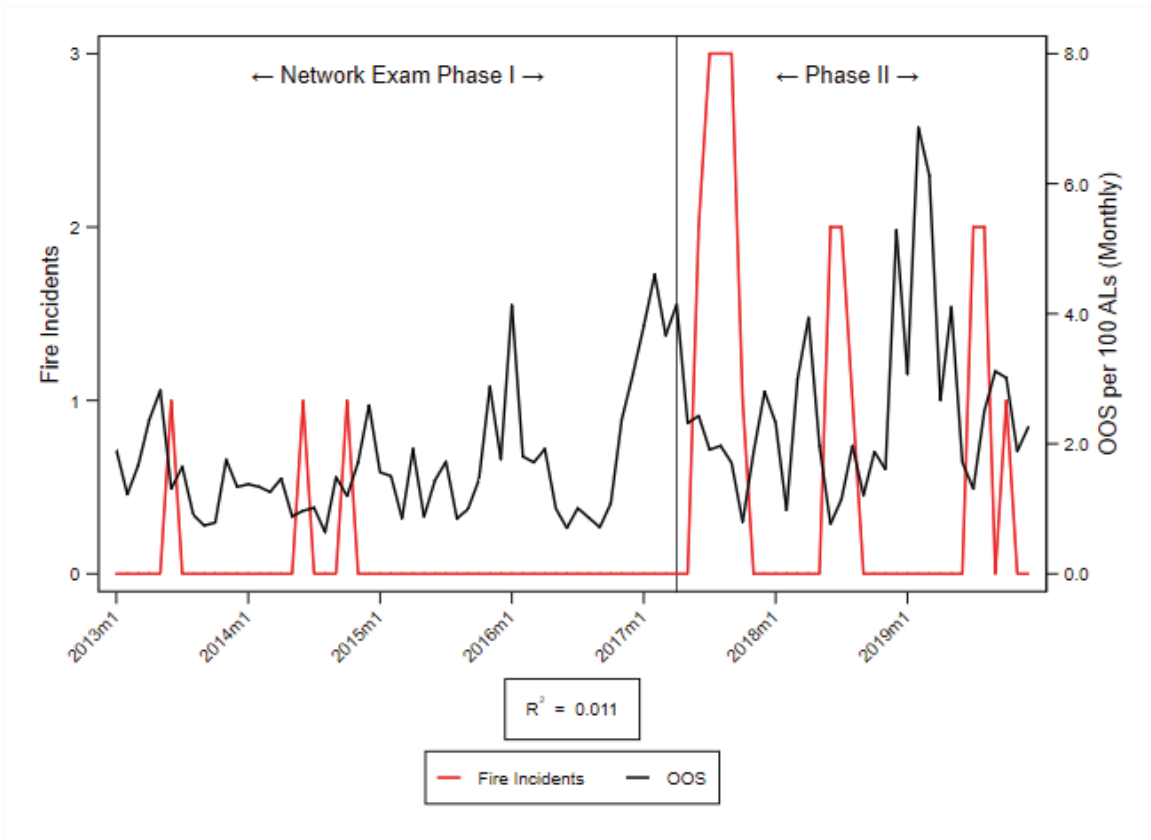
COUNTY-REGION MADERA - NORTHERN SAN JOAQUIN VALLEY (AT&T)



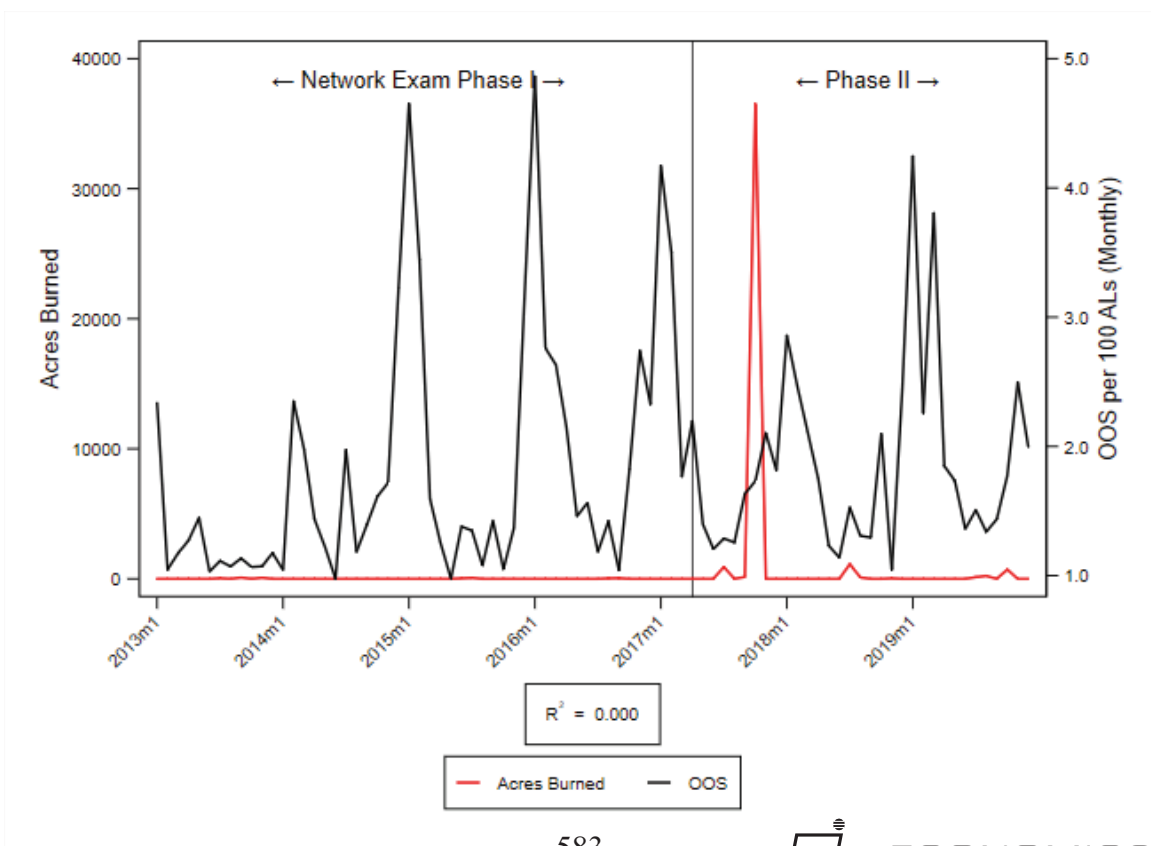
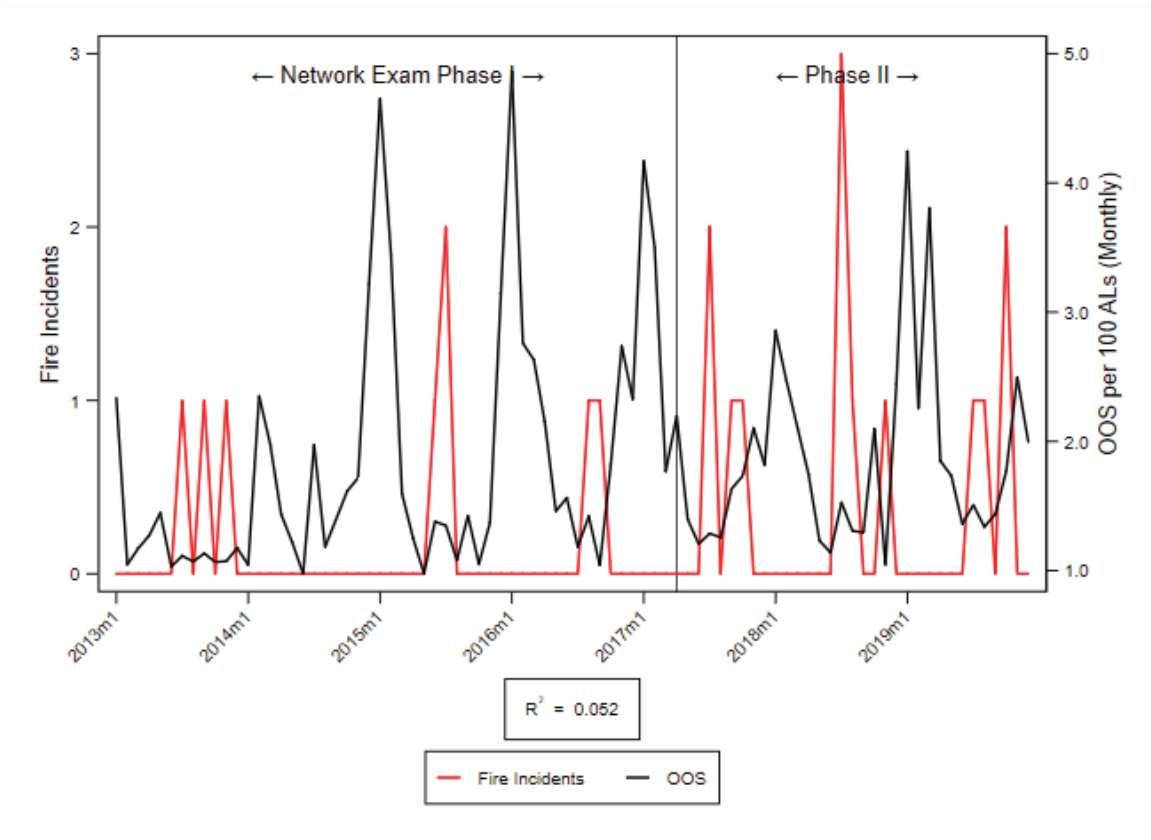
COUNTY-REGION MARIN - SAN FRANCISCO BAY AREA (AT&T)



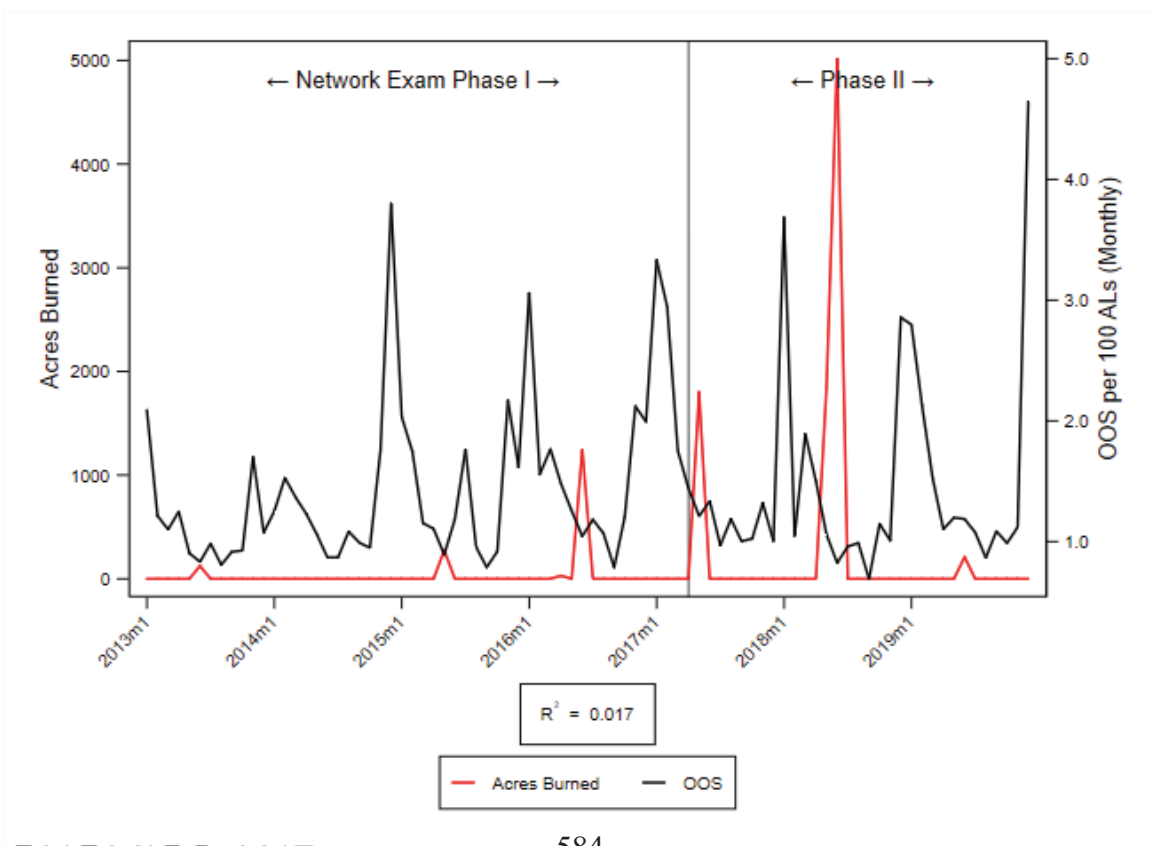
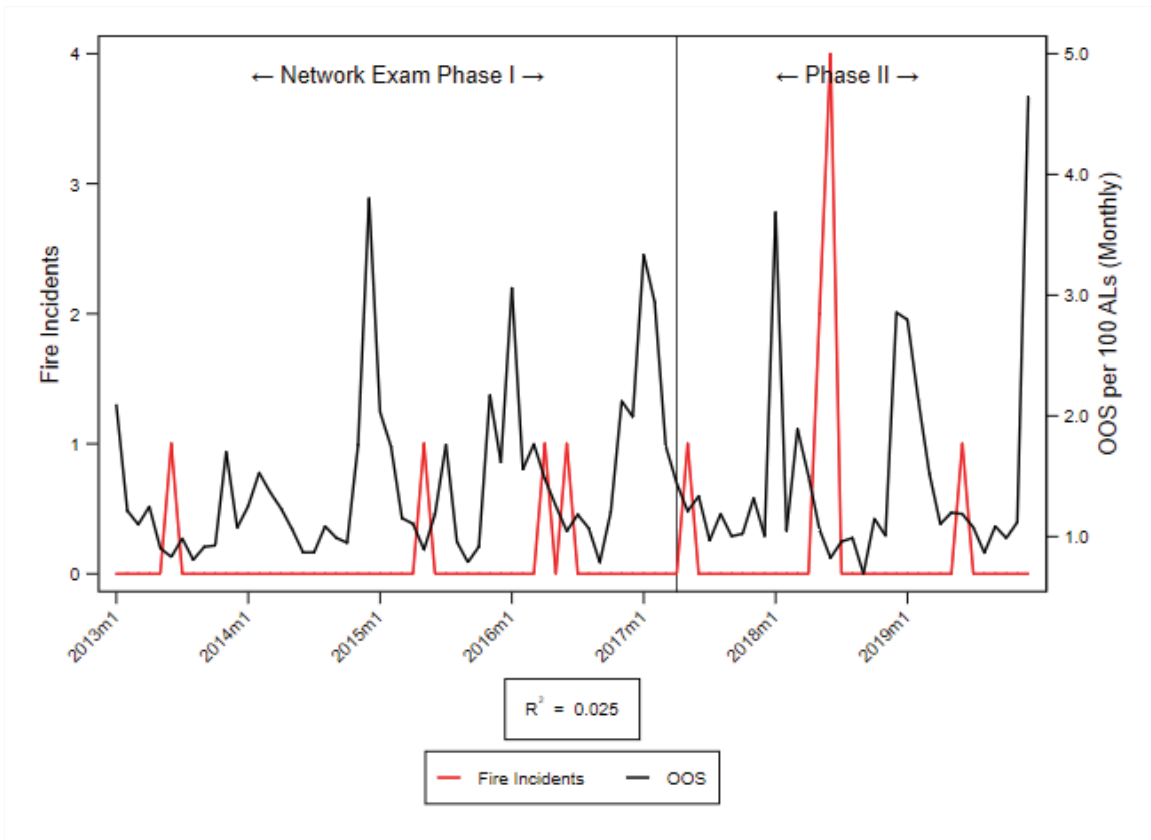
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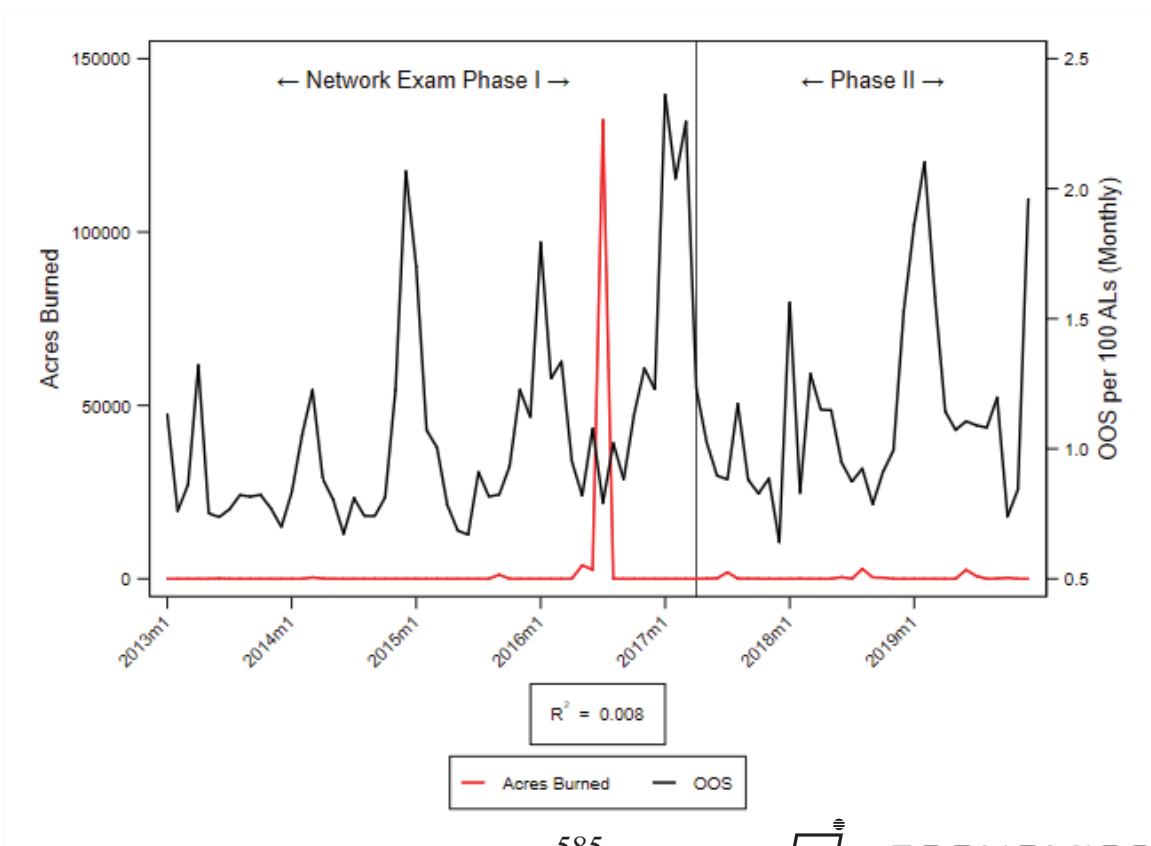
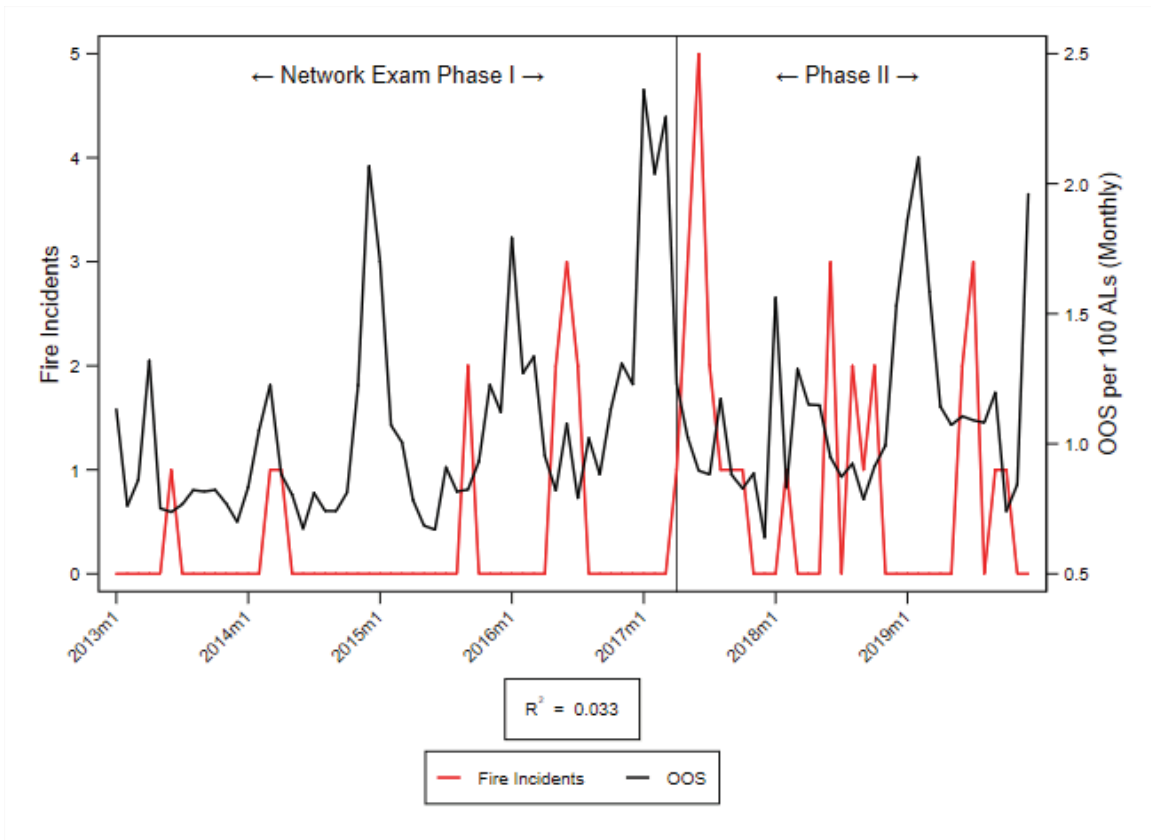
COUNTY-REGION MENDOCINO - NORTH COAST (AT&T)



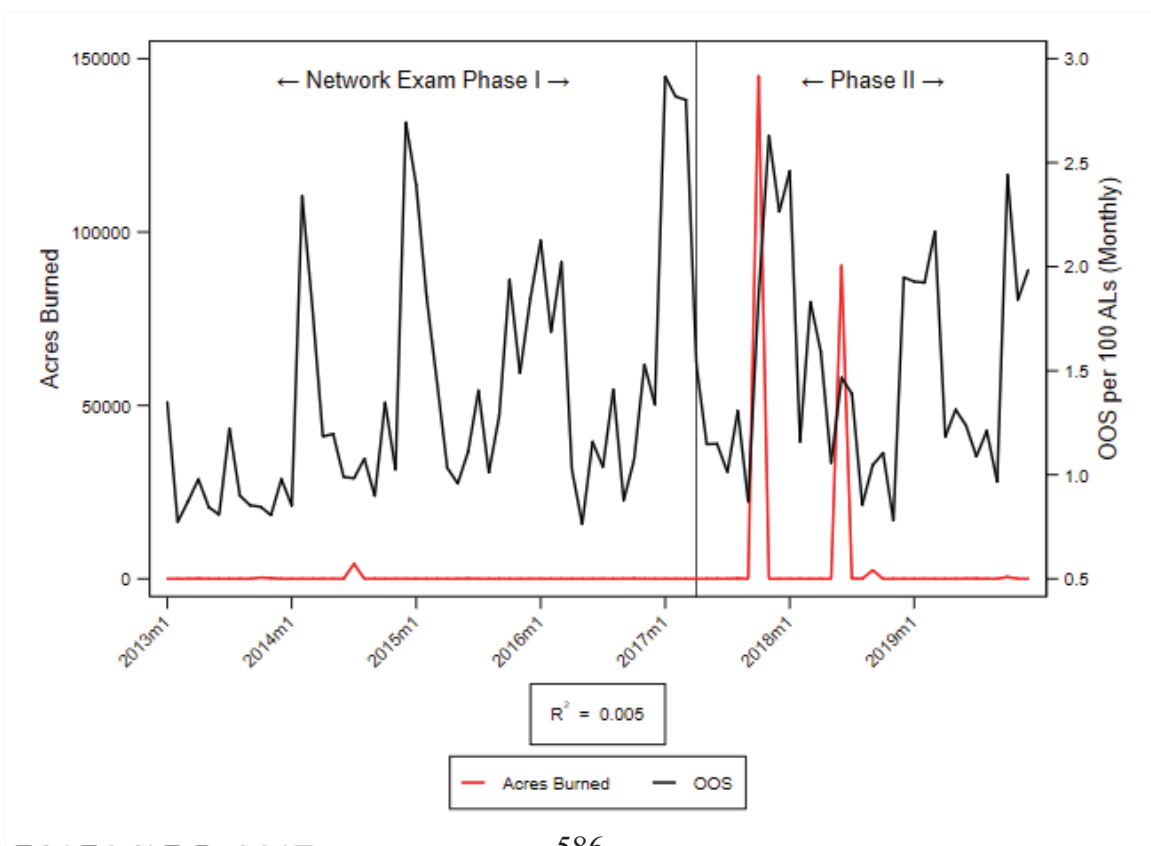
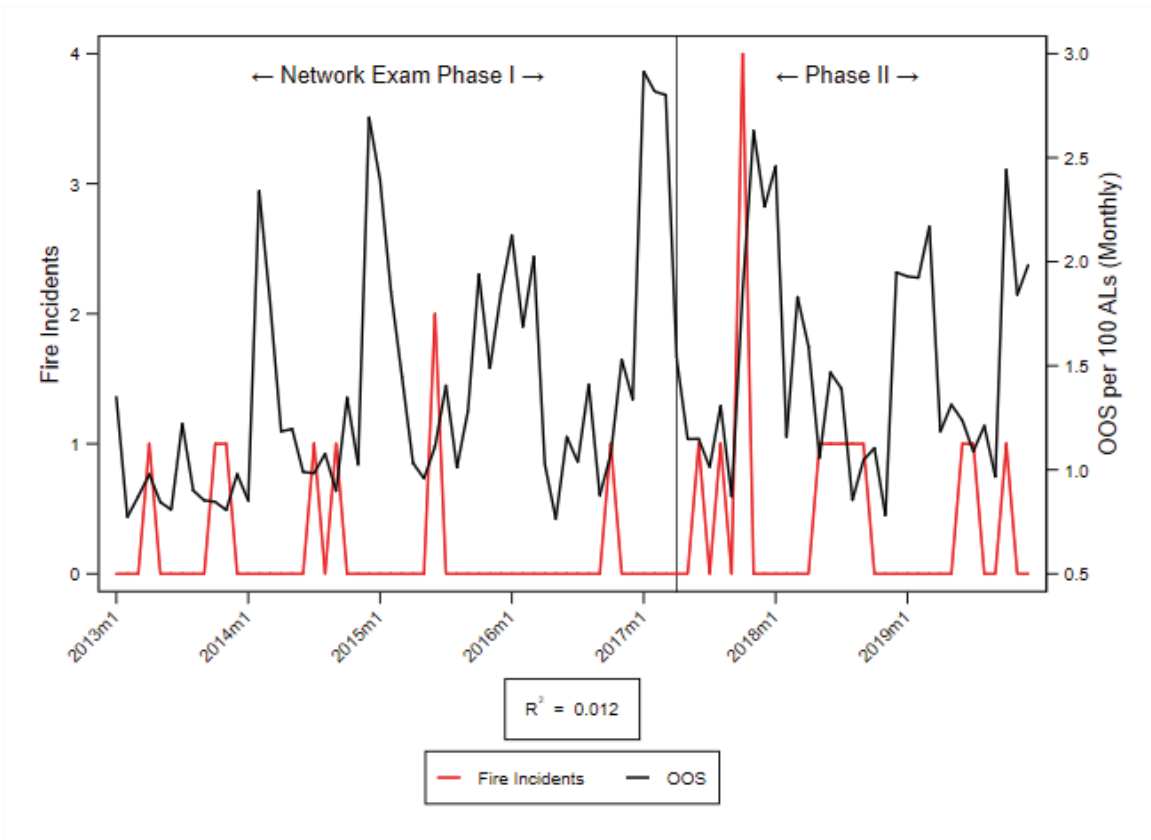
COUNTY-REGION MERCED - NORTHERN SAN JOAQUIN VALLEY (AT&T)



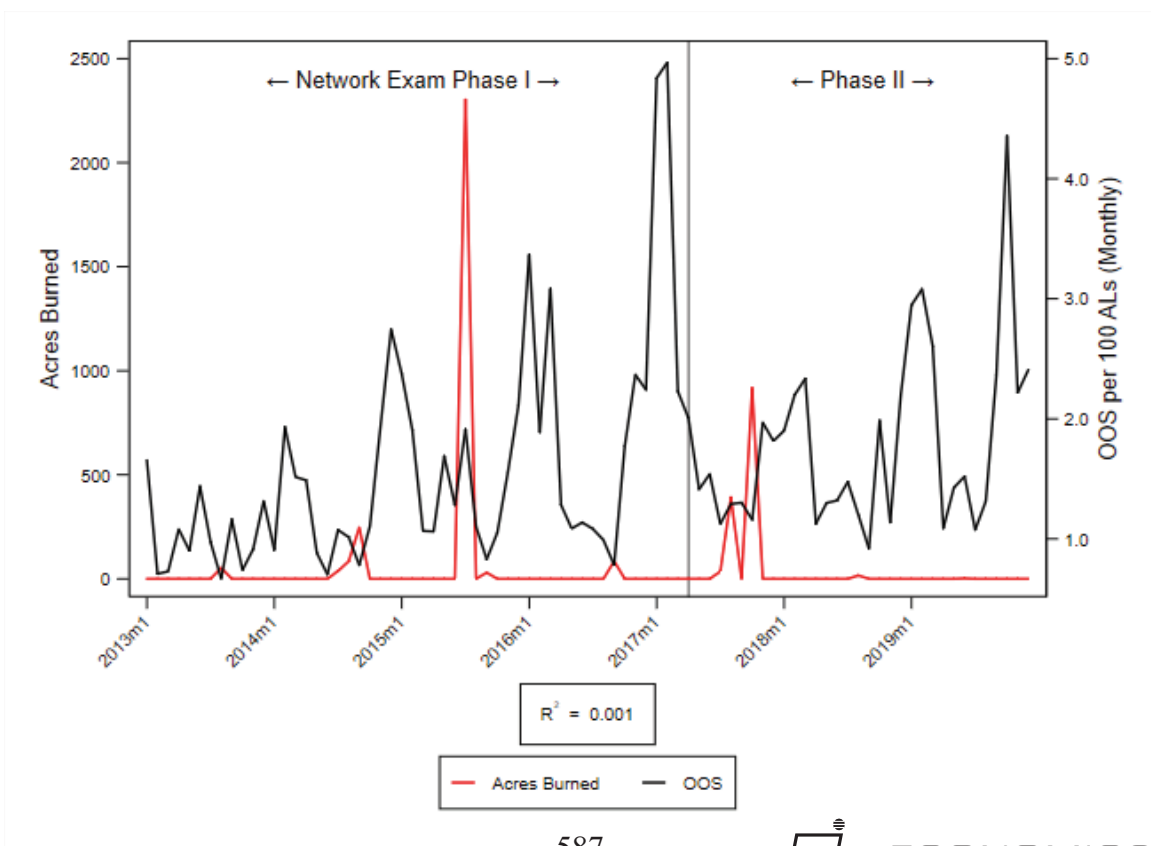
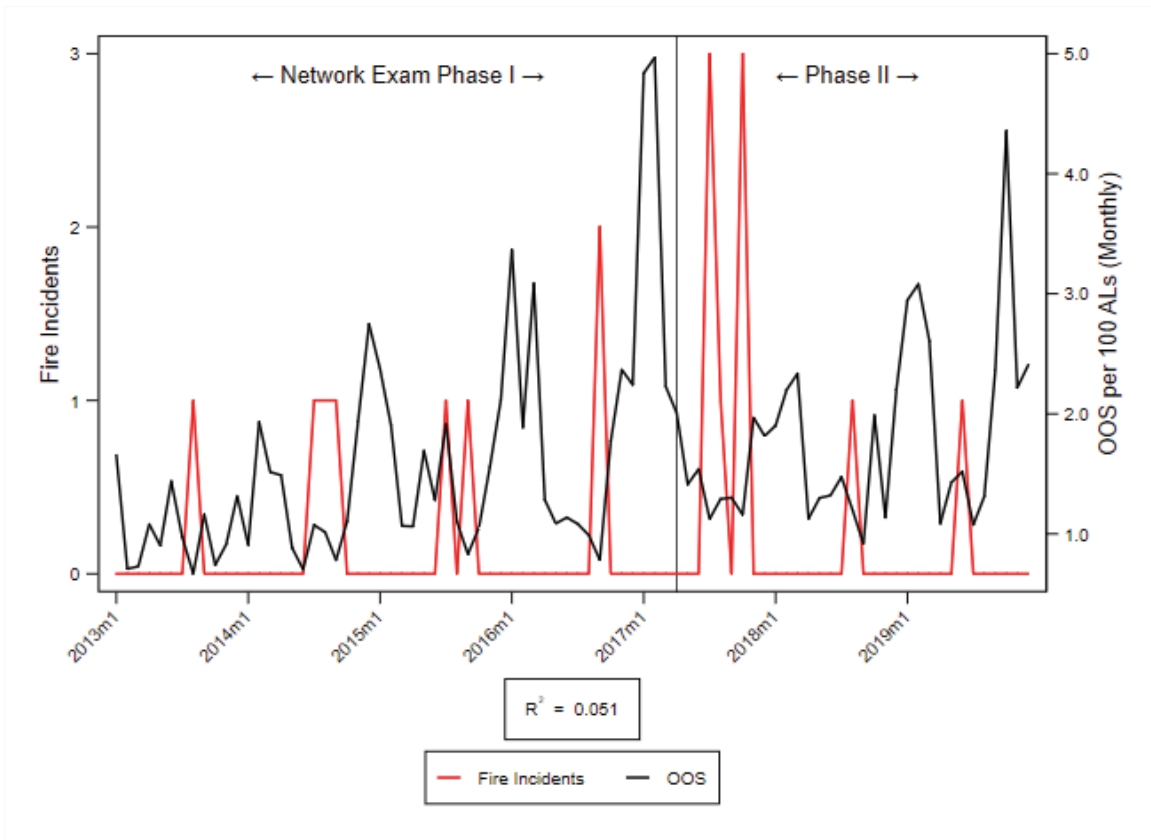
COUNTY-REGION MONTEREY - CENTRAL COAST (AT&T)



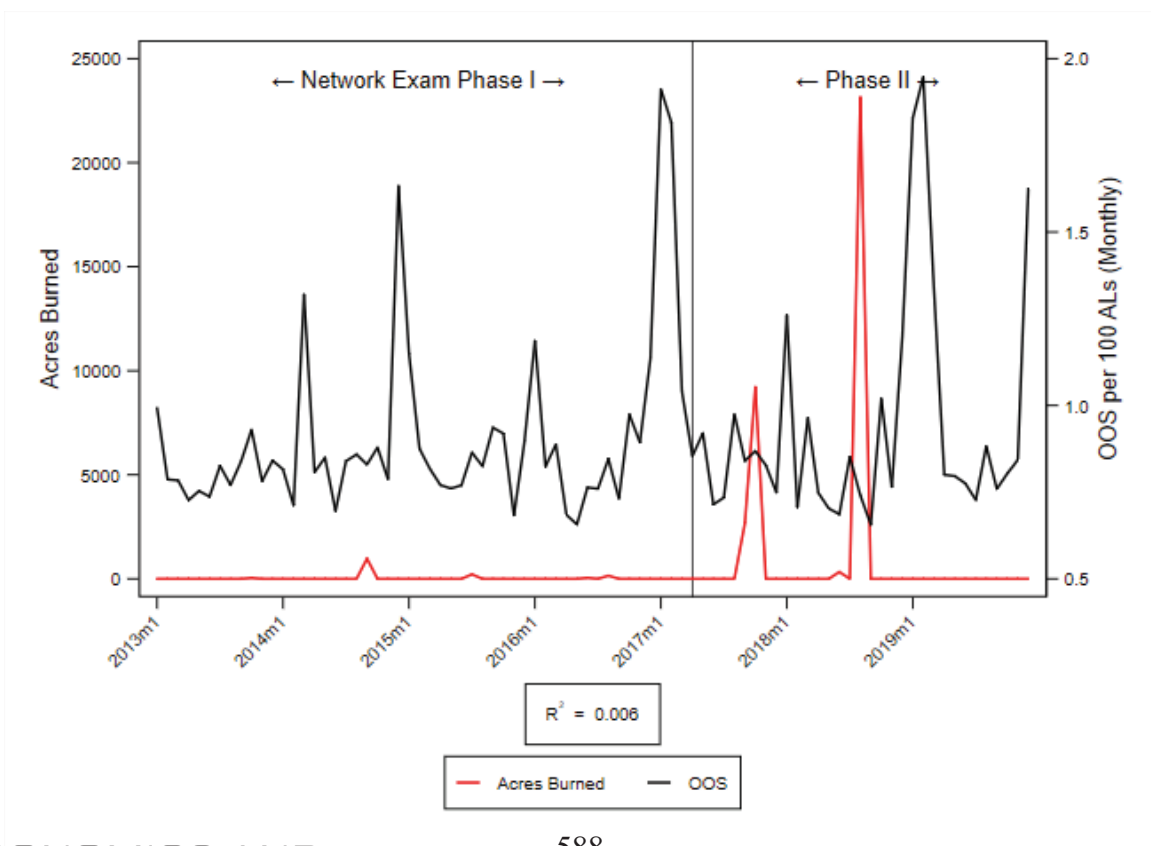
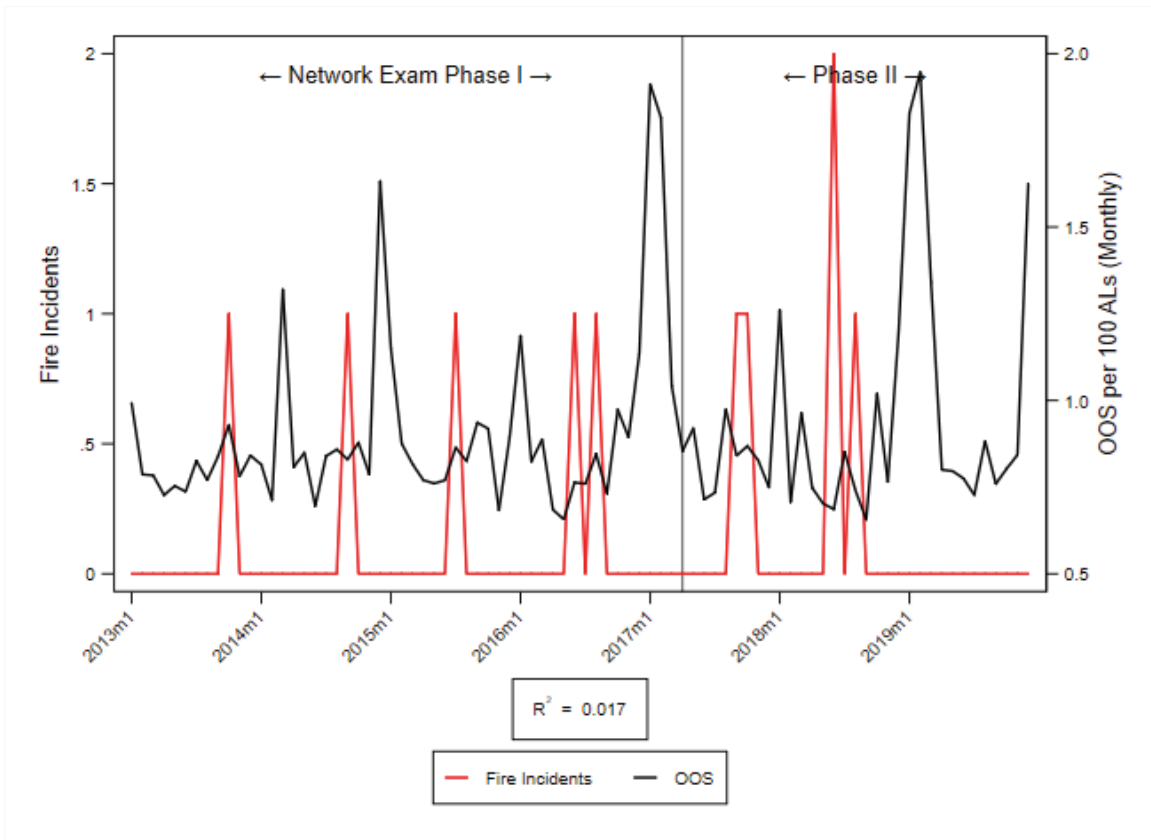
COUNTY-REGION NAPA - NORTH COAST (AT&T)



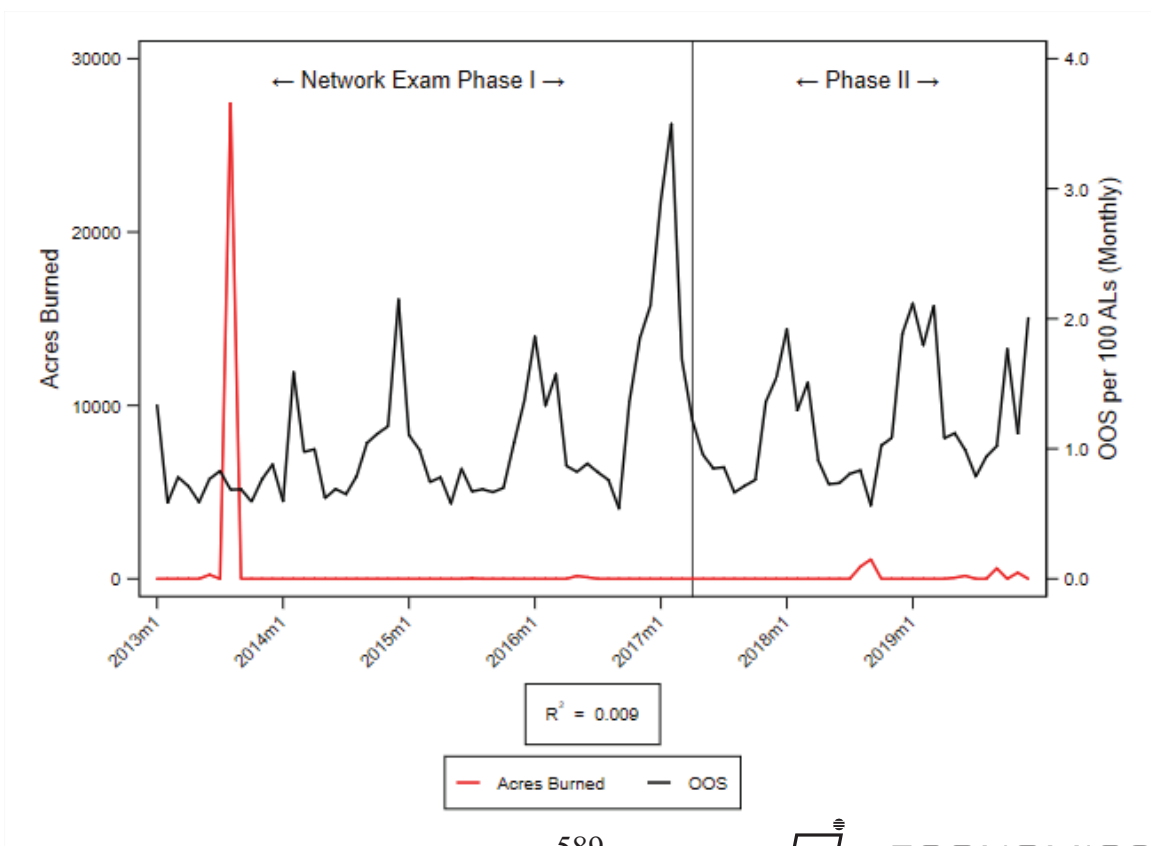
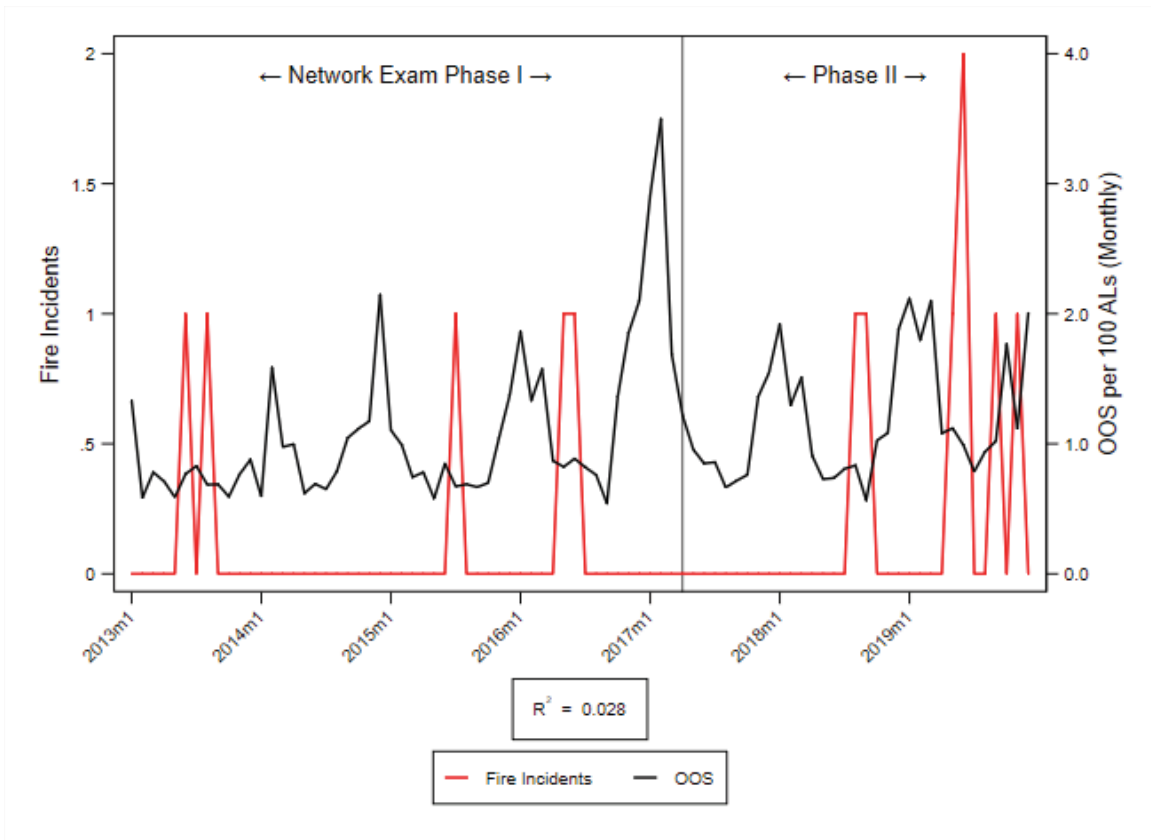
COUNTY-REGION NEVADA - SUPERIOR CALIFORNIA (AT&T)



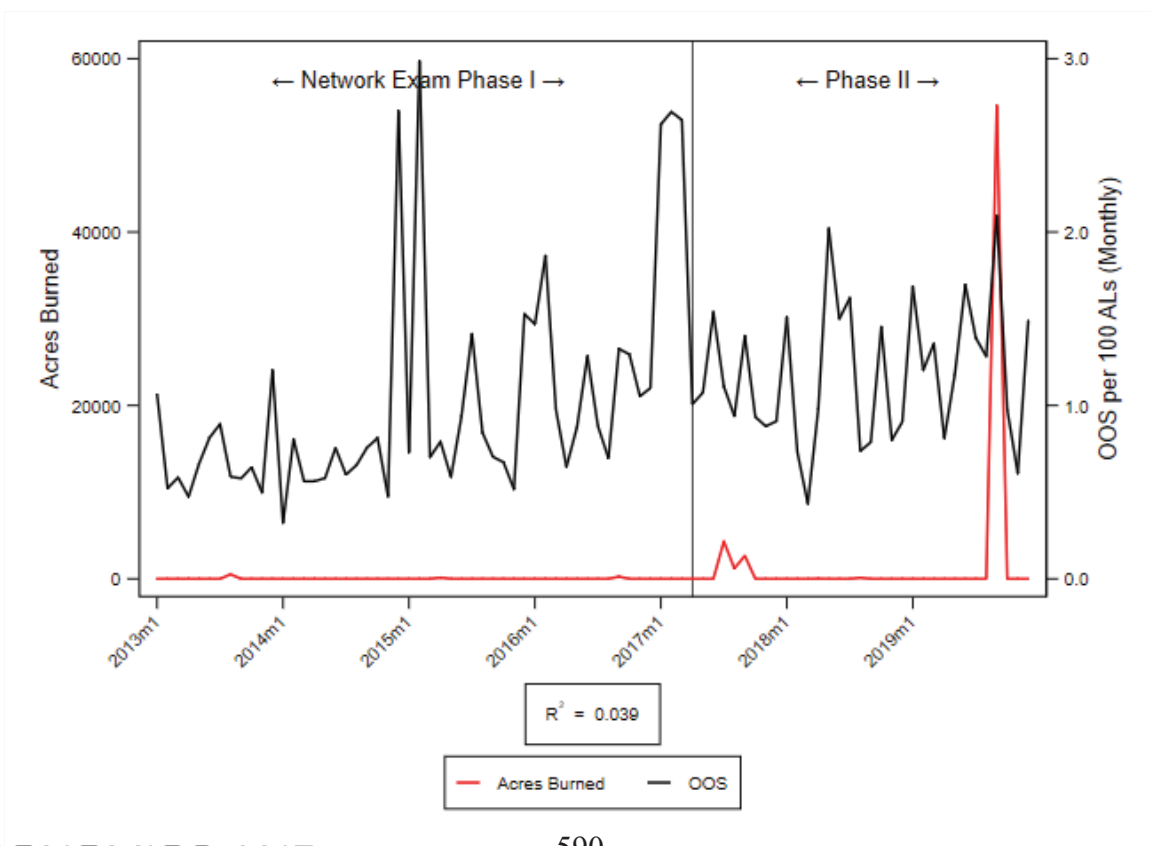
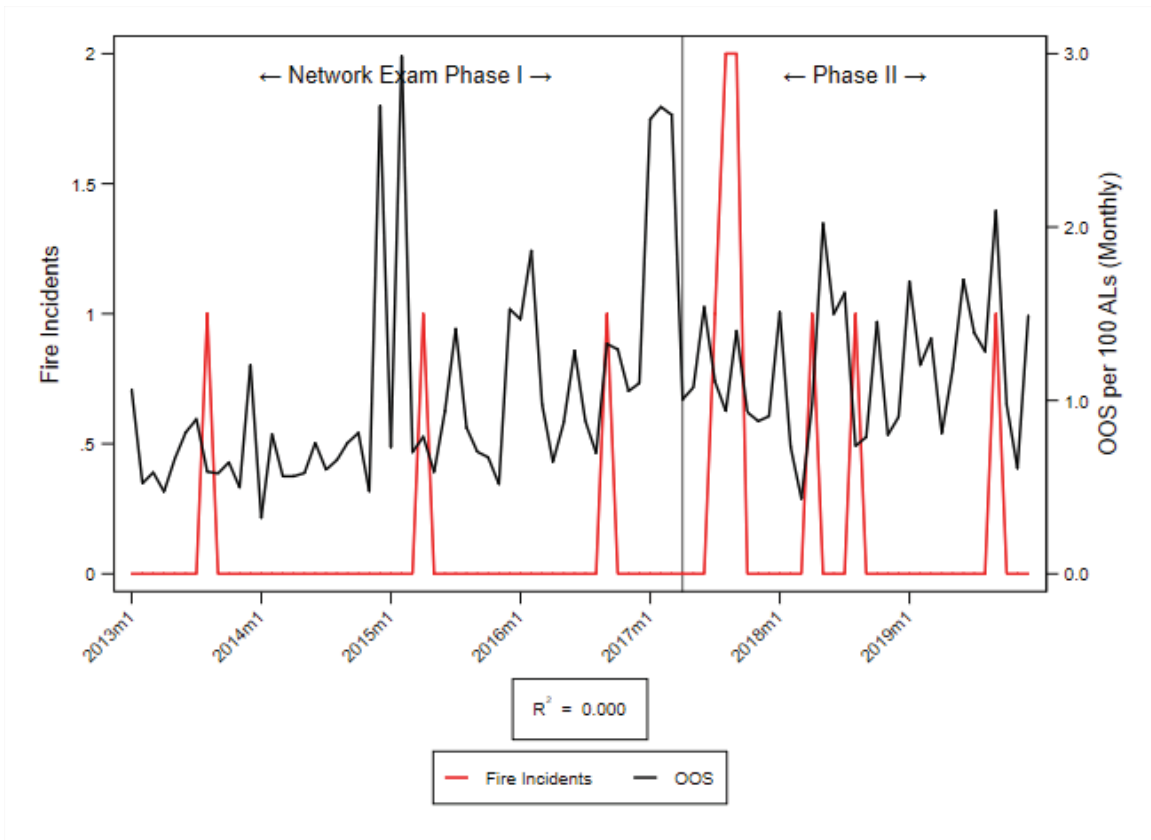
COUNTY-REGION ORANGE - ORANGE (AT&T)



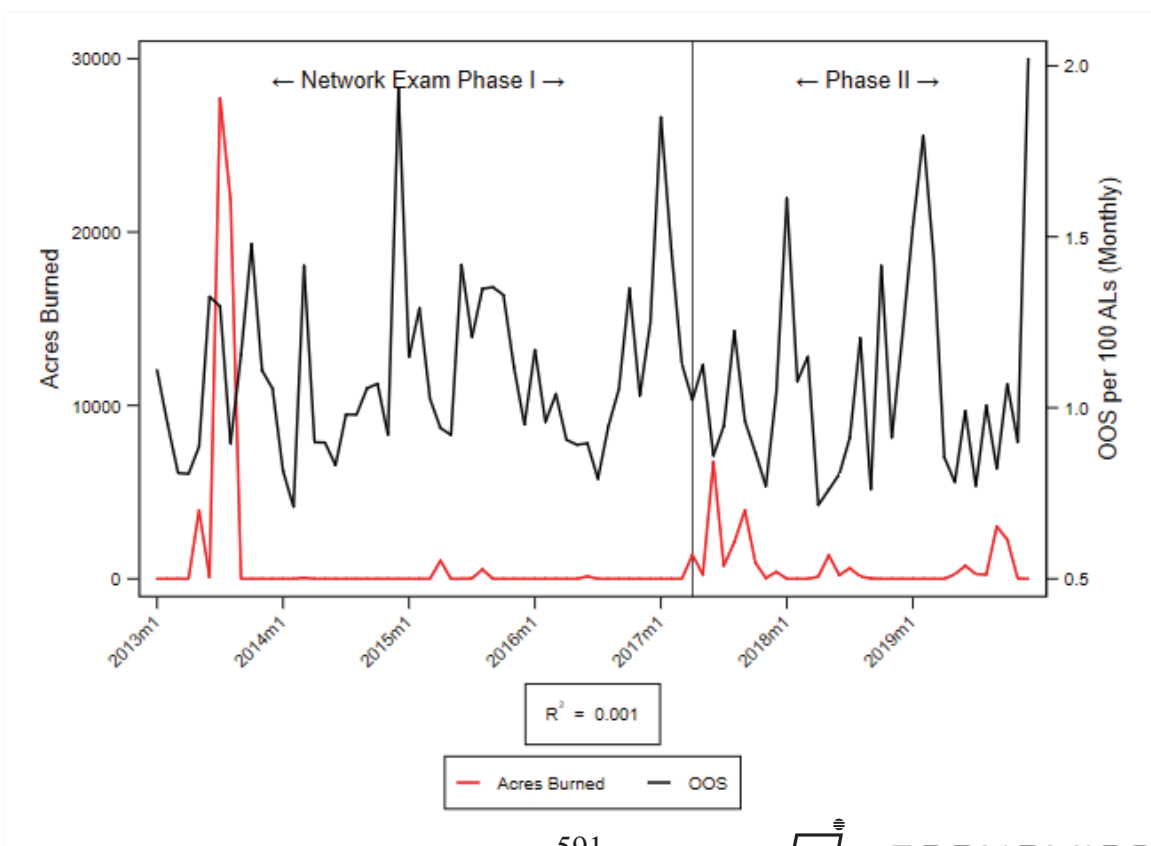
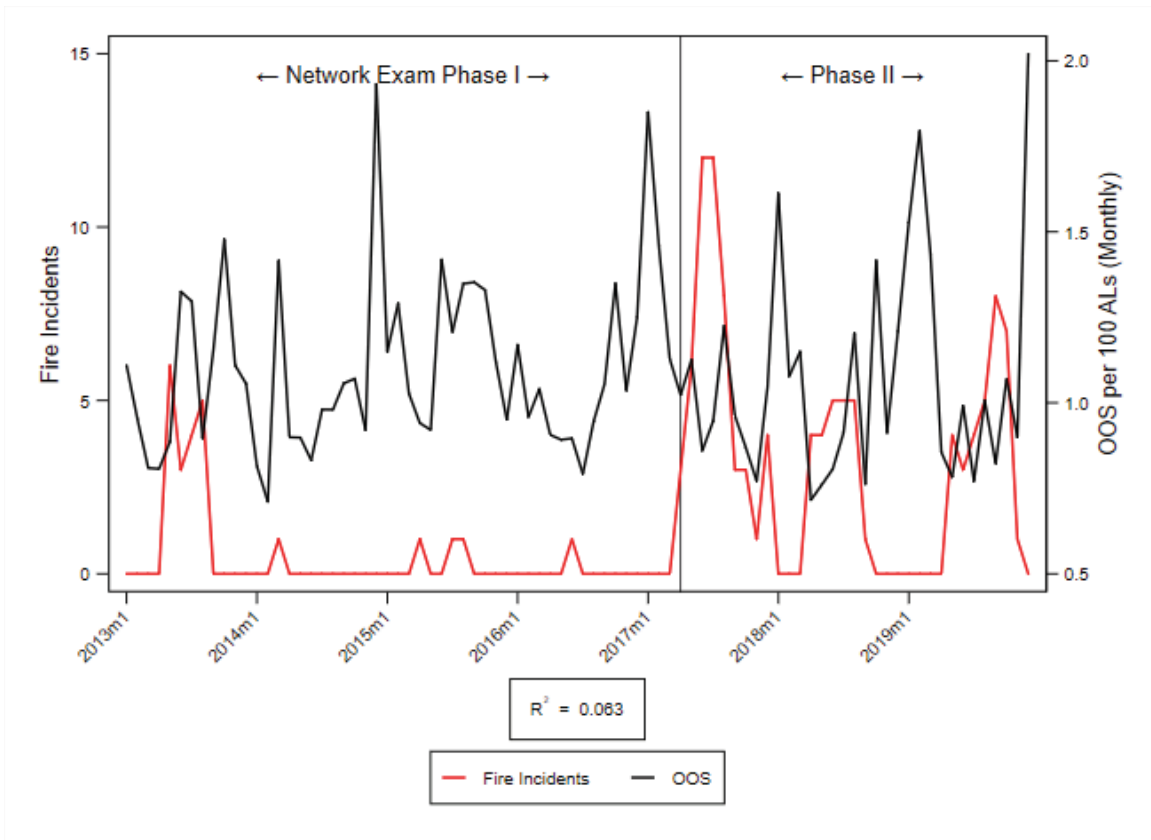
COUNTY-REGION PLACER - SUPERIOR CALIFORNIA (AT&T)



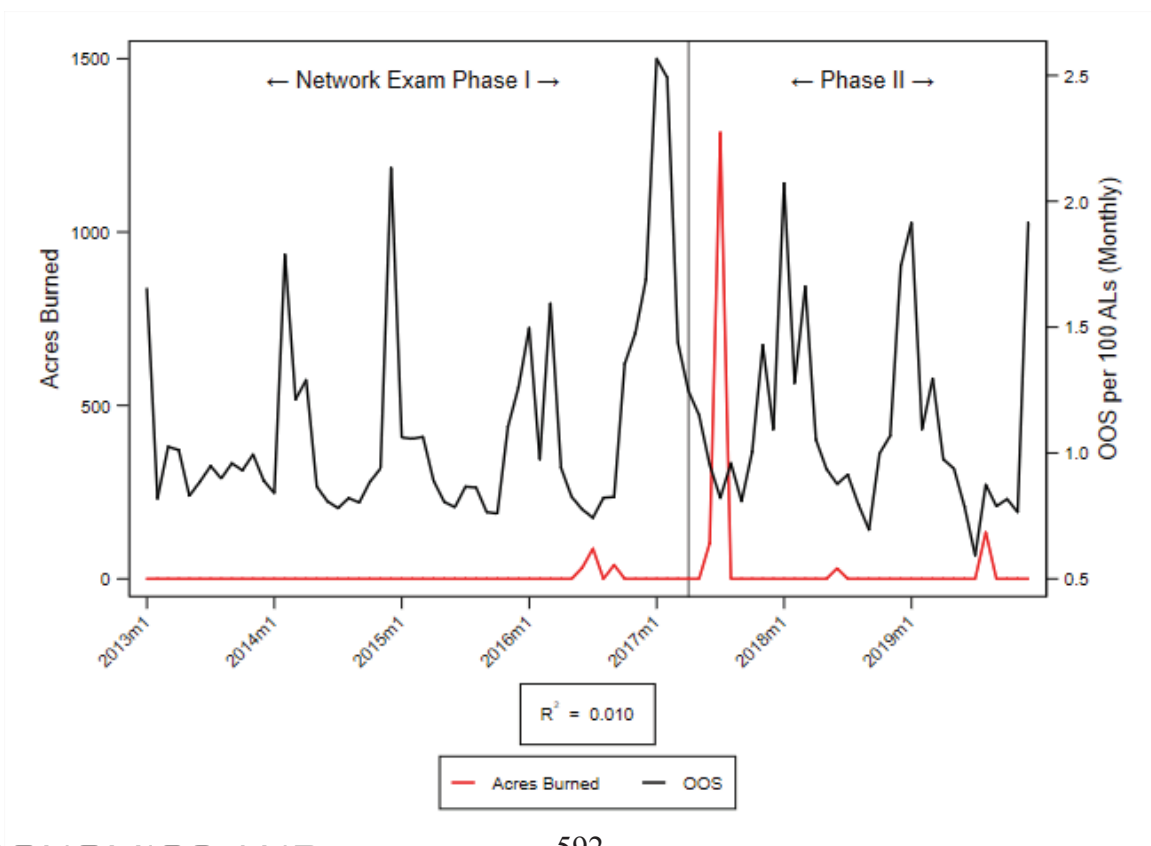
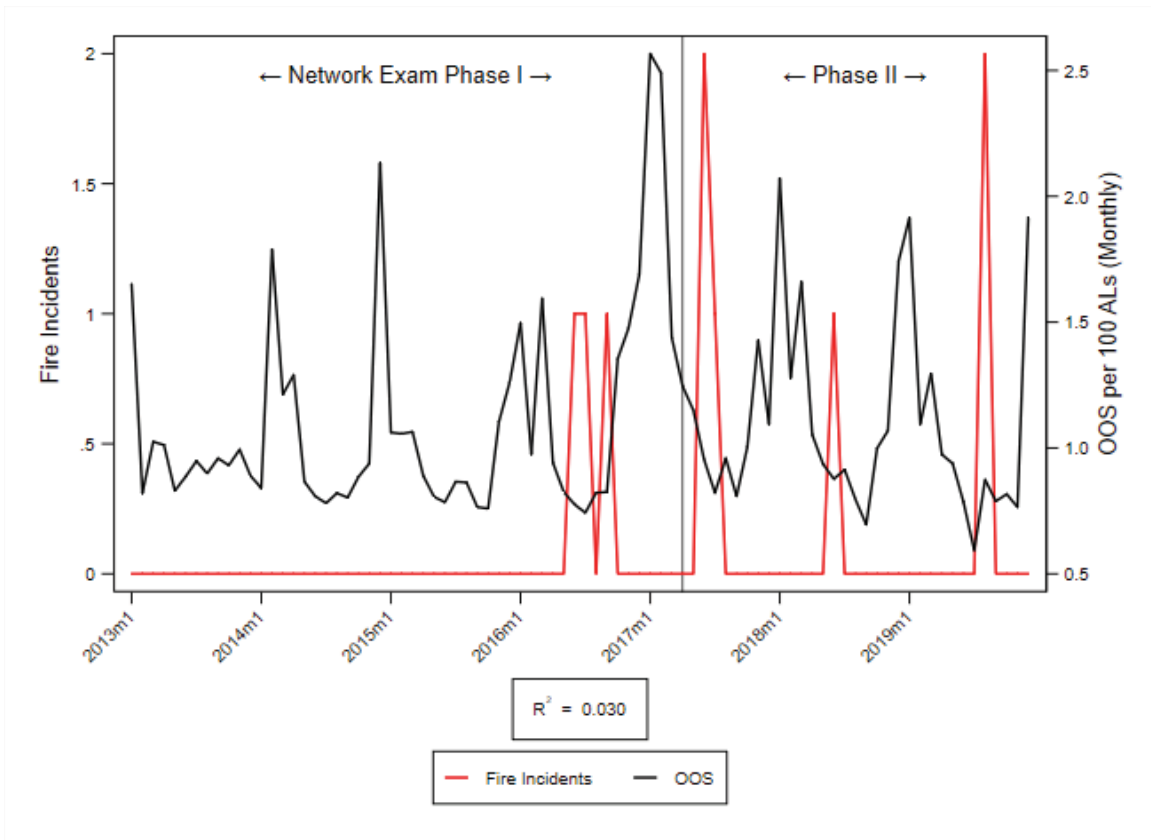
COUNTY-REGION PLUMAS - SUPERIOR CALIFORNIA (AT&T)



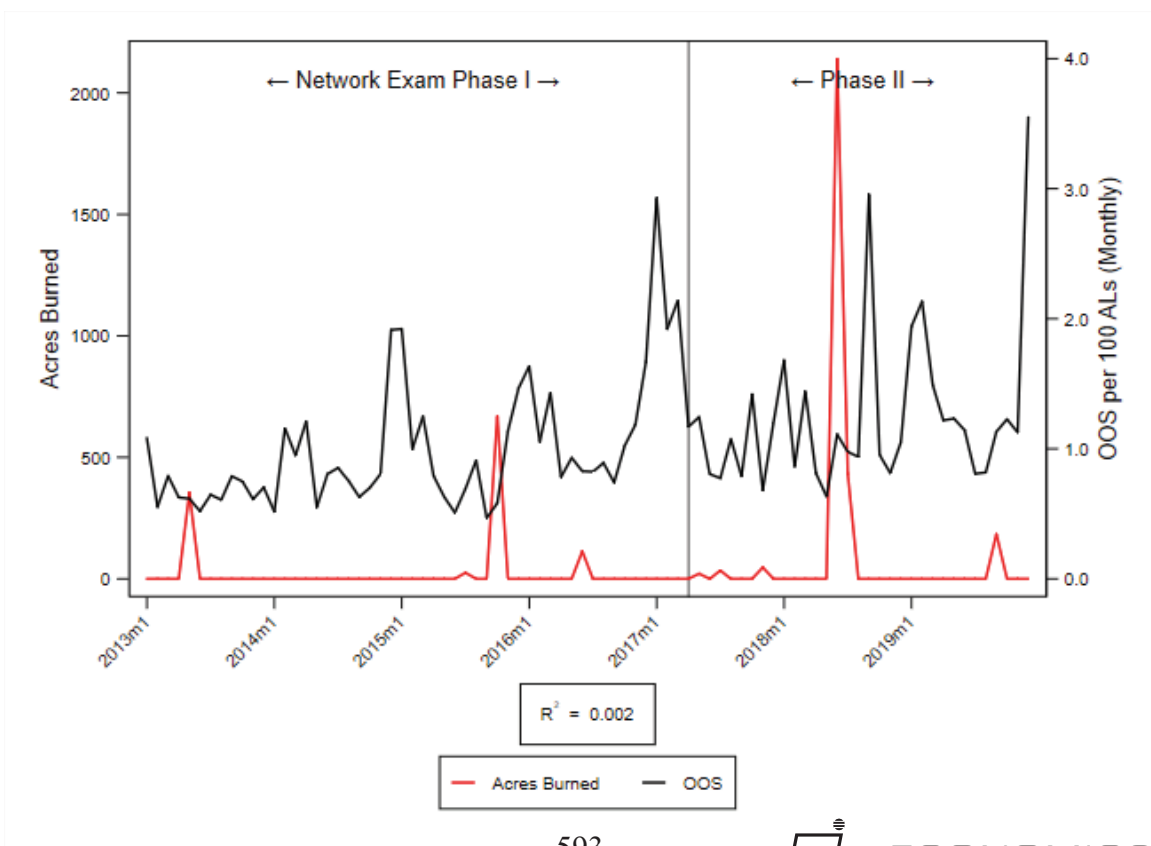
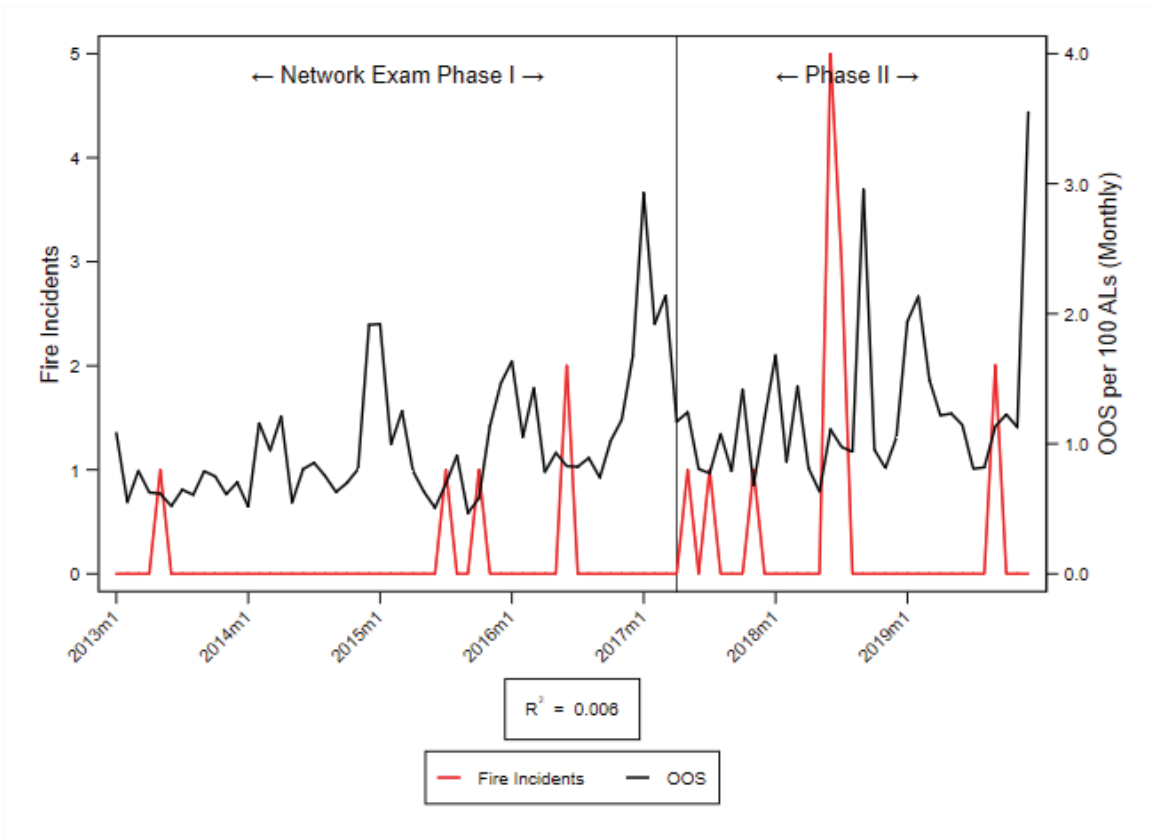
COUNTY-REGION RIVERSIDE - INLAND EMPIRE (AT&T)



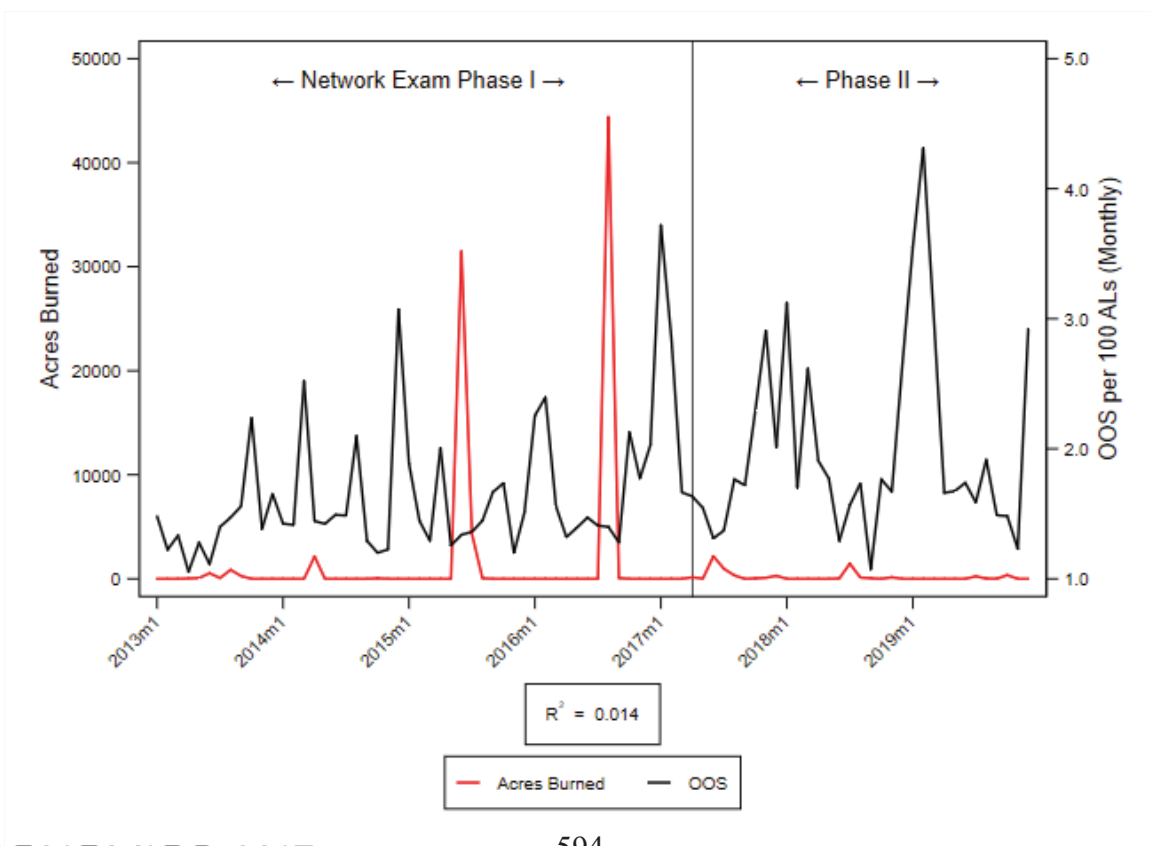
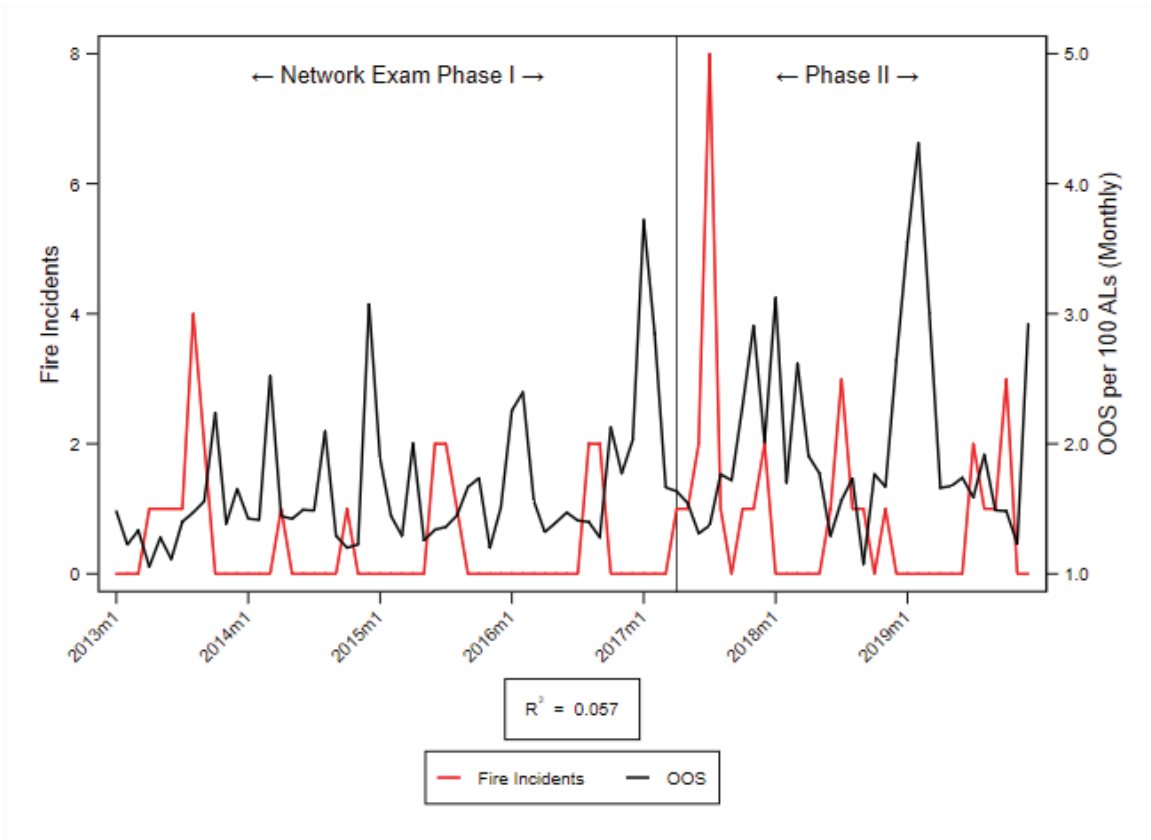
COUNTY-REGION SACRAMENTO - SUPERIOR CALIFORNIA (AT&T)



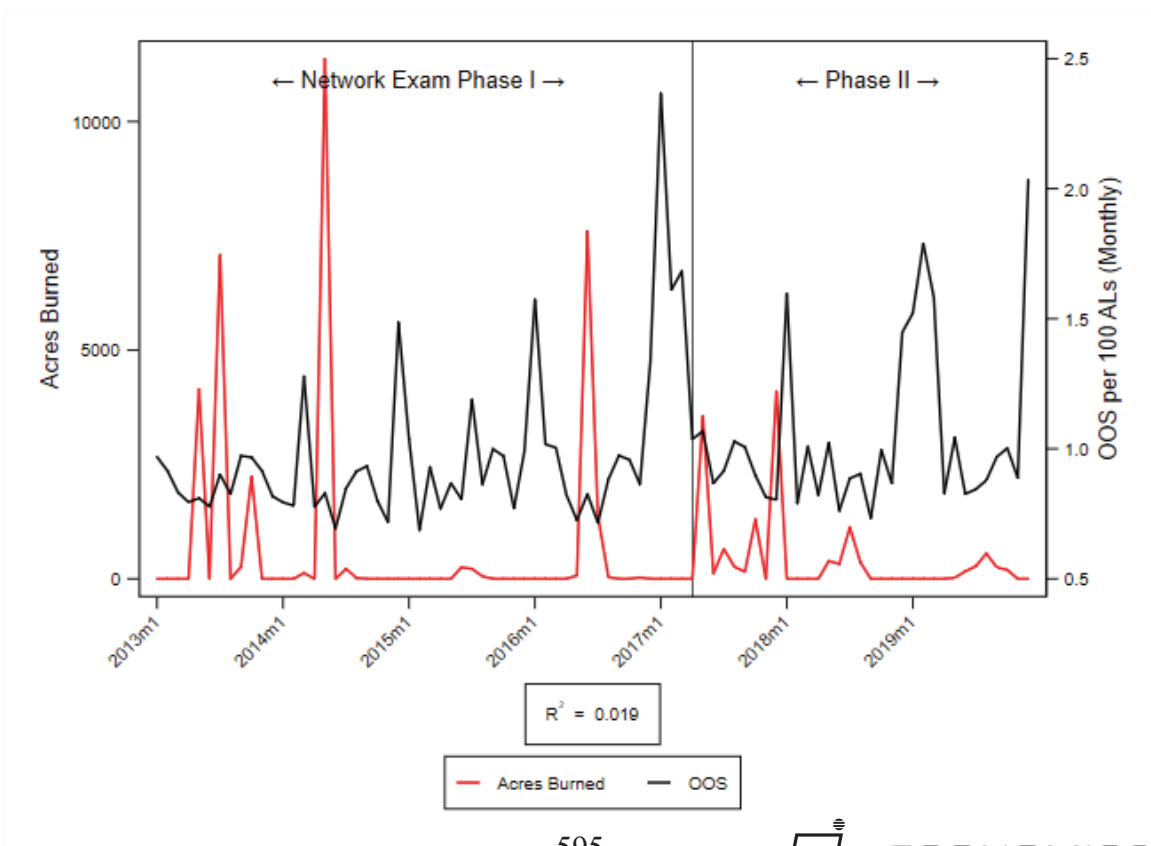
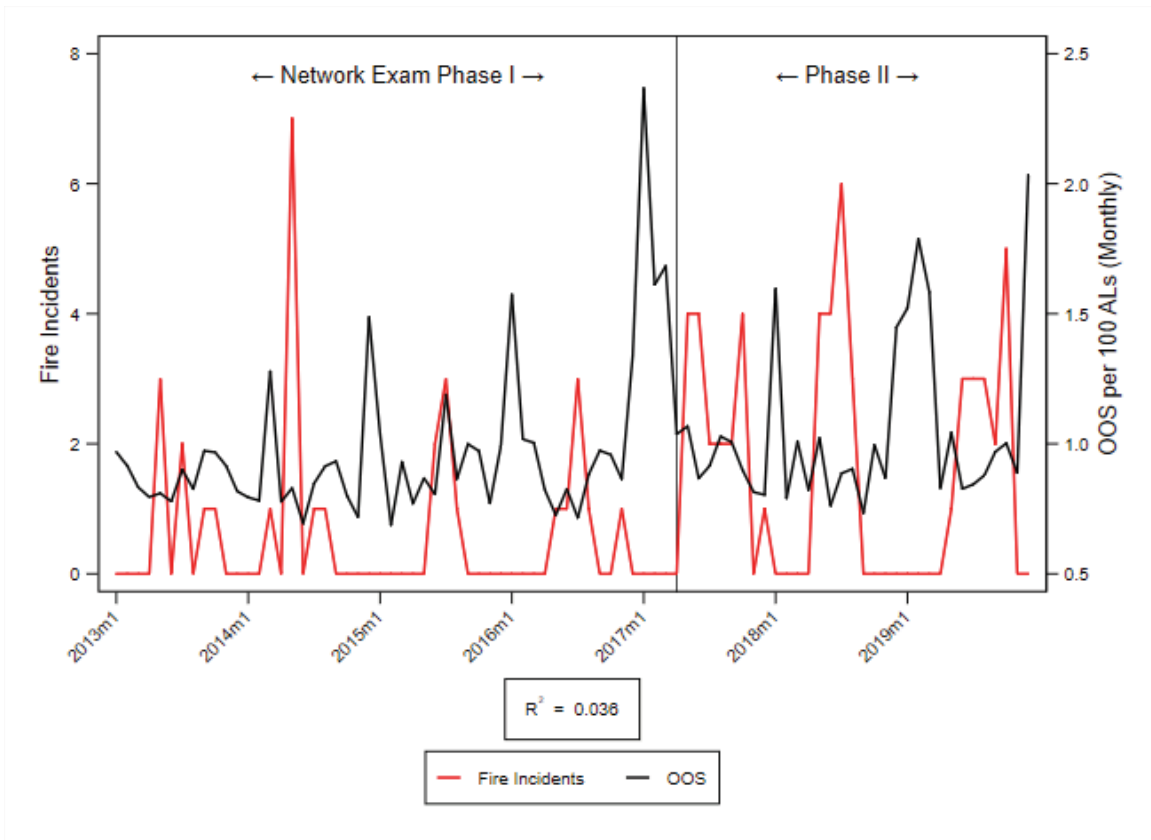
COUNTY-REGION SAN BENITO - CENTRAL COAST (AT&T)



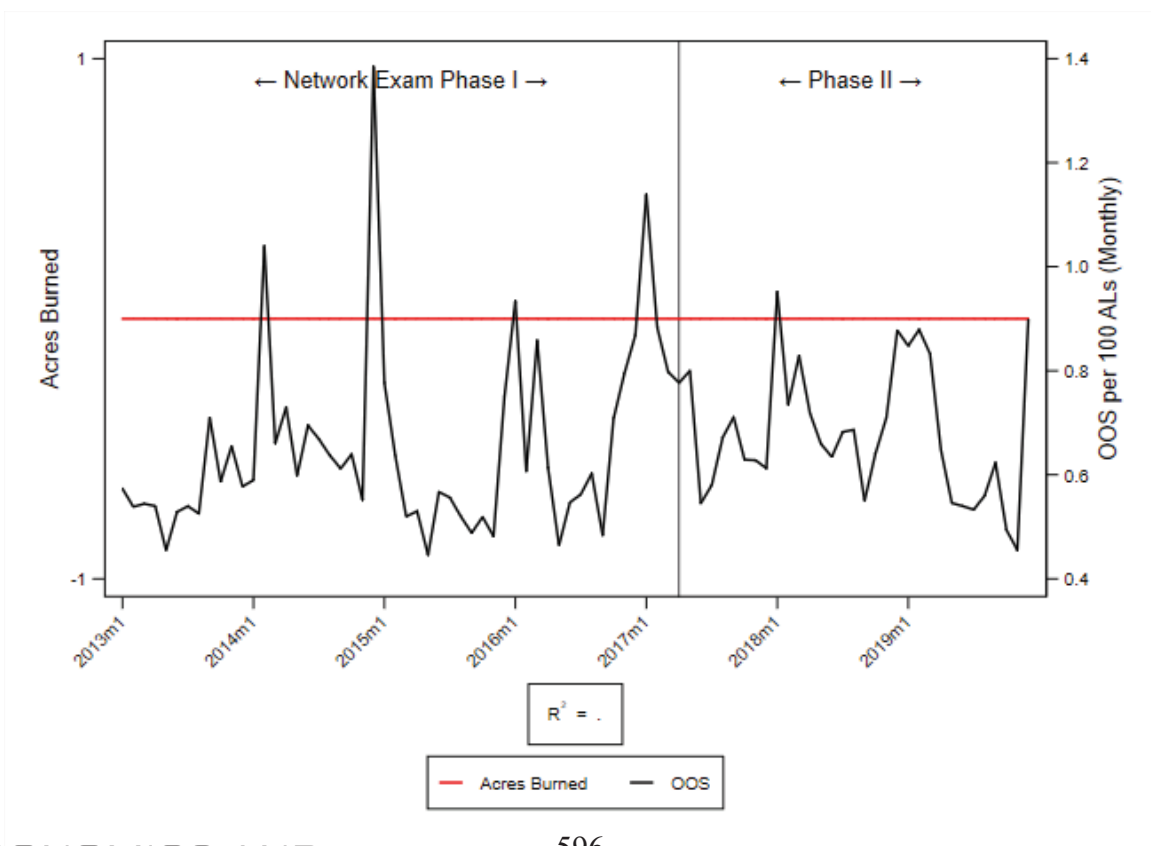
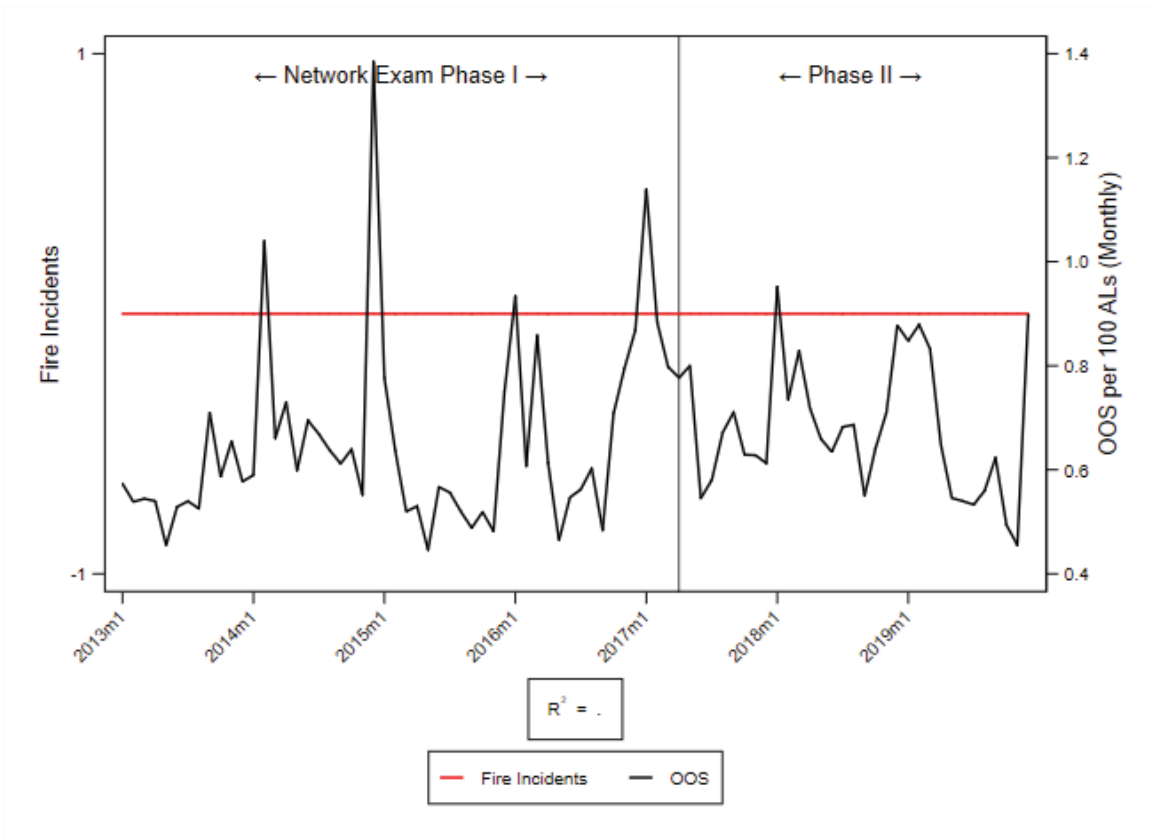
COUNTY-REGION SAN BERNARDINO - INLAND EMPIRE (AT&T)



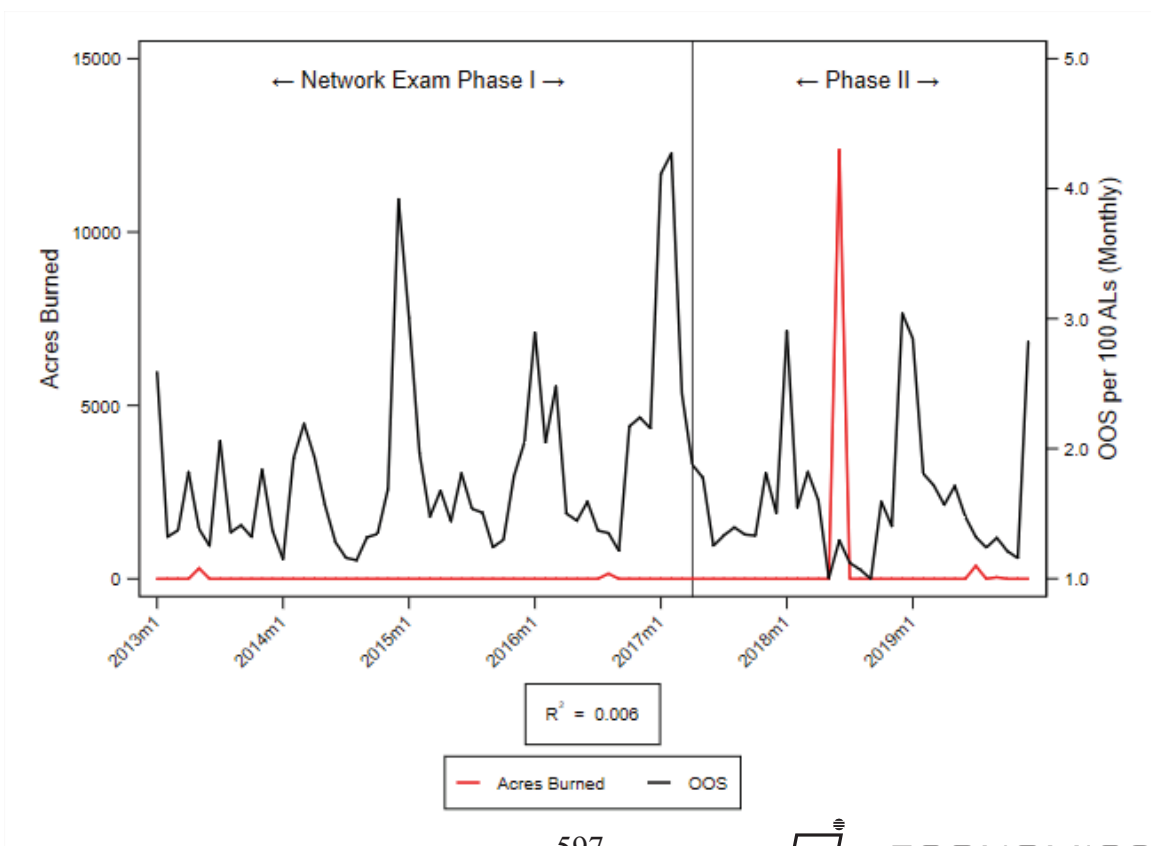
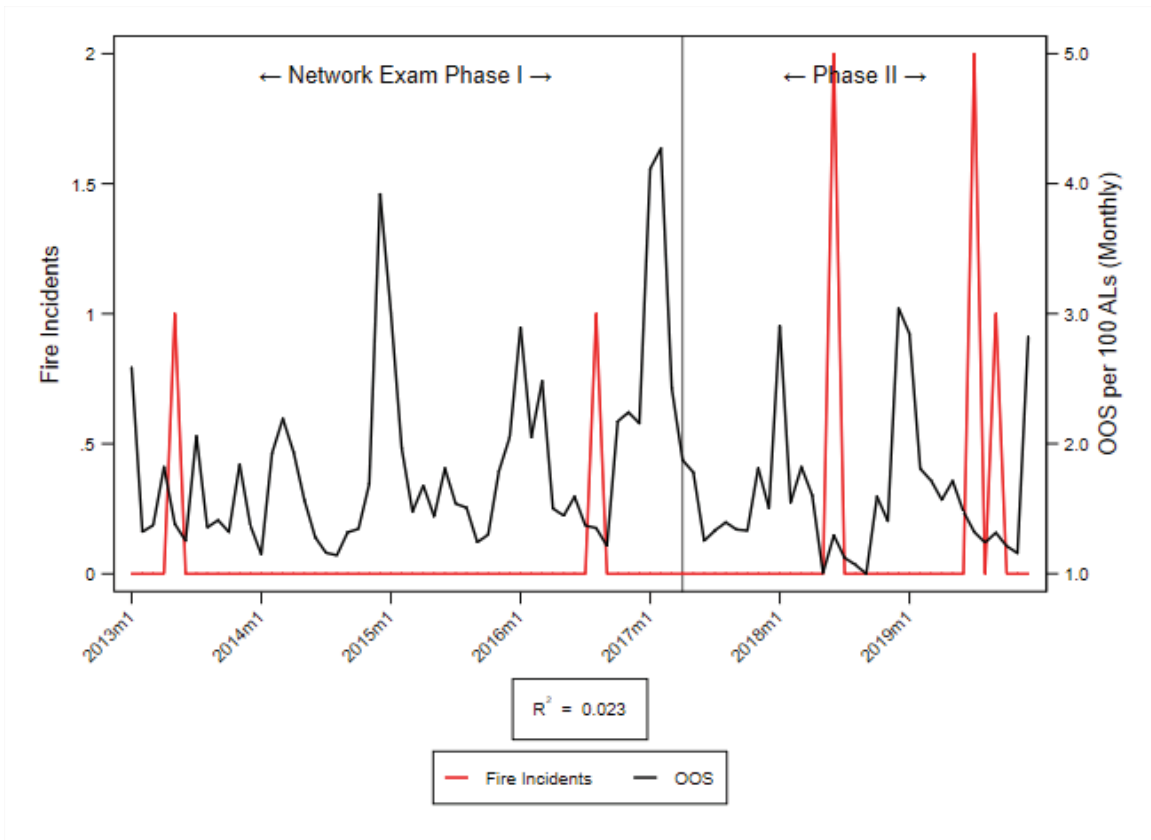
COUNTY-REGION SAN DIEGO - SAN DIEGO-IMPERIAL (AT&T)



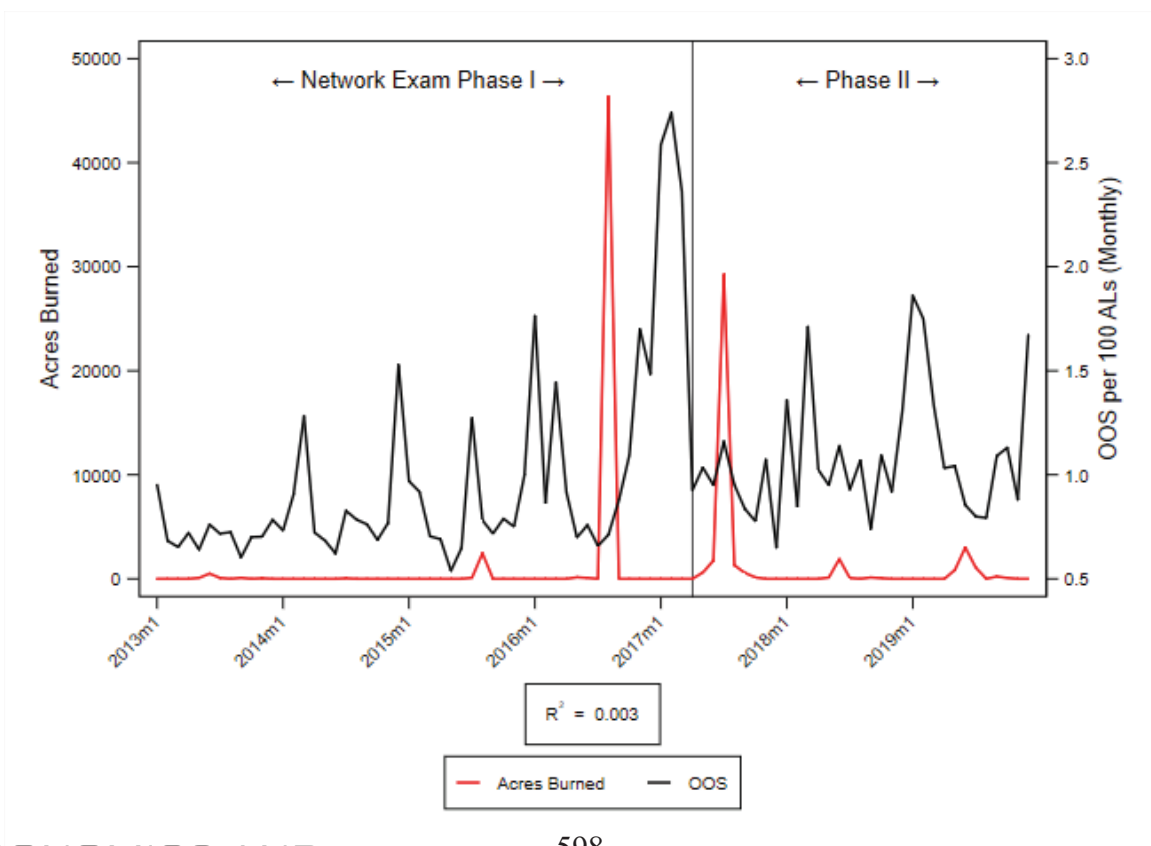
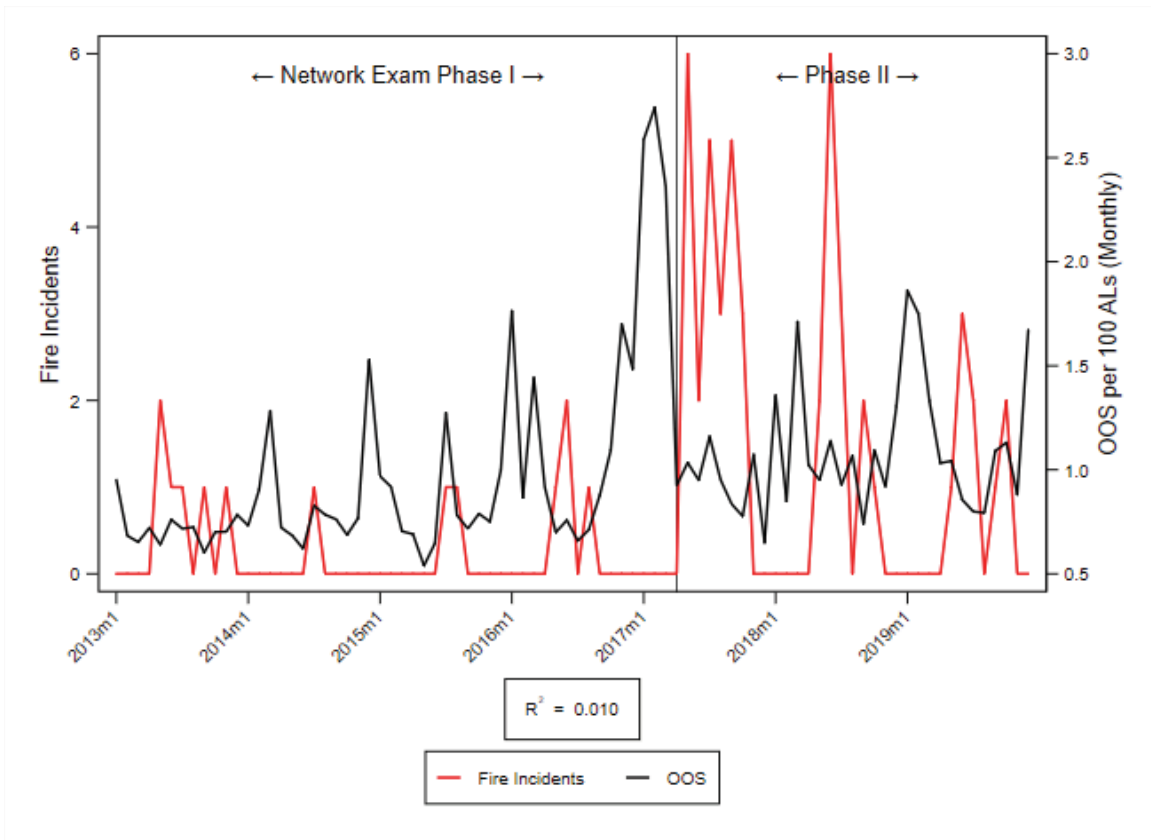
COUNTY-REGION SAN FRANCISCO - SAN FRANCISCO BAY AREA (AT&T)



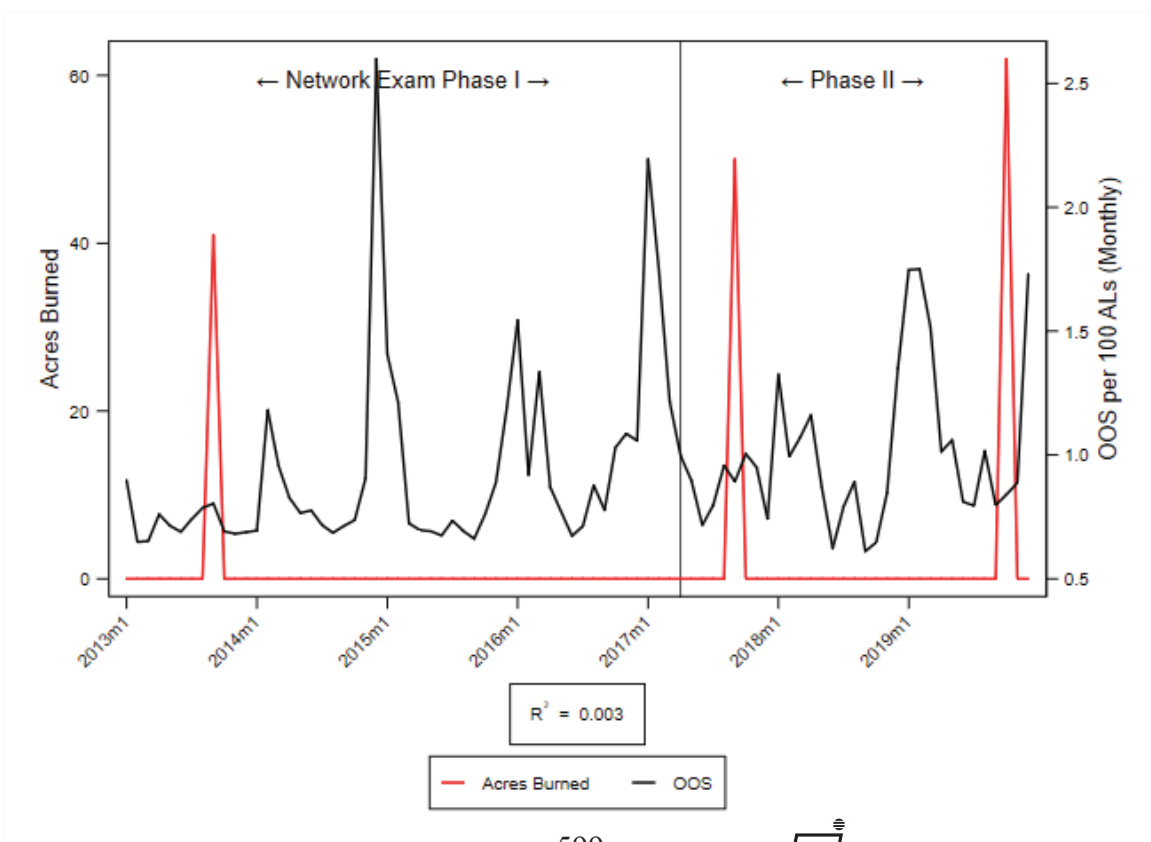
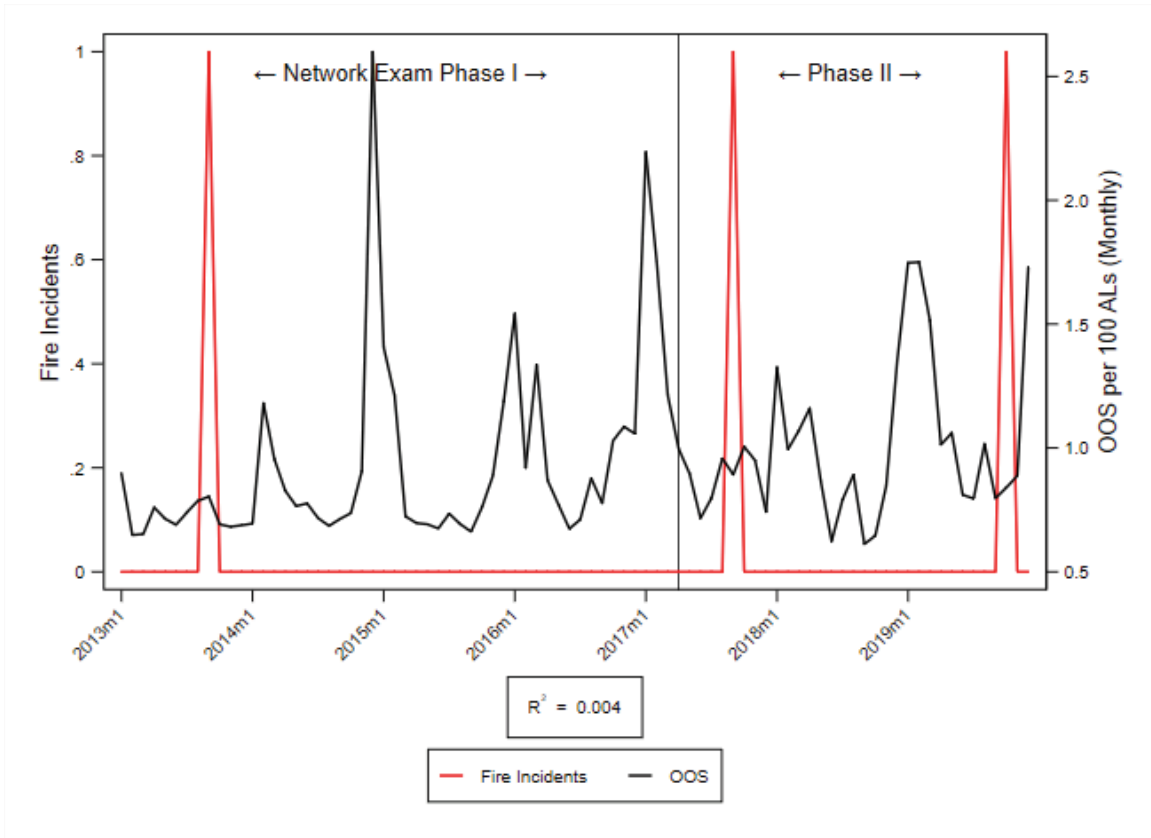
COUNTY-REGION SAN JOAQUIN - NORTHERN SAN JOAQUIN VALLEY (AT&T)



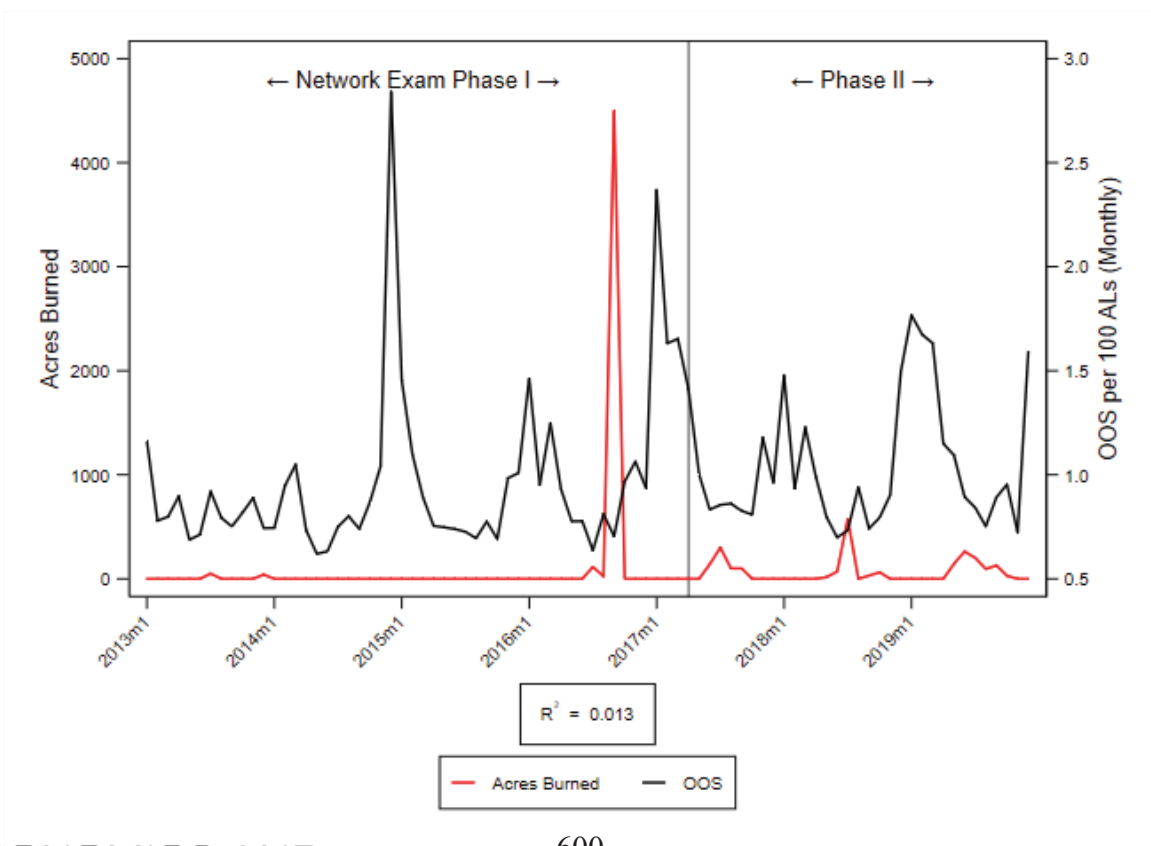
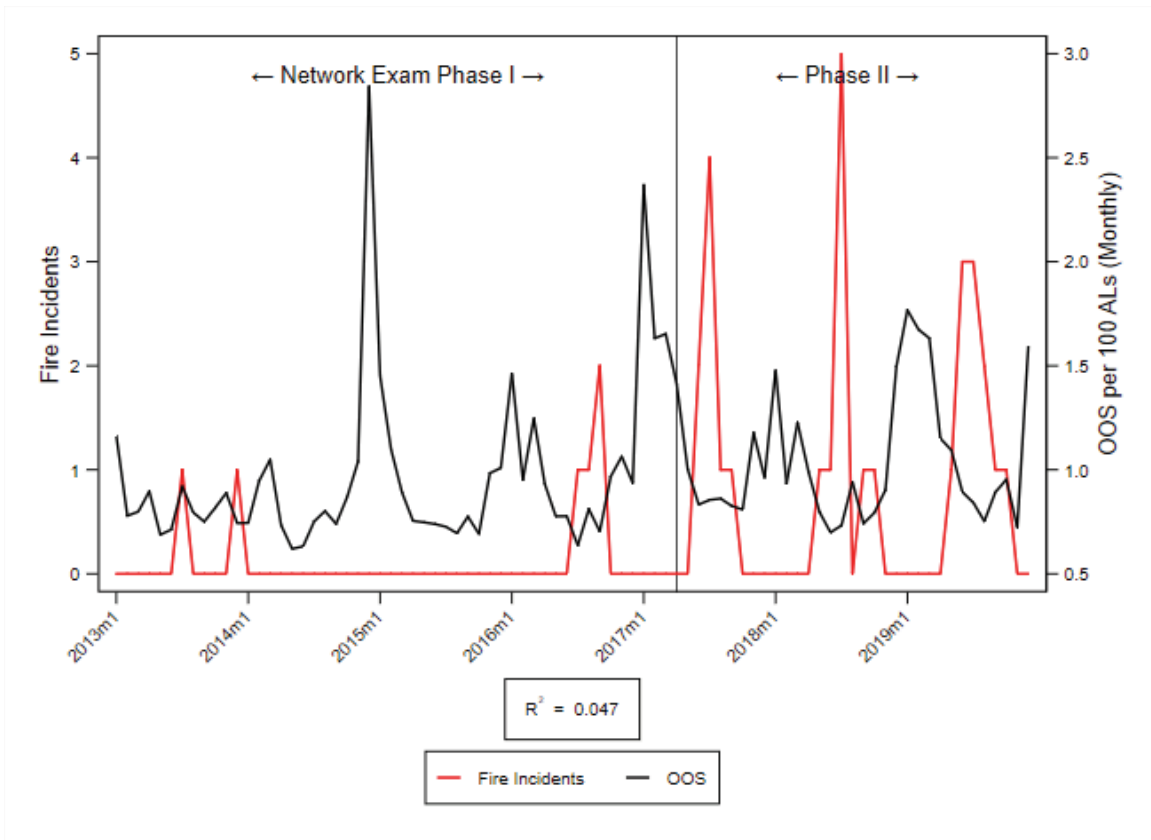
COUNTY-REGION SAN LUIS OBISPO - CENTRAL COAST (AT&T)



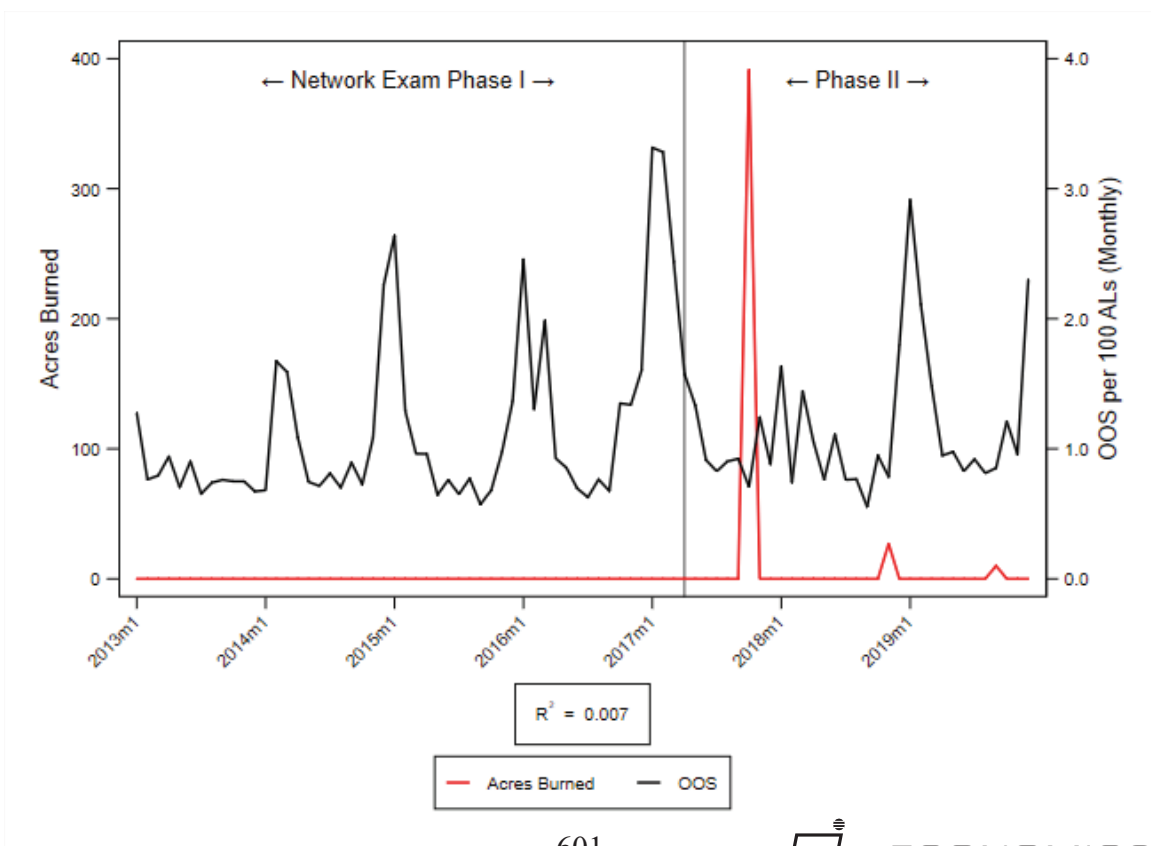
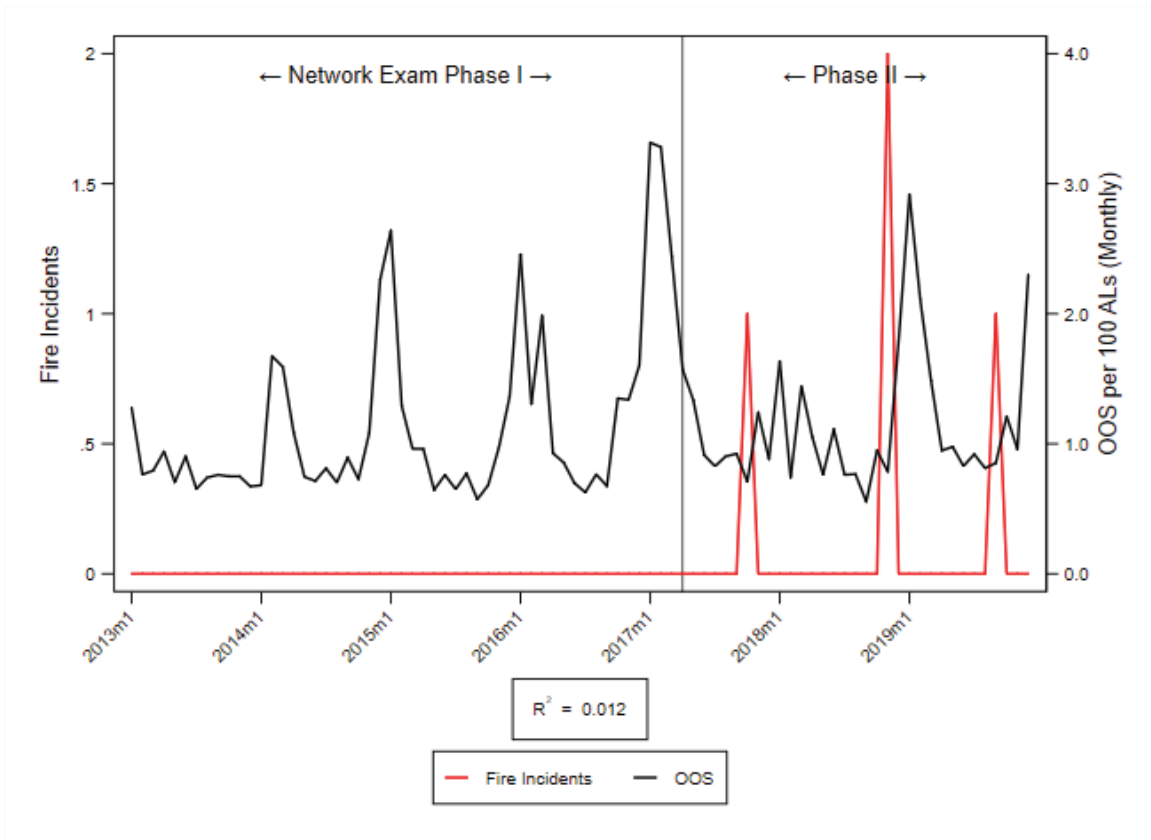
COUNTY-REGION SAN MATEO - SAN FRANCISCO BAY AREA (AT&T)



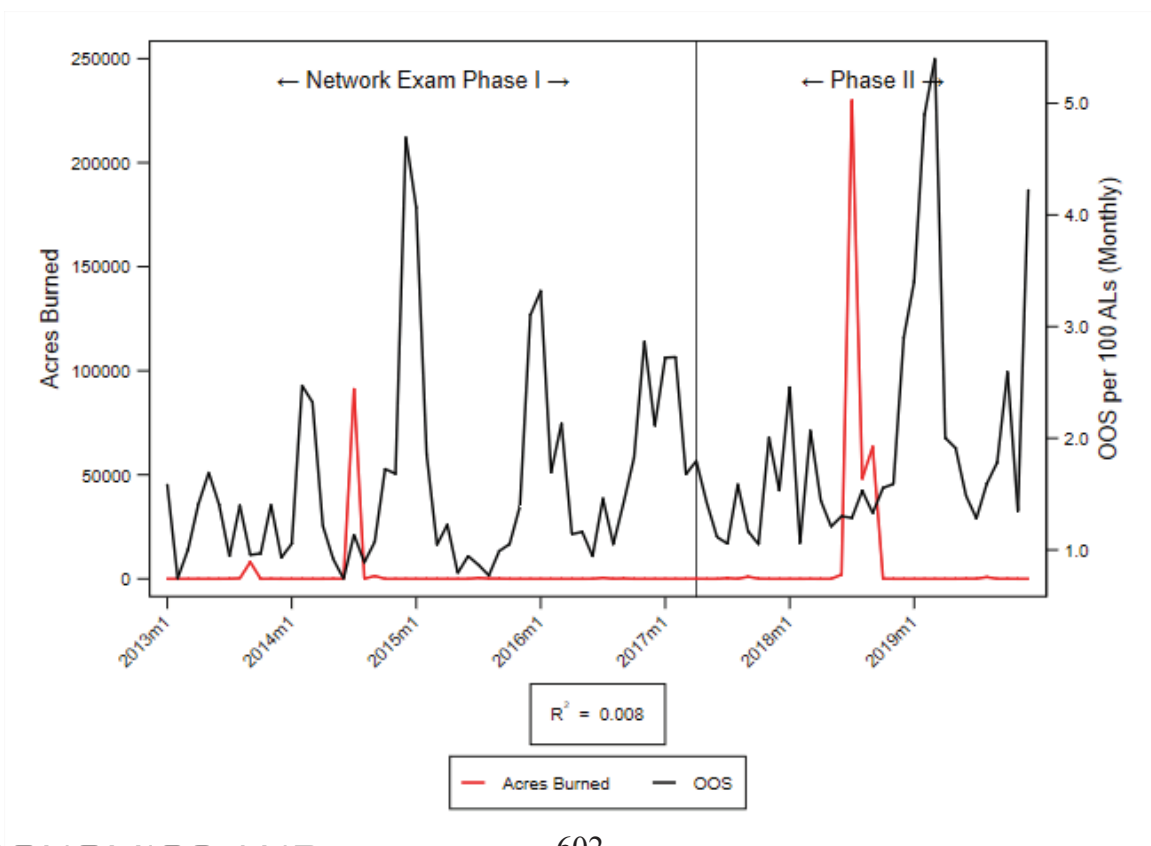
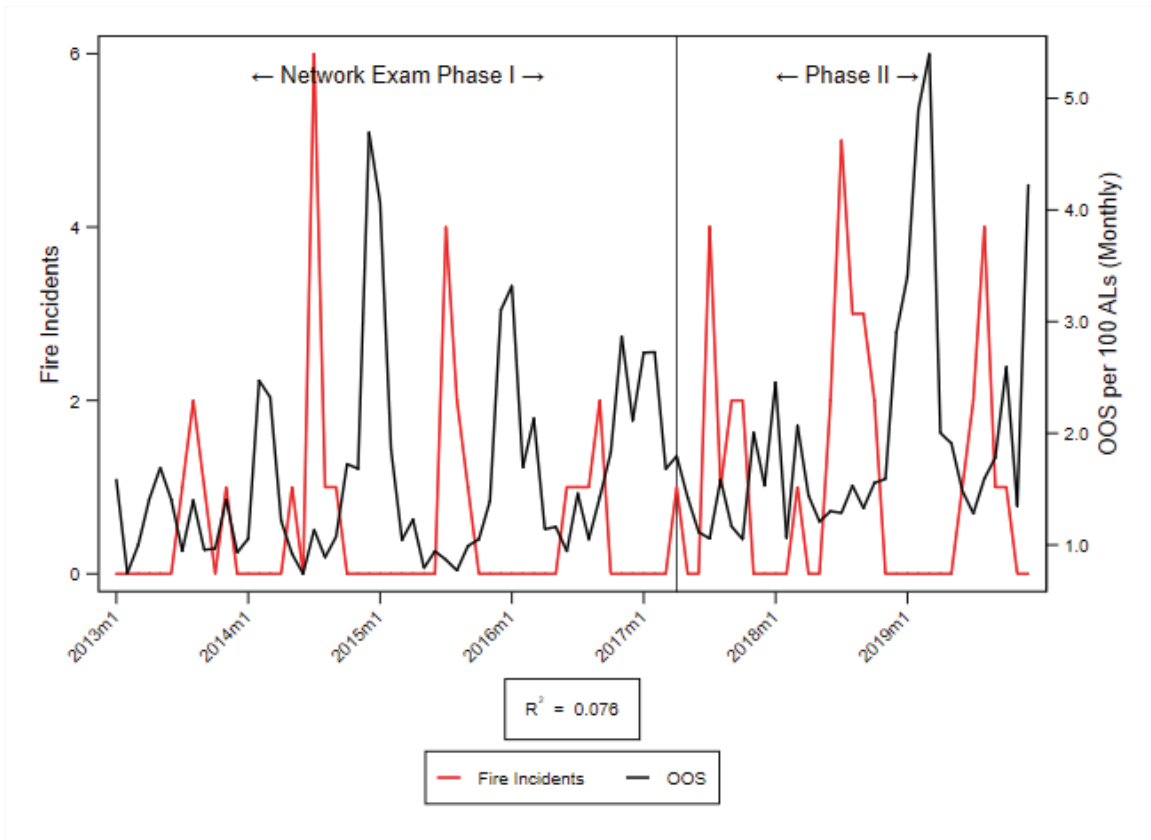
COUNTY-REGION SANTA CLARA - SAN FRANCISCO BAY AREA (AT&T)



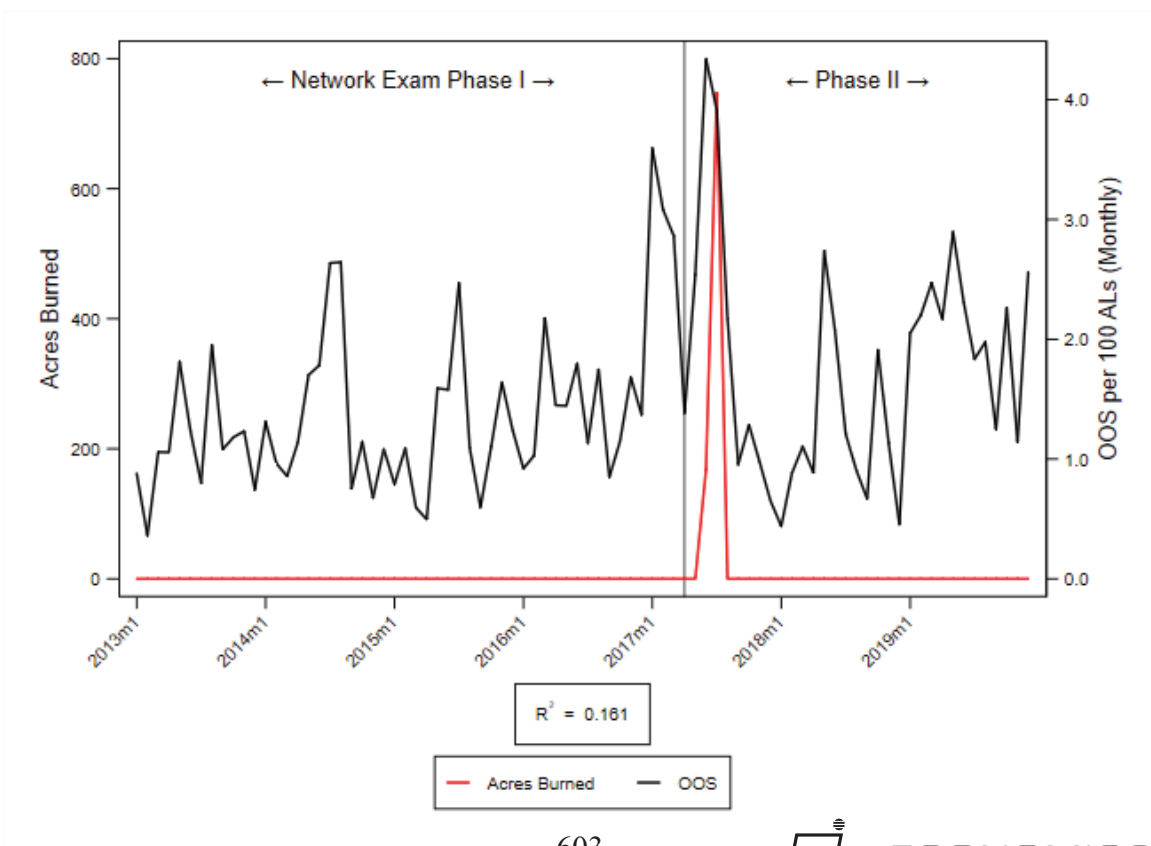
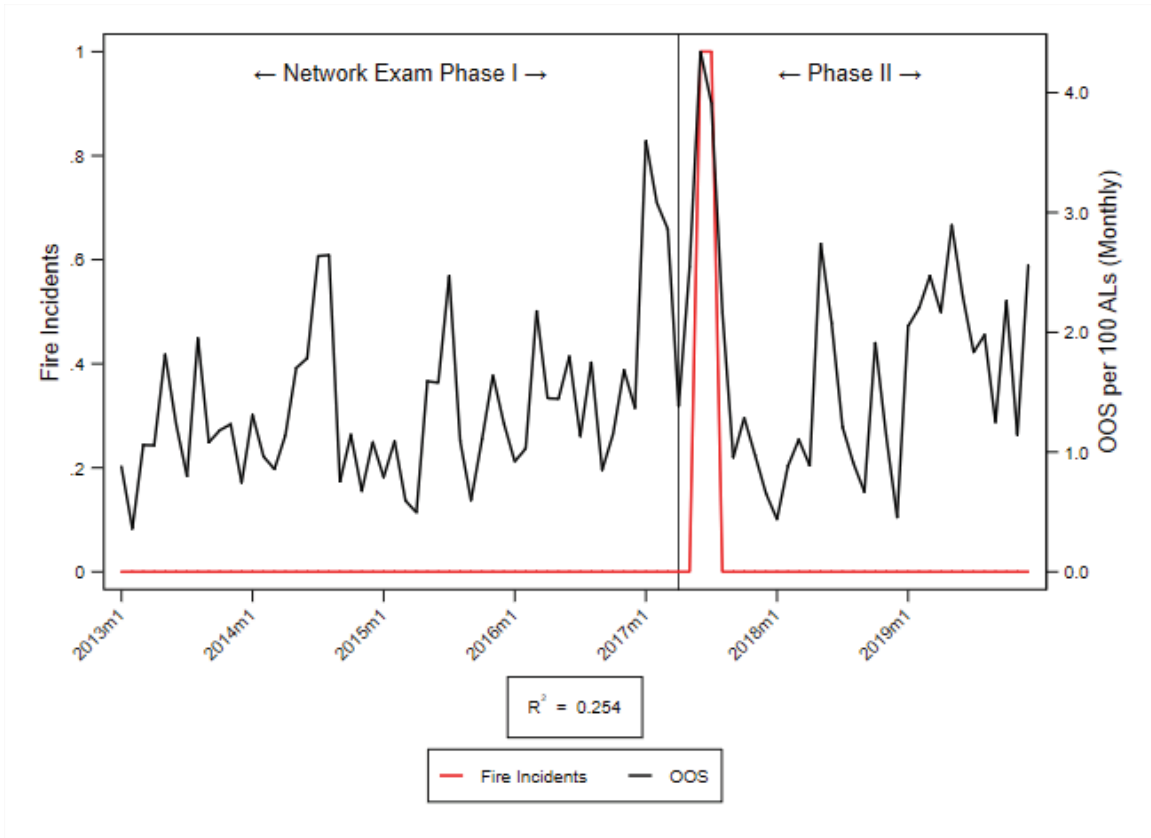
COUNTY-REGION SANTA CRUZ - CENTRAL COAST (AT&T)



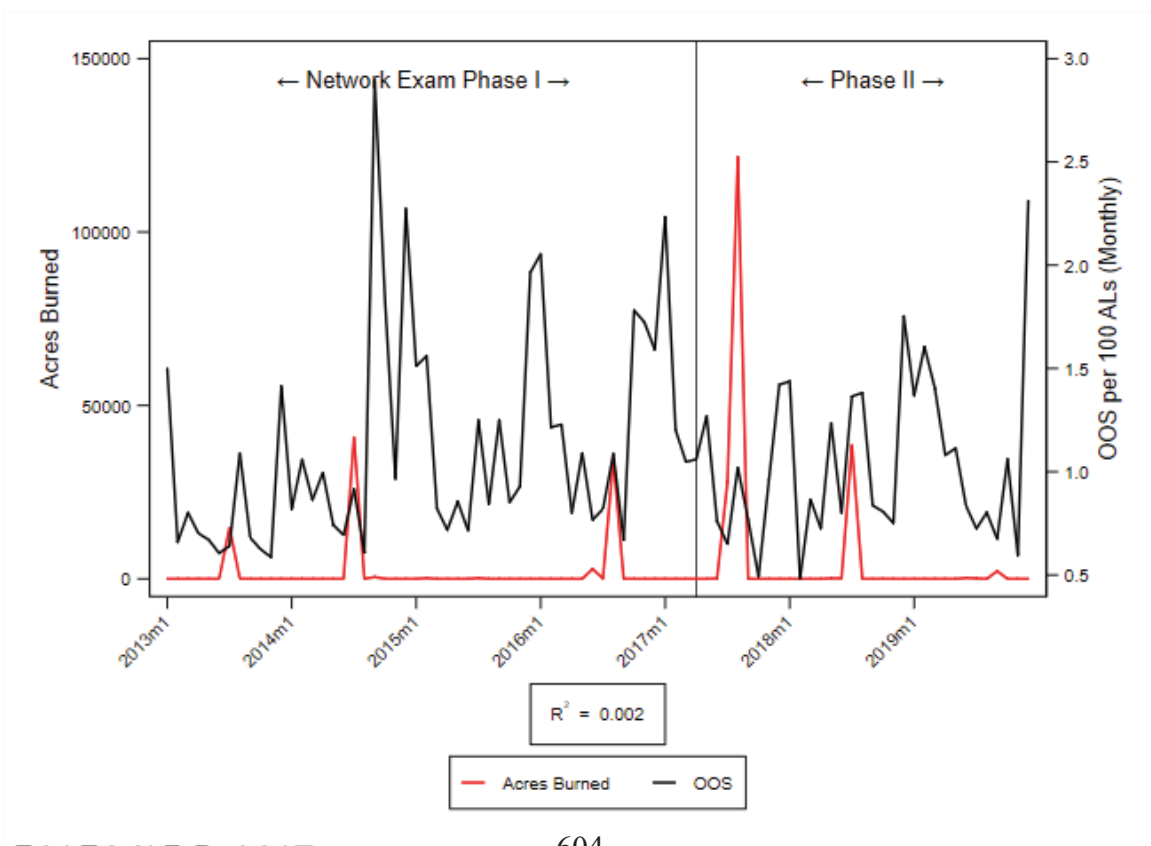
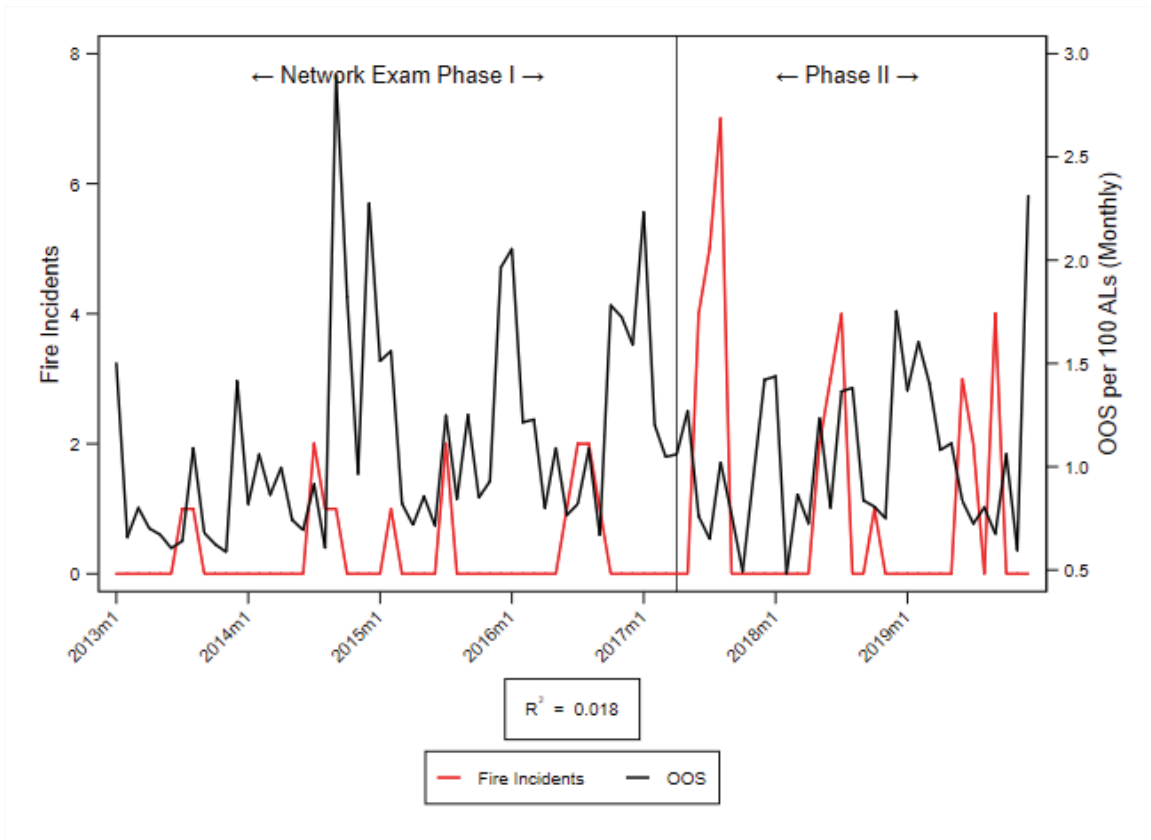
COUNTY-REGION SHASTA - SUPERIOR CALIFORNIA (AT&T)



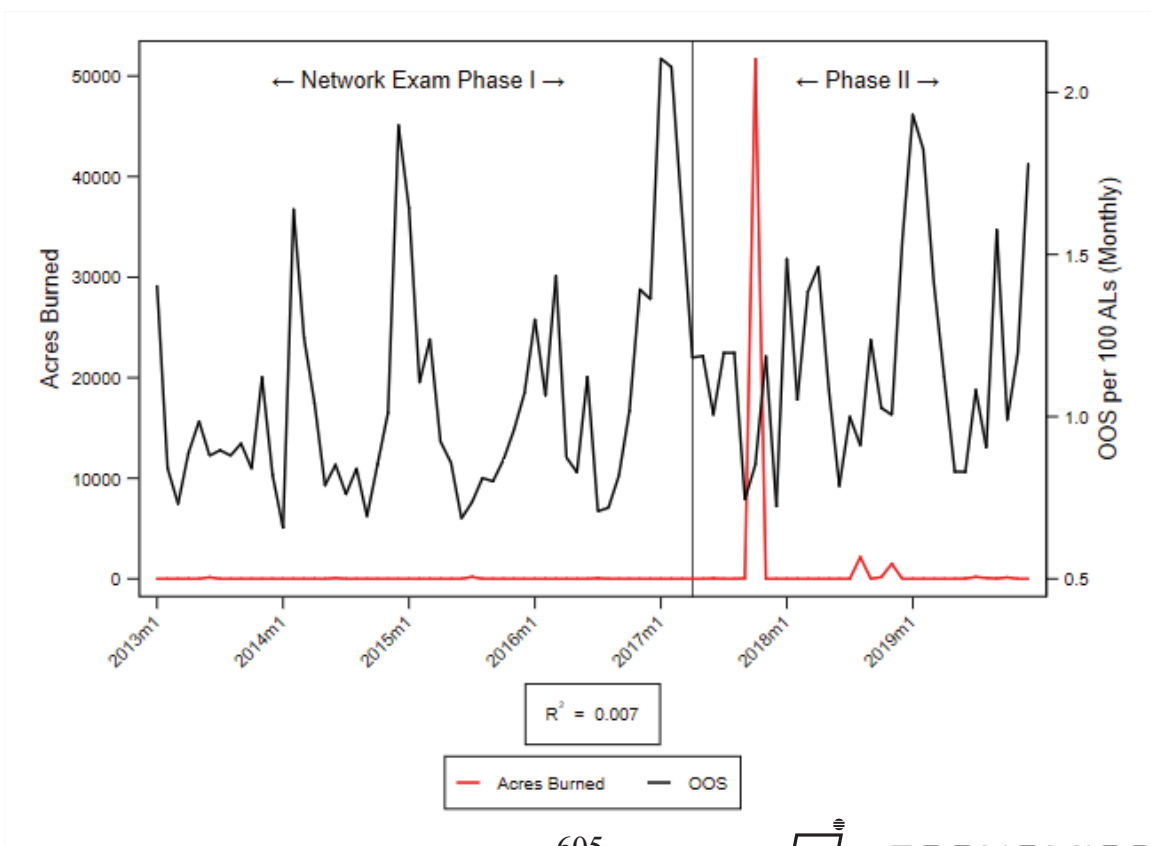
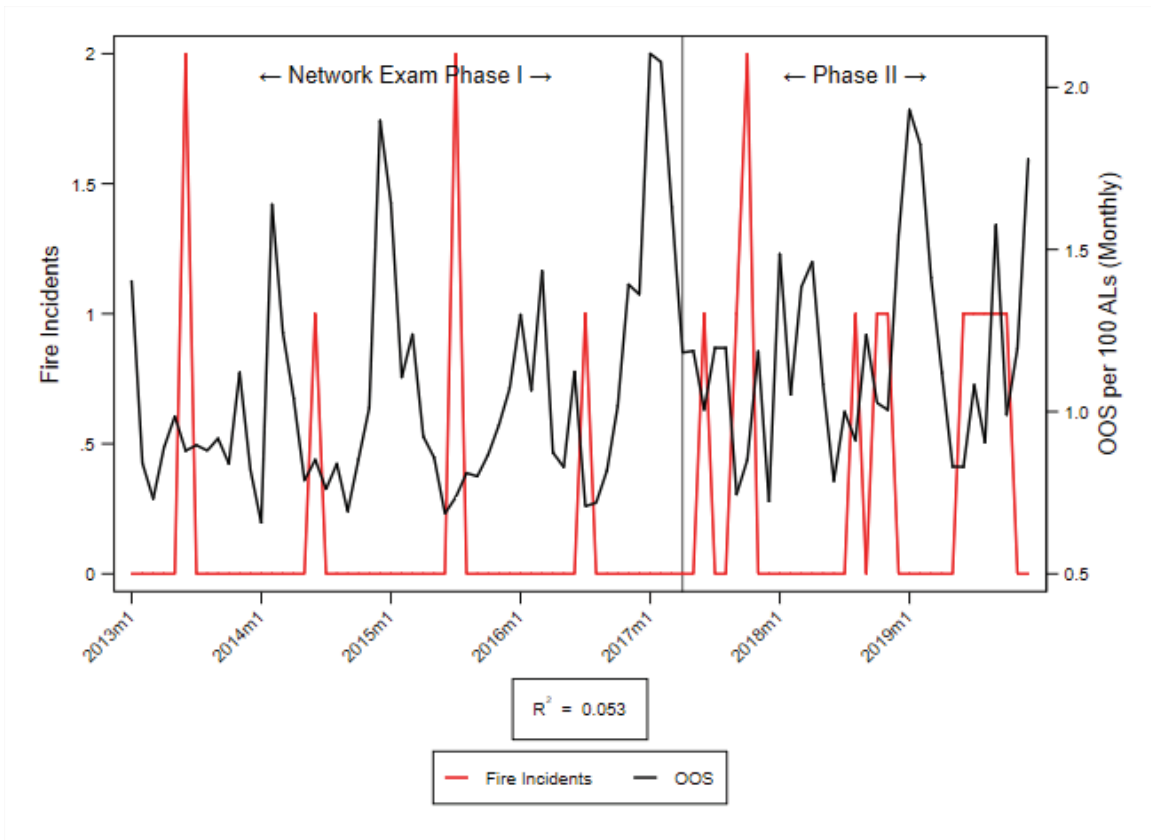
COUNTY-REGION SIERRA - SUPERIOR CALIFORNIA (AT&T)



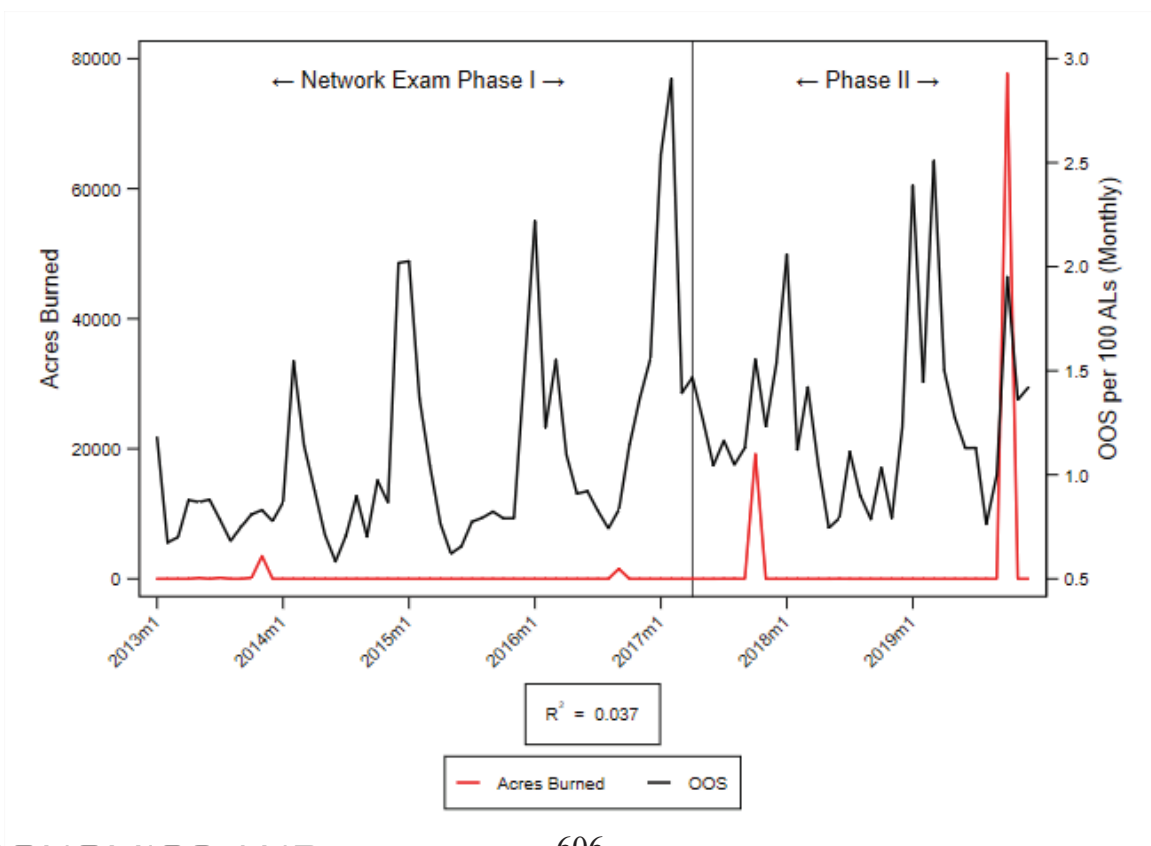
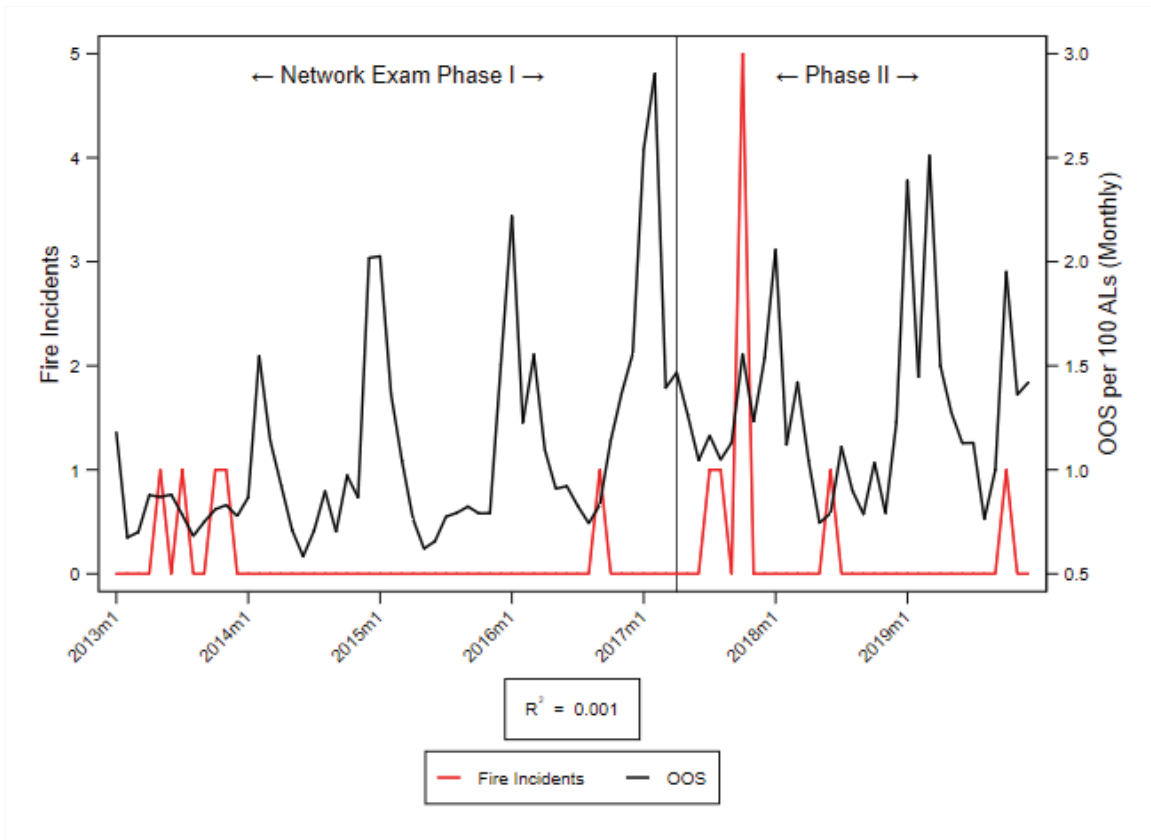
COUNTY-REGION SISKIYOU - SUPERIOR CALIFORNIA (AT&T)



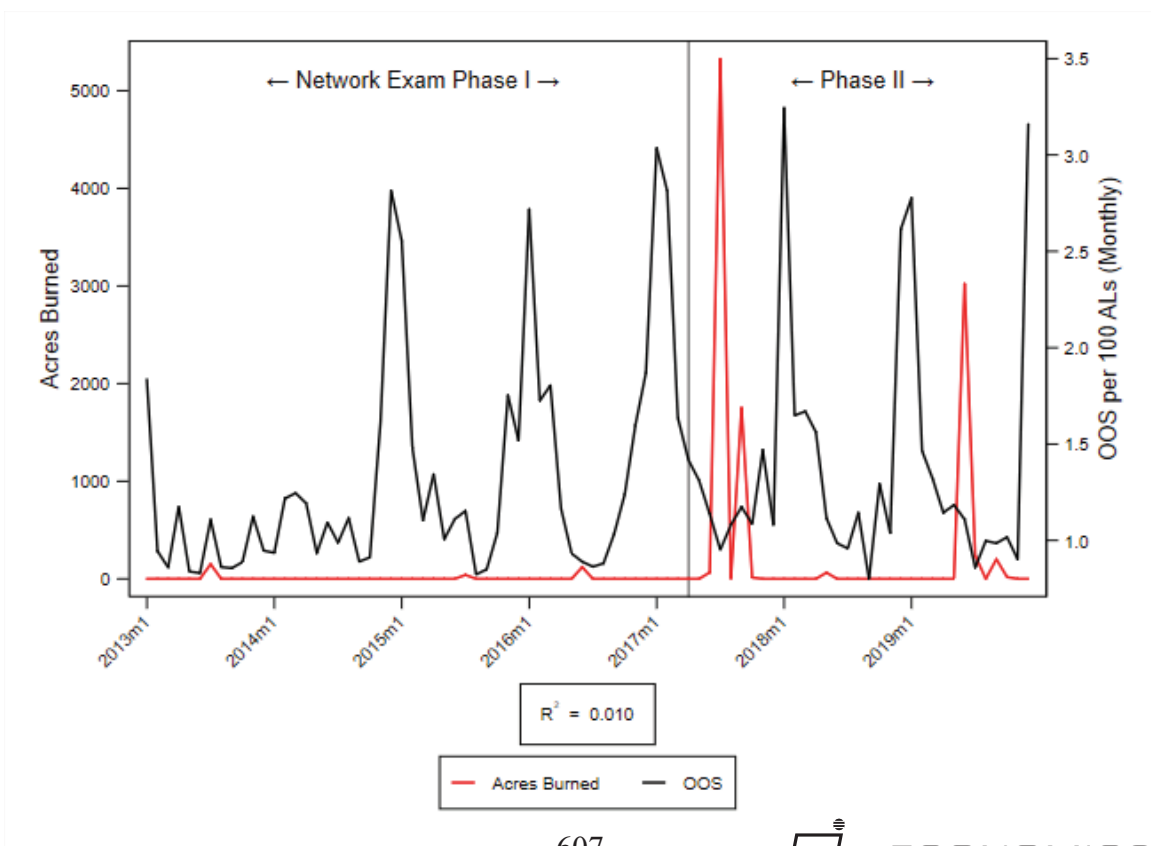
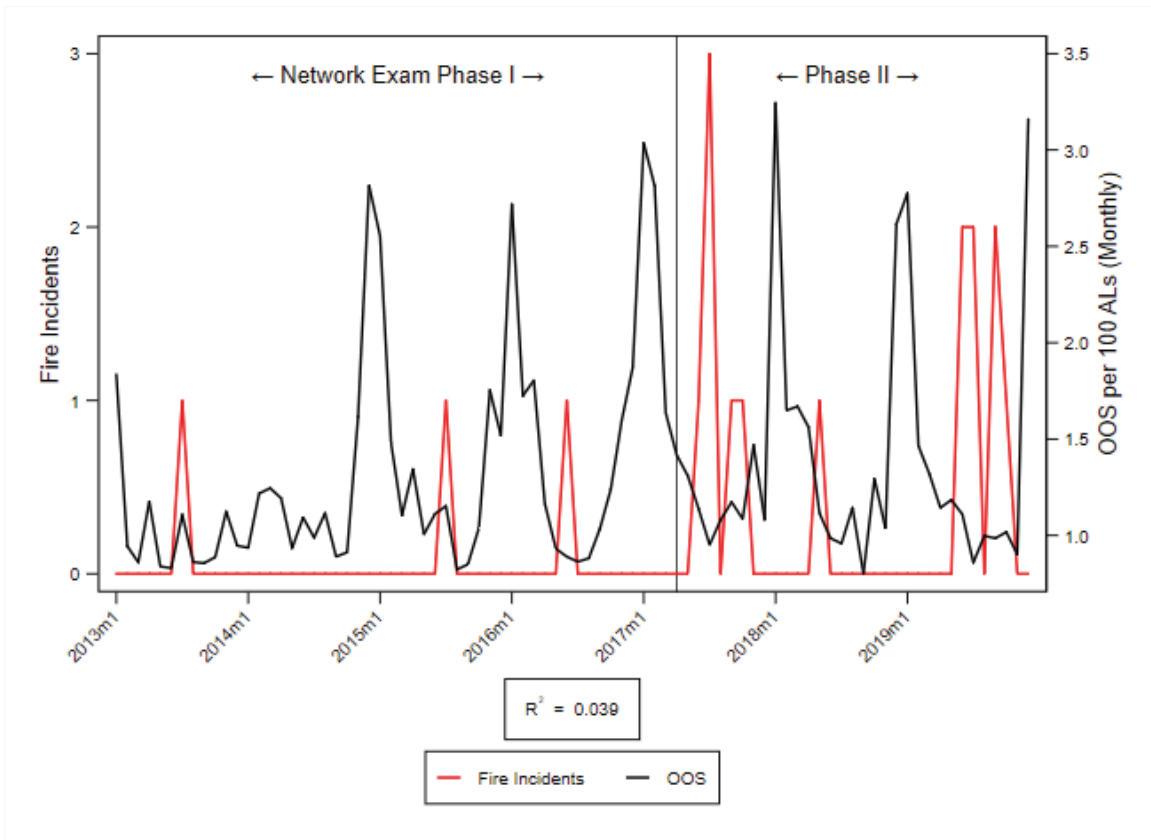
COUNTY-REGION SOLANO - SAN FRANCISCO BAY AREA (AT&T)



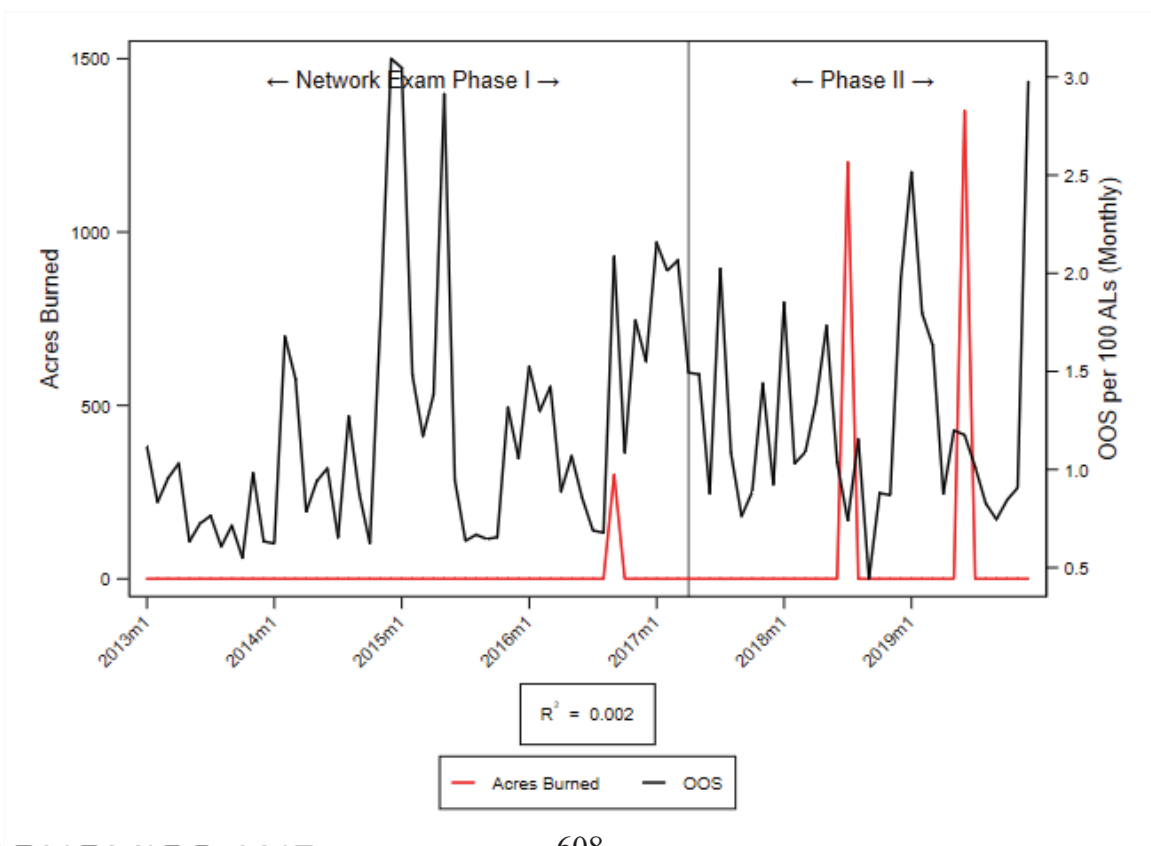
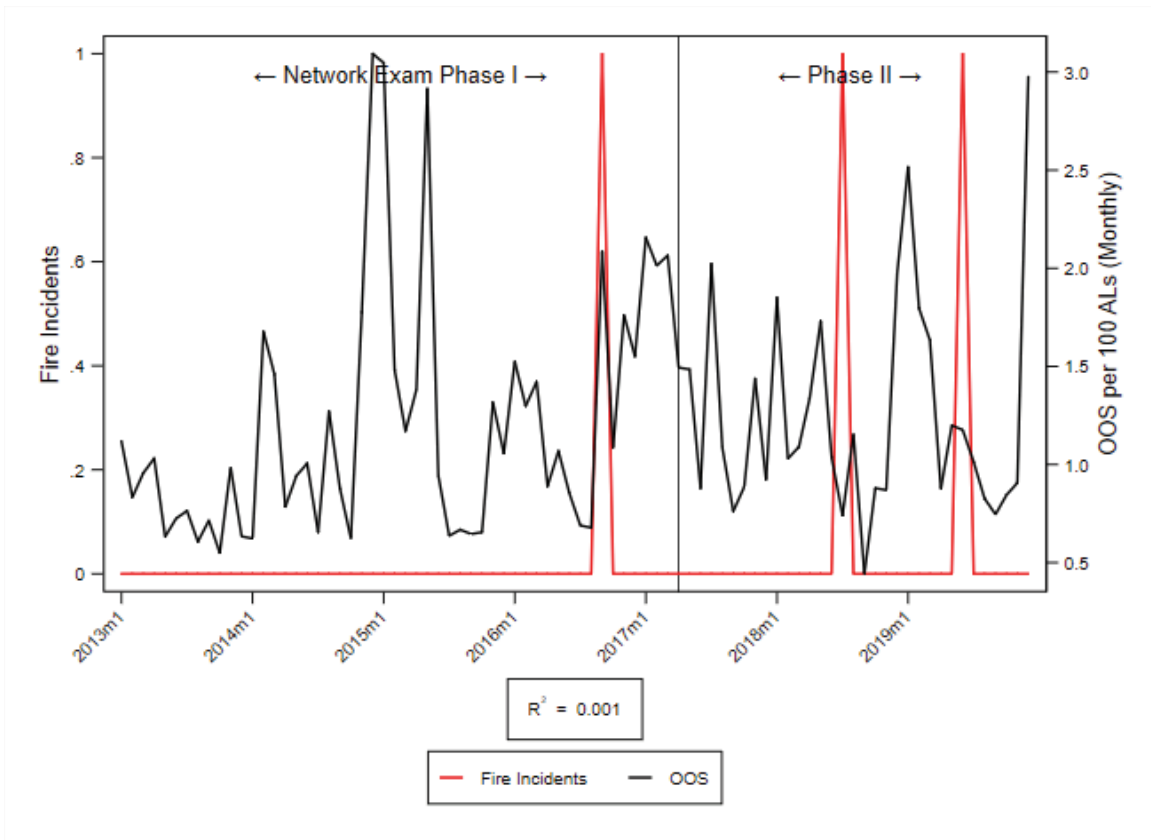
COUNTY-REGION SONOMA - NORTH COAST (AT&T)



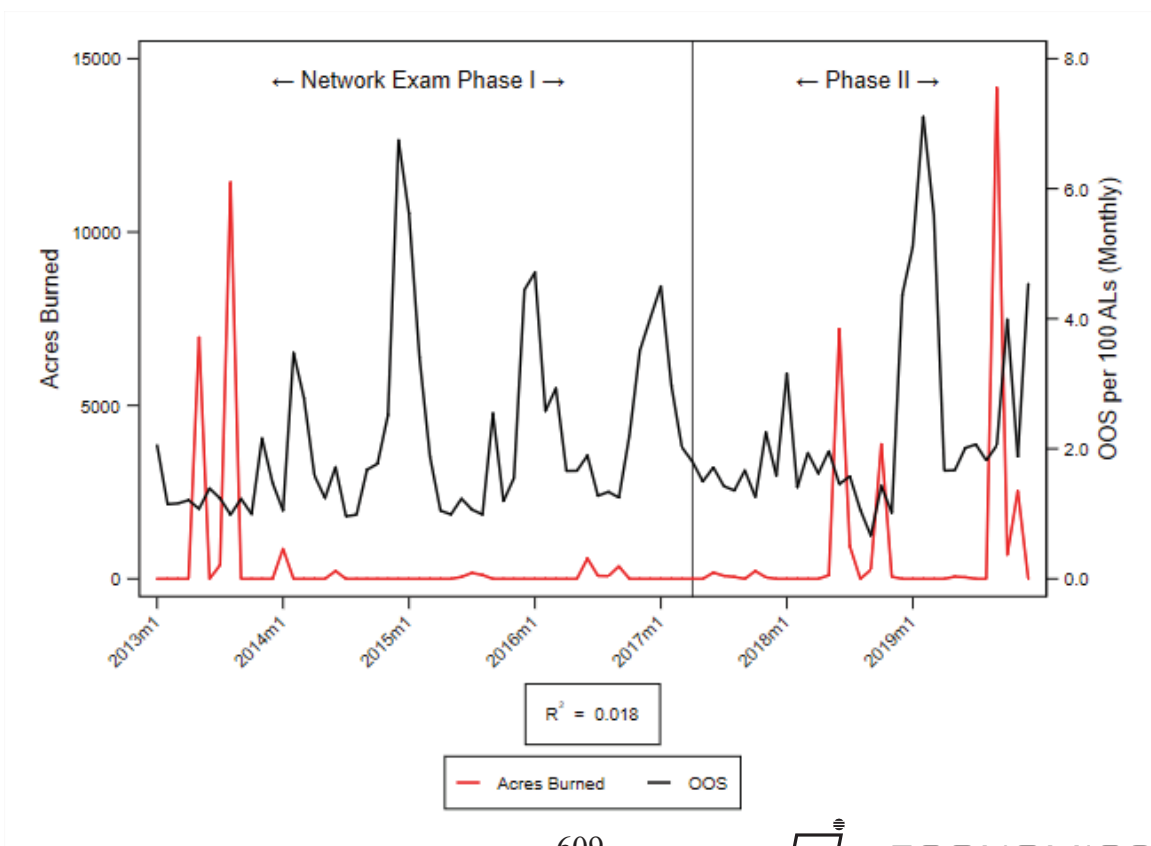
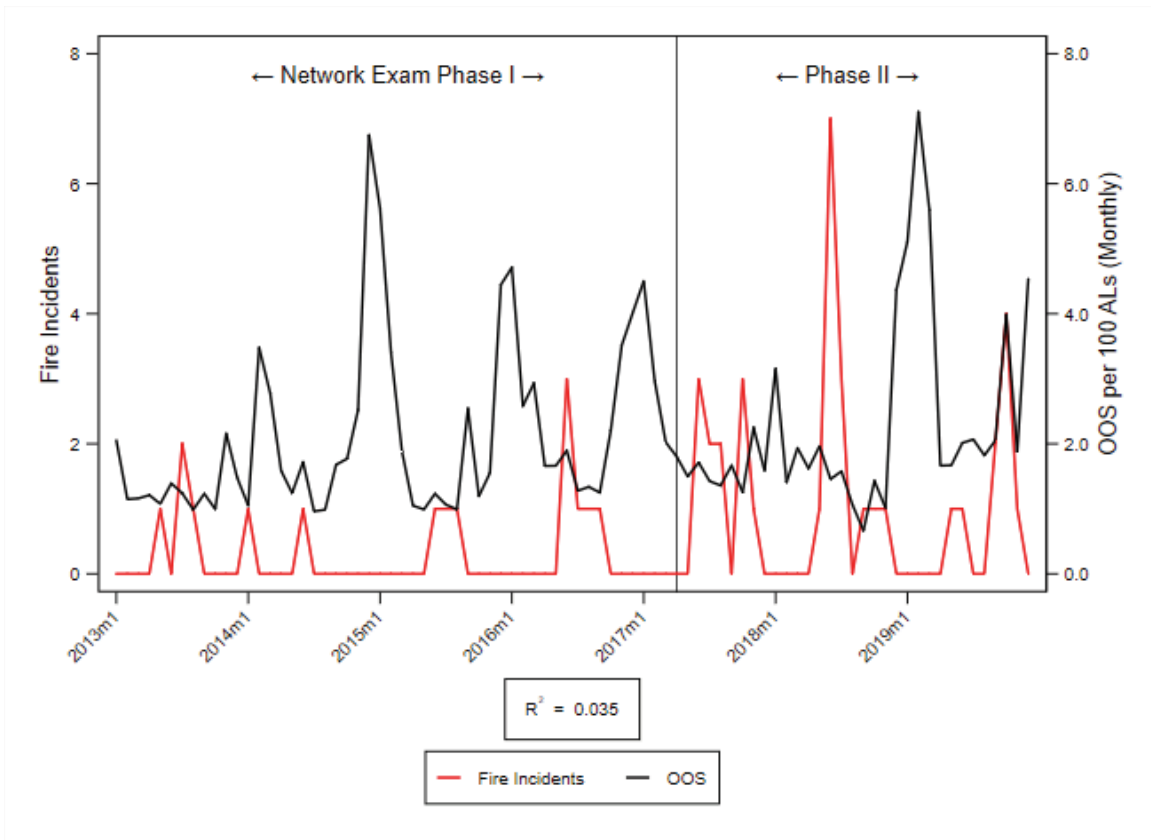
COUNTY-REGION STANISLAUS - NORTHERN SAN JOAQUIN VALLEY (AT&T)



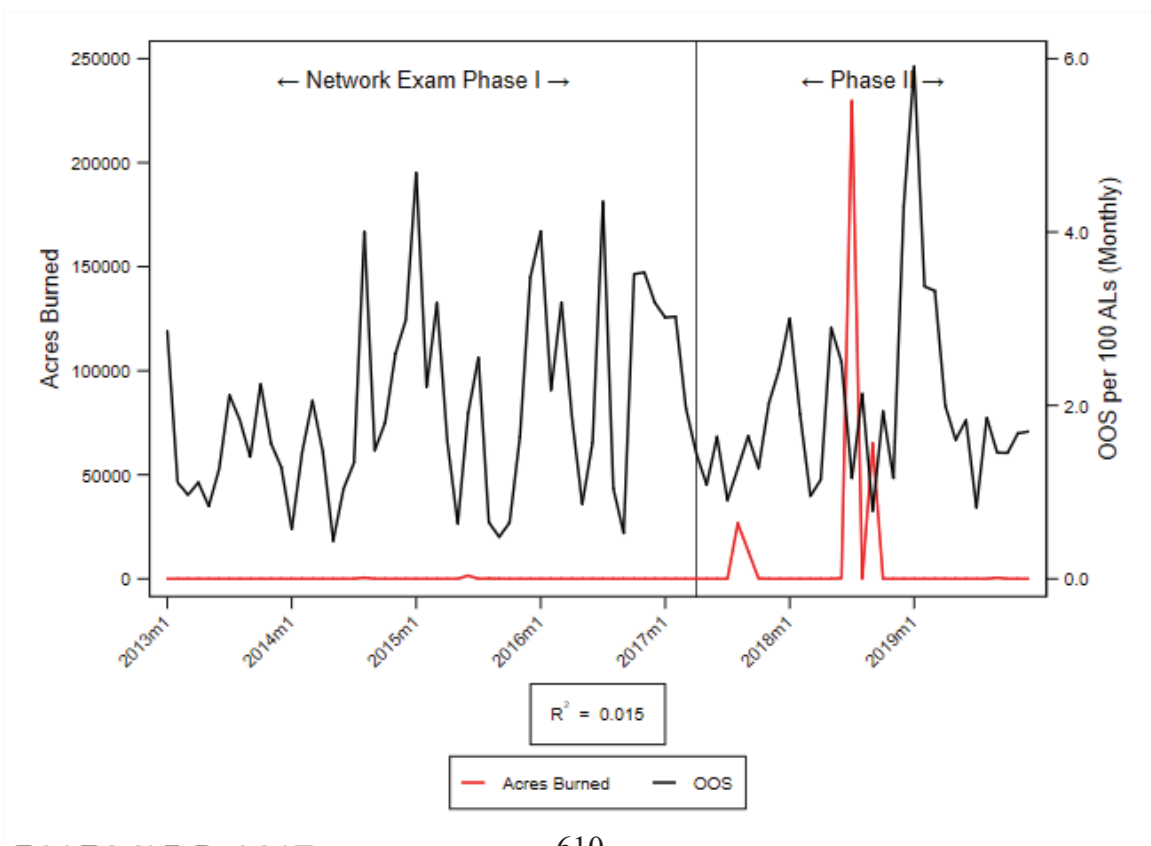
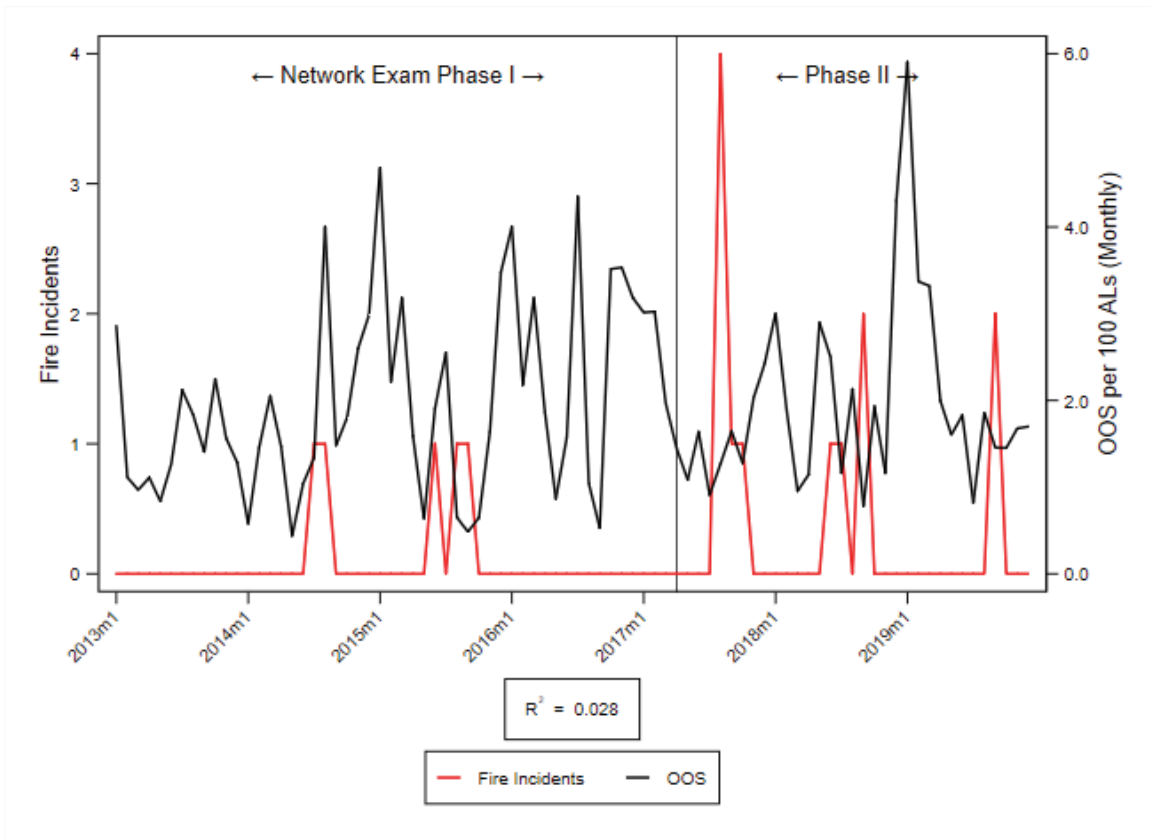
COUNTY-REGION SUTTER - SUPERIOR CALIFORNIA (AT&T)



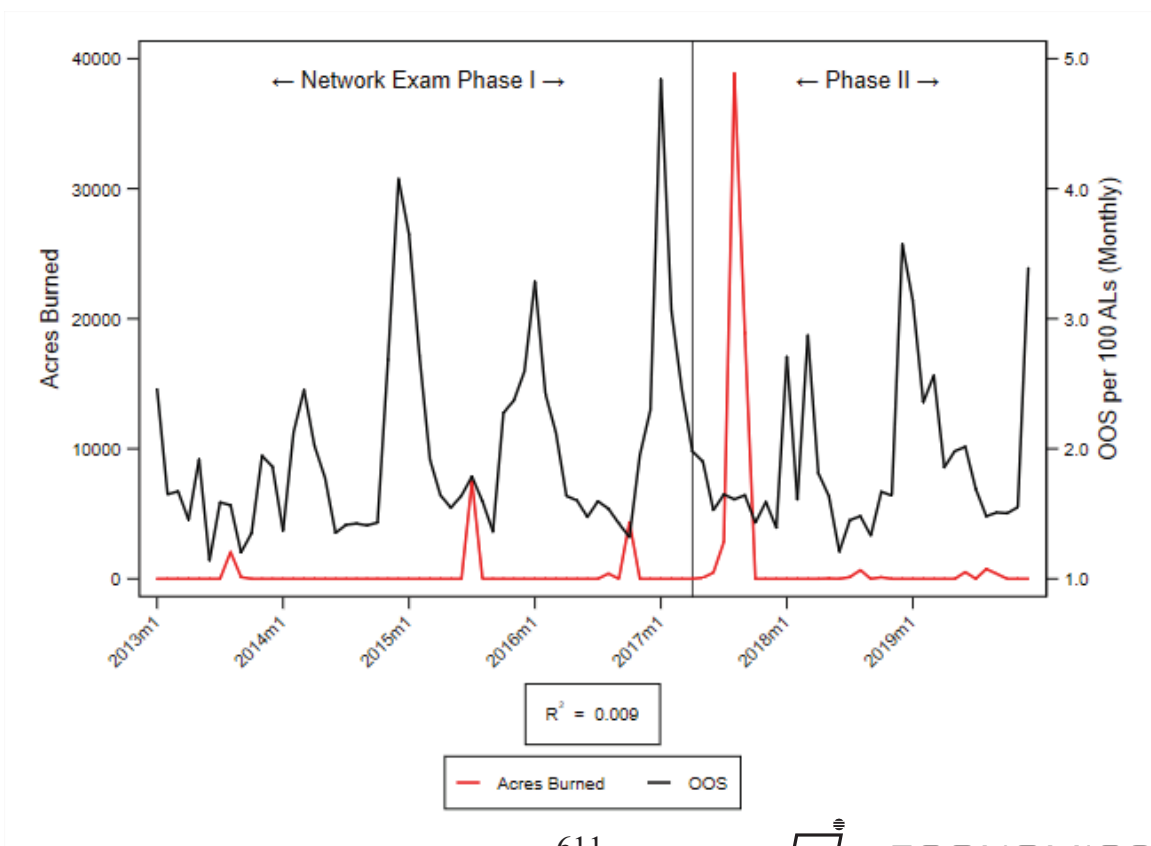
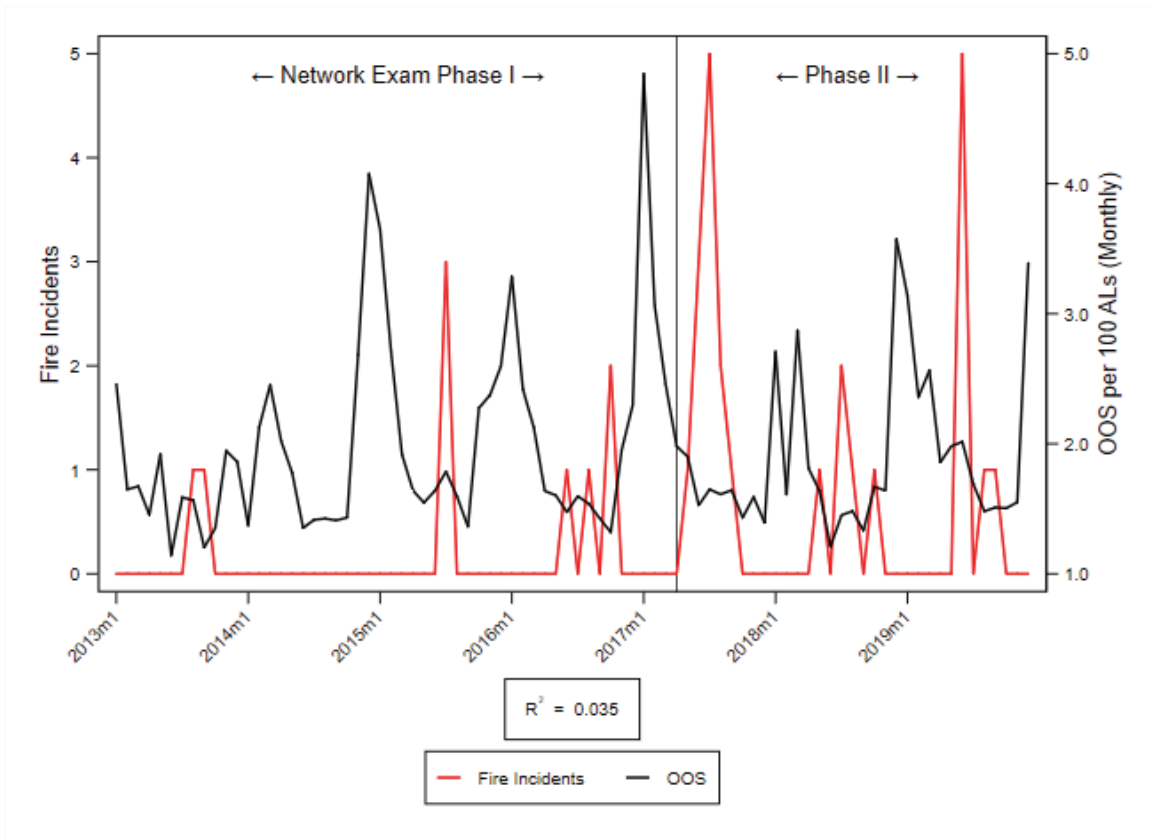
COUNTY-REGION TEHAMA - SUPERIOR CALIFORNIA (AT&T)



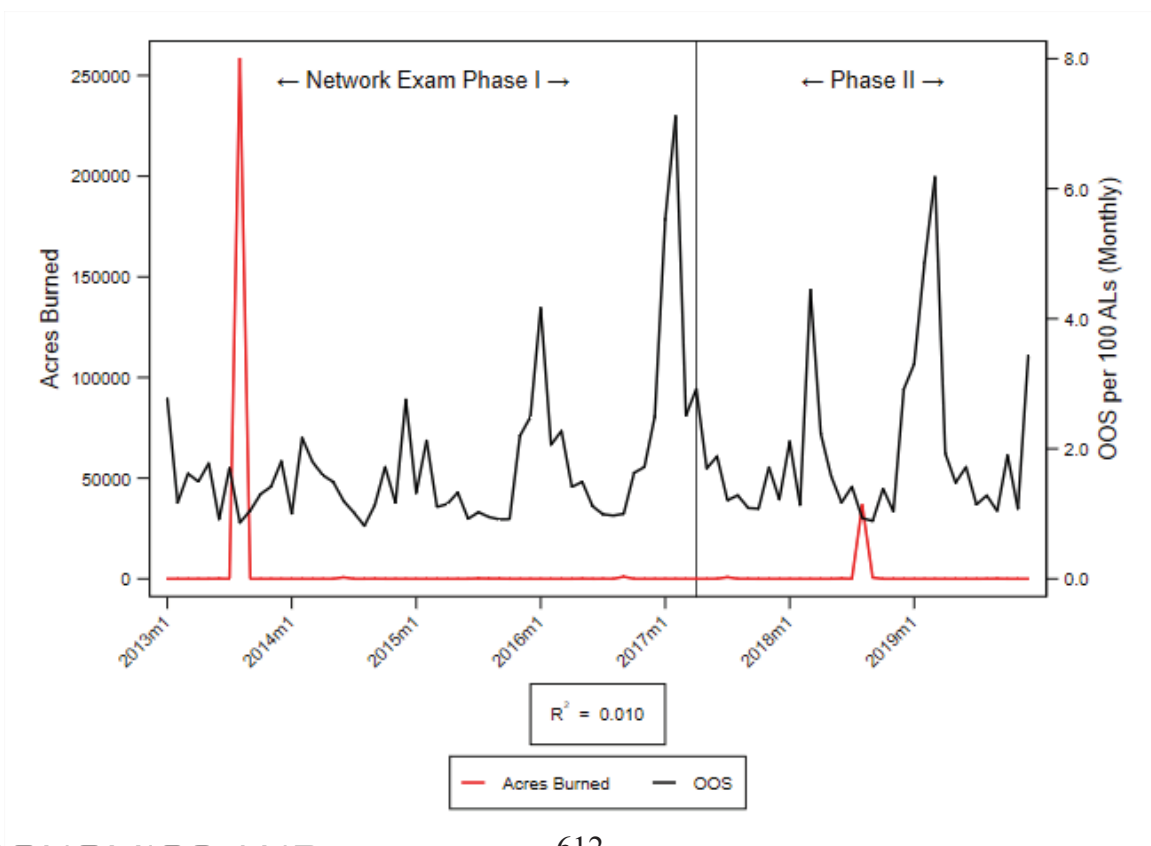
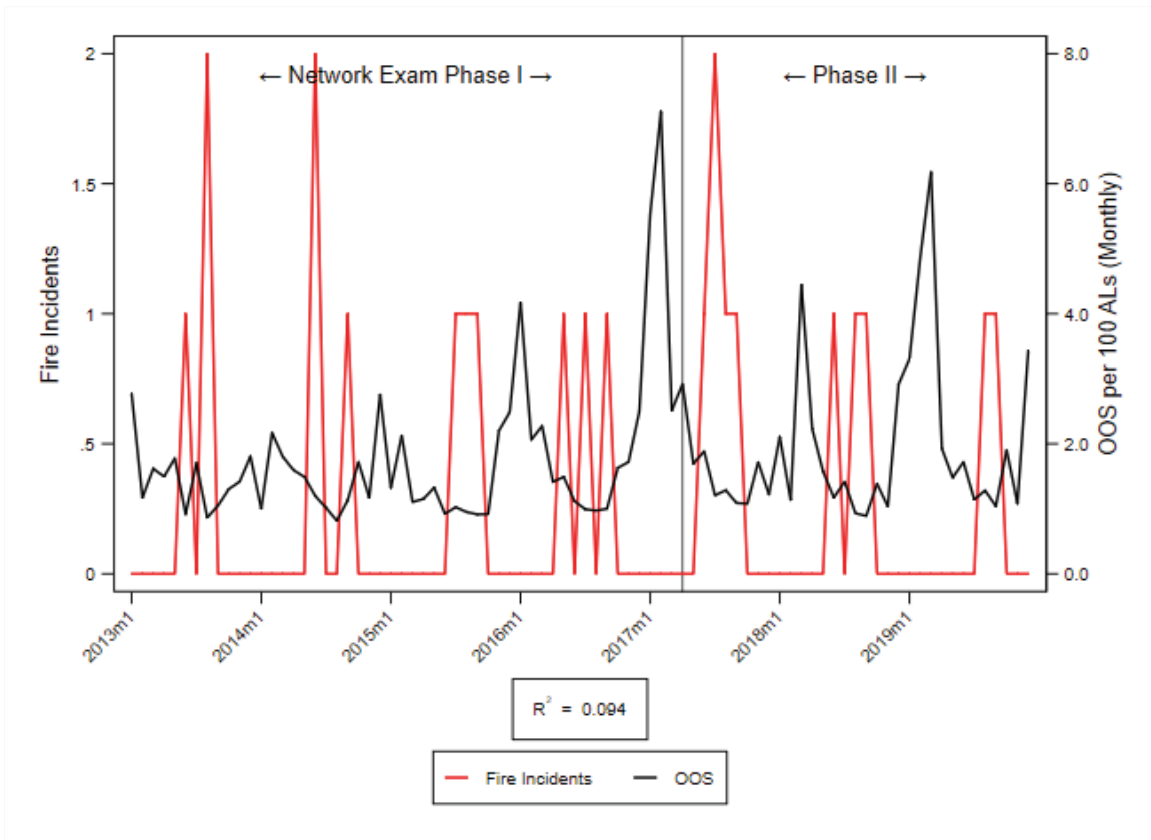
COUNTY-REGION TRINITY - NORTH COAST (AT&T)



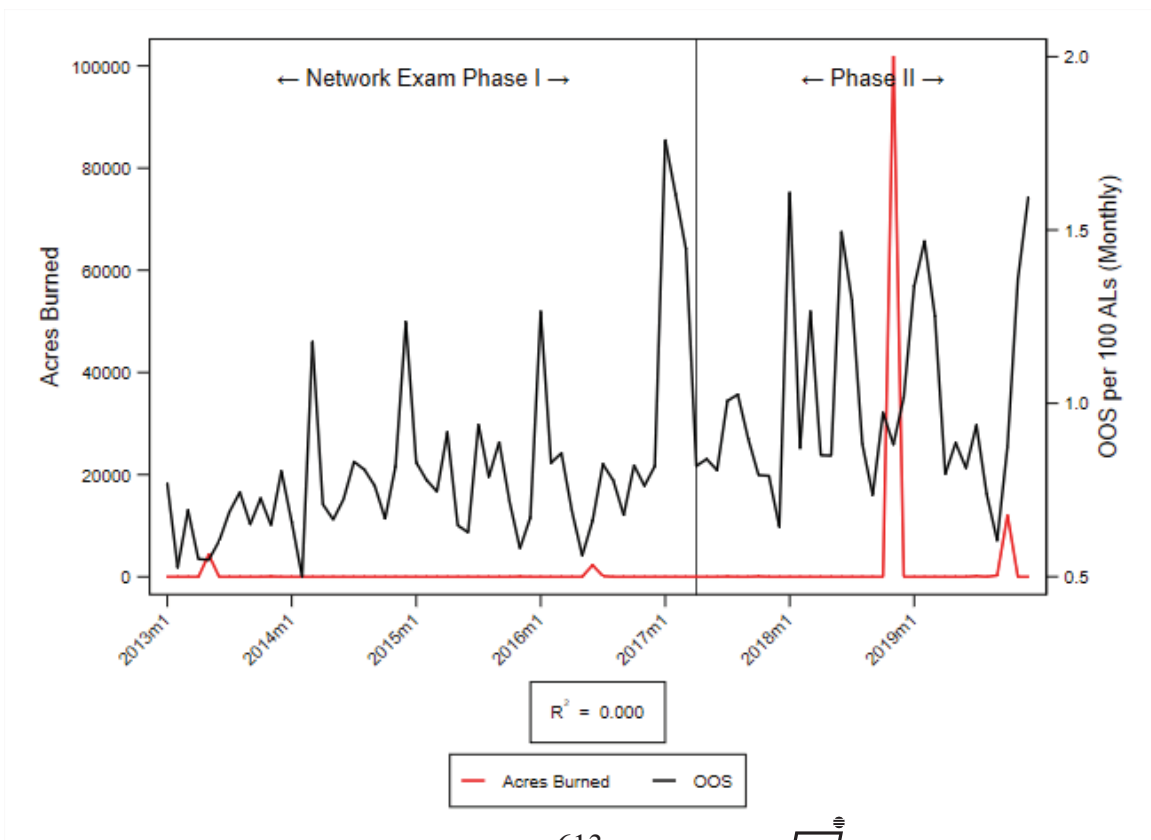
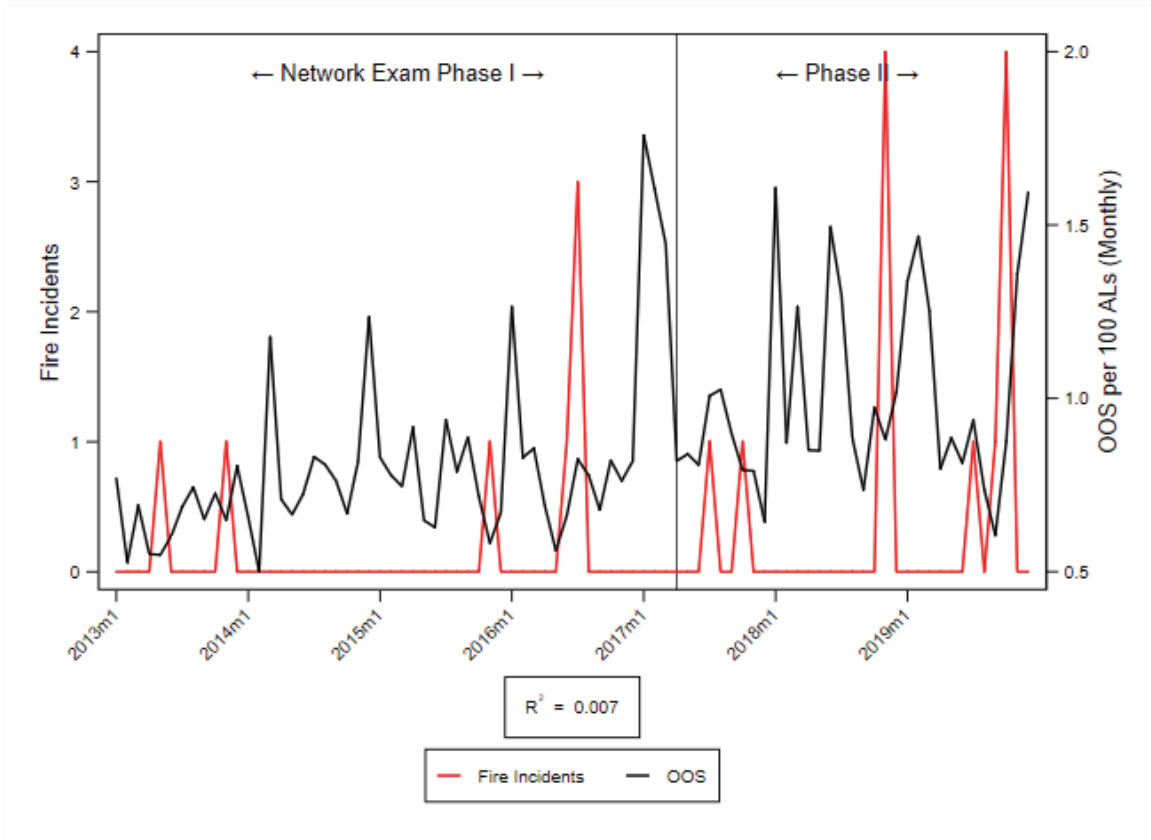
COUNTY-REGION TULARE - SOUTHERN SAN JOAQUIN VALLEY (AT&T)



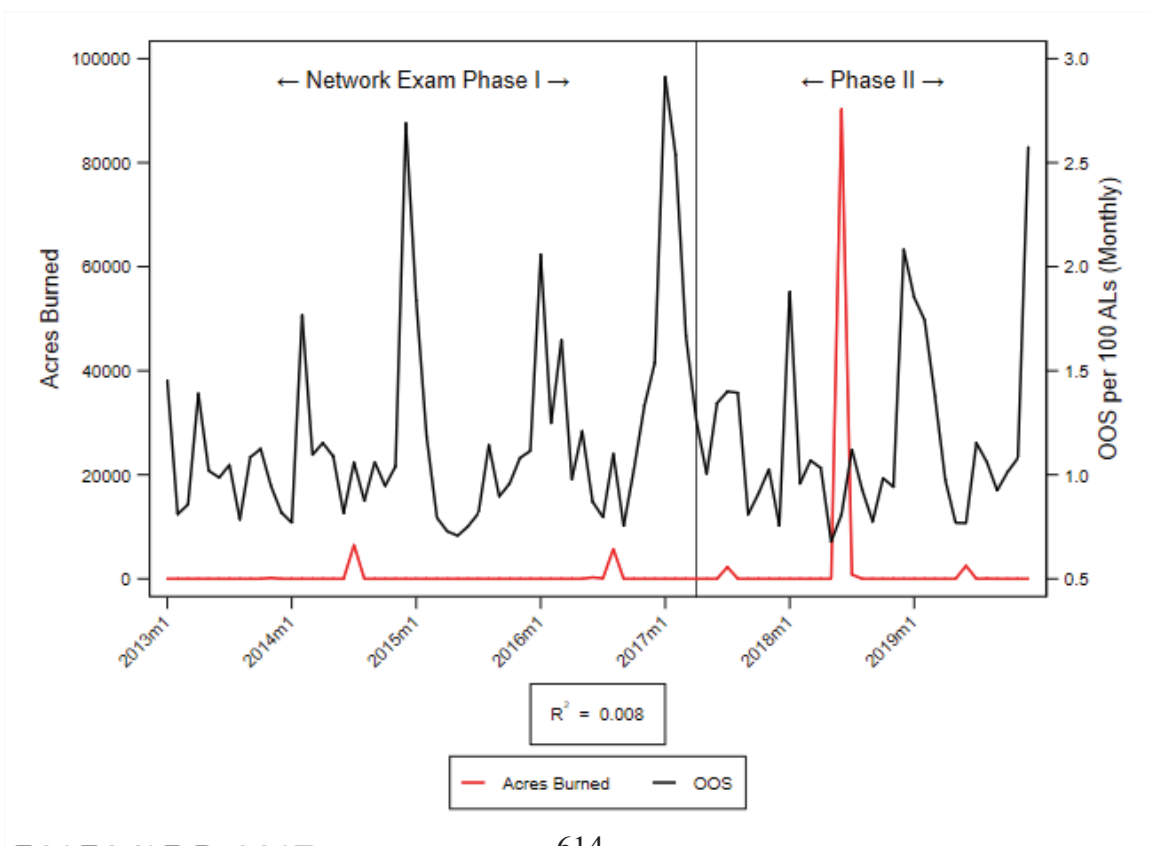
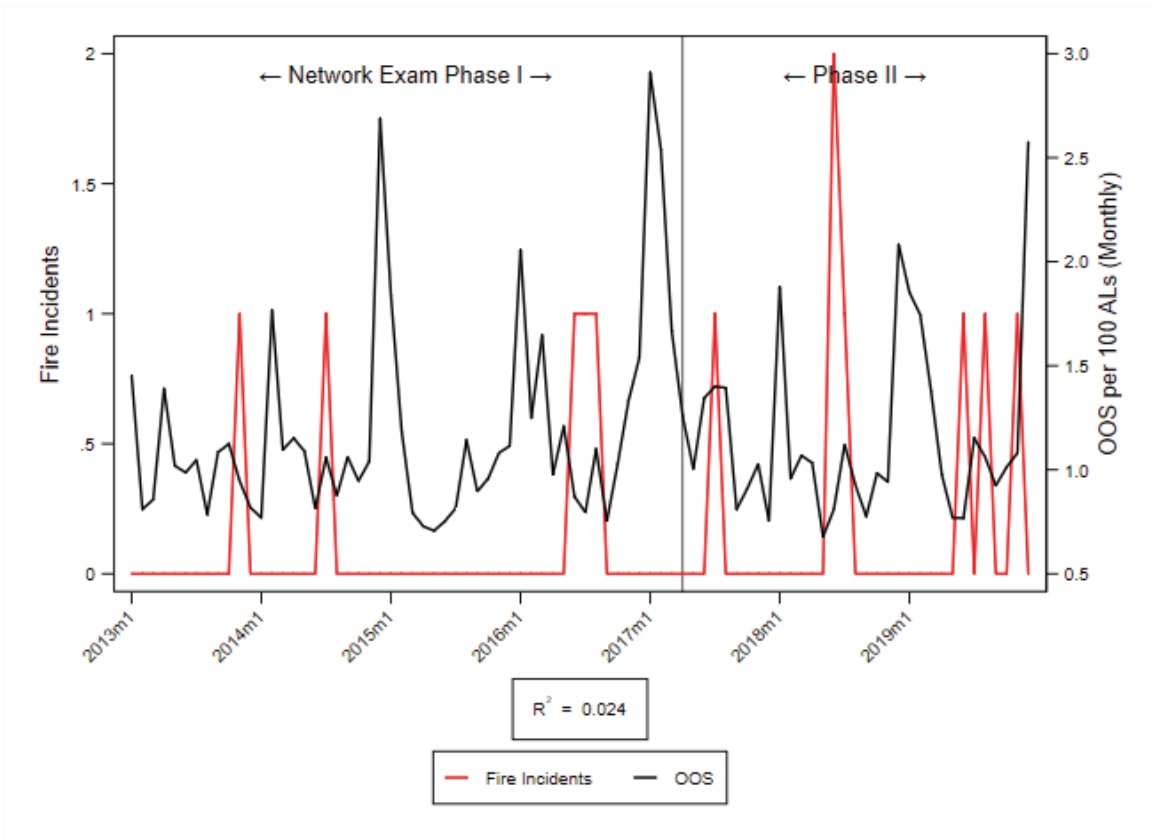
COUNTY-REGION TUOLUMNE - NORTHERN SAN JOAQUIN VALLEY (AT&T)



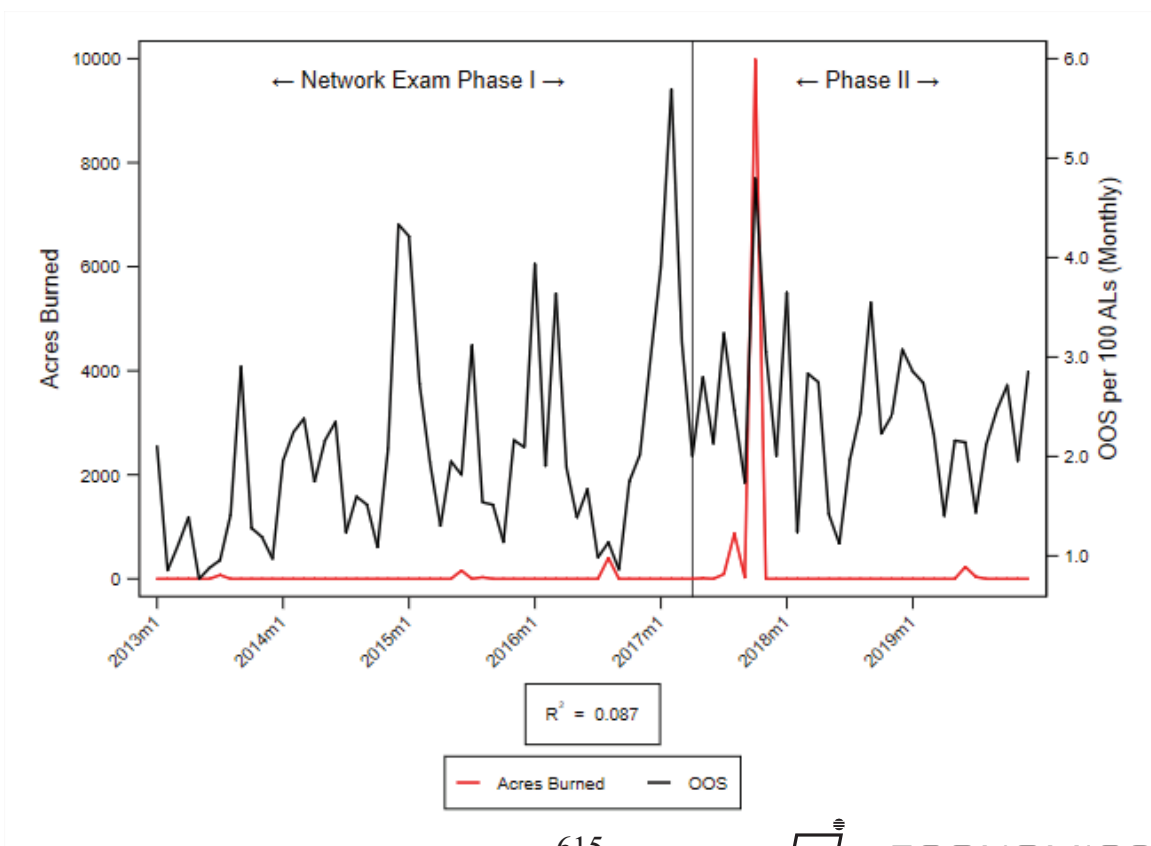
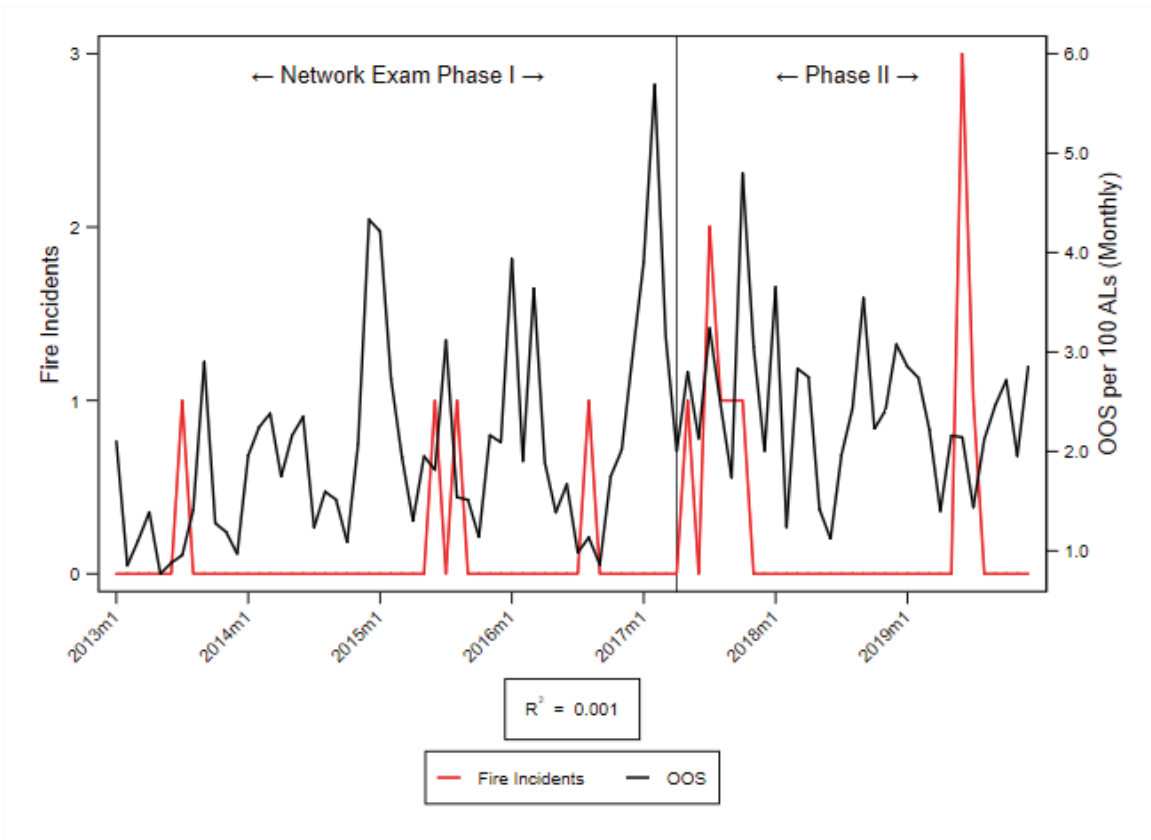
COUNTY-REGION VENTURA - CENTRAL COAST (AT&T)



COUNTY-REGION YOLO - SUPERIOR CALIFORNIA (AT&T)



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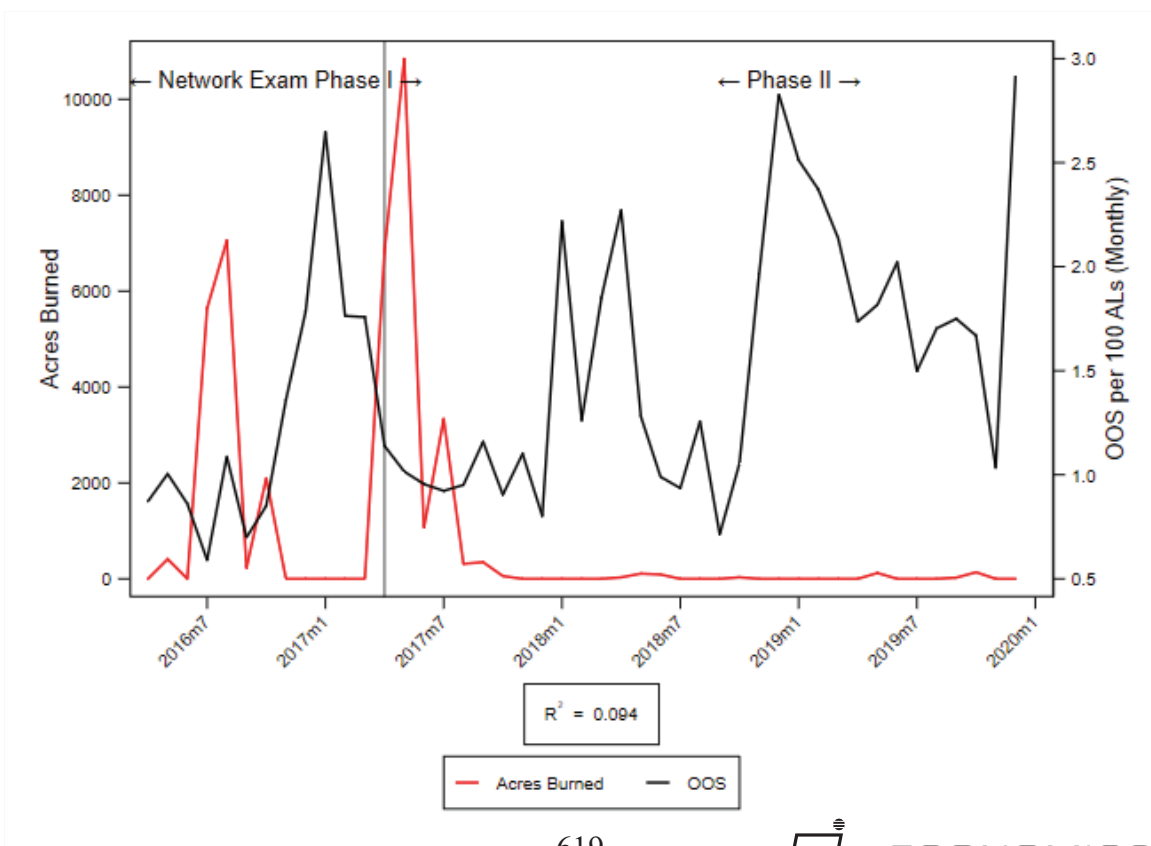
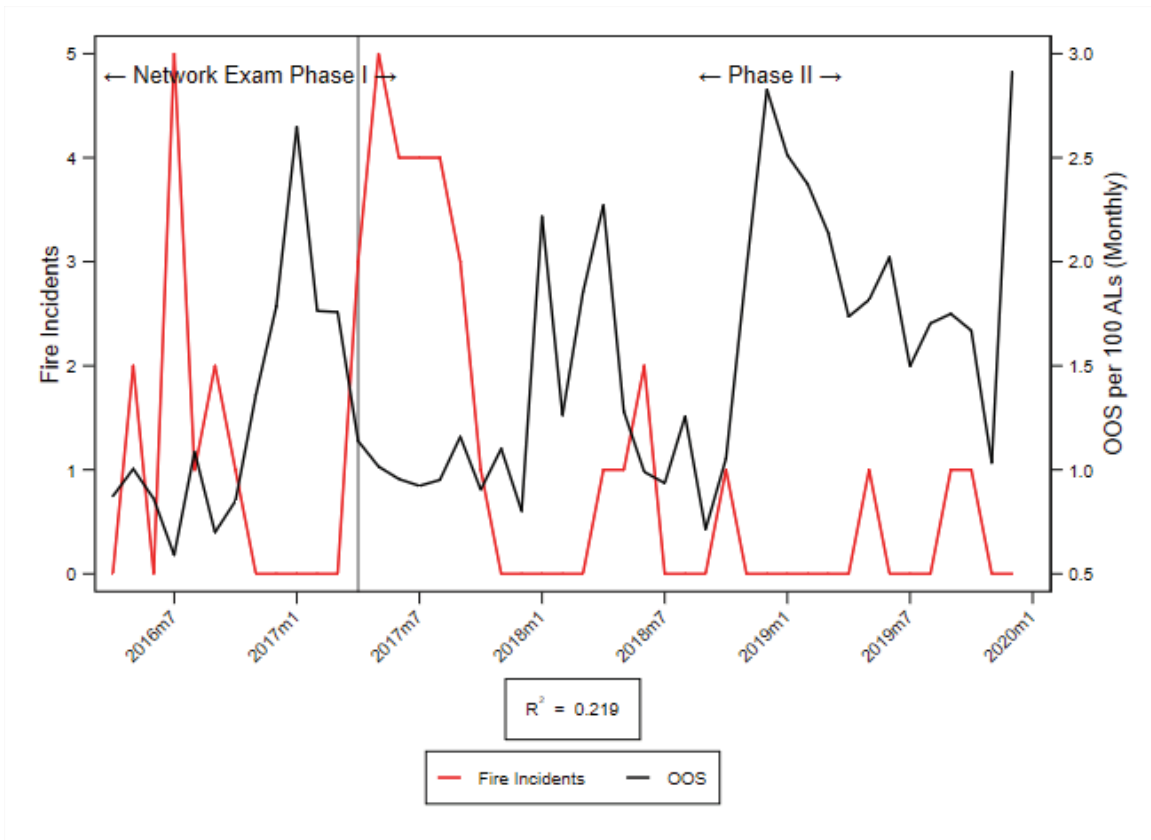


Appendix 13-2

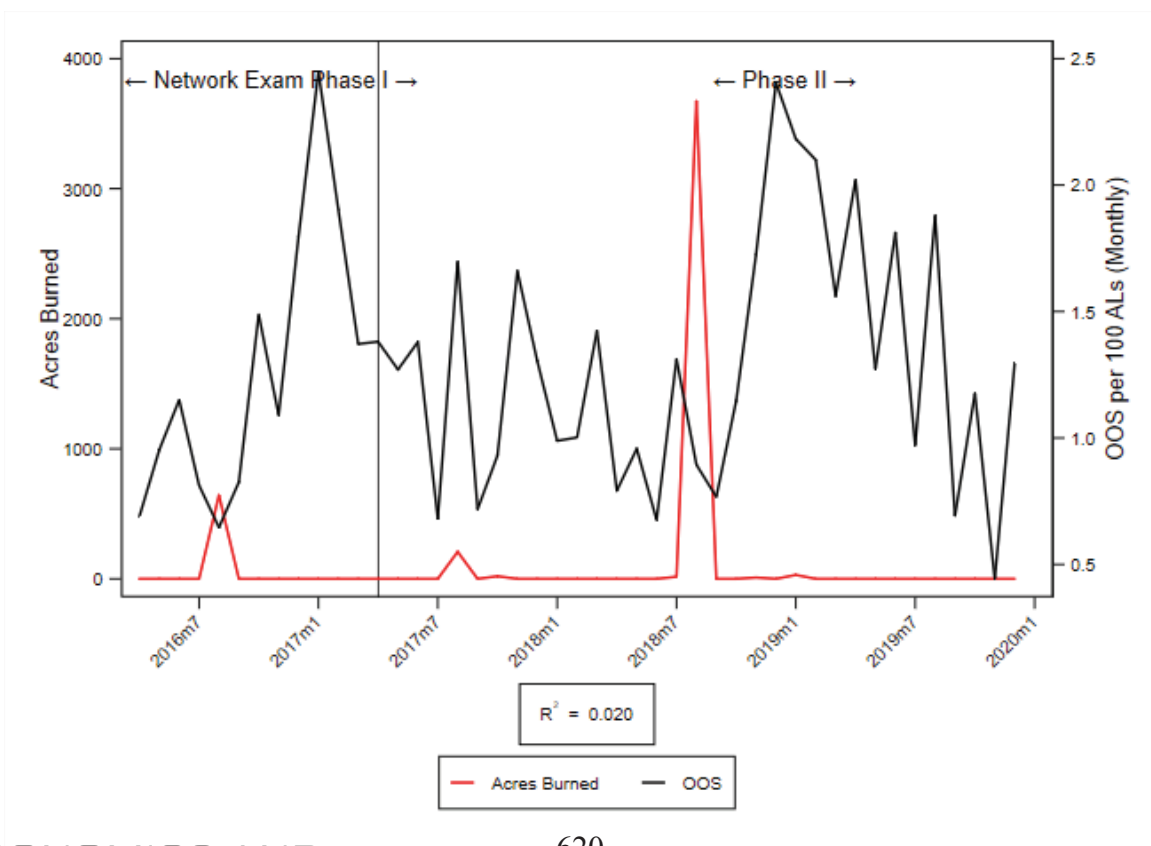
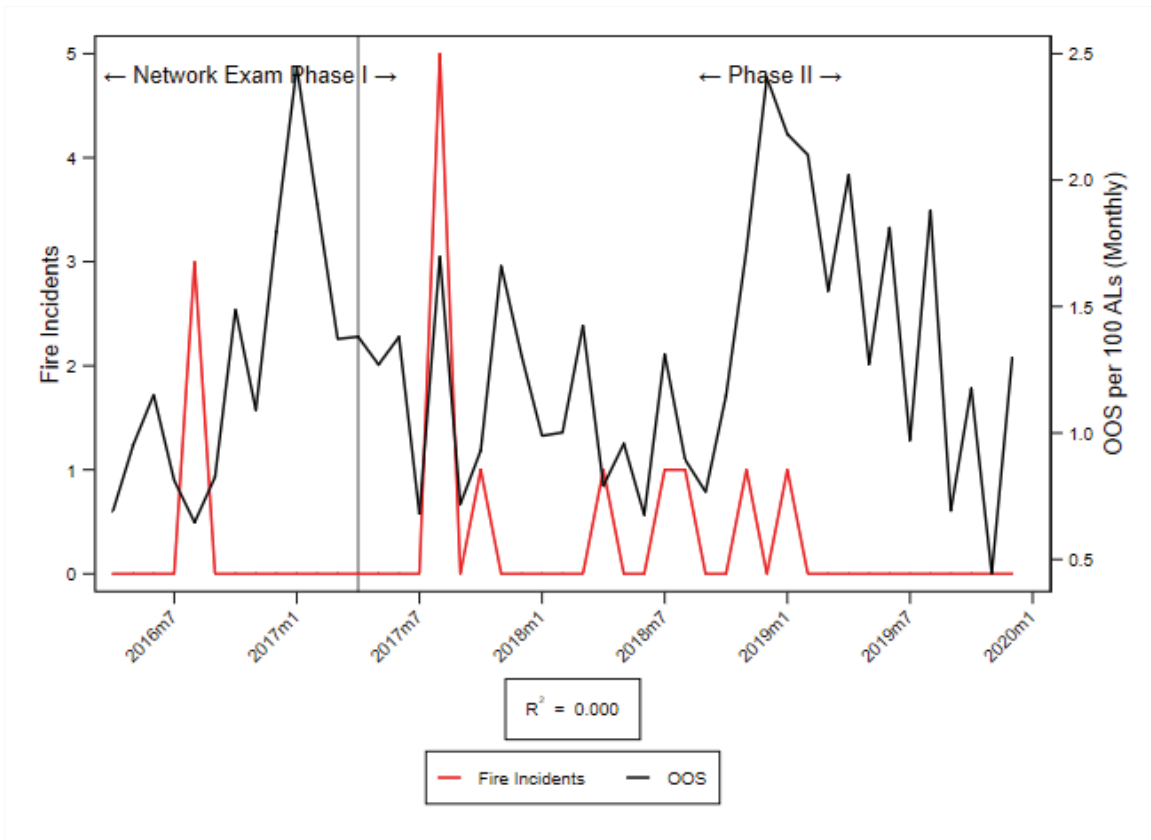
Frontier California

County-level Regression Analyses Wildfires vs. Telephone Service Outages

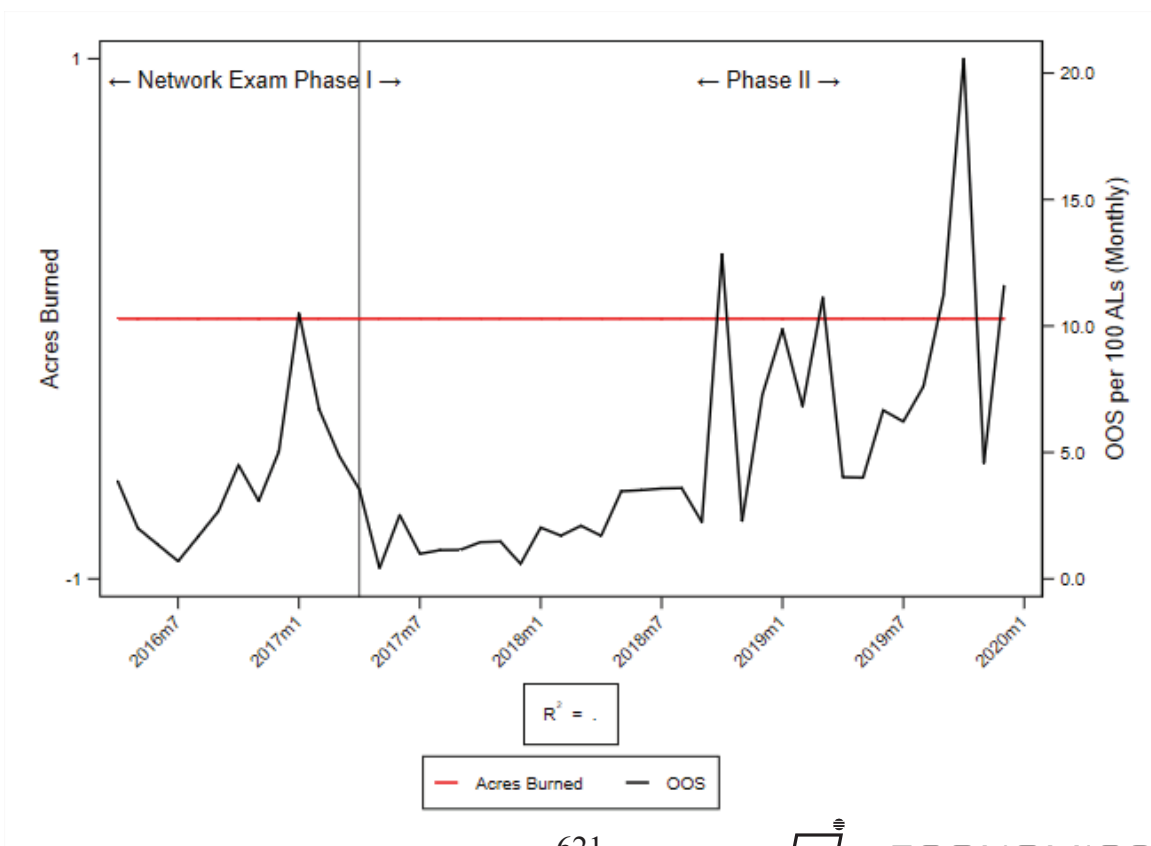
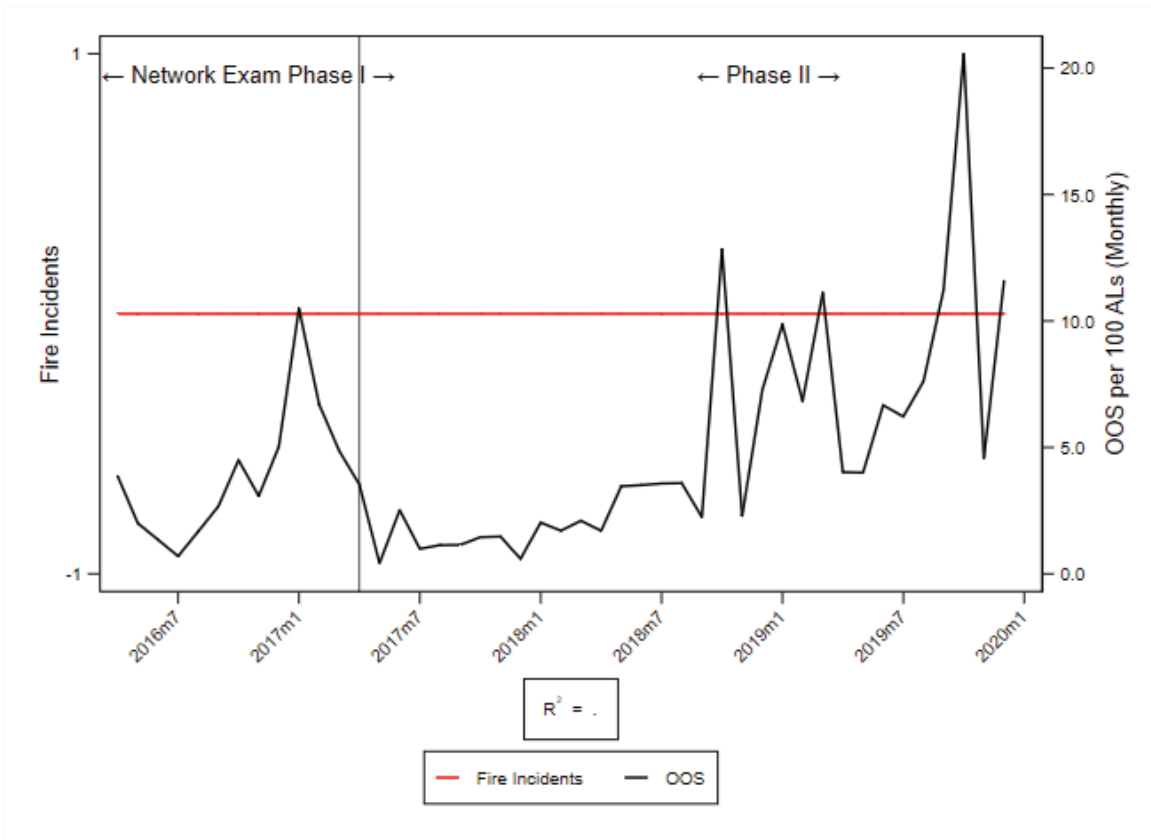
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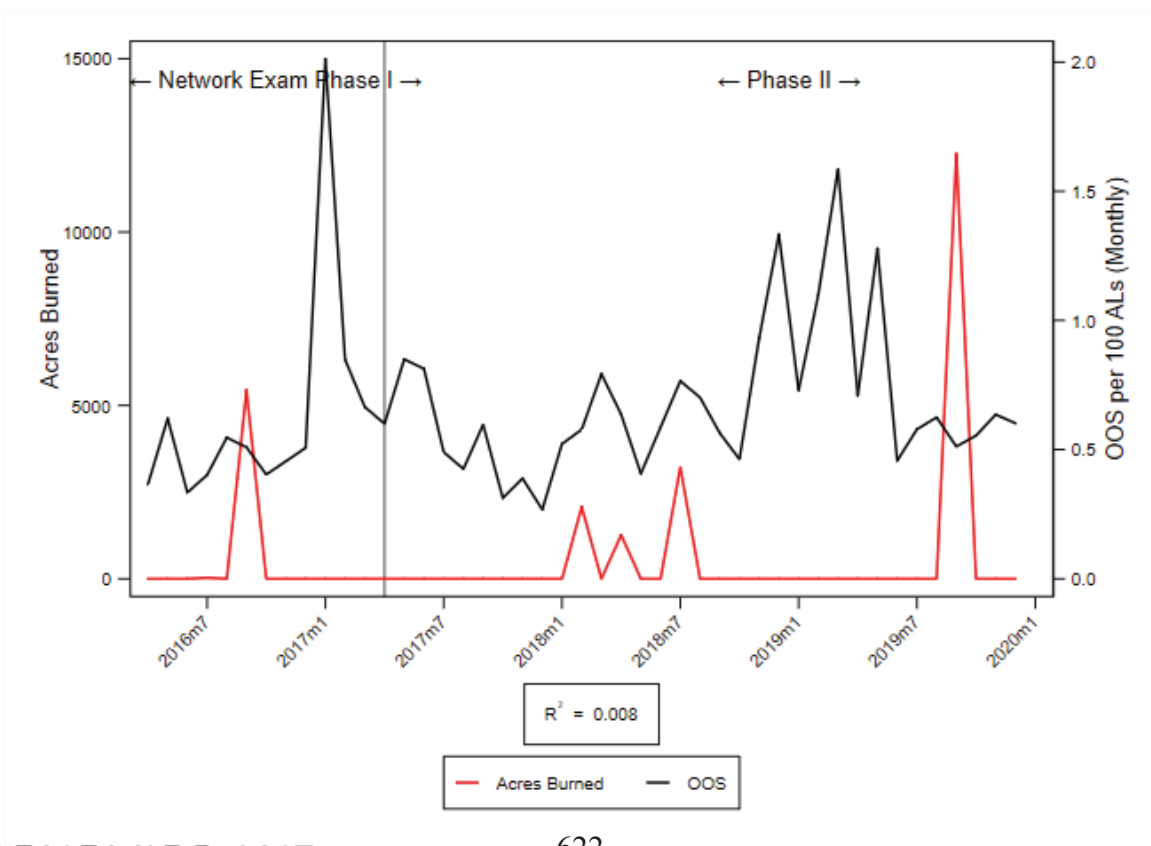
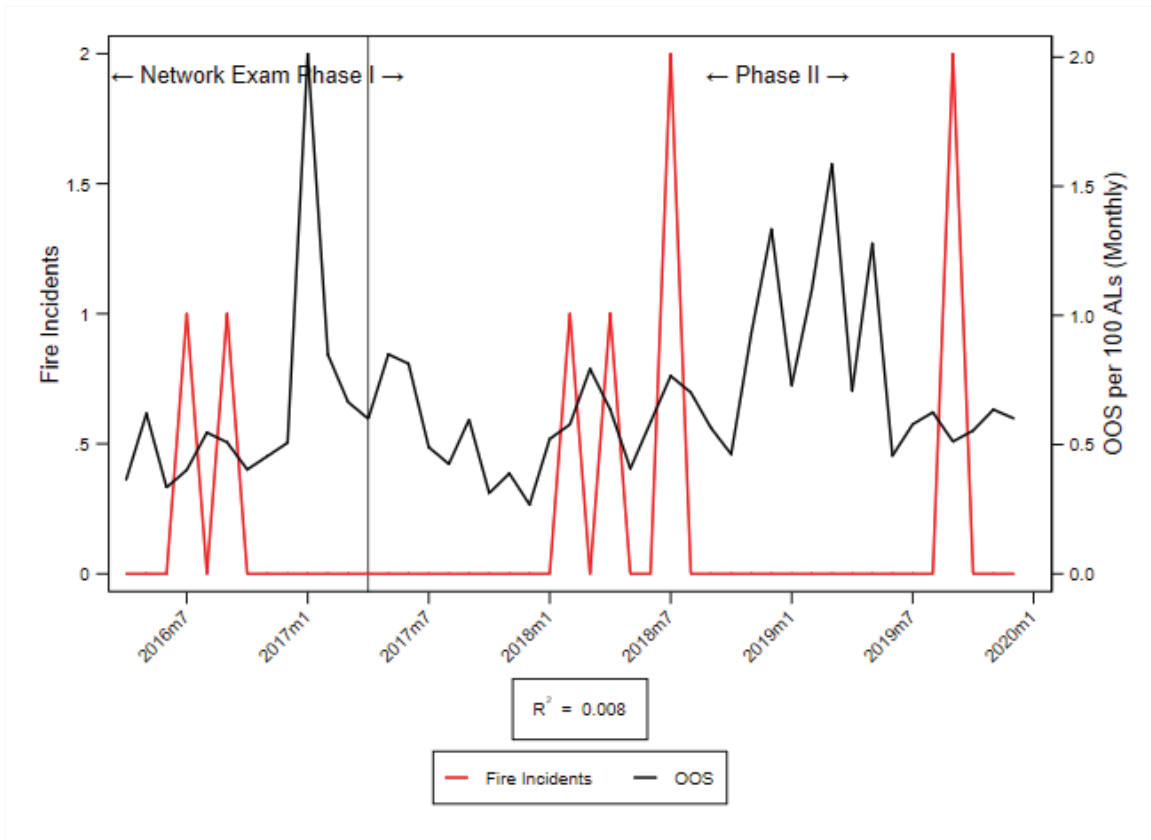
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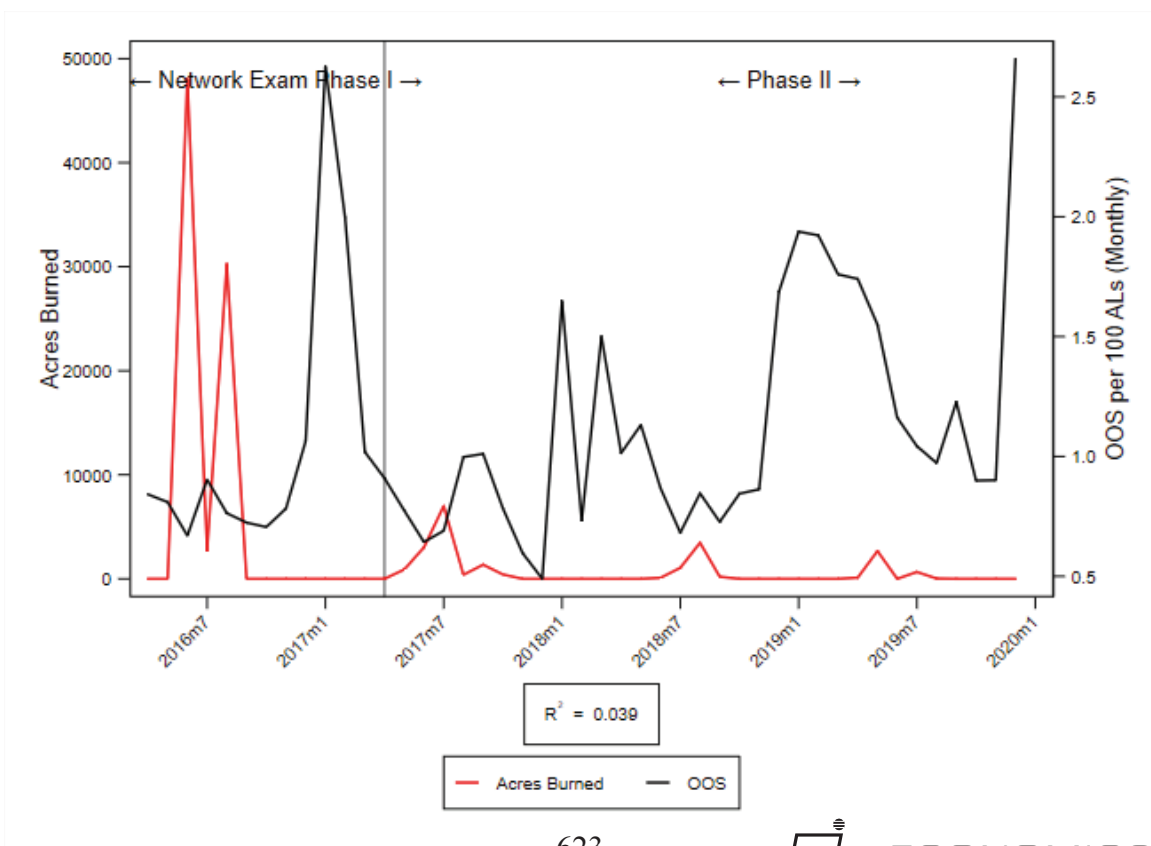
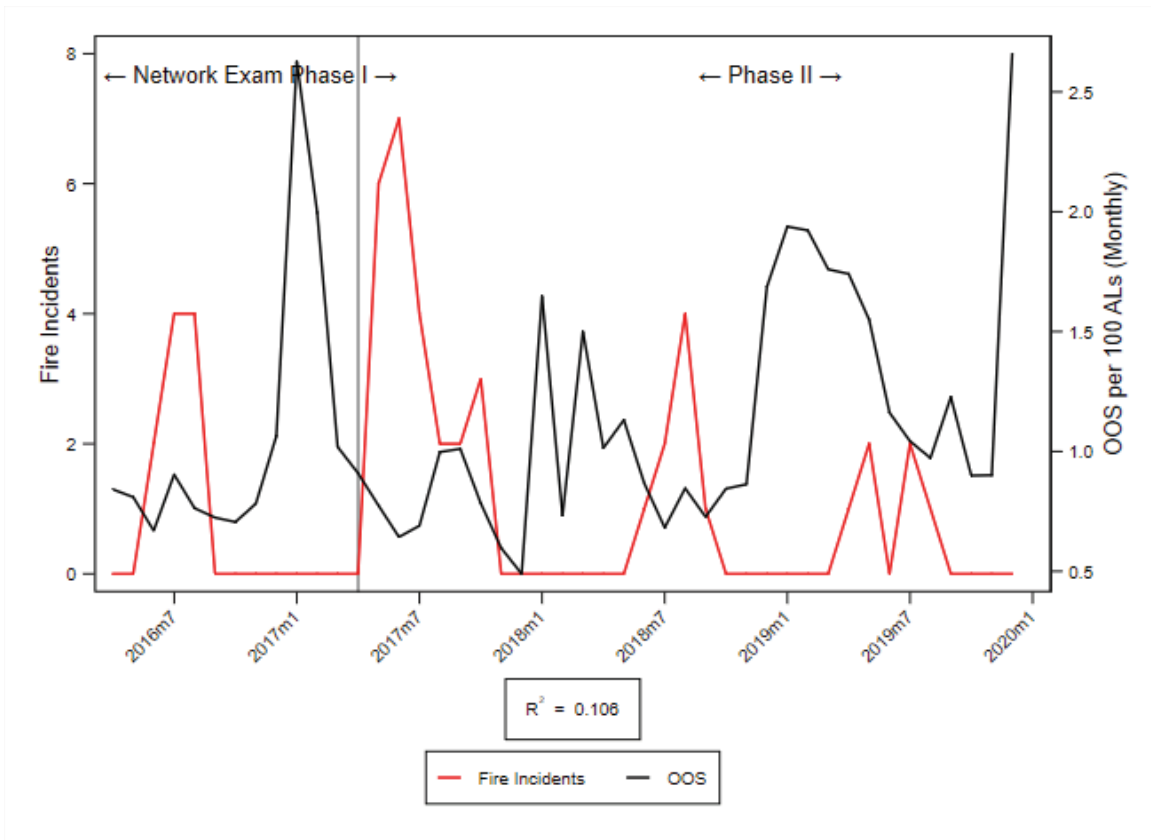
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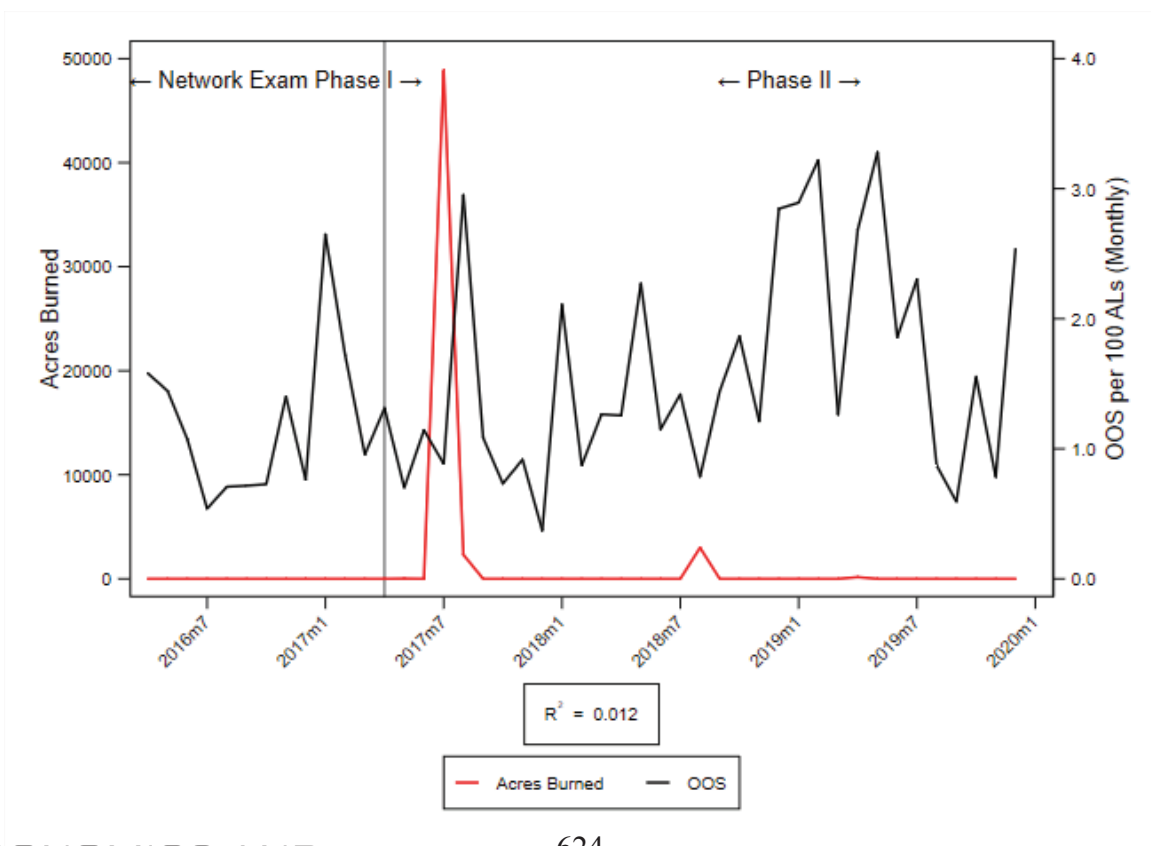
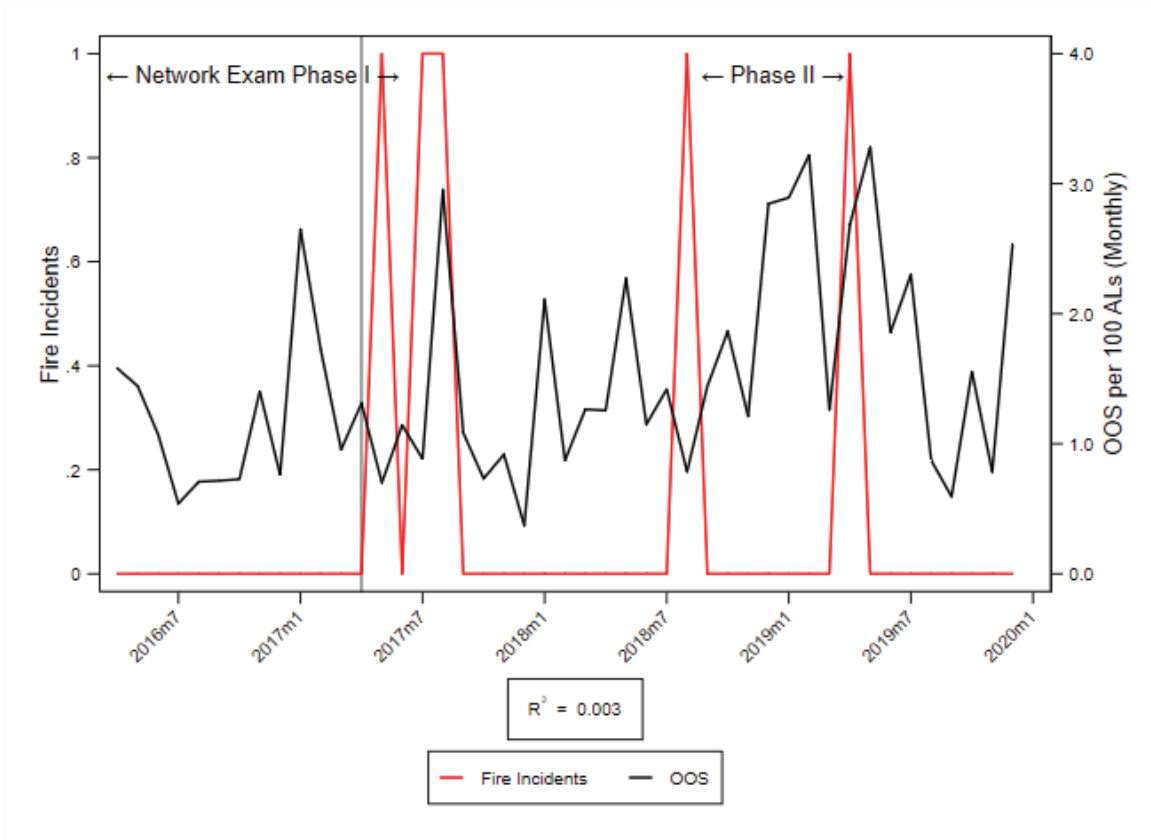
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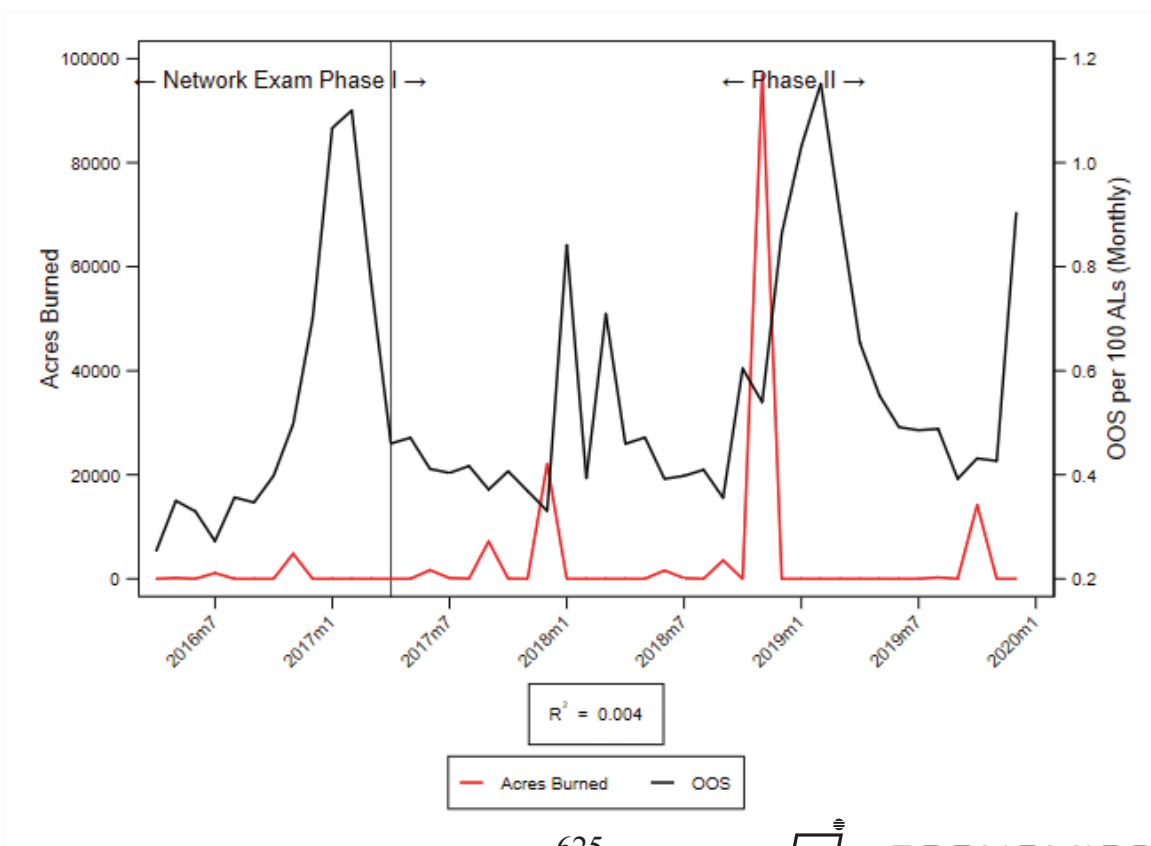
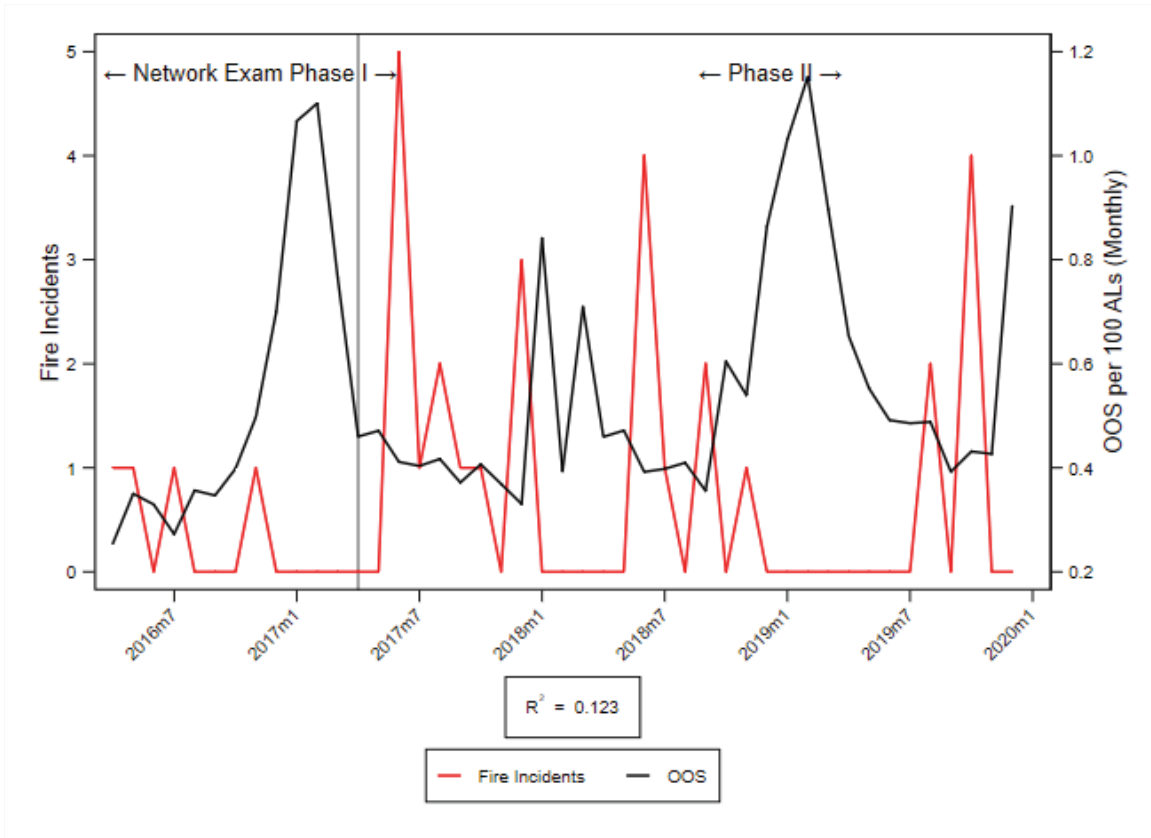
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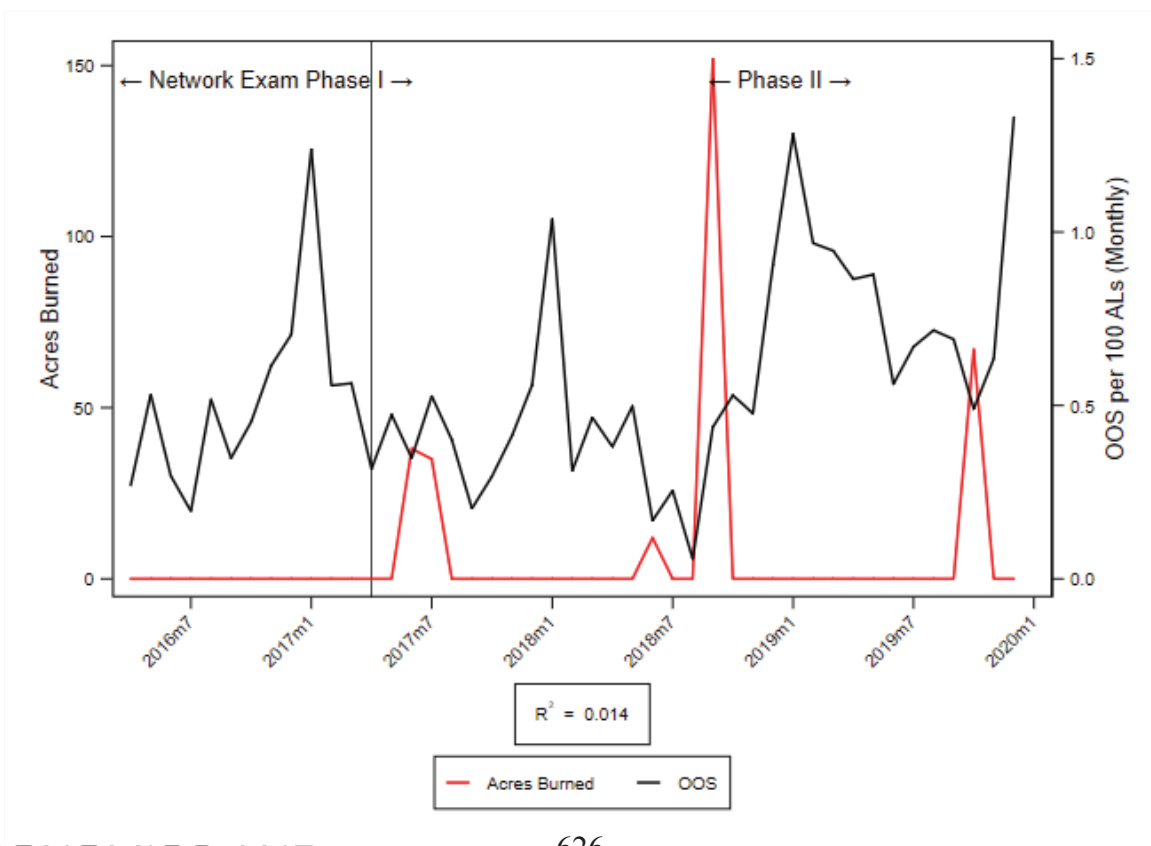
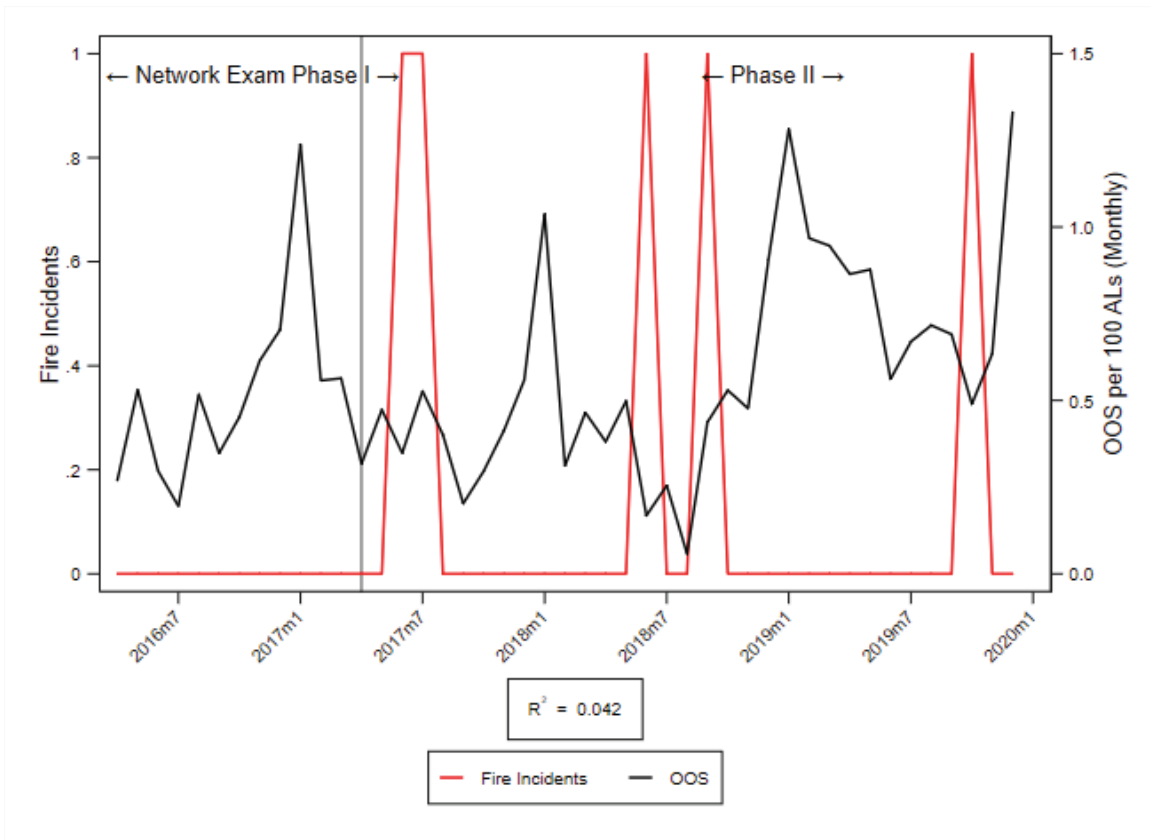
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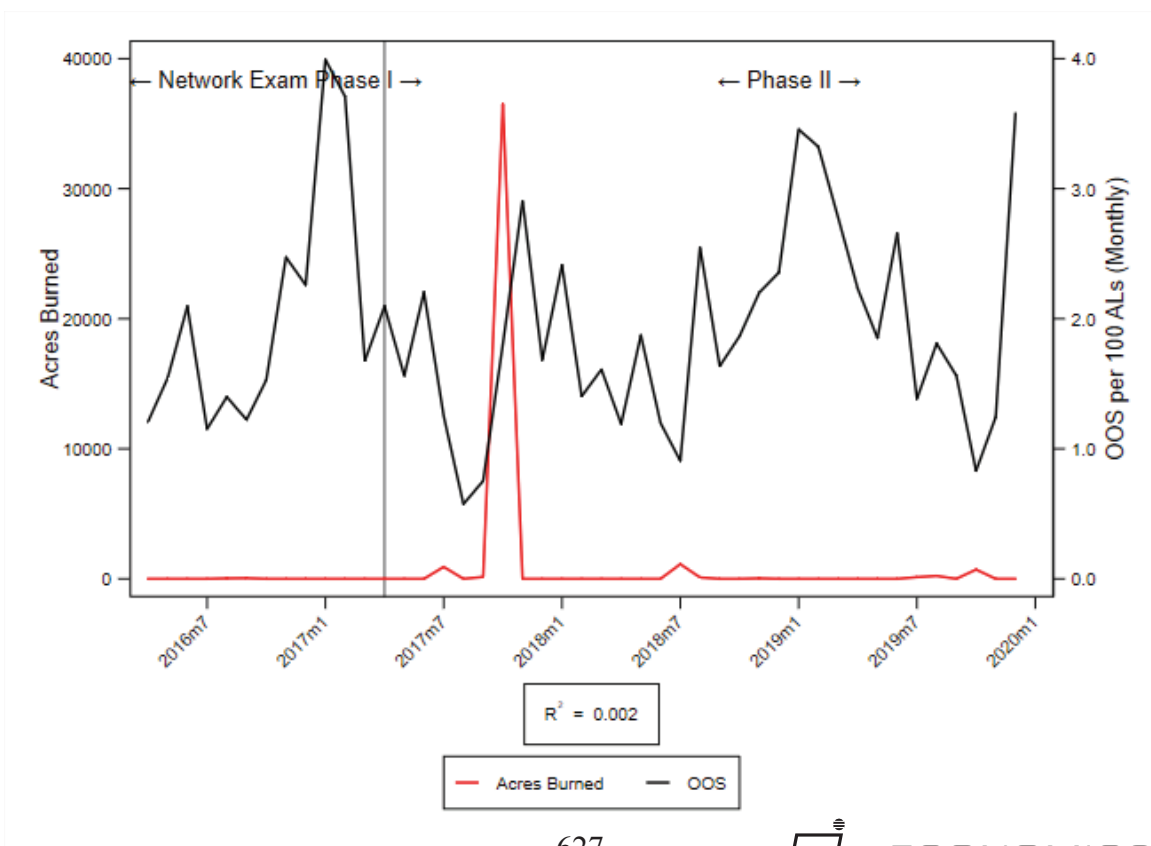
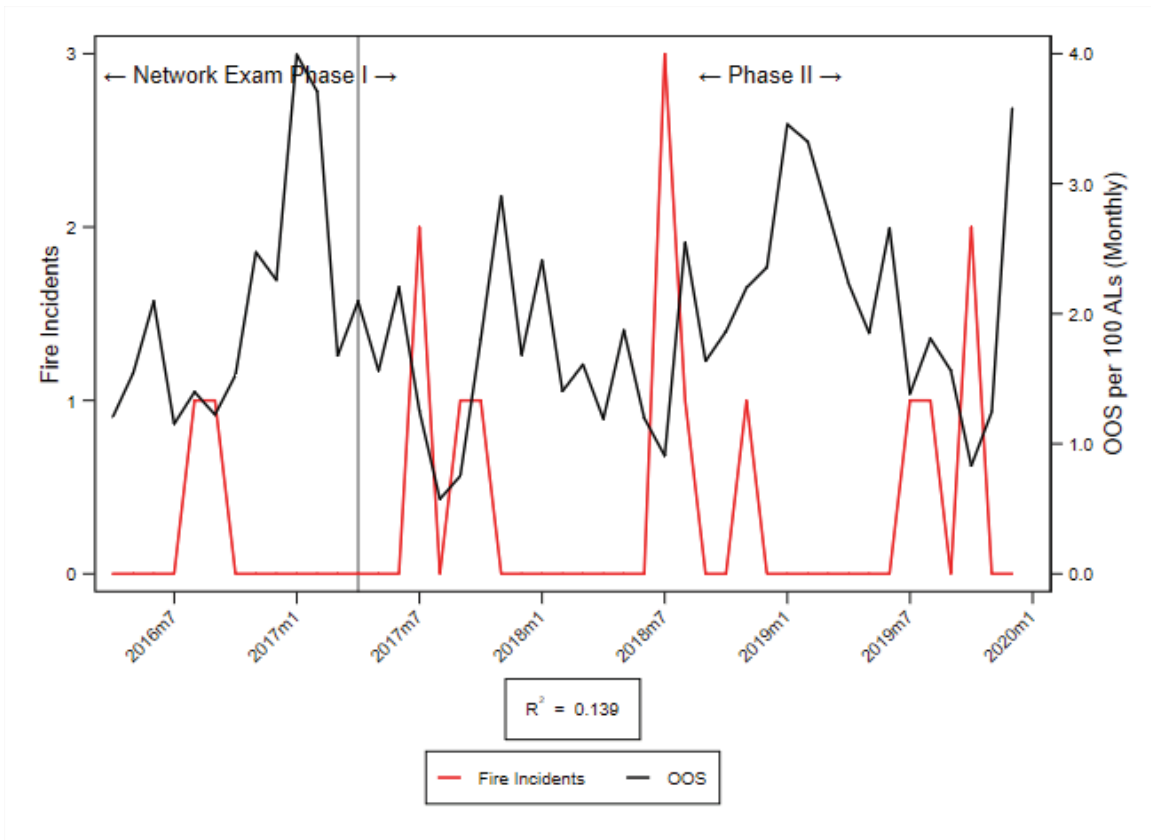
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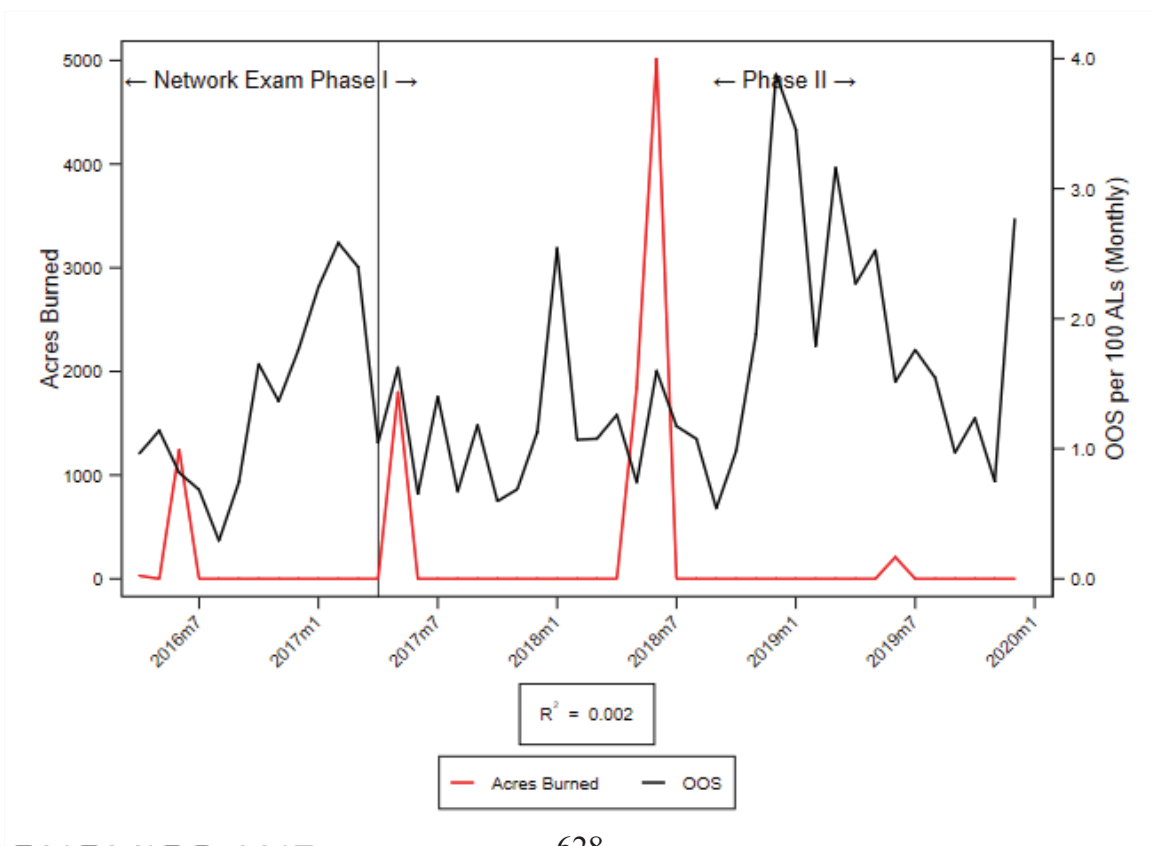
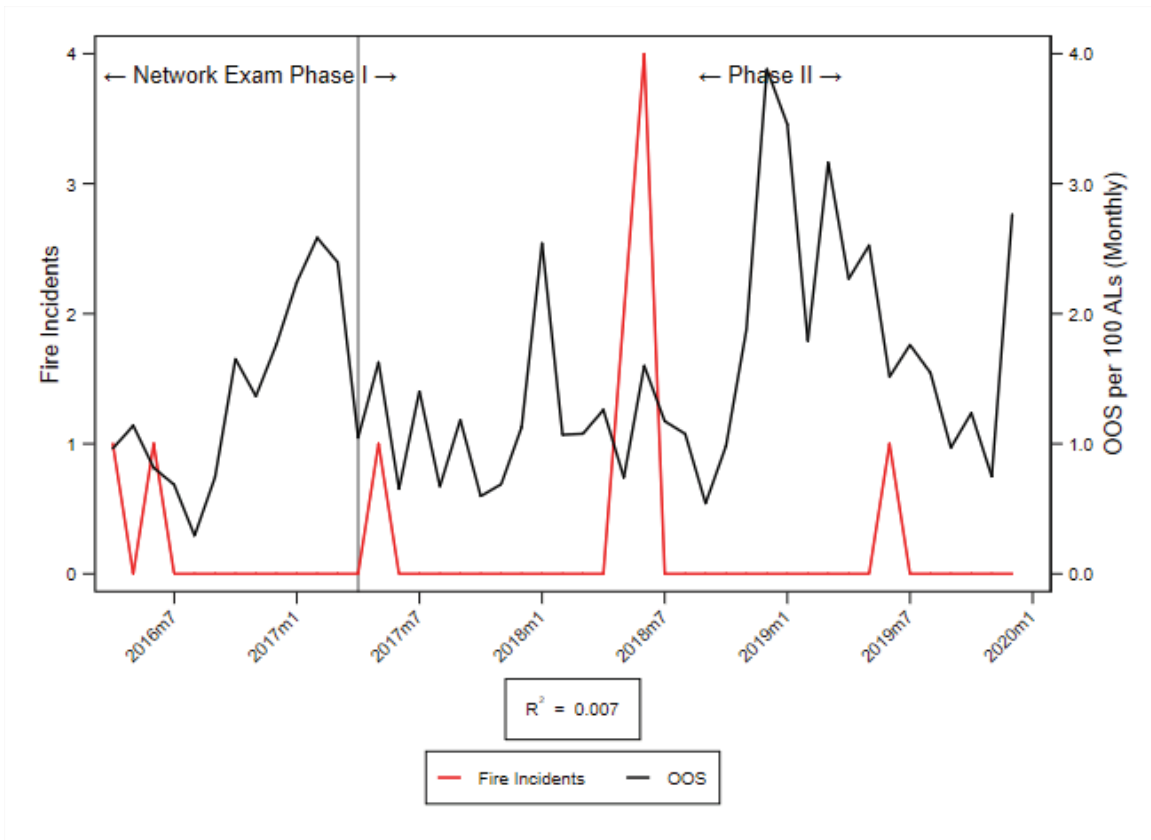
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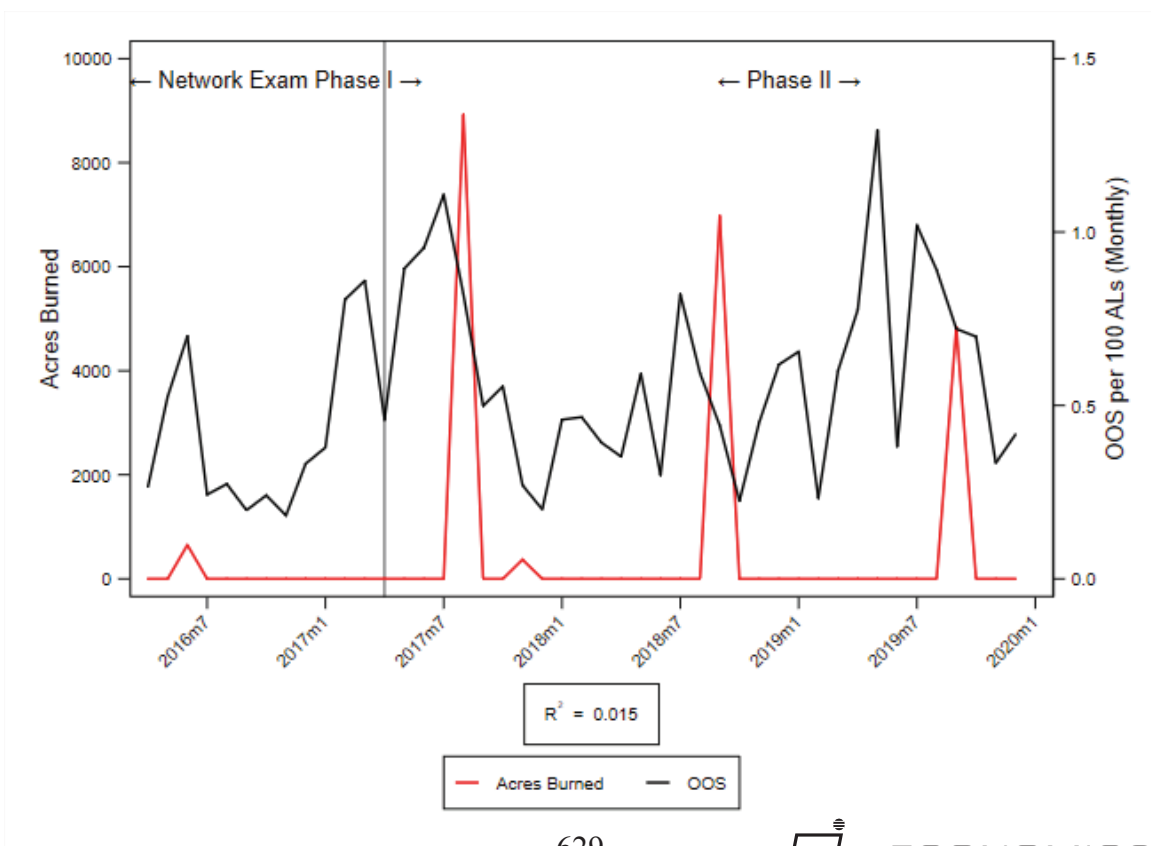
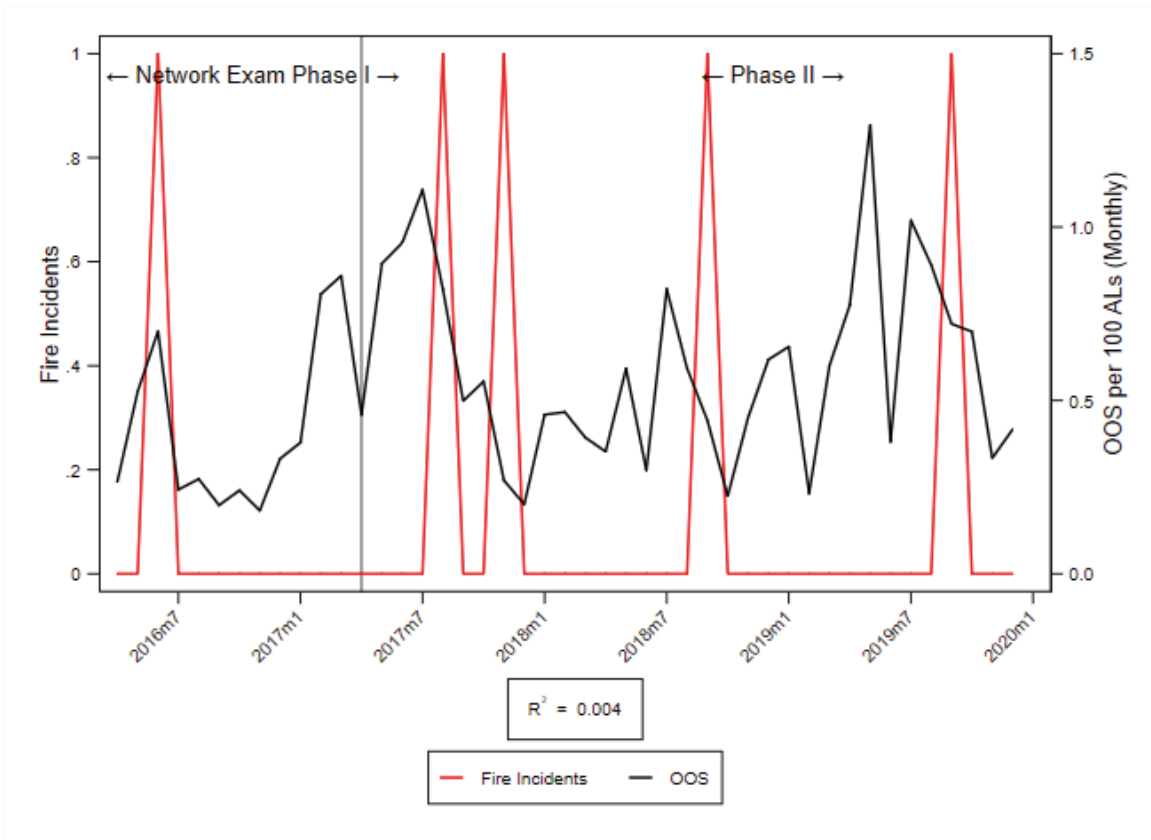
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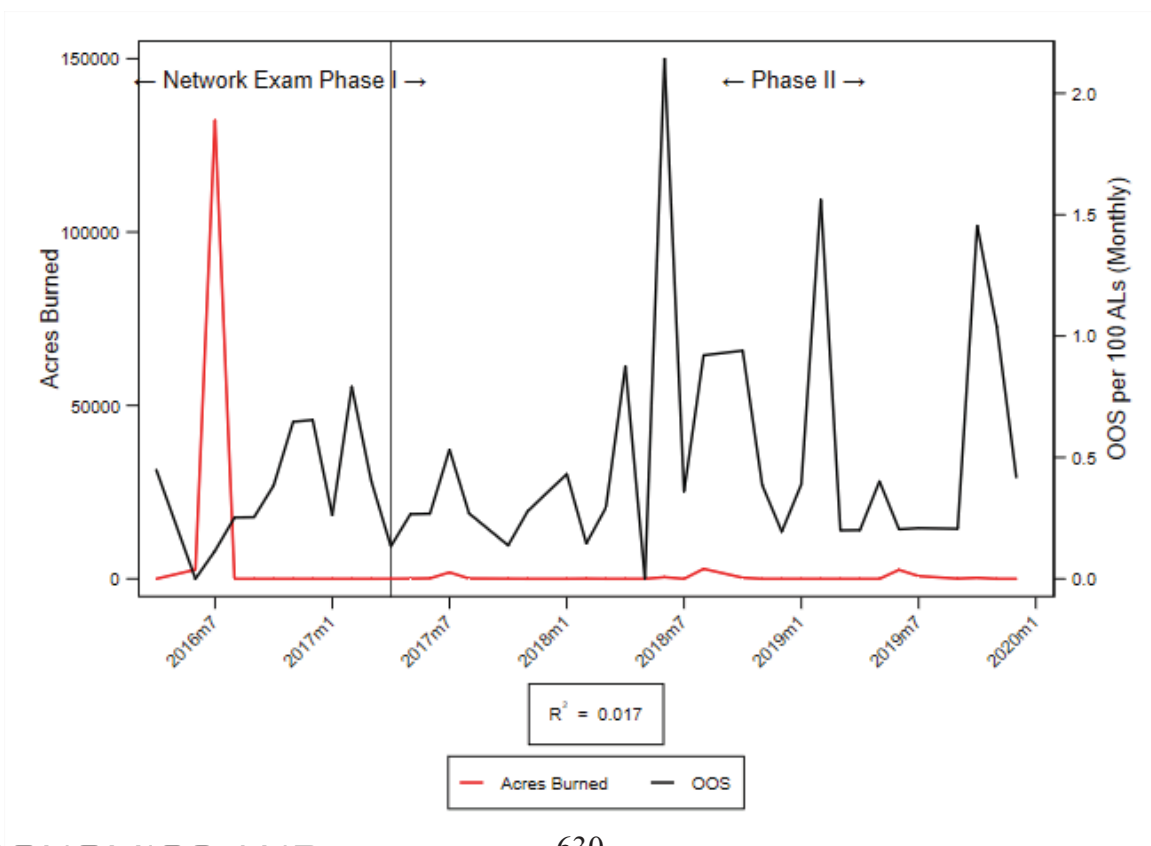
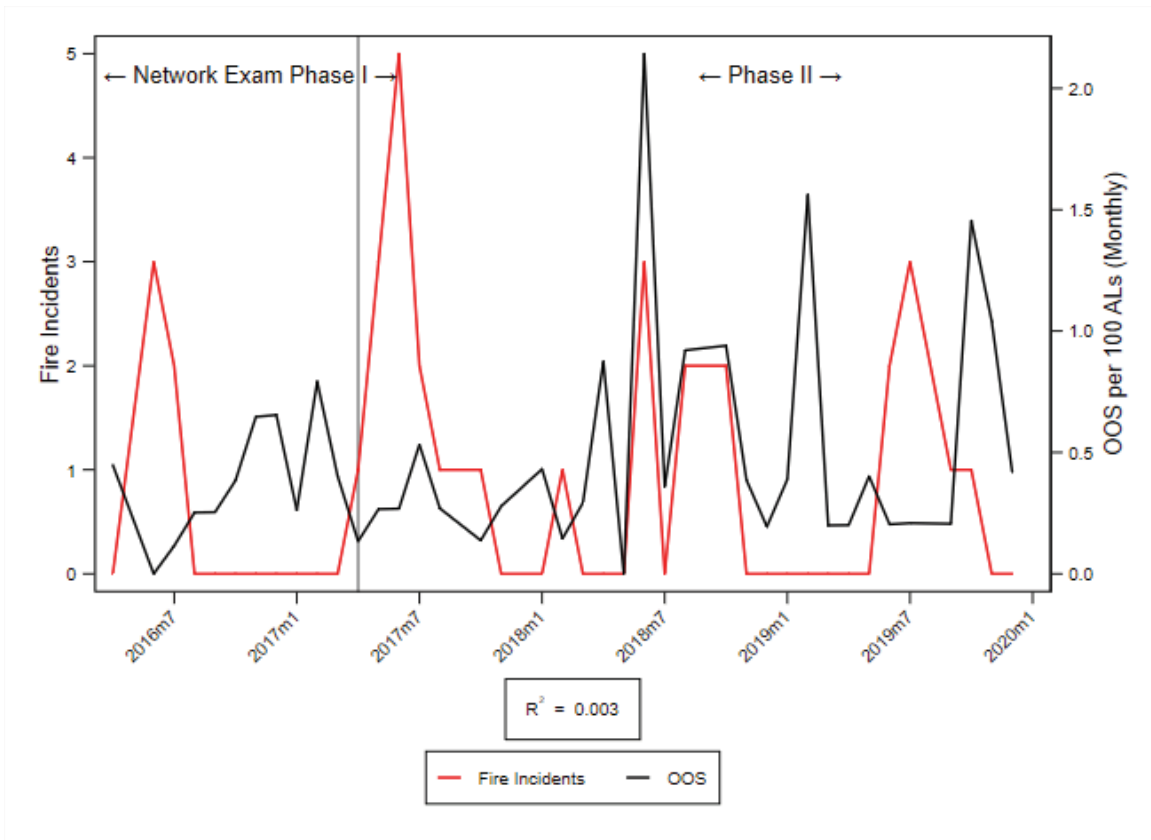
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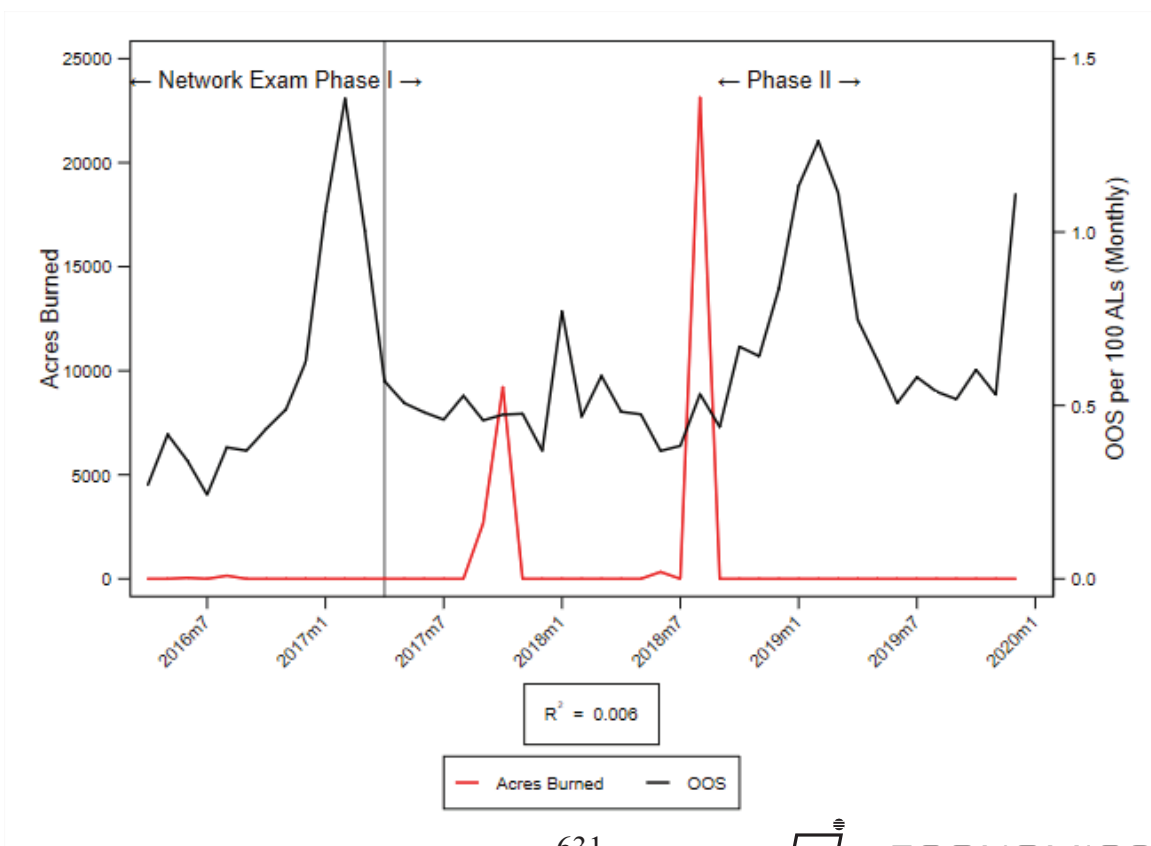
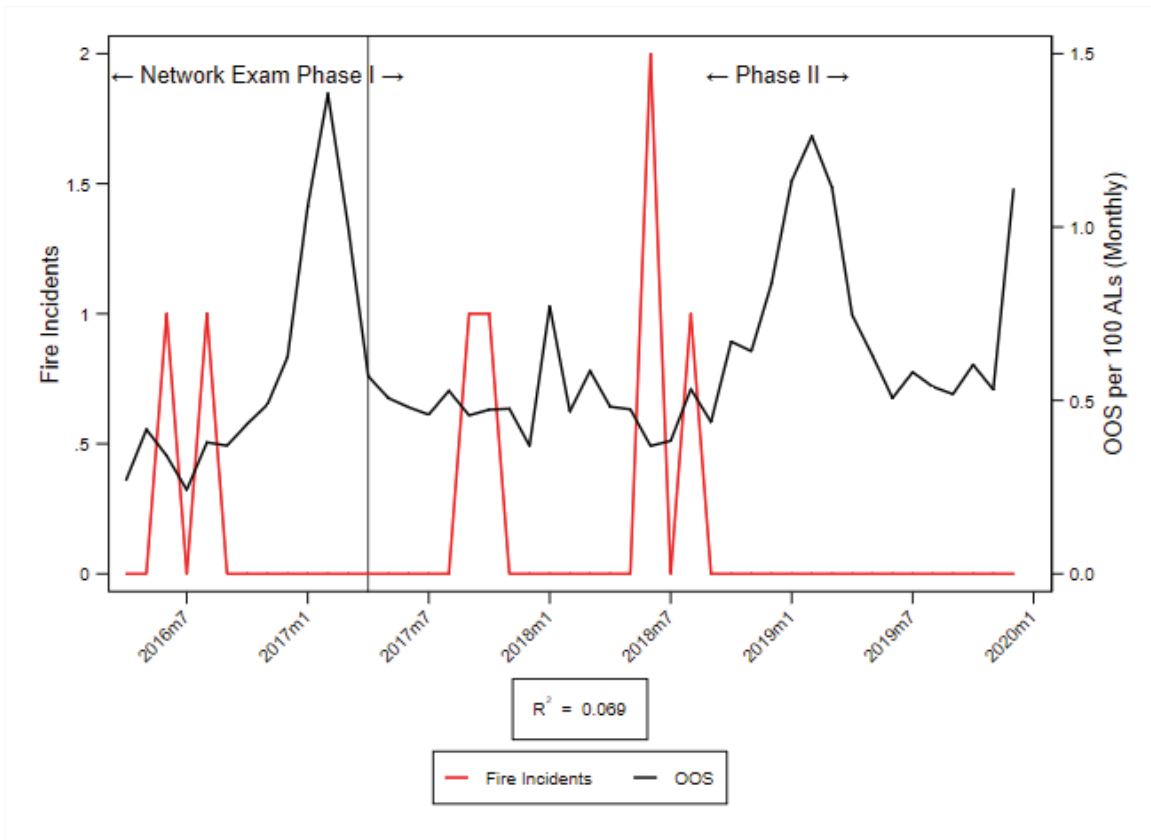
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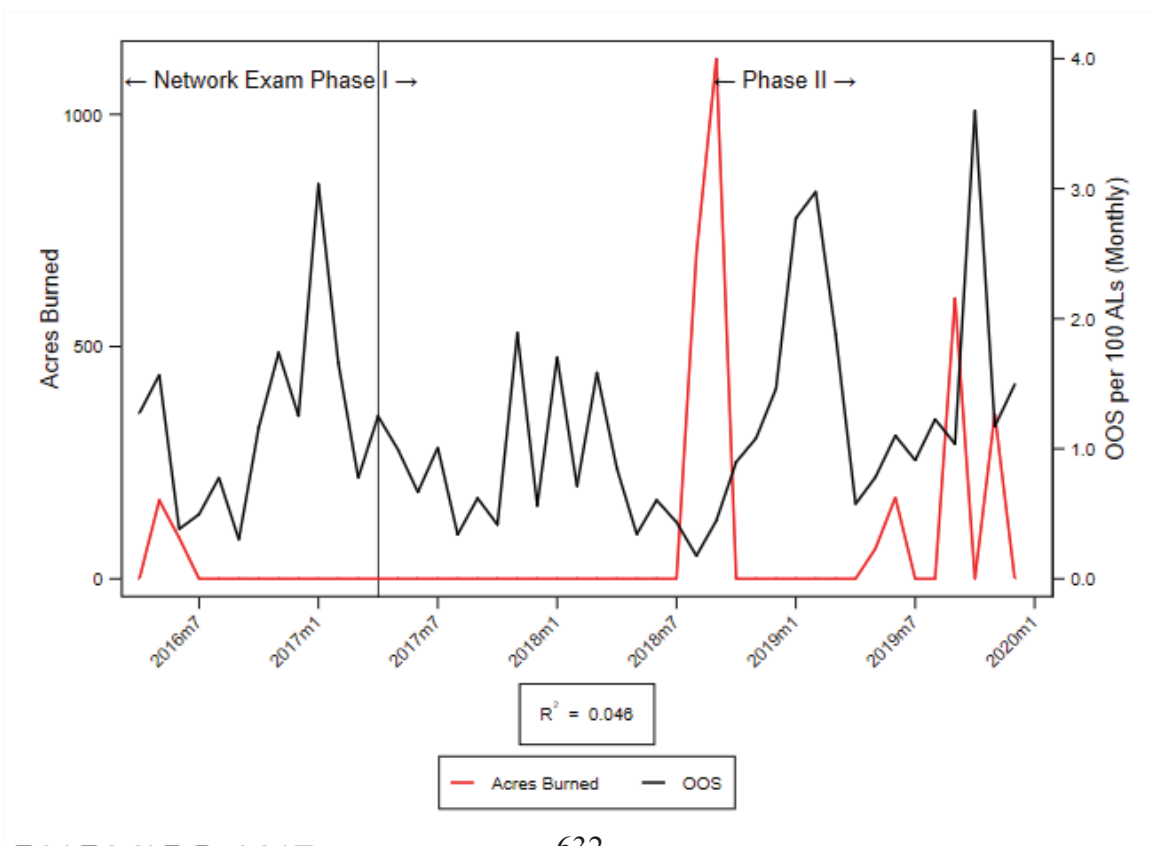
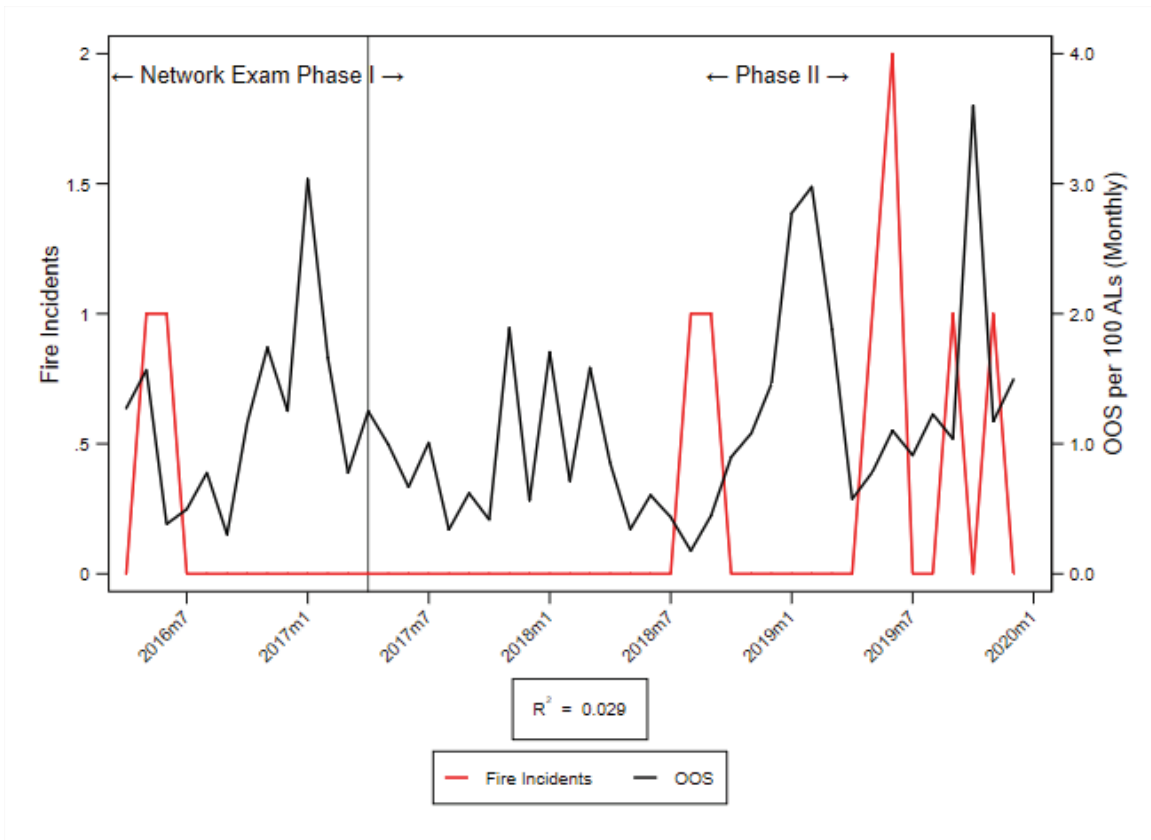
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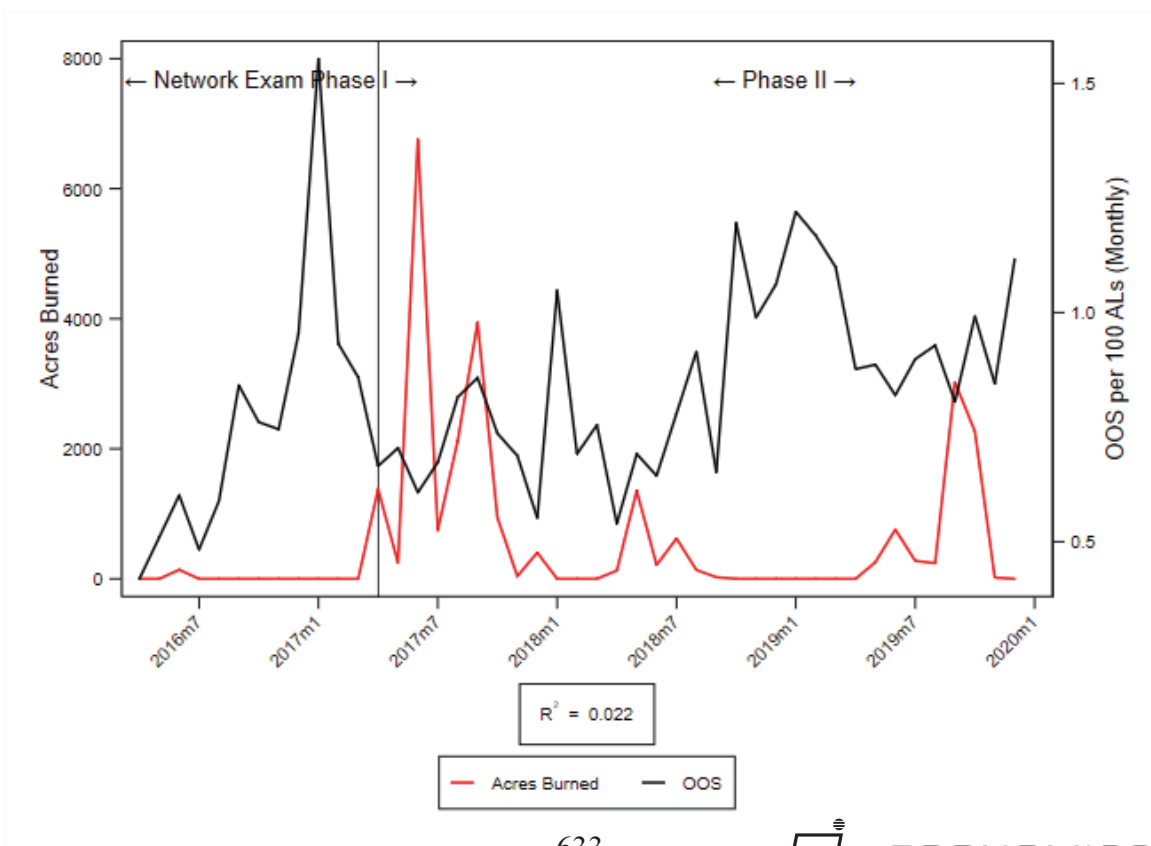
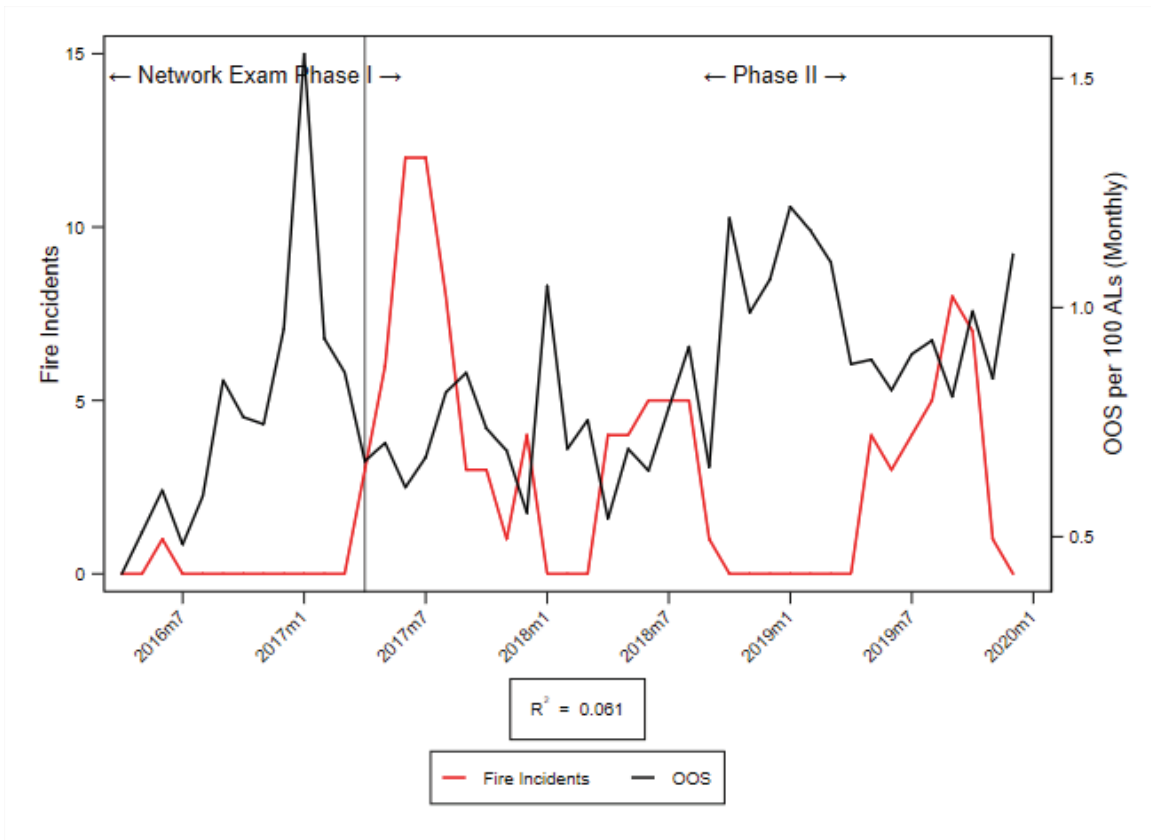
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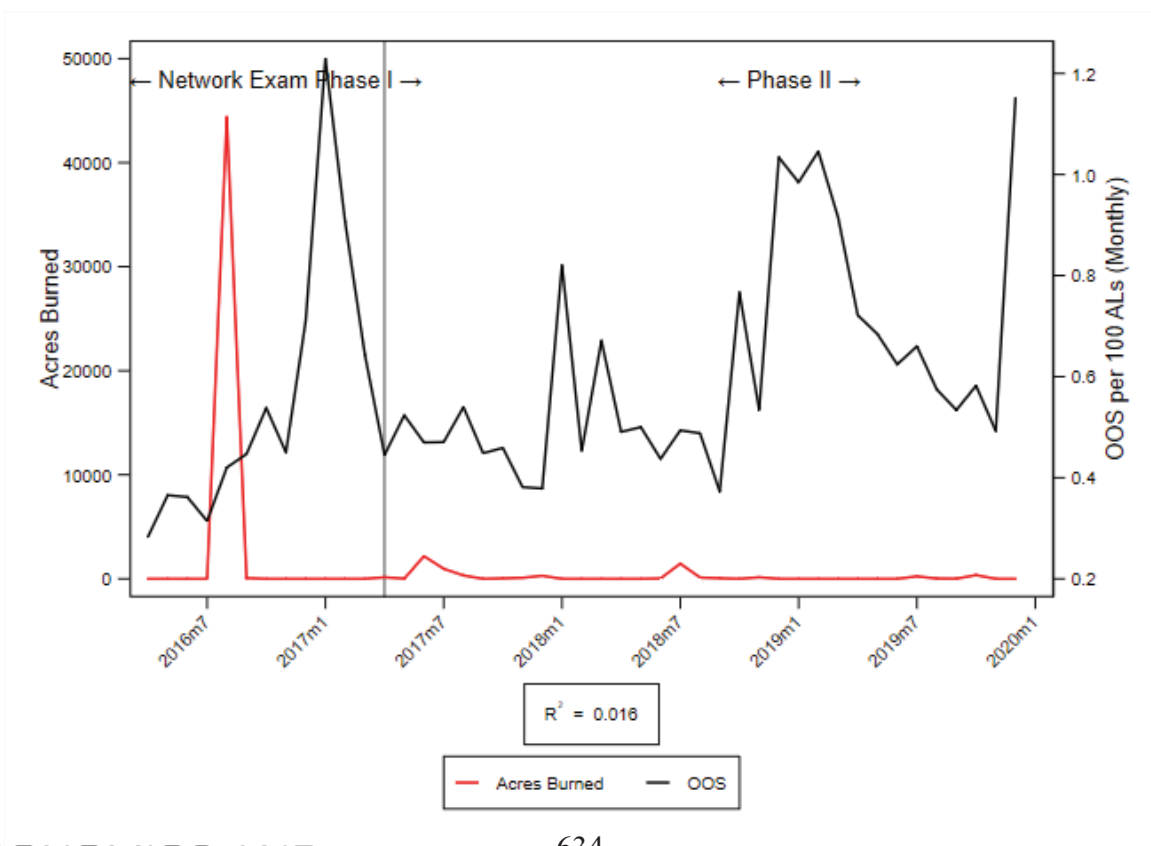
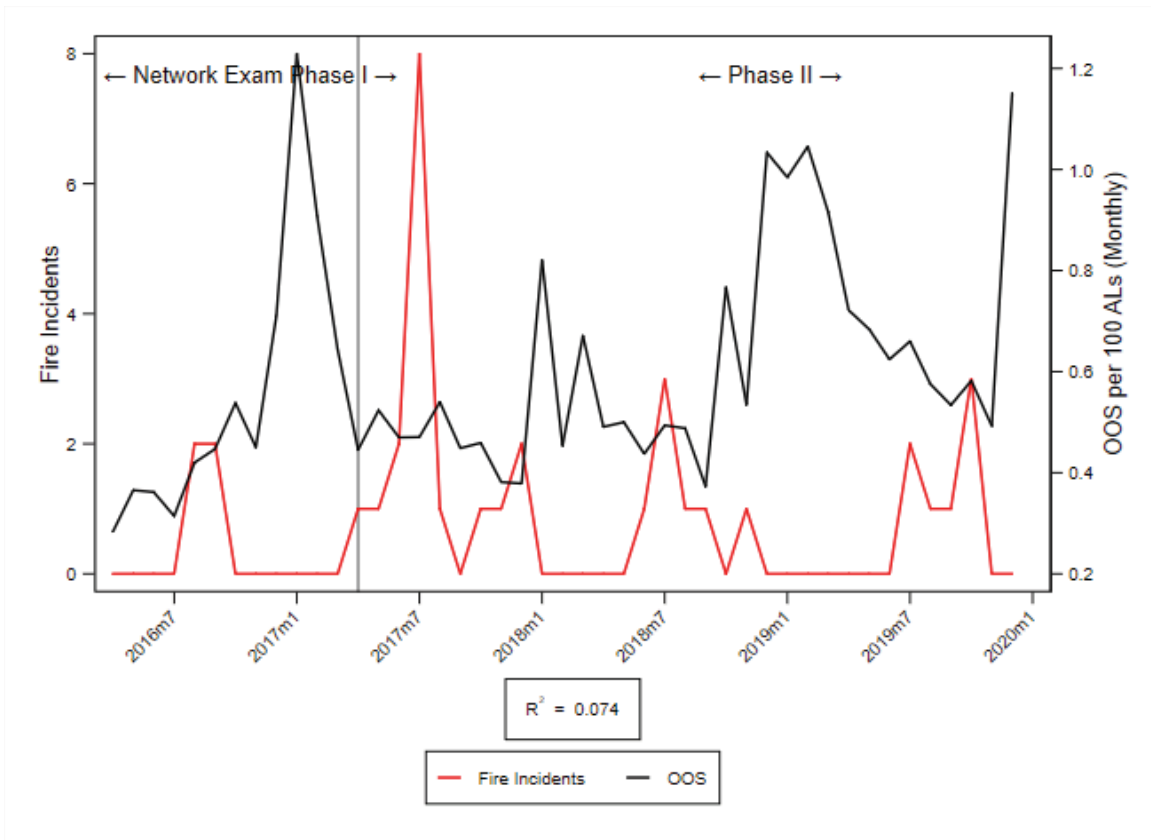
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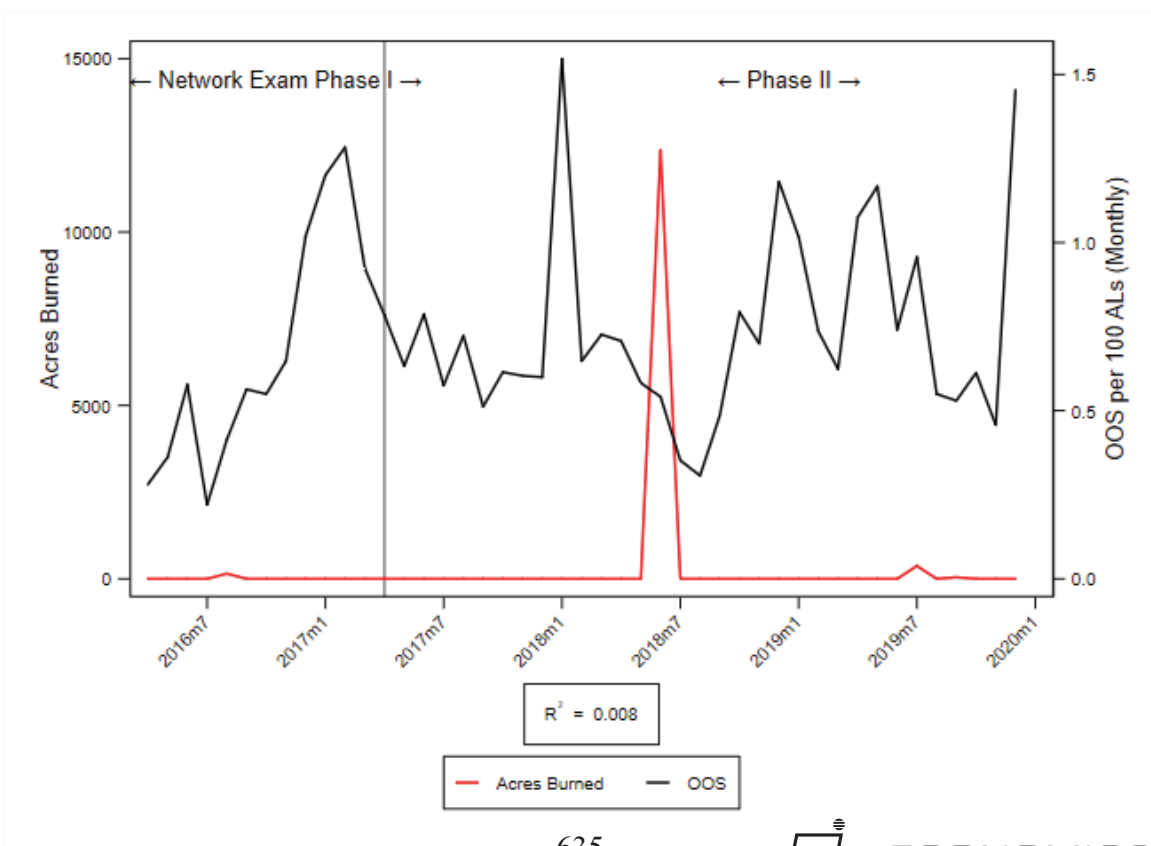
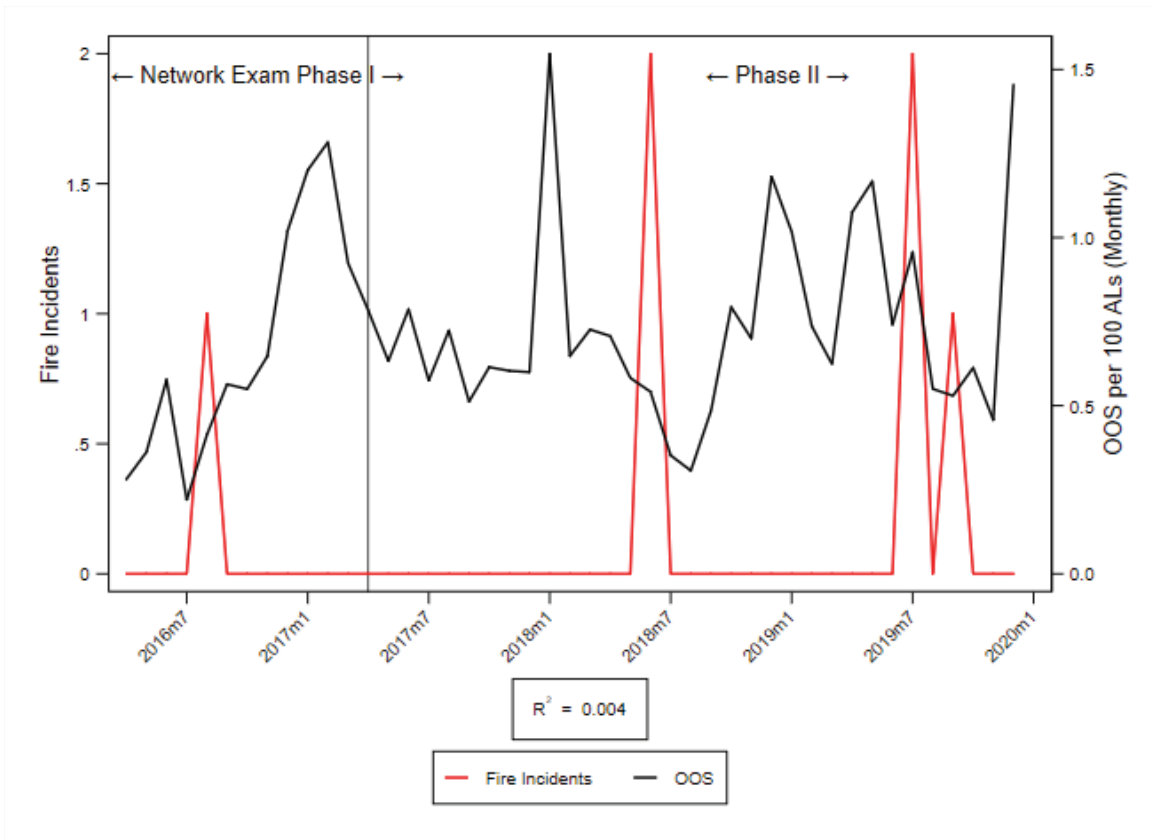
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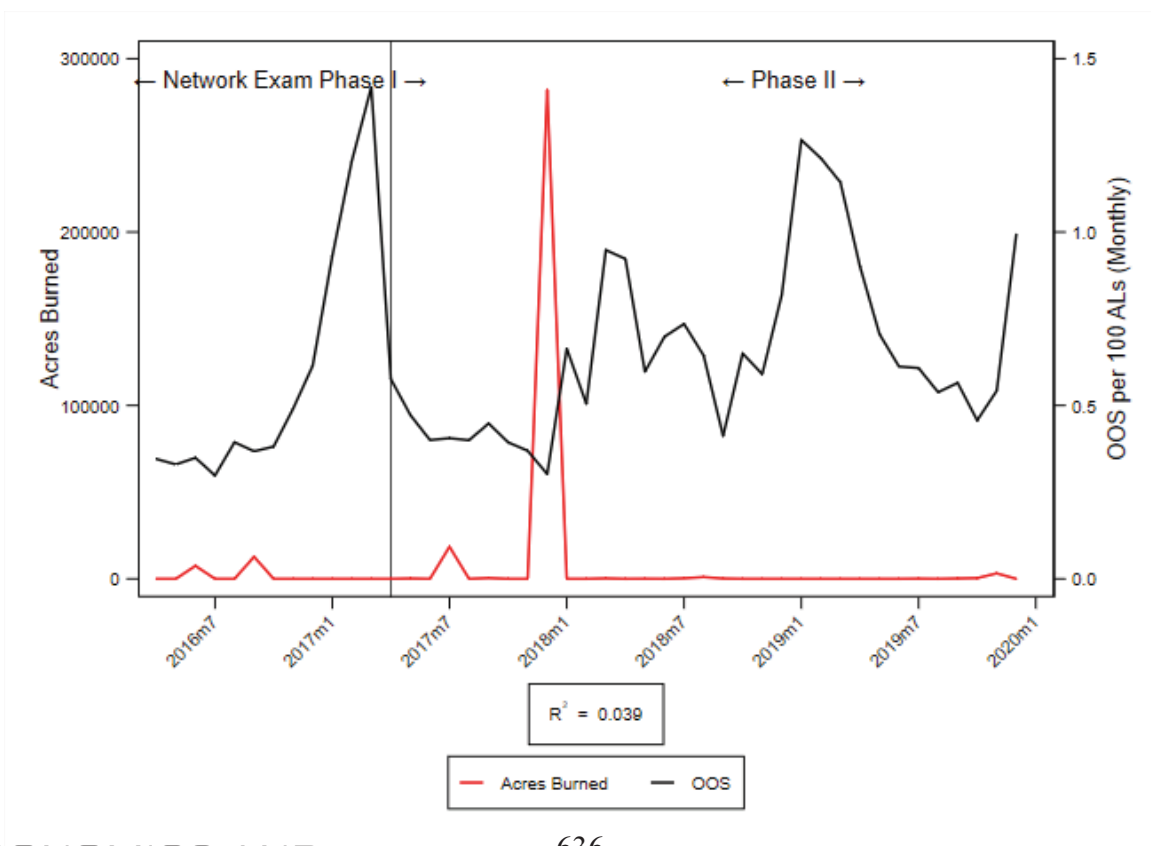
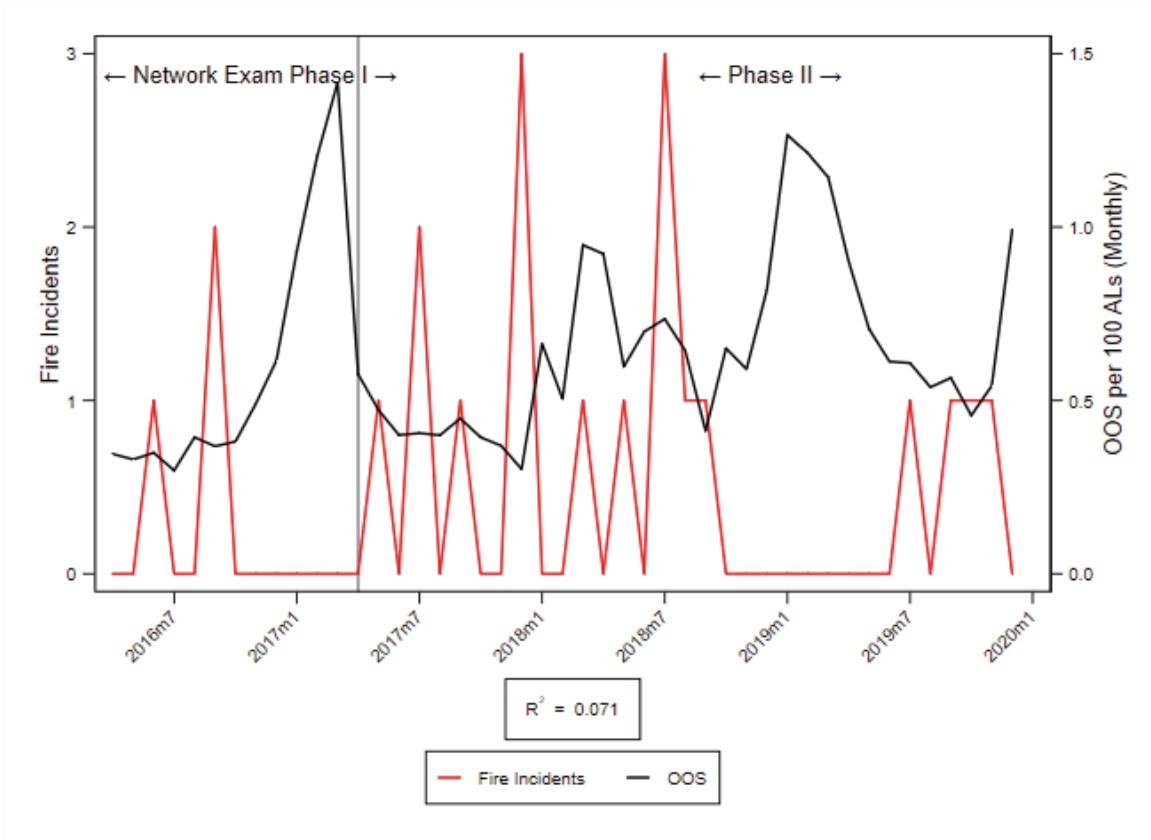
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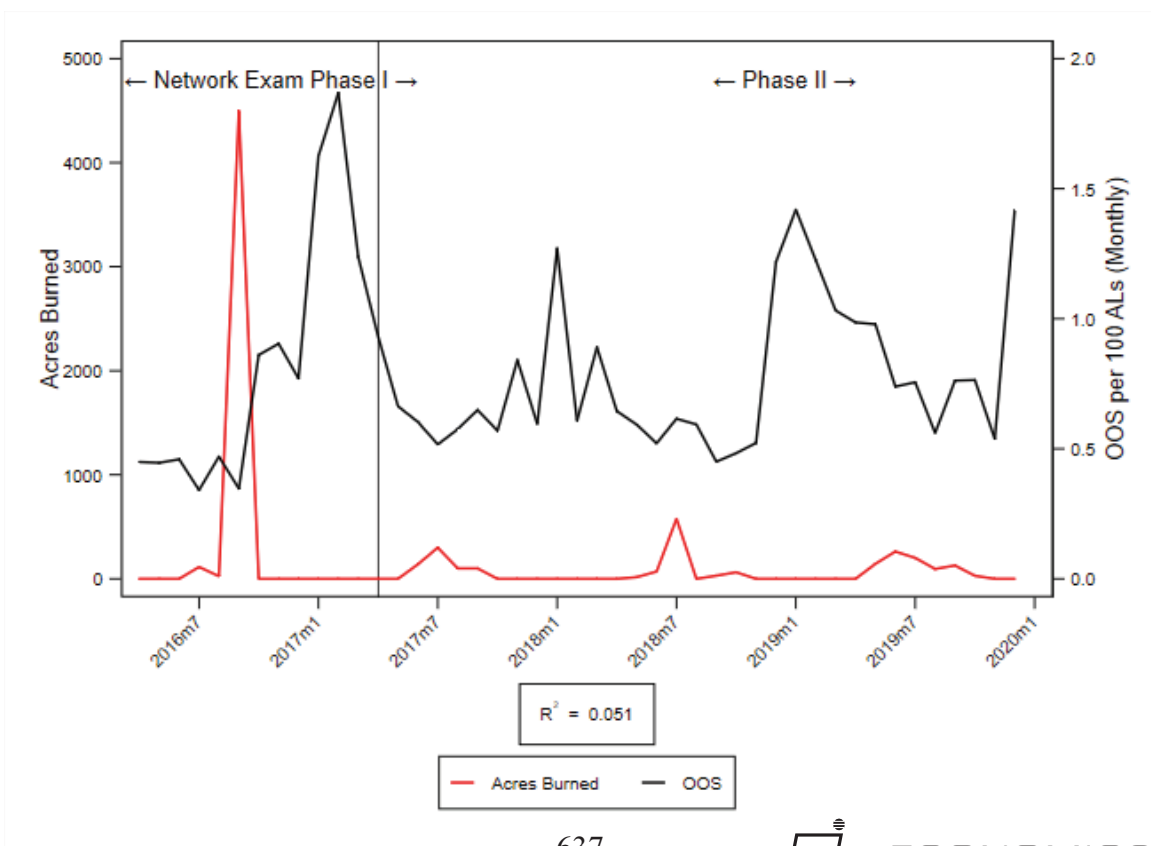
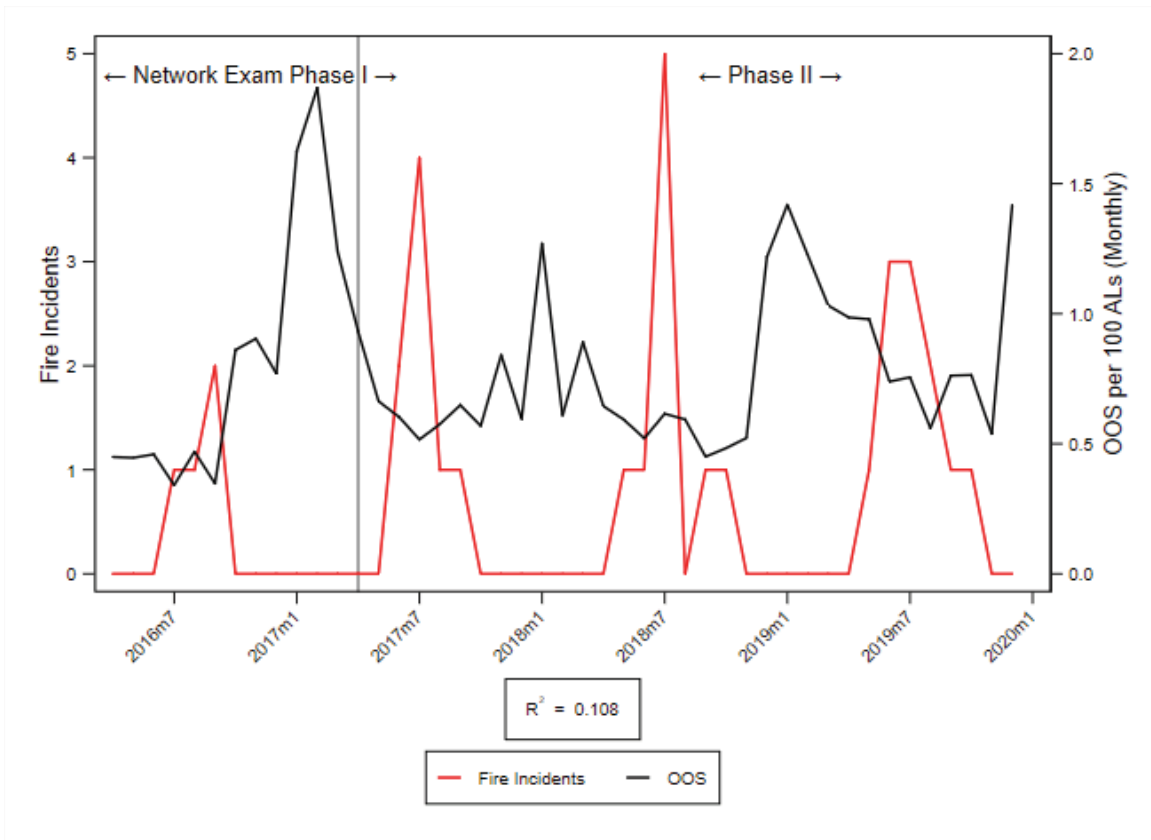
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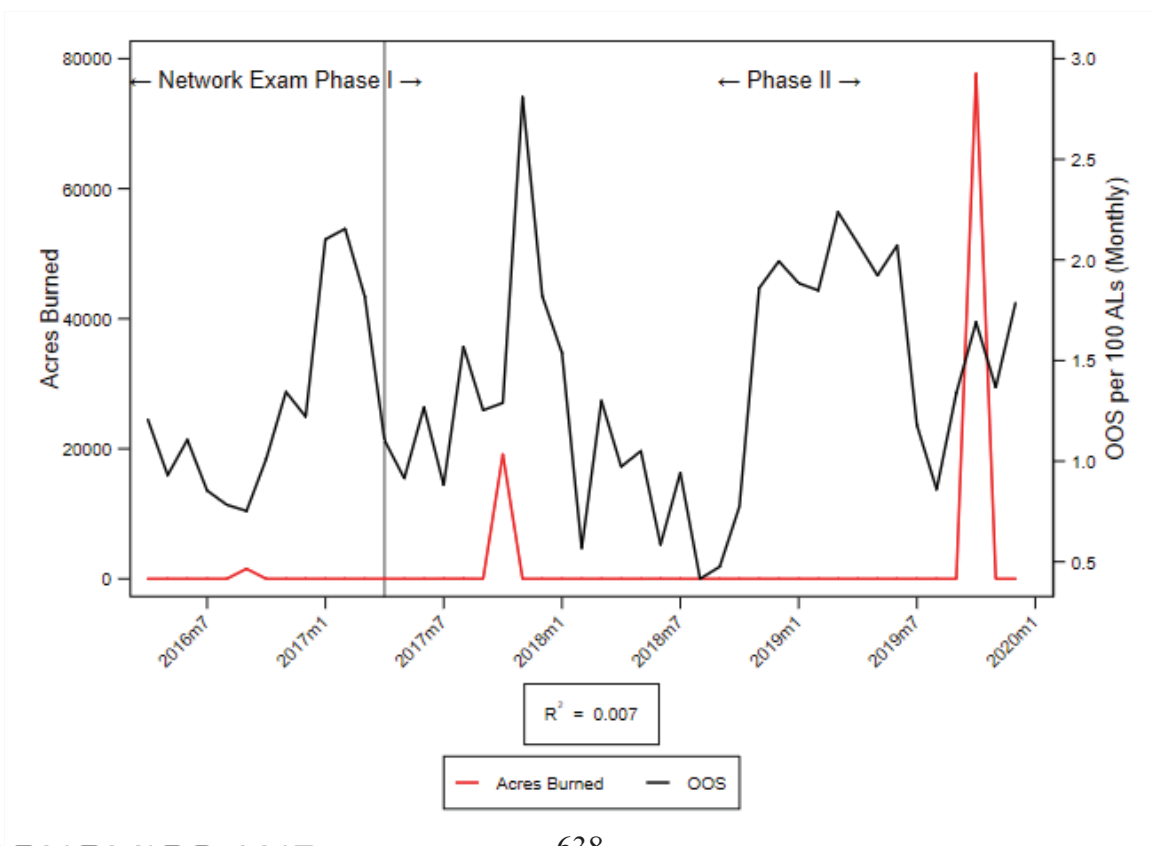
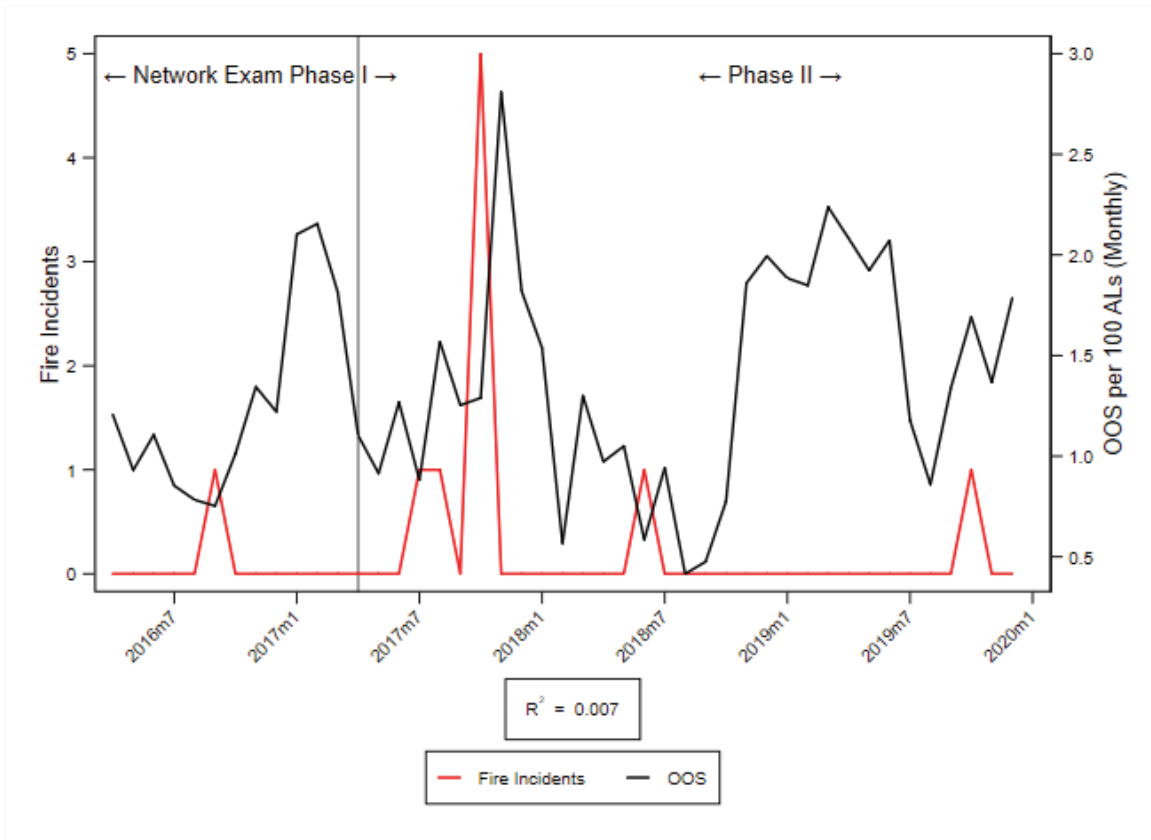
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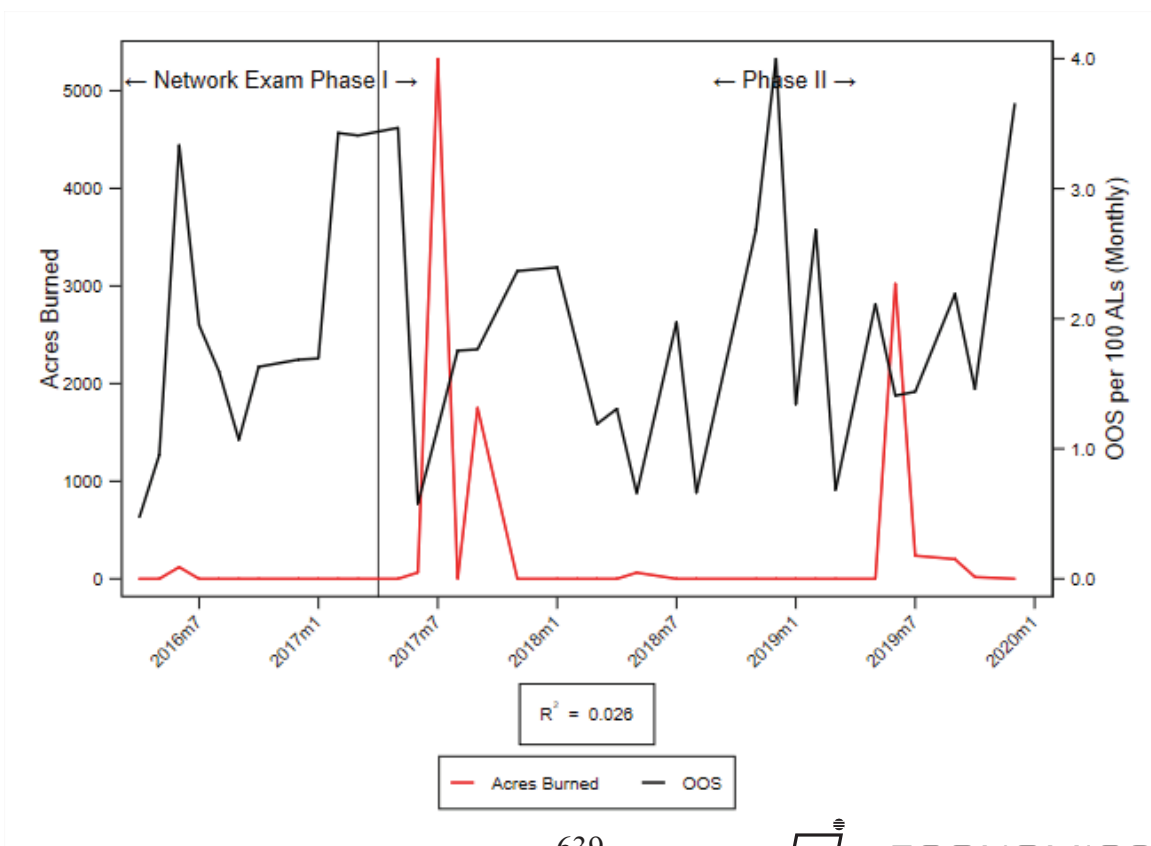
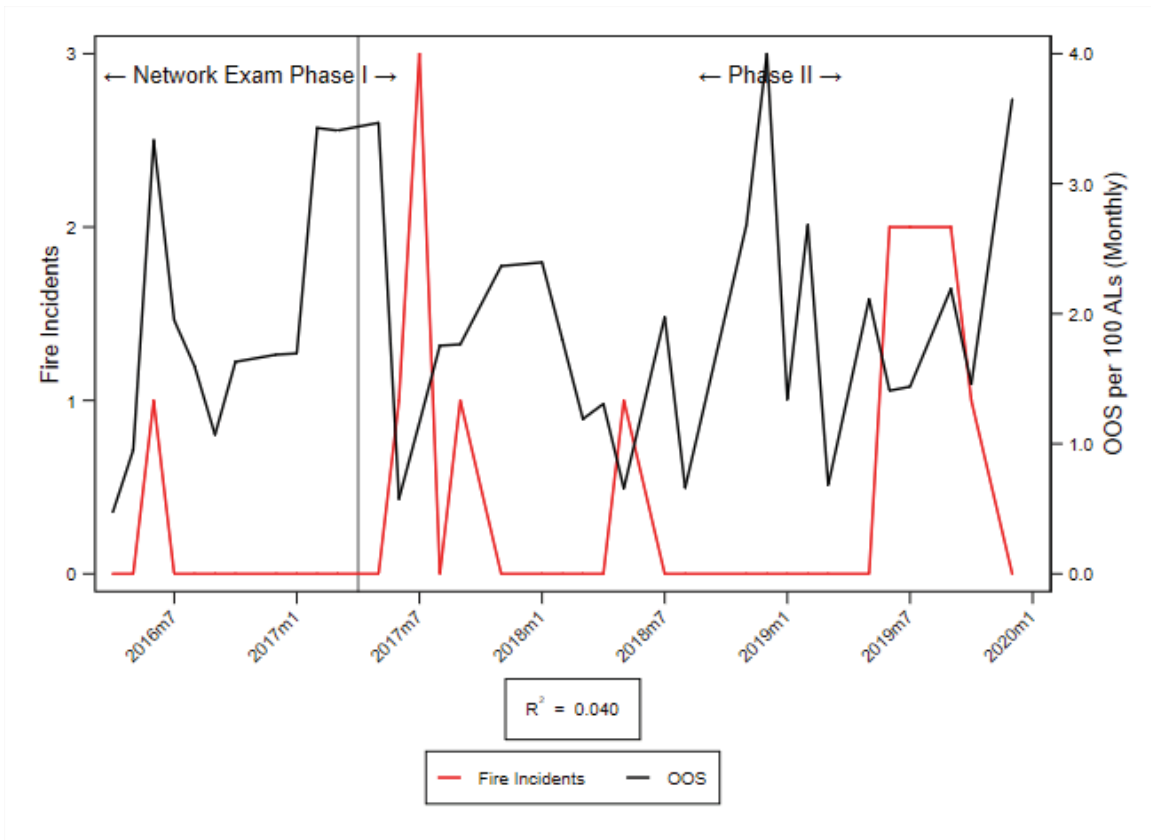
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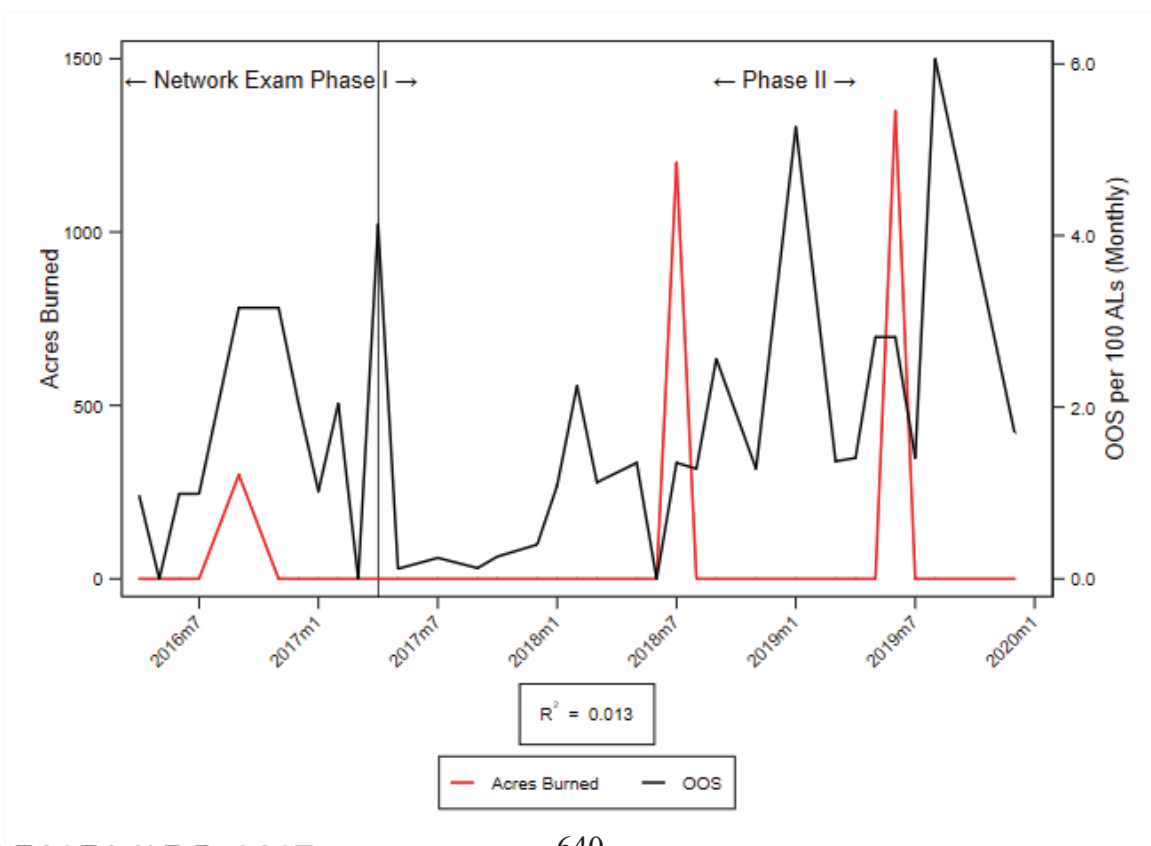
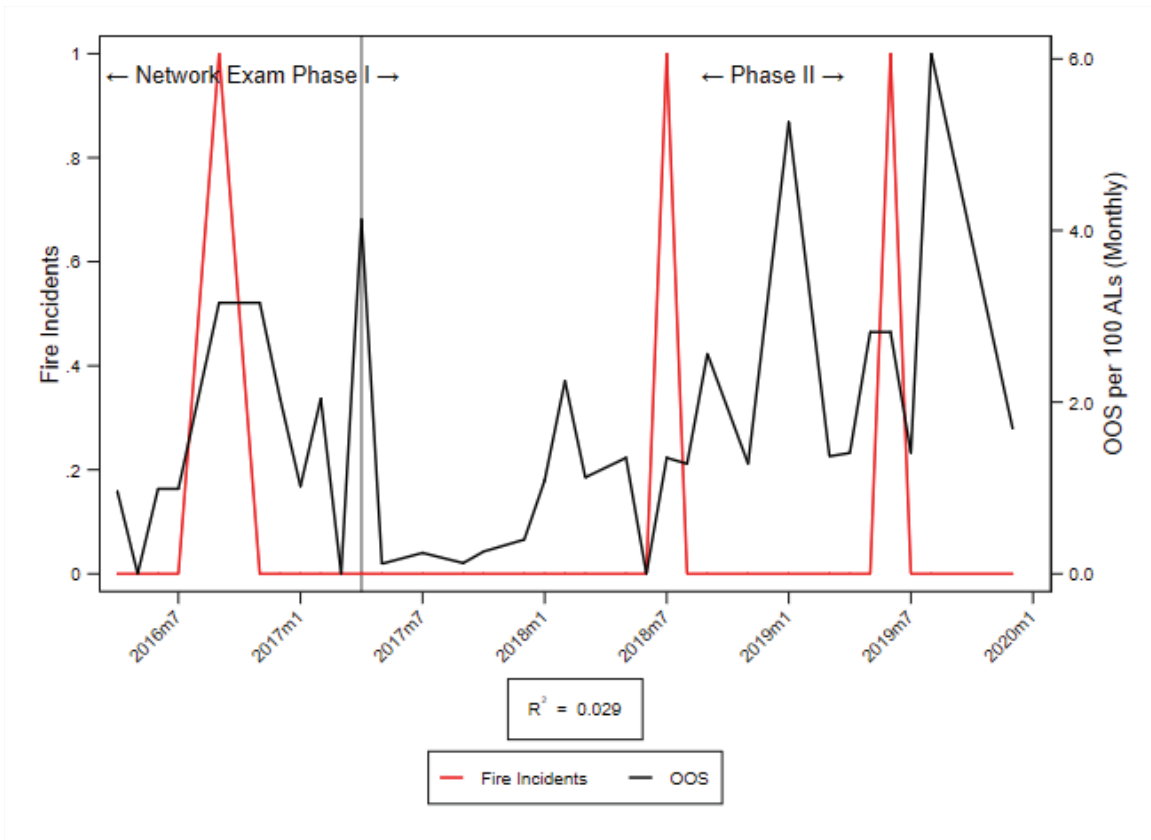
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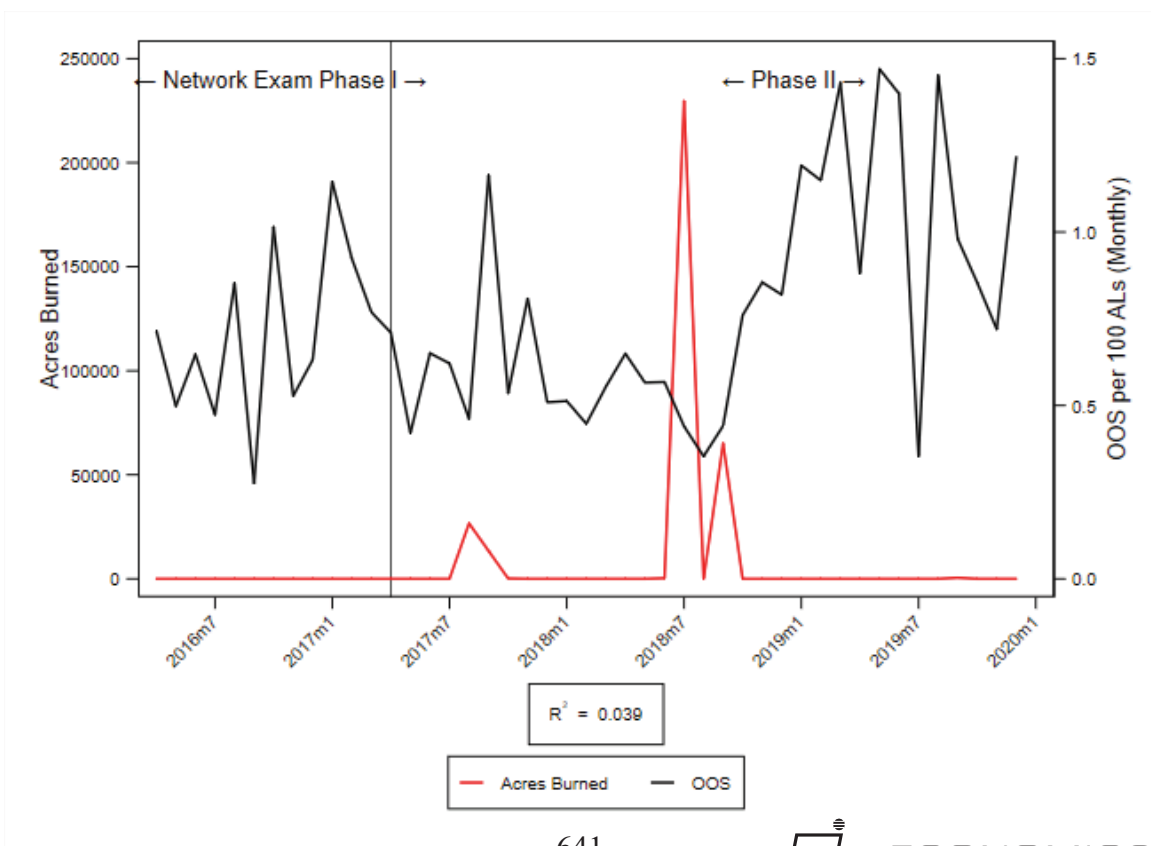
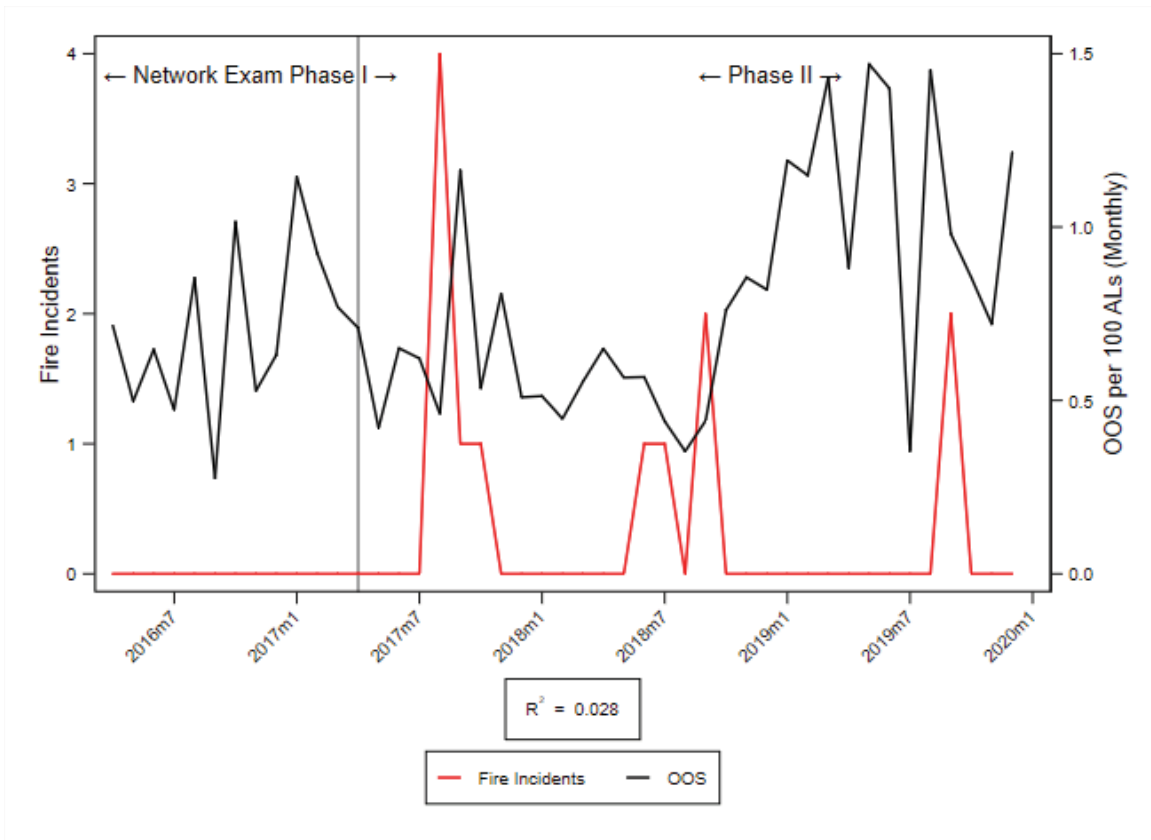
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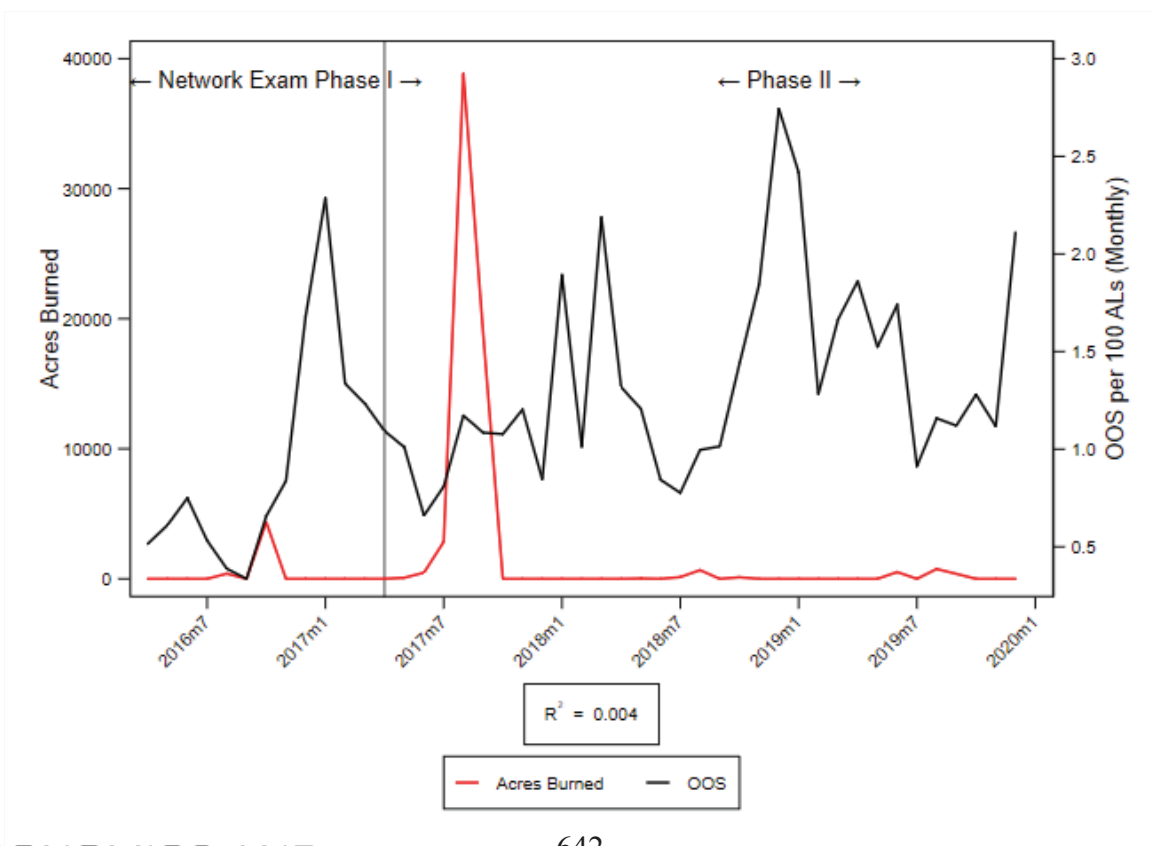
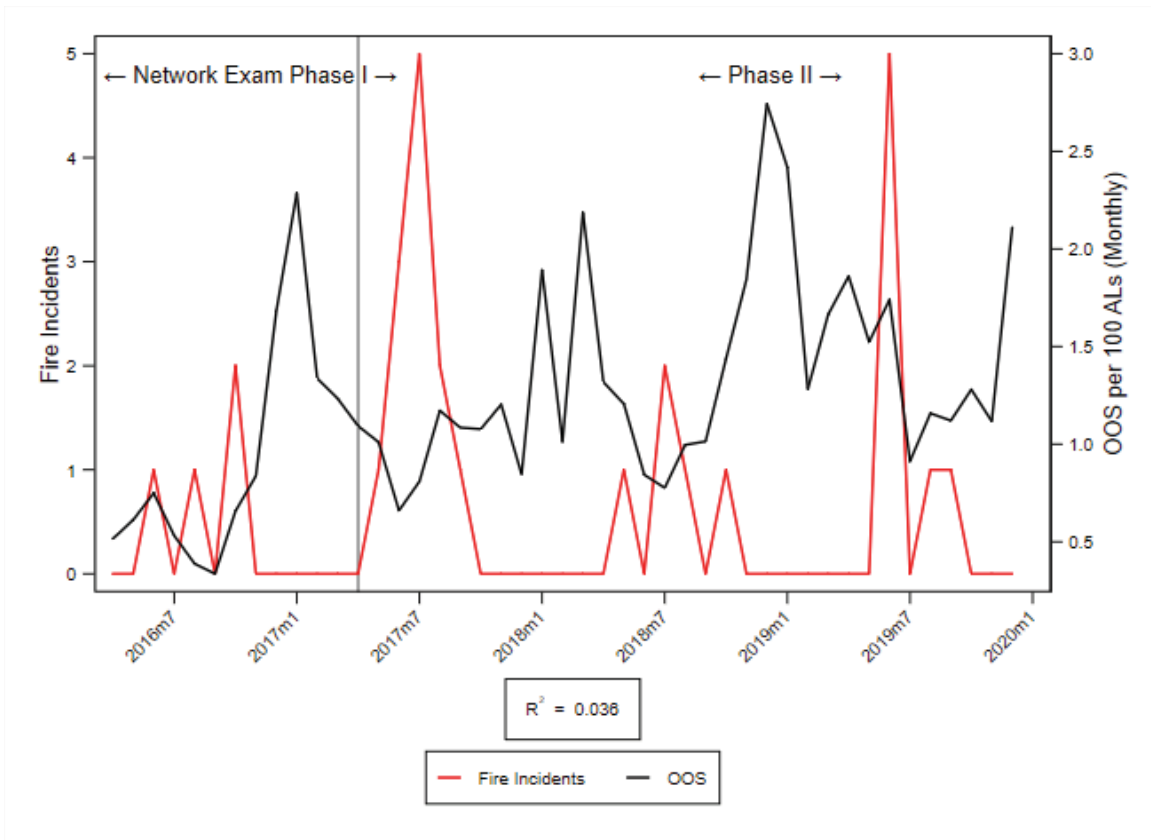
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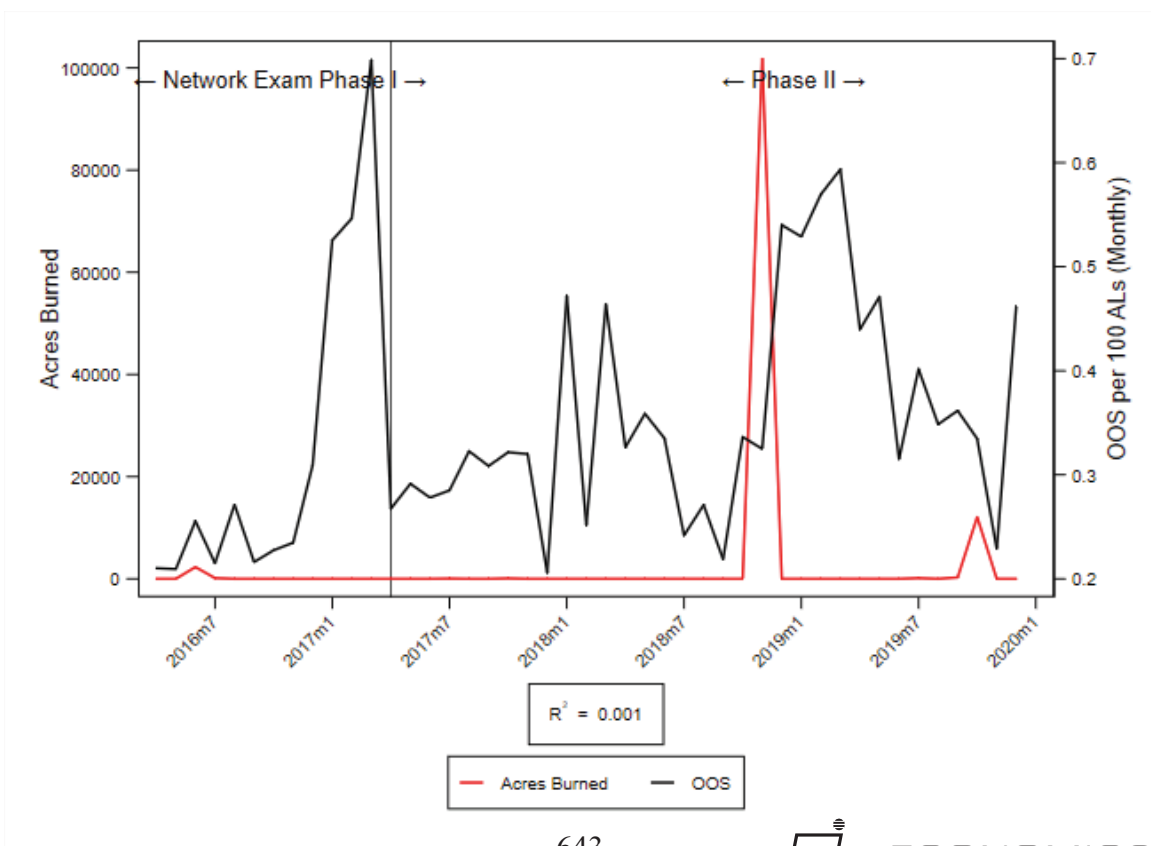
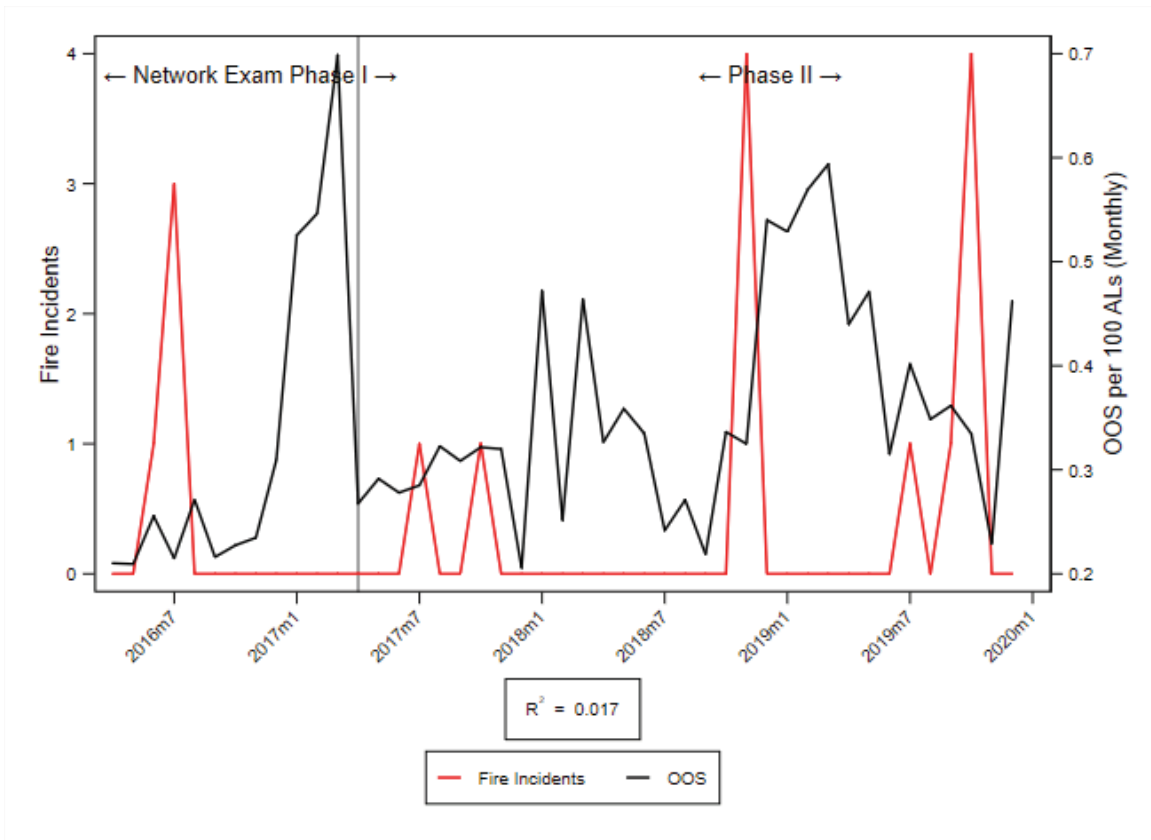
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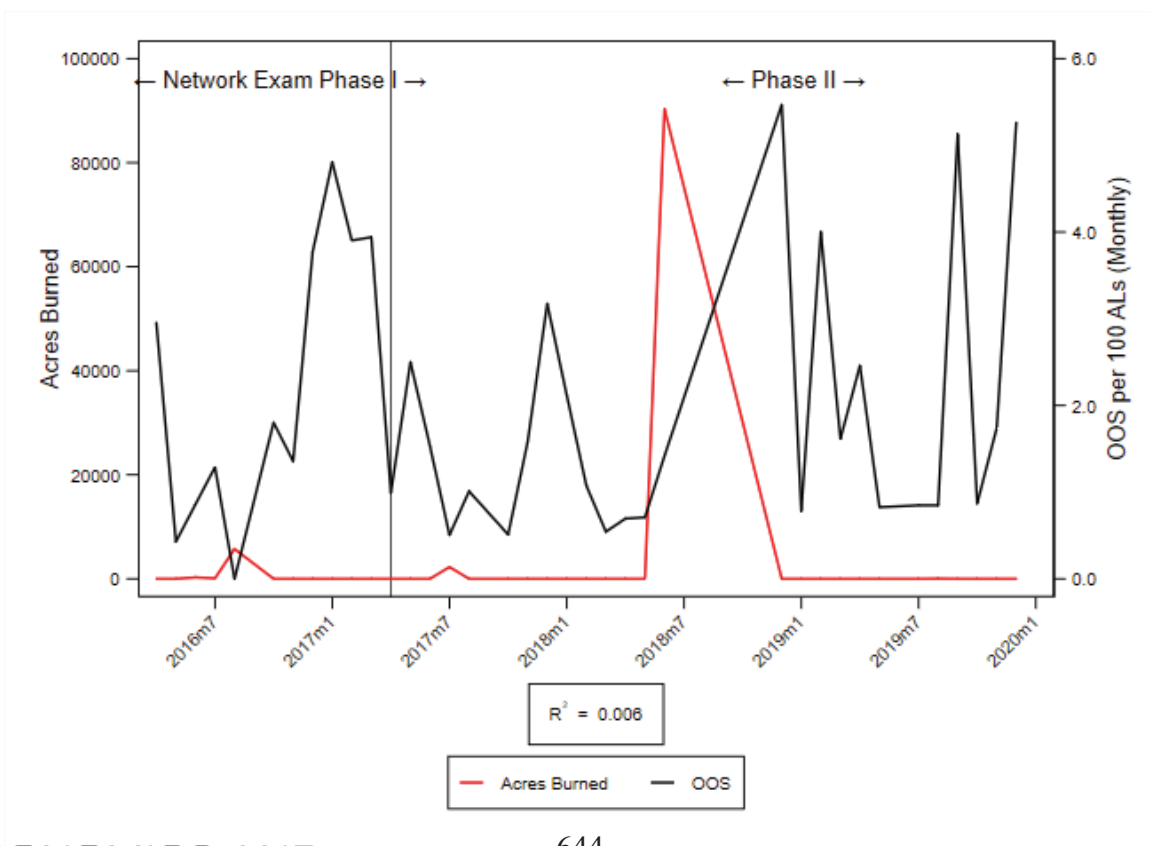
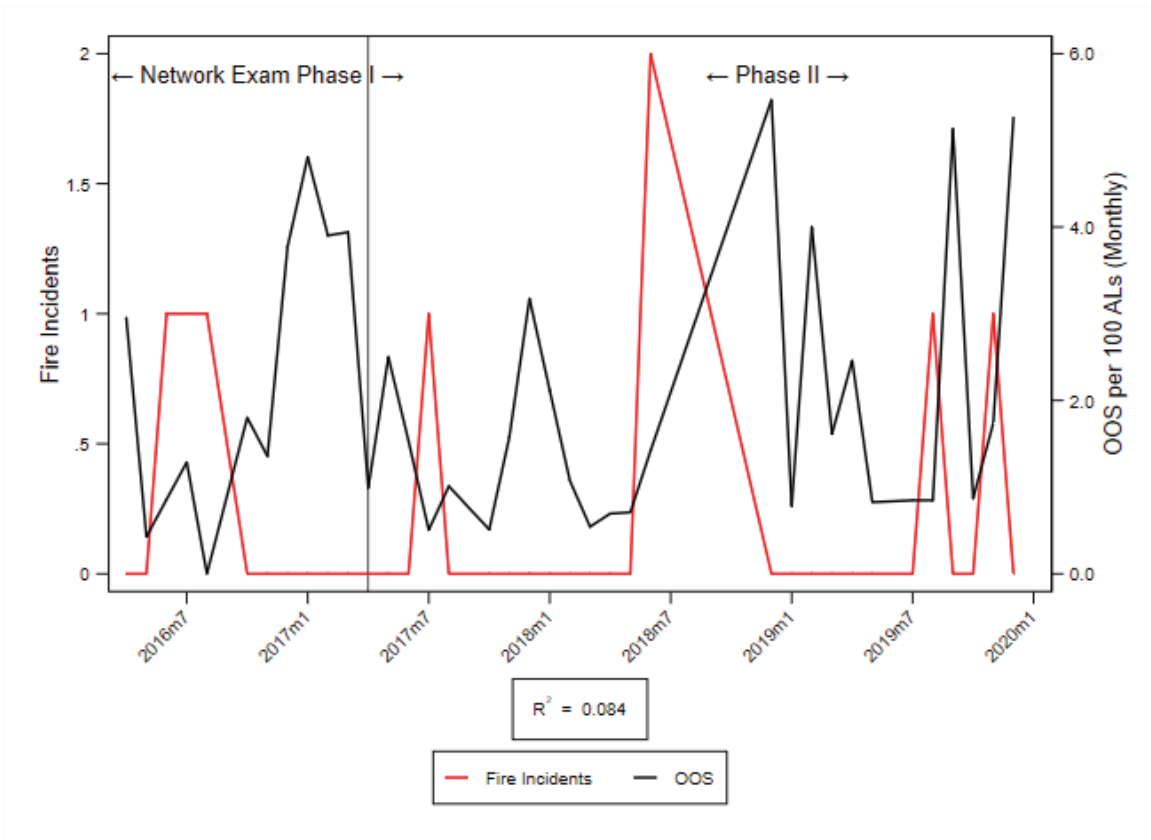
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COUNTY-REGION VENTURA - CENTRAL COAST (FTR)



COUNTY-REGION YOLO - SUPERIOR CALIFORNIA (FTR)



14 | ILEC RESPONSES TO SERVICE OUTAGES: VoIP SERVICES

Key findings addressed in this Chapter

- When an ILEC legacy circuit-switched POTS customer orders some form of broadband access from the ILEC, the carrier will generally migrate the customer's voice telephone service to a VoIP offering that is delivered, together with the customer's broadband Internet access, via the digital service.
- ILEC VoIP services are provided out of the same serving wire center that had been used for legacy circuit-switched services, but the VoIP switch itself can be located anywhere on the Internet. A service interruption or outage can arise in the local distribution infrastructure or anywhere beyond that point on the ILEC's IP network.
- Most AT&T California VoIP services are provided using DSL technology over a hybrid Fiber-to-the-Node ("FTTN") / copper distribution architecture. However, AT&T's deployment of Fiber-to-the-Premises ("FTTP") has been increasing; by the end of 2019, some ████████ of all AT&T California VoIP customers were being served via FTTP.
- From 2012 through 2016, the percentage of AT&T California VoIP access lines that had experienced out-of-service conditions in any given month was decreasing steadily, but those gains were reversed after 2016.
- The average duration of all trouble and out-of-service conditions was also shrinking up until 2016, but both metrics saw large upward spikes, with outage durations increase from less than 30 hours prior to 2017 to around 50 hours from 2017 onward.
- Some 58.4% of the 3.3-million AT&T California VoIP trouble reports created during the 2012-2019 period involved distribution plant issues.
- In wire centers where both VoIP and POTS are offered and where trouble report data is available for both services, the relative incidence of VoIP service outages was 38.7% greater than it was for POTS over the full Phase 1/2 study periods.
- Frontier suffered large losses both of POTS and VoIP access lines since assuming control of the company on April 1, 2016 with POTS losses slightly higher, suggesting that the availability of FTTP-based FiOS has done little to help Frontier maintain its customer base overall.

- As of the end of December 2019, Frontier was serving only [REDACTED] residential VoIP subscribers, just under 50% of the VoIP lines in service as of the takeover date. In comparison, Frontier had experienced a far greater drop-off in legacy circuit-switched access lines over that same period
- Out of the 44,095 out-of-service reports provided for the period from April 2016 through December 2019, only 25,089, or about 56.9%, appear to be the result of Frontier plant or equipment issues or employee actions.

ILEC RESPONSES TO SERVICE OUTAGES: VoIP SERVICES

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Introduction

For more than a decade, traditional circuit-switched voice telephone services have been in the process of being replaced by Voice over Internet Protocol (“VoIP”) technology. VoIP requires the deployment of digital services to the customer’s premises with sufficient bandwidth to accommodate both voice telephony as well as the various other digital (typically Internet-based) services that are used by the customer. Twisted-pair copper “loops” that have traditionally been provided to almost all residential premises and to most business locations can support digital end-to-end services, but generally cannot support the bandwidth requirements of typical residential and business customers for the full suite of voice and broadband Internet applications, particularly streaming video. Substantially greater bandwidths can be achieved through the use of either of three other technologies – fiber-to-the-premises (“FTTP”), fiber-to-the-node (“FTTN”), or hybrid fiber/coax (“HFC”). FTTP and FTTN are the preferred approach to high bandwidth services for ILECs, whereas HFC is used primarily by cable TV operators. With both FTTN and HFC, fiber is extended to a “node” located relatively close to the customer, but not all the way to the customer’s premises. The potential bandwidth achievable via twisted pair copper or coaxial cable is inversely related to the physical length of that segment; by extending fiber to the neighborhood node, the length of the copper or coax segment can be minimized, thereby enabling greater bandwidth to be delivered to the customer’s premises. Verizon (now Frontier) has focused upon an FTTP strategy via the *FiOS* brand; AT&T has some FTTP, but its predominant approach has been toward FTTN.

When an ILEC legacy circuit-switched POTS customer orders some form of broadband access from the ILEC, the carrier will generally migrate the customer’s voice telephone service to a VoIP offering that is delivered, together with the customer’s broadband Internet access, via the digital service. AT&T California *does not* offer VoIP services to customers who do not also take broadband Internet access and/or video from the ILEC; Frontier had a similar policy up until July 2019, when it began offering VoIP service on a stand-alone basis.⁹⁵



When an ILEC legacy circuit-switched POTS customer orders some form of broadband access from the ILEC, the carrier will generally migrate the customer's voice telephone service to a VoIP offering that is delivered, together with the customer's broadband Internet access, via the digital service.

The term “interconnected VoIP” refers to VoIP telephone service that is capable of initiating and/or receiving telephone calls over the Public Switched Telephone Network (“PSTN”). VoIP service can be furnished by a carrier, such as an ILEC or a cable television MSO, or as a so-called “over-the-top” Internet application by providers such as Vonage, MagicJack and others. A form of interconnected VoIP known as “Session Initiated Protocol” (“SIP”) is used by

⁹⁵. AT&T California Response to CD Data Request 11-A-25; Frontier California Response to CD Data Request 13-F-03(d).

businesses and other nonresidential customers where multiple voice paths (what would have been called “PBX trunks” in a circuit-switched world) are needed. When VoIP service is provided by an ILEC or a cable TV company, it is typically configured to operate over a dedicated subset, or “channel,” of the total Internet Protocol (“IP”) bandwidth that is being provided to the customer. “Over-the-top” services, which are purchased separately by the customer, typically share the same total available bandwidth with any other Internet activities that the customer is using. The customer’s Internet router can, however, be configured to afford priority to VoIP or other specific applications, if the customer has the technical knowledge to make the necessary “Quality of Service” (“QoS”) router settings. These settings enable over-the-top VoIP services to achieve results using shared Internet bandwidth that are roughly equivalent to those that are available through the use of “dedicated” VoIP bandwidth as provided by the carrier. Larger businesses that utilize SIP trunking obtained from an over-the-top provider may obtain dedicated IP bandwidth for this purpose that is separate and apart from their other IP applications.

Regulatory status of VoIP in California

In 2012, the California legislature adopted a new §710 of the California Public Utilities Code whose effect was to remove most aspects of any VoIP service from the CPUC’s regulatory jurisdiction.⁹⁶ §710 had included a “sunset” provision that became operative as of January 1, 2020; CD has advised us that §710 is no longer in effect and that the CPUC currently has resumed its jurisdiction over VoIP services. That notwithstanding, the ILECs continue to maintain that VoIP remains deregulated and that the Commission does not have jurisdiction with respect to this service. For example, in its response to a CD Data Request for certain VoIP-related data, Frontier asserts that:

Frontier notes that many of these questions seek irrelevant information that is unrelated to Frontier’s infrastructure, facilities and service quality and therefore, exceed the scope of the network examination authorized by Commission Decisions (D) 13-02-023 and D.15-08-041 and the scope of Commission General Order (G.O.) 133-D. Frontier also notes that several of the data requests seek granular information regarding Frontier’s unregulated VoIP services. Insofar as these questions are intended to bring VoIP within the Commission’s jurisdiction, it is contrary to federal law. See, e.g., *Vonage Holdings Corporation Petition for Declaratory Ruling Concerning and Order of the Minnesota Public Utilities Commission*, WC Docket No. 03•]211, *Memorandum Opinion and Order*, FCC 04-267 (rel. Nov. 12, 2004) ¶ 1 & n. 78 (confirming that interconnected VoIP is not subject to traditional telephone company regulations); *Minnesota PUC v. FCC*, 483 F.3d 570 (8th Cir. 2007) (affirming Vonage order); see also *Charter Advanced Services, LLC v. Lange*, 903 F.3d 715, 719 (8th Cir. 2018) (“[i]n the

96. Stats. 2012, Ch 733, Sec 3. (SB 1161) Effective January 1, 2013. Repealed as of January 1, 2020, by its own provisions.

absence of direct guidance from the FCC,” interconnected VoIP service should be treated as an “information service.”)⁹⁷

Notwithstanding this objection, Frontier California has generally been responsive to CD Data Requests pertaining to VoIP services.

Whether or not the sunset of §710 has the effect of reinstating the CPUC’s ratemaking authority with respect to VoIP services, as a practical matter the Commission no longer regulates most basic service rates in any event. When §710 was in effect, POTS customers were being migrated to VoIP either involuntarily or were being induced to switch to VoIP via the succession of POTS rate increases that AT&T and, to a lesser extent, Frontier, were implementing. The migration of POTS customers to VoIP services is typically triggered when the customer elects to subscribe for broadband Internet access and/or video from either ILEC; such involuntary migration has had the effect of diminishing, if not eliminating altogether, any regulatory recourse that may have been available to the POTS customer with respect to service quality issues. The reinstatement of the Commission’s jurisdiction with respect to VoIP services could help to eliminate this disparity.

Principal forms of digital services that support VoIP telephony

Most residential and small business customers that are provided with VoIP services are served via one of four technology platforms:

- *Digital Subscriber Line (“DSL”)*
- *Fiber-to-the-Node (FTTN)*
- *Fiber-to-the-Premises (FTTP)*
- *Hybrid fiber/coax (HFC)*

DSL. Digital services that are furnished over copper loops utilize “Digital Subscriber Line” (“DSL”) technology. As illustrated in Figure 14.1 below, copper-based distribution architecture utilized relatively small capacity (up to about 300 or 600 pair) cables that would run down individual streets or roads connecting individual customer premises to “remote terminals” where each of the individual pairs in these low-capacity cables would be “cross-connected” to individual copper pairs in large capacity (typically greater than 1200 pairs) “feeder cables.”

97. Frontier response to CD DR 13-F, cover letter dated August 7, 2020.

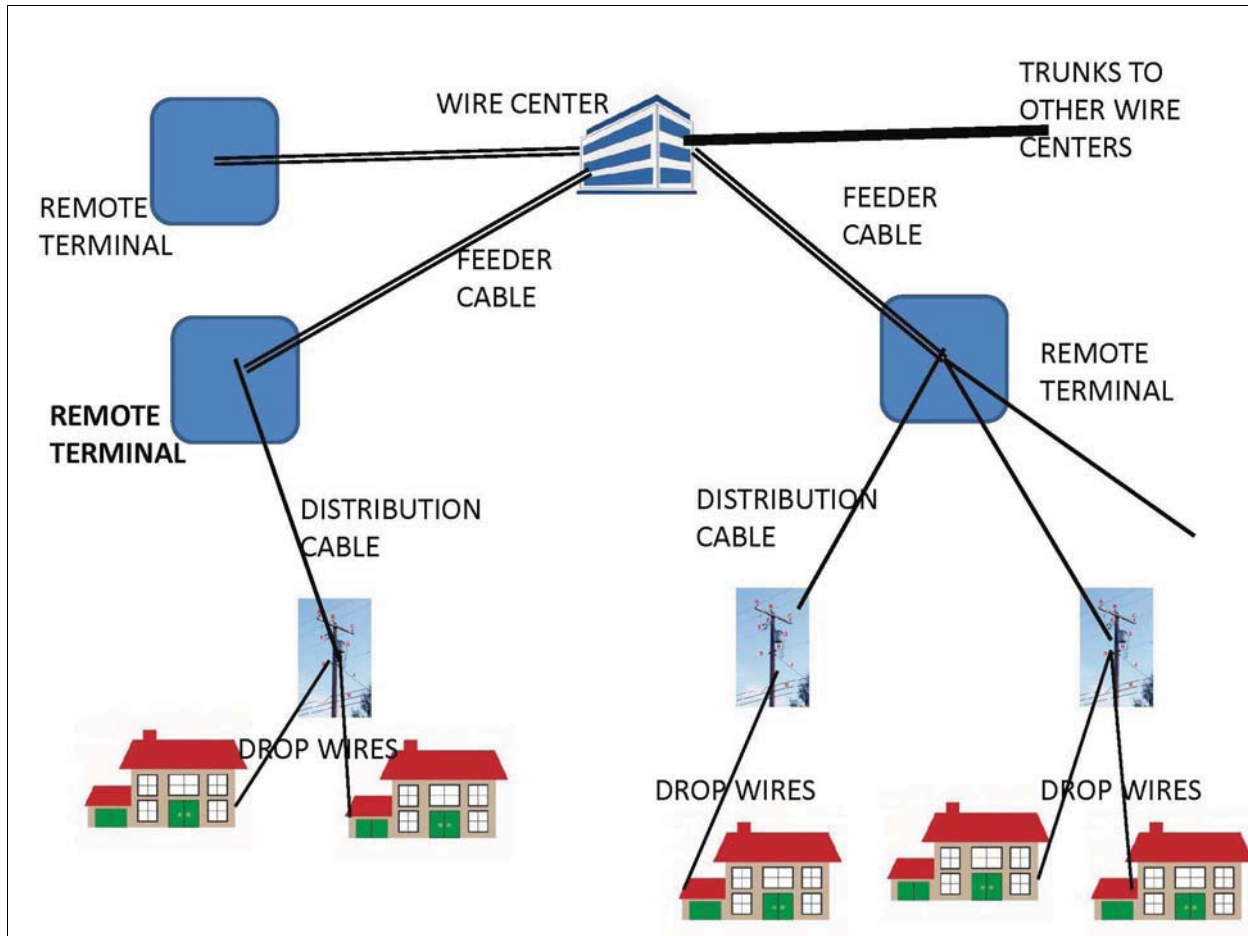


Figure 14.1. Principal components of an ILEC local distribution network.

The effective bandwidth (data rate) that is available with DSL is inversely related to the physical route length of the copper portion of the subscriber’s distribution network connection; if both the distribution and feeder cables involve copper wire, the total premises-to-central office route distance is controlling insofar as the effective DSL bandwidth that can be achieved. In general, DSL can only be provided where the aggregate length of the copper segment *route* (distribution + feeder) is less than about 18,000 route feet, which usually corresponds to about two miles of the straight-line distance, from the wire center.

FTTN. ILECs have been replacing copper feeder cables with fiber optic cables so as to shorten the length of the copper segment. The closer that fiber is brought to the ultimate customer premises, the greater the bandwidth that can be furnished to the end-user. In general, DSL without fiber can typically support bandwidths of around 1.0 megabits per second (“mbps”) or less to perhaps as much as 5 or 6 mbps depending upon route distance. With FTTN architecture, where the fiber segment is extended to within a few thousand feet of the customer, DSL may be capable of supporting up to 15 to 20 mbps, but rarely more than that. AT&T California’s

principal form of broadband Internet access is via FTTN architecture, although the company has been expanding its deployment of FTTP in a few areas.⁹⁸ A two-way VoIP telephone call requires around 100 kbps in each direction; however, since other activities may also be taking place over a customer's digital connection, a stable VoIP service generally requires a minimum bandwidth of about 3.0 mbps.

FTTP. ILECs may also provide Internet access (and VoIP) over a full fiber-to-the-premises architecture. Frontier obtained a substantial quantity of FTTP-served customer locations from Verizon through its 2016 acquisition. Verizon began deploying its *FiOS* FTTP infrastructure in the mid-2000s, although it largely discontinued most construction after 2010.⁹⁹ Frontier has not been able to provide the total number of homes passed by *FiOS*-capable FTTP facilities as of the April 1, 2016 acquisition date. Homes passed figures for October 2018 and 2019 were provided – [REDACTED] for October 2018, and 1,466,503 for October 2019.¹⁰⁰ As of December 2019, [REDACTED] of AT&T California VoIP customers were being served via FTTP.

HFC. Hybrid-fiber/coax is the architecture being used by cable TV MSOs such as Comcast and Charter to provide broadband Internet access and VoIP-based telephone services. HFC is a form of FTTN as used by ILECs, except that the “last mile” connection is provided by coaxial cable instead of twisted-pair copper wire. As with DSL, there is an inverse relationship between the route length of the coax segment and the bandwidth that can be supported, so cable MSOs have been bringing fiber closer to their customers so as to shorten the length of the coax segment. Unlike the ILECs' DSL-based hybrid fiber/copper approach, however, HFC is capable of supporting substantially higher bandwidths overall than DSL. Not surprisingly, cable MSOs have been far more successful both in attracting and in maintaining customers on their networks.

ILEC VoIP service architecture

Circuit-switched telephone services are provided out of central office switching equipment that is located either at the customer's serving wire center or, more recently, out of a remote service unit (“RSU”) that is connected, typically via a DS-3 (45 mbps) digital channel, to a “host” central office that may be located usually within 20 or 30 miles from the serving wire center, although in theory there is no particular distance limit for the host/remote link.

ILEC VoIP services are physically connected to the customer out of the same serving wire center that had been used for legacy circuit-switched services, but the VoIP switch – a computer “server” that supports the VoIP software – can in theory be located anywhere on the Internet. As


98. According to AT&T California's Form 477 submissions to the FCC, as of December 2019, approximately [REDACTED] of VoIP customers were being served via FTTP facilities. See Table 14.1 below.

99. “Verizon to End Rollout of FiOS,” *The Wall Street Journal*, March 30, 2010. <http://www.wsj.com/articles/SB10001424052702303410404575151773432729614> [accessed on July 16, 2015].

100. Frontier response to CD DR 15-F-6.

a result, a service interruption or outage can arise in the distribution infrastructure that connects the customer to the service wire center or anywhere beyond that point on the ILEC’s IP network.

From a maintenance perspective, the feeder/distribution link between the serving wire center and the customer’s premises is, as with legacy circuit-switched services, the location of most service outages. However, because VoIP requires locally-powered equipment located at the customer’s premises, failures in these devices can also result in service outages.

 ILEC VoIP services are provided out of the same serving wire center that had been used for legacy circuit-switched services, but the VoIP switch itself can be located anywhere on the Internet. A service interruption or outage can arise in the local distribution infrastructure or anywhere beyond that point on the ILEC's IP network.

VoIP service quality metrics: AT&T California

AT&T California began offering VoIP services in 2012. Demand for AT&T VoIP service peaked in 2015 and has been on the decline since then. As shown in Table 14.1 below, the overwhelming majority of AT&T VoIP service is being furnished over “copper” (DSL and FTTN) facilities; although the share of AT&T VoIP services that were being furnished over FTTP facilities has increased significantly, from ██████ in 2012 to ██████ in 2019:

Table 14.1							
AT&T CALIFORNIA							
VoIP SUBSCRIPTIONS AND TECHNOLOGIES							
2012-2019							
End of Year	Total	FTTP	Coaxial Cable	Fixed Wireless & Satellite	Copper	Other	Pct FTTP
2012	██████	██████	0	0	493,924	0	██████
2013	██████	██████	0	0	677,212	0	██████
2014	██████	██████	0	0	957,468	0	██████
2015	██████	██████	0	0	1,072,039	0	██████
2016	██████	██████	0	0	1,056,720	0	██████
2017	██████	██████	0	0	989,097	0	██████
2018	██████	██████	0	0	831,122	0	██████
2019	██████	██████	0	0	671,644	0	██████

Source: AT&T FCC Form 477 filings, AT&T California Response to CD Data Request 11-A-01.

FCC Form 477 also collects data on VoIP services being furnished over coaxial cable, fixed wireless & satellite, and “other.” AT&T California is not utilizing any of these technologies to provide its VoIP services.



Most AT&T California VoIP services are provided using DSL technology over a hybrid Fiber-to-the-Node (“FTTN”) / copper distribution architecture. However, AT&T’s deployment of Fiber-to-the-Premises (“FTTP”) has been increasing; by the end of 2019, some ██████ of all VoIP customers were being served via FTTP.

AT&T has provided us with approximately 3.3-million VoIP-related Trouble Report records for the 2012-2019 period. Table 14.2 below compares the total number of annual Trouble Reports with the “average” number of VoIP subscriptions during each year, calculated by taking the average of the December 31 VoIP subscription count for the current and prior years.

Table 14.2							
AT&T CALIFORNIA							
VoIP SUBSCRIPTIONS AND TROUBLE REPORTS							
2012-2019							
Year	EOY Subs	Average Subs for Year	Total Trouble Reports	Monthly TRs as Pct of Subs	Out-of-Service Trouble Reports	Monthly OOS TRs as Pct of Subs	OOS TRs as Pct of all TRs
2011	█						
2012	██████	██████	170,387	5.58%	109,189	3.57%	64.08%
2013	██████	██████	423,661	5.85%	282,685	3.90%	66.72%
2014	██████	██████	561,227	5.58%	346,958	3.45%	61.82%
2015	██████	██████	586,742	4.68%	316,543	2.52%	53.95%
2016	██████	██████	516,908	3.88%	310,023	2.33%	59.98%
2017	██████	██████	451,563	3.40%	296,370	2.23%	65.63%
2018	██████	██████	323,580	2.57%	215,073	1.71%	66.47%
2019	██████	██████	270,798	2.45%	185,504	1.68%	65.80%

Source: AT&T FCC Form 477 filings, AT&T California Response to CD Data Request 11-A-01.

Expressed in relative terms, there appears to have been a steady improvement in the percentage of VoIP subscriptions that experience trouble conditions in any given month, both in total as well as in the incidence of out-of-service conditions. However, the relative incidence of out-of-service reports as a percentage of all trouble reports has remained within the same 50%-69%) over the full 8-year period.



From 2012 through 2016, the percentage of AT&T California VoIP access lines that had experienced out-of-service conditions in any given month was decreasing steadily, but those gains were reversed after 2016.

We have also tracked the average duration of all trouble and out-of-service conditions, as measured from the date/time of the initial report to the date/time when the trouble or out-of-service conditions was fully cleared. As shown in Table 14.3 below, there was a small improvement in this metric through 2016, but over the last three years (2017-2019), durations of all trouble conditions as well as those involving service outages experienced a considerable spike, not unlike what had occurred for AT&T California’s legacy POTS services.

Year	Total Trouble Reports	Average Duration (Days)	Out-of-Service Trouble Reports	Average Duration (Days)
2012	170,387	1.27	109,189	1.22
2013	423,661	1.39	282,685	1.36
2014	561,227	1.33	346,958	1.26
2015	586,742	1.14	316,543	1.11
2016	516,908	1.19	310,023	1.17
2017	451,563	1.71	296,370	1.70
2018	323,580	2.24	215,073	2.21
2019	270,798	2.48	185,504	2.44

Source: AT&T FCC Form 477 filings, AT&T California Response to CD Data Request 11-A-01.



The average duration of all trouble and out-of-service conditions was also shrinking up until 2016, but both metrics saw large upward spikes, with outage durations increase from less than 30 hours prior to 2017 to around 50 hours from 2017 onward.

Service issues have many causes and, particularly with VoIP, many are driven by conditions largely or entirely outside of the carrier’s control. Unlike legacy POTS services where customer premises equipment (“CPE”) consists mainly of technologically simple analog telephone handsets, VoIP services require, among other things, a local source of electrical power including some form of battery back-up, either an “analog telephone adapter” (“ATA”) of some sort to convert between the analog microphone and earpiece signals associated with conventional

telephone handsets and the IP data stream that carries the VoIP signal as well as to translate touch tone signals into digital form, or one or more VoIP telephone handsets.¹⁰¹ If the VoIP service is physically provided in conjunction with the customer's broadband Internet access, a home router with an ethernet switch will also be needed. Such equipment is frequently provided (for a monthly rental fee) by the carrier, but some of it may also be provided by the customer, who must then assume responsibility for its installation and maintenance. Problems with any of the CPE can lead to service difficulties or outright interruptions. In many cases, when such situations arise, the carrier may provide technical support assistance to help the customer diagnose and correct the problem and restore service. Sometimes, all that is required is for the customer to briefly unplug and then reboot the router and/or modem. In many of these instances, however, when a customer reports a problem, a trouble ticket may nevertheless be created.

AT&T trouble report records include a "cause code" to identify the nature of the problem as determined by the carrier, AT&T has provided descriptions of approximately 190 cause codes,¹⁰² but some 300 unique cause codes are present in the 3.3-million VoIP trouble report records covering the 2012-2019 time frame. AT&T classifies the cause codes into six (6) broad "major" categories and about 40 subcategories. Table 14.4 below identifies the six categories and the total number of trouble reports in each category. Table 14.5 breaks this down for each year over the 2012-2019 period.

As shown in Table 14.4, some 58.4% of all trouble reports fall into categories 1-3, and are associated with distribution plant issues. Those falling into categories 1 and 2 are described as having been caused either by AT&T employees or by other non-AT&T personnel performing work on the distribution network. Category 3, which represents roughly 22% of all trouble reports, are associated with some type of network facility issue that arises from time to time but is not attributable to any specific activity being undertaken by the company. Less than one percent (category 4) are caused by weather, with another 2.5% (category 5) the result of various environmental conditions, including fires, animals and floods. Category 6 appears to be a sort of catch-all for other causes, the bulk of which (subcategories 62 and 65) appear to relate to customer premises issues, which likely include technical support with respect to the use of certain CPE components.

101. Unlike legacy circuit-switched services where several conventional analog handsets can be connected to the same access line and as individual "extensions" can be connected to the same phone call, only a single VoIP handset can be used with a typical residential VoIP service. As a result, most residential VoIP services are configured to utilize an Analog Telephone Adapter ("ATA") that is connected to the customer's existing inside (copper) wire for use with one or more conventional analog telephone handsets.

102. AT&T Response to CD DR 13-A-1.

Table 14.4						
AT&T CALIFORNIA						
PRINCIPAL VoIP TROUBLE REPORT CAUSE CATEGORIES AND SUBCATEGORIES						
2012-2019						
Cause Category	Subcategory	Category		Subcategory		
		Incidents	Pct of Total	Incidents	Pct of Total	
1 AT&T COMPANY EMPLOYEE / SYSTEM	10			111,750	3.38%	
	12			9,732	0.29%	
	13			6,234	0.19%	
	15			3,146	0.10%	
				3,522	0.11%	
	18			1,497	0.05%	
			161,655	4.89%	25,647	19.32%
2 NON-EMPLOYEE	20			393,862	11.92%	
	21			3,673	0.11%	
	22			6,119	0.19%	
	29		1,041,899	31.54%	638,210	19.32%
3 AT&T PLANT OR EQUIPMENT	30			692,573	20.96%	
	31			10,910	0.33%	
	32			14,580	0.44%	
	33			32	0.00%	
	34			11	0.00%	
	39		723,869	21.91%	3,885	0.12%
4 WEATHER	40			12,493	0.38%	
	41			1,075	0.03%	
	42			13,786	0.42%	
	43			331	0.01%	
	44			1,442	0.04%	
	4			376	0.01%	
	46			396	0.01%	
	4		31,012	0.94%	1,113	0.03%
5 MISCELLANEOUS / SERVICE ORDER ACTIVITY	50			2,528	0.08%	
	51-53			14	0.00%	
	54			132	0.00%	
	55			19	0.00%	
	56			10,708	0.32%	
	57			16,317	0.49%	
				1,798	0.05%	
59		82,926	2.51%	7,493	0.23%	
6 UNKNOWN / ROUTINE	60			43,363	1.31%	
				554	0.02%	
	62			697,984	21.13%	
	63			55,275	1.67%	
	64			97,405	2.95%	
	65			1,971	0.06%	
	66			24,322	0.74%	
				98,061	2.97%	
				19,984	0.60%	
		1,262,153	38.20%	144,516	4.37%	
UNCLASSIFIED		269	0.01%	7,882	0.24%	
TOTALS		3,303,783	100.00%	3,303,783	100.00%	

Source: AT&T Response to CD Data Requests 11-A-25; 13-A-1.



Some 58.4% of the 3.3-million AT&T California VoIP trouble reports created during the 2012-2019 period involved distribution plant issues.

Table 14.5

AT&T CALIFORNIA
ANNUAL VoIP TROUBLE REPORT INCIDENTS BY MAJOR CAUSE CATEGORIES
2012-2019

Category	2012	2013	2014	2015	2016	2017	2018	2019	Total
1 AT&T COMPANY EMPLOYEE / SYSTEM	8,545	22,162	29,661	25,052	20,112	21,240	16,763	18,120	161,655
2 NON-EMPLOYEE	68,236	166,965	214,988	156,449	125,411	131,165	100,991	77,694	1,041,899
3 AT&T PLANT OR EQUIPMENT	33,980	91,648	129,582	170,392	139,266	83,345	38,174	37,482	723,869
4 WEATHER	531	1,351	3,184	2,715	3,168	7,544	6,112	6,407	31,012
5 MISC / SERVICE ORDER ACTIVITY	2,018	5,311	10,309	20,727	15,715	13,458	7,618	7,770	82,926
6 UNKNOWN / ROUTINE	57,076	136,217	173,500	211,299	212,562	194,586	153,838	123,075	1,262,153
TOTALS	170,386	423,654	561,224	586,634	516,234	451,338	323,560	270,753	3,303,783

For legacy POTS services, GO 133-C/D utilizes a metric of “Trouble Reports per Hundred Access Lines per Month” (“TRPH”) to assess overall service quality performance. In Table 14.6 below, we calculate average monthly TRPH for each years 2012-2019 and separately for each major cause category:

Category	2012	2013	2014	2015	2016	2017	2018	2019
Average VoIP access lines	██████	██████	██████	██████	██████	██████	██████	██████
1 AT&T COMPANY EMPLOYEE / SYSTEM	0.2797	0.3059	0.2949	0.1998	0.1510	0.1598	0.1330	0.1641
2 NON-EMPLOYEE	2.2334	2.3048	2.1374	1.2477	0.9416	0.9869	0.8015	0.7036
3 AT&T PLANT OR EQUIPMENT	1.1122	1.2651	1.2883	1.3588	1.0457	0.6271	0.3030	0.3395
4 WEATHER	0.0174	0.0186	0.0317	0.0217	0.0238	0.0568	0.0485	0.0580
5 MISC / SERVICE ORDER ACTIVITY	0.0661	0.0733	0.1025	0.1653	0.1180	0.1013	0.0605	0.0704
6 UNKNOWN / ROUTINE	1.8682	1.8804	1.7249	1.6851	1.5960	1.4641	1.2209	1.1147
TOTAL TRPH	5.5769	5.8482	5.5796	4.6783	3.8761	3.3958	2.5678	2.4521
Note: Includes all Trouble Reports, Out-of-Service as well as non-OOS								

It is instructive to compare AT&T California's service quality performance for its legacy POTS and its VoIP services. Table 14.7 below provides the monthly weighted (by access lines in each wire center) average out-of-service TRPH over the Phase 2 2018-2019 study period separately for AT&T California legacy POTS and VoIP services. We have calculated the OOS TRPH for legacy services in several different ways:

- (1) The first calculation was based upon all 606 AT&T California wire centers for which both trouble report and access line data was available.
- (2) In the second approach, we limited the analysis to only the 530 wire centers where VoIP was being offered as of the end of 2019.
- (3) In the third calculation, we only looked at the 76 AT&T California wire centers where VoIP was *not* being offered as of the end of 2019.
- (4) In the fourth calculation, we have excluded the 27 wire centers where VoIP is offered but where no Trouble Report data for 2018 or 2019 was available.
- (5) The fifth calculation, which includes the same wire centers that were included in (4) and is thus a direct comparison, provides the weighted average out-of-service trouble reports per hundred VoIP access lines.

Calculation method	Number of Wire Centers	Out-of-Service Reports per Hundred Access Lines
1 Legacy POTS access lines – all wire centers for which data is available	606	1.2366
2 Legacy POTS access lines – wire centers where VoIP is offered	530	1.2213
3 Legacy POTS access lines – wire centers where VoIP is NOT offered	76	1.9964
4 Legacy POTS access lines – wire centers where VoIP Trouble Report data is available	503	1.2138
5 VoIP access lines	503	1.6842

This analysis provides several important findings. In the direct comparison of the 503 wire centers where both VoIP and POTS are offered and where trouble report data is available for both services (calculations (4) and (5) above), the VoIP OOS TRPH is actually 38.7% *greater* than for POTS. And when we compare calculations (2) and (3) above, we find that the incidence of POTS out-of-service conditions is 63.5% greater in the 76 wire centers where VoIP is *not* offered than in the 530 wire centers where it is. This result is, of course, consistent with our finding, as discussed in Chapter 4A above, that most all POTS service quality metrics are better in wire centers that have been equipped for broadband services than in those where no broadband upgrade investments have been made.



In wire centers where both VoIP and POTS are offered and where trouble report data is available for both services, the relative incidence of VoIP service outages was 38.7% greater than it was for POTS over the full Phase 1/2 study periods.

Individual wire center VoIP service quality performance

Table 14.8 provides average VoIP lines in service for each AT&T California wire center for each of the years 2014-2019, based upon AT&T FCC Form 477 submissions. Tables 14.9 and 14.10 provide Total and Out-of-Service VoIP TRPH for all AT&T wire centers where VoIP service is provided for the years 2015 through 2019.¹⁰³ This analysis included all cause codes,

103. AT&T provided us with its Form 477 VoIP access line data for end-of-year 2014 through 2019. Form 477 requires that carriers provide subscription counts by individual Census Block, rather than by wire center. With the assistance of the Geographic Information Systems (GIS) group in the Communications Division, we were able to associate each Census Block with a specific AT&T California wire center, and on that basis we were able to develop

even those where the outage was the result of customer activity or misuse of the service. As we explained earlier, VoIP services involve considerably more customer premises equipment than is needed for legacy POTS-type services. We do not believe it would be correct to exclude sources of service problems merely because they are located at the customer's premises.

The AT&T VoIP TRPH calculations shown in Tables 14.9 and 14.10 appear to fall well short of the GO 133-C/D threshold. Certain wire centers appear to exhibit particularly high TRPH numbers, but these seem to be due primarily to the nature of the underlying data upon which this analysis was based rather than to systemic issues in those locations. That said, the spike in overall trouble reports and in service outages that appears to have occurred starting in 2017 does raise some concerns, and it may be worthwhile for the Commission to pursue this further as the importance of VoIP as the preferred method of providing basic service grows in future years.

wire center level VoIP subscriptions as of the end of each year from 2014 through 2019. In order to calculate TRPH based only upon annual data, we needed to calculate the average number of lines in service over the full year, which required that we start our analysis with 2015, using the average of end-of-year 2014 and 2015.

Table 14.8

AT&T CALIFORNIA
VoIP ACCESS LINES IN SERVICE BY WIRE CENTER
AVERAGE PER MONTH
2014-2019

WC	CLLI	WC Name	2014	2015	2016	2017	2018	2019
661410	ACTNCA11	Acton						
661351	AGDLCA11	Agua Dulce						
818600	AGORCA11	Agoura						
510001	ALBYCA11	Albany/Solano						
530425	ALGHCA11							
626601	ALHBCA01	Alhambra						
510002	ALMDCA11	Alameda/Central						
619700	ALPICA12	Alpine						
209150	ANCMCA01	Angels Camp						
707275	ANGWCA11	Angwin						
714701	ANHMCA01	Anaheim Lemon						
714702	ANHMCA11	Anaheim Cypress						
714703	ANHMCA12	Anaheim La Palma						
714811	ANHMCA17	ANHM Hills						
925003	ANTCCA11	Antioch						
831100	APTSCA12	Aptos						
626602	ARCDCA11	Arcadia						
707276	ARCTCA11	Arcata						
805352	ARGRCA12	Arroyo Grande						
831144	ARMSCA11	Aromas						
209151	ARNLCA11	Arnold						
530427	ARSNCA11	Anderson						
951704	ARTNCA11	Arlington						
661353	ARVNCA11	Arvin						
559152	ASMTCA11							
805354	ATSCCA11	Atascadero						
209153	ATWRCA12	Atwater						
530428	AUBNCA01	Auburn - Main						
530429	AUBNCA11	Auburn - Placer Hills						
559154	AVNLCA12	Avenal						
949706	BALBCA01	Balboa						
530434	BCWYCA11	Brockway						
530431	BEALCA11	Beale						
323604	BELLCA11	Bell						
530432	BGGSCA11	Biggs						
707281	BGVLCA11							
661356	BKFDCA11	Bakersfield Empire						
661357	BKFDCA12	Bakersfield Main / Fairview						
661358	BKFDCA13	Bakersfield Columbus						
661359	BKFDCA14	Bakersfield Temple						
661360	BKFDCA15	Bakersfield Mettler						
661361	BKFDCA17	Bakersfield West / Rosedale						
661409	BKFDCA19	Bakersfield Nomad						
510004	BKLYCA01	Berkeley/Bancroft						
831102	BLCKCA11	Boulder Creek						
707277	BNCICA11	Benicia						
831103	BNLMCA11	Ben Lomond						
714710	BNPKCA11	Buena Park						
707280	BNVLCA11	Boonville						
818605	BRBNCA11	Burbank Palm						
818606	BRBNCA13	Burbank Thornton						
#N/A	BRDLCA91							
714709	BREACA12	Brea						
650006	BRLNCA01	Burlingame						
760707	BRSPCA11							
925007	BRWDCA12	Brentwood						
760708	BRWLCA11	Brawley						
925082	BSRNCA70	Bishop Ranch						
530435	BTCYCA11							
925008	BTISCA11	Bethel Island						
559242	BURLCA11	Burrell						
310607	BVHLCA01	Beverly Hills						
209155	BVLYCA11	Bear Valley						
805362	BYPKCA11	Baywood Park						
707285	CBMTCA11	Cobb Mountain						
530438	CHICCA01	Chico Main						
530437	CHLNCA11							

WC	CLLI	WC Name	2014	2015	2016	2017	2018	2019
619718	CHVSCA11	Chula Vista Third Avenue						
619719	CHVSCA12	Chula Vista Apache						
559158	CHWCCA11	Chowchilla						
818666	CLBSCA11	Calabasas / Park Sorrento						
818665	CLBSCA50	Calabasas / Los Virgenes						
310608	CLCYCA11	Culver City						
559160	CLNGCA01	Coalinga						
707283	CLOKCA11	Clear Lake Oaks						
707282	CLSTCA11	Calistoga						
559159	CLVSCA11	Clovis						
760712	CLXCCA12	Calexico						
805364	CMBACA11	Cambria						
559156	CMNLCA11							
760714	CMPDCA01	Camp Pendleton						
310609	CMTNCA01	Compton						
925009	CNCRCA01	Concord						
818610	CNPKCA01	Canoga Park						
530528	CNVYCA11	Central Valley						
707284	CODLCA11	Cloverdale						
650010	COLACA01	Colma-Daly City						
707286	CORDCA12	Cordelia						
951721	CORNCA11	Corona						
909720	COTNCA11	Colton						
510011	CRCTCA02	Crockett						
949722	CRDMCA11	Corona Del Mar						
760716	CRLSCA11	Carlsbad Harding						
760717	CRLSCA12	Carlsbad La Costa						
831105	CRMLCA11	Carmel Main						
619723	CRNDCA11	Coronado						
530440	CRNGCA12	Corning						
559157	CRTHCA11	Caruthers						
831106	CRVYCA11	Carmel Valley						
949725	CSMSCA11	Costa Mesa						
661408	CSTCCA11	Castaic						
831107	CSVLCA11	Castroville						
707287	CTTICA12	Cotati						
209161	CTVLCA11							
530441	CTWDCA11	Cottonwood						
209162	CWLDCA12	Crows Landing						
805366	CYCSCA11	Cayucos						
925081	CYTNCA11	Clayton						
925012	DAVLCA12	Danville-Main (12)						
925085	DAVLCA13	Danville - Tassajara (13)						
530442	DAVSCA11	Davis						
661367	DELNCA11	Delano						
559164	DINBCA01	Dinuba						
707443	DIXNCA11	Dixon						
858727	DLMRCA12	Del Mar						
559163	DLRYCA11	Del Rey						
619728	DLZRCA11	Dulzura						
530445	DNGNCA12	Dunnigan						
530446	DNSMCA11	Dunsmuir						
661369	EDWRCA01	Edwards						
530448	EKCKCA11							
619729	ELCJCA11	El Cajon						
760730	ELCNCA01	El Centro						
626611	ELMNCA01	El Monte						
510013	ELSBCA11	Rich-Appian Way/El Sobrante						
310613	ELSGCA12	El Segundo Douglas						
949731	ELTRCA11	El Toro						
760732	ENCTCA12	Encinitas						
661368	ERLMCA11	Earlimart						
209192	ESCLCA11	Escalon						
760733	ESCNCA01	Escondido						
530450	ESPRCA11	Esparto						
707289	EURKCA01	Eureka						
831108	FETNCA11	Felton						
760735	FLBKCA12	Fallbrook						
805370	FLMRCA11	Fillmore						
916453	FLSMCA12	Folsom - Nimbus						
916454	FLSMCA13	Folsom - El Dorado Hills						
916536	FLSMCA14	Folsom - Blue Ravine						
909736	FNTACA11	Fontana						
559166	FRBHCA11	Firebaugh						

WC	CLLI	WC Name	2014	2015	2016	2017	2018	2019
760738	FRCKA11							
707290	FRFDCA01	Fairfield						
530455	FRGLCA11							
510014	FRMTCA11	Fremont Main 11						
510015	FRMTCA12	Fremont Adams (Oliver12)						
916451	FROKCA11	Fair Oaks						
559168	FRSNCA01	Fresno Main						
559169	FRSNCA11	Fresno Baldwin						
559172	FRSNCA12	Fresno Clinton						
559170	FRSNCA13	Fresno Sierra						
559245	FRSNCA14	Fresno West / Highway City						
559247	FRSNCA15	Fresno Woodward						
559165	FRVLCA11	Farmersville						
707291	FSVLCA11	Forestville						
707292	FTBRCA02	Fort Bragg						
707293	FTUNCA11	Fortuna						
714737	FUTNCA01	Fullerton						
209171	GALTCA11	Galt						
818614	GLDLCA11	Glendale						
831109	GNFDC11	Green Field						
831110	GNZLCA11	Gonzales						
530461	GRDLCA11	Gridley						
310615	GRDNCA01	Gardena						
714739	GRGVCA01	Euclid						
530457	GRTWCA11	Georgetown						
530459	GRVYCA01	Grass Valley						
530532	GRVYCA11	Lake of the Pine						
530535	GRVYCA12	Wildwood						
209174	GUSTCA11	Gustine						
707296	GUVLCA11	Guerneville						
707294	GYVLCA11	Geyersville						
209176	HERLCA11	Herald						
909741	HGLDCA11	Highland						
209177	HGSNCA11	Hughson						
707297	HLBGCA11	Healdsburg						
831111	HLSTCA11	Hollister						
760742	HLVLCA11	Holtville						
323616	HLWDCA01	Hollywood						
650016	HMBACA12	Half Moon Bay						
530462	HMCYCA11	Hamilton City						
530463	HMWDCA11	Homewood						
559175	HNFRCA01	Hanford						
323617	HNPKCA01	Huntington Park						
510080	HRCLCA11	Hercules-Pinole						
559178	HURNCA11	Huron						
310618	HWTHCA01	Hawthorne						
510017	HYWRCA01	Hayward Main						
510018	HYWRCA11	Hayward Depot						
415019	IGNCCA12	Ignacio						
310619	IGWDCA01	Inglewood						
619744	IMBHCA11	Imperial Beach						
760743	IMPRCA11	Imperial						
415020	INVRCA11	Inverness						
209179	IONECA11	Ione						
949745	IRVNCA01	Irvine						
949807	IRVNCA11	Irvine/Airport						
949810	IRVNCA12	Spectrum-Irvine						
559180	IVNHCA11	Ivanhoe						
619851	JAMLCA60	Jamul						
209181	JCSNCA01	Jackson						
209182	JMTWCA11	Jamestown						
760748	JULNCA12	Julian						
559183	KGBGCA11	Kingsburg						
831112	KGCYCA11	King City						
209184	KNFYCA11							
530465	KYBRCA11	Kyburz						
818621	LACRCA11	La Crescenta						
858750	LAJLCA11	La Jolla / Girard						
619752	LAMSCA01	La Mesa						
661372	LAMTCA11	Lamont						
209190	LCFRCA11	Lockeford						
661373	LEBCCA11	Lebec						
559188	LEMRC11	Lemore Main						
559189	LEMRC12	Lemore Wyman						

WC	CLLI	WC Name	2014	2015	2016	2017	2018	2019
925022	LFYTC A11	Lafayette						
949749	LNGCA12	Laguna Niguel						
209187	LGRDCA11	Le Grande						
209185	LGRNCA12	LaGrande/D Pedro						
707301	LKBRCA11							
661405	LKLACA11	Lake Los Angeles						
707302	LKPTCA02	Lakeport						
619751	LKSDCA12	Lakeside						
530471	LLTNCA11							
916467	LNCLCA11	Lincoln						
661374	LNVC A11	Leona Valley						
209191	LODICA01	Lodi						
707303	LOLTCA11	Lolita						
916470	LOMSCA11	Loomis						
310622	LOMTCA11	Lomita						
415023	LRKSCA11	Larkspur/Corte Madera						
213624	LSANCA02	Madison 02 / MO						
213625	LSANCA03	Madison 03 / MA						
323626	LSANCA05	LSAN Pleasant						
213627	LSANCA06	Union						
310628	LSANCA07	LSAN Airport						
323629	LSANCA08	LSAN Melrose						
213630	LSANCA09	Richmond						
323631	LSANCA10	LSAN Webster						
213632	LSANCA11	Rampart						
323633	LSANCA12	Normandy						
323634	LSANCA13	LSAN Plymouth						
323635	LSANCA14	LSAN Adams						
323636	LSANCA15	LSAN Axminster						
323638	LSANCA23	LSAN Capitol						
323640	LSANCA29	LSAN Sunset						
323641	LSANCA34	LSAN Angeles						
323642	LSANCA35	LSAN Montebello						
323643	LSANCA38	LSAN Republic						
323644	LSANCA56	LSAN Clinton						
650024	LSATCA11	Los Altos						
209193	LSBNCA12	Los Banos						
530469	LSMLCA11	Los Molinos						
661375	LTRKCA11	Little Rock						
925025	LVMRCA11	Livermore						
530468	LVOKCA11	Live Oak						
707304	LWLKCA11	Lower Lake						
559194	MADRCA11	Madera Main						
559243	MADRCA12	Madera Bonnadelli						
831113	MARNCA11	Marina						
209199	MDSTCA02	Modesto Main						
209200	MDSTCA03	Modesto Kellog / South / Ceres						
209201	MDSTCA04	Modesto Kingswood / Curtis / Salida						
209248	MDSTCA05	Modesto Tally						
707306	MDTWCA11	Middletown						
209202	MKHLCA12							
707307	MKVLCA11	McKinleyville						
650026	MLBRCA11	Millbrae						
408114	MLPSCA11	Milpitas						
415027	MLVYCA01	Mill Valley						
707305	MNDCCA11	Mendocino						
559195	MNDTCA11	Mendota						
650028	MNPKCA11	Menlo Park						
661376	MOJVCA01	Mojave						
925029	MORGCA12	Moraga						
805378	MRBACA11	Morro Bay						
209196	MRC DCA01	Merced						
530473	MRDNCA11							
209203	MRPHCA11	Murphys						
805377	MRPKCA12	Moorpark						
925030	MRTZCA11	Martinez						
650031	MSBHCA11	Moss Beach						
949806	MSVJCAAT	Mission Viejo						
530529	MTAGCA11	Montague						
831115	MTRYCA01	Monterey						
530474	MTSHCA12	Mount Shasta						
650032	MTVWCA11	Mountain View						
530472	MYVICA01	Marysville						
707310	NAPACA01	Napa						

WC	CLLI	WC Name	2014	2015	2016	2017	2018	2019
530477	NCLSCA12	Nicolaus						
916478	NHLDCA11	Edgewood/N. Highl						
661379	NHLLCA01	Newhall						
818646	NHWDCA01	NHWD / Lankershim						
818647	NHWDCA02	NHWD / Magnolia						
707311	NICECA11	Nice						
415033	NICSCA11							
760855	NILDCA11	Niland Main						
760856	NILDCA12							
805380	NIPMCA11	Nipomo						
818648	NORGCA11	Northridge						
916479	NSCRCA11	Wabash						
916537	NSCRCA12	North Natomas						
530480	NSJNCA11	North San Juan						
619754	NTCYCA11	National City - Highland						
530475	NVCYCA11	Nevada City						
916476	NWCSCA11	Newcastle						
209204	NWMNCA12	Newman						
530481	NYUBCA11							
707312	OCDNCA11							
760758	OCSOCA11	Oceanside / Mission						
805382	OJAICA11	Ojai						
209205	OKDLCA11	Oakdale						
510036	OKLDCA03	Oakland Franklin						
510037	OKLDCA04	Oakland Kellog(Fruitvale)						
510038	OKLDCA11	Oakland 45th/Olympic(Central)						
510039	OKLDCA12	Oakland Holly						
510040	OKLDCA13	Oakland Mountain						
925041	OKLYCA11	Oakley						
805381	OKVWCA11	Oakview						
661383	OLDLCA11	Export / Oildale						
559206	ORCVCA11	Orange Cove						
530483	ORLDCA11	Orland						
925042	ORNDCA11	Orinda						
714759	ORNGCA11	Orange Chapman						
714760	ORNGCA13	Orange Olive						
714761	ORNGCA14	Orange West						
559207	ORSICA11	Orosi						
916482	ORVACA11	Orangevale						
530484	ORVLA11	Oroville Main						
530485	ORVLA12	Oroville East						
619853	OTMSCA11	Otay Mesa						
760764	PALACA11	Pauma Valley						
858762	PCBHCA01	Garnet						
858763	PCBHCA11	Hornblend						
650043	PCFCCA11	Pacifica						
951765	PDLYCA11	Pedley						
805386	PIRUCA11	Piru						
650045	PLALCA02	Palo Alto Main						
650046	PLALCA12	Palo Alto South						
714767	PLCNCA11	Placentia						
661384	PLDLCA01	Palmdale						
661412	PLDLCA11	Palmdale East / 47TH ST						
209212	PLMOCA11	Plymouth						
925047	PLTNCA12	Pleasanton Main/Hopyard						
925083	PLTNCA13	Pleasanton Hacienda						
530489	PLVLCA11	Placerville - Main						
530490	PLVLCA12	Placerville - Niagara						
619766	PNVYCA11	Pine Valley						
858768	POWYCA11	Poway Midland						
530486	PRDSCA11	Paradise Main						
530487	PRDSCA12	Paradise Pines						
559208	PRLRCA11	Parlier						
562649	PRMTCA01	Paramount						
925049	PSBGCA01	Pittsburg Main						
925050	PSBGCA11	Pittsburg Bay Point / Willow						
805387	PSBHCA11	Pismo Beach						
650051	PSCDCA11	Pescadero						
626650	PSDNCA11	Pasadena / Mt Wilson / Green						
626651	PSDNCA12	Pasadena / Lake						
805385	PSRBCA01	Paso Robles						
707314	PTLMCA01	Petaluma						
530492	PTOLCA01							
559213	PTVLCA11	Porterville						

WC	CLLI	WC Name	2014	2015	2016	2017	2018	2019
707316	PTVYCA11							
559210	PXLYCA11	Pixley						
530493	QNCYCA12							
760769	RAMNCA11	Ramona						
858770	RBRNCA11	Rancho Bernardo						
916541	RCKLCA01	Stanford Ranch						
916527	RCKLCA11	Rocklin						
510052	RCMDCA11	Richmond-SF						
530494	RDBLCA01	Red Bluff						
650053	RDCYCA01	Redwood City						
530495	RDNGCA02	Redding Main						
530531	RDNGCA11	Redding Enterpr						
818652	RESDCA01	Reseda						
707317	RIDECA11	Rio Dell						
916526	RILNCA12	Rio Linda						
909773	RILTCA11	Rialto						
858854	RNPSCA11	Rancho Penasquitos						
619852	RNSDCA11	Rancho San Diego						
626654	ROSMCA11	Rosemead						
858771	RSFECA12	Rancho Santa Fe						
661388	RSMDCA11	Rosamond						
949808	RSMGCA11	R. S. Margarita						
707337	RTPKCA11	Rohnert Park						
559215	RVDLCA11	Riverdale						
209214	RVRBCA11	Riverbank						
951774	RVSDCA01	Riverside Orange						
951775	RVSDCA11	Woodcrest						
661407	SAGSCA11	Saugus						
619795	SANTCA01	Santee						
805391	SATCCA12	Saticoy						
707321	SBSTCA11	Sebastapol						
916497	SCRMA01	Sacramento Mn						
916498	SCRMA02	SCRMA - Ivanhoe						
916499	SCRMA03	SCRMA - Garden						
916500	SCRMA11	SCRMA - Gladstone						
916501	SCRMA12	SCRMA - Empire						
916502	SCRMA13	SCRMA - Fruitridge						
831116	SCVYCA01	Scotts Valley						
530508	SDSPCA11	Soda Springs						
559217	SELMCA11	Selma						
831117	SESDCA11	Seaside						
323655	SGATCA01	South Gate						
530504	SGSPCA11	Shingle Springs						
661392	SHFTCA11	Shafter						
530503	SHLKCA01	Shasta Lake						
818656	SHOKCA01	Sherman Oaks						
805393	SIMICA11	Simi						
949791	SJCPCA12	S. J. Capistrano						
209220	SKTNCA01	Stockton Main						
209221	SKTNCA11	Stockton Granite						
209222	SKTNCA12	Stockton Ashley						
209223	SKTNCA14	Stockton Redwood						
831118	SLDDCA11	Soledad						
661394	SLMNCA11	Solemint						
831119	SLNSCA01	Salinas Main						
831120	SLNSCA11	Hickory/Salinas						
831121	SLNSCA12	Glenview						
831122	SLNSCA13	Hunter						
831123	SLNSCA14	Moro						
714797	SLVRCA11	Silverado						
530507	SMAVCA11	Smartsville						
714788	SNANCA01	Bush						
714789	SNANCA11	Bristol						
714804	SNANCA12	Santa Ana West / SNAN Bolsa						
650055	SNBUCA02	San Bruno						
949776	SNCLCA12	San Clemente						
650056	SNCRCA11	San Carlos						
831125	SNCZCA01	Santa Cruz						
831126	SNCZCA11	Santa Cruz-Capitola						
619777	SNDGCA01	SNDG C Street						
619778	SNDGCA02	SNDG University						
858779	SNDGCA03	SNDG Linda Vista						
619780	SNDGCA05	SNDG Saipan						
619781	SNDGCA06	SNDG 37th Street						

WC	CLLI	WC Name	2014	2015	2016	2017	2018	2019
619782	SNDGCA11	SNDG College						
619783	SNDGCA12	SNDG Market Street						
619784	SNDGCA14	SNDG Tennyson						
858785	SNDGCA15	SNDG Regents						
858786	SNDGCA16	SNDG Mira Mesa						
415058	SNFCCA01	SF Bush Pine						
415059	SNFCCA04	SF Market-McCoppin						
415060	SNFCCA05	SF Mission-25th St						
415061	SNFCCA06	SF Juniper-Onondaga						
415067	SNFCCA12	SF Larkin-Steiner						
415064	SNFCCA13	SF Evergreen-9th Ave						
415065	SNFCCA14	SF Montrose-19th						
415066	SNFCCA17	SF Third St.						
415068	SNFCCA21	SF Folsom						
415084	SNFCCA64							
626658	SNGBCA01	San Gabriel						
831127	SNJNCA11	San Juan Baustista						
408128	SNJSCA02	San Jose Main						
408129	SNJSCA11	San Jose White Rd						
408130	SNJSCA12	San Jose Dial Way						
408131	SNJSCA13	San Jose Chynoweth						
408132	SNJSCA14	San Jose Foxworthy						
408133	SNJSCA15	San Jose Evergreen / San Felipe						
408134	SNJSCA18	San Jose Almaden Valley						
#N/A	SNJSCA20							
408145	SNJSCA21	San Jose Junction						
510070	SNLACA11	San Leandro						
805389	SNLOCA01	San Luis Obispo						
408136	SNMACA11	San Martin						
#N/A	SNMCCA11							
805390	SNMICA11							
650071	SNMTCA11	San Mateo						
310659	SNPDCA01	San Pedro						
209218	SNRACA13	Sonora						
415072	SNRFCA01	San Rafael Main						
415073	SNRFCA11	Parkway						
925074	SNRMCA11	San Ramon						
707320	SNRSCA01	Santa Rosa Main						
707319	SNRSCA11	Los Alamos						
408143	SNTCCA01	Santa Clara Spacepark						
408137	SNTCCA11	Santa Clara Bellomy						
408138	SNVACA01	Carrol / Sunnyvale						
408139	SNVACA11	Mathilda / Sunneyvale						
619794	SNYSCA12	San Ysidro						
707323	SONMCA12	Sonoma						
626660	SPSDCA11	Sout Pasadena / Mission						
415075	SSLTCA11	Sausalito Larkspur						
530509	STAHCA01	South Tahoe - Sussex						
530511	STAHCA12	South Tahoe - Tamarack						
530512	STAHCA13	South Tahoe - Meyers/Apache						
415076	STBHCA11	Stinson Beach						
209225	STCKCA11	Sutter Creek						
707318	STHNCA11	St. Helena						
707324	SUISCA11	Suisun City						
415005	TBRNCA11	Tiburon						
661395	THCHCA01	Techachapi						
530514	THCYCA01	Tahoe City						
209227	THTNCA11	Thornton						
805396	TMTNCA11	Templeton						
559229	TPTNCA11	Tipton						
209230	TRACCA11	Tracy						
209232	TRLCCA11	Turlock						
310661	TRNCCA11	Torrance						
707326	TRNDCA11							
530515	TRUCCA11	Truckee						
559231	TULRCA11	Tulare						
714798	TUSTCA11	Tustin 11						
209233	TWHRCA11	Twain Harte						
707328	UKIHCA01	Ukiah Main						
707327	UKIHCA12	Capella/Ivanhoe						
510078	UNCYCA11	Union City						
707329	UPLKCA11	Upper Lake						
707330	VCVLCA12	Vacaville						
559235	VISLCA11	Visalia Main						

WC	CLLI	WC Name	2014	2015	2016	2017	2018	2019
760800	VISTCA12	Vista						
760799	VLCTCA11	Valley Center						
707331	VLLJCA01	Vallejo						
818662	VNNYCA02	Van Nuys						
805400	VNTRCA02	Ventura / Fir						
805399	VNTRCA11	Ventura Main / Montalvo						
209234	VYSPCA11	Valley Springs						
209238	WANACA11	Wawana						
661402	WASCCA01	Wasco						
530523	WDLCA11	Woodland						
559239	WDLKCA11	Woodlake						
530518	WEEDCA01	Weed						
707333	WEOTCA11	Weott						
310663	WLANCA01	Century City						
661401	WLBSCA11							
209236	WLLCCA11	Wallace						
310664	WLMGCA01	Wilmington						
707334	WLTSCA12	Willits						
530521	WLWSCA11	Willows						
925079	WNCKCA11	Walnut Creek						
707335	WNDSCA11	Windsor						
760801	WNSPCA12							
530522	WNTRCA11	Winters						
916519	WSCRCA11	Frontier						
209237	WTFRCA11	Waterford						
530520	WTLCA12	Wheatland						
831141	WTVLCA01	Watsonville						
530525	YBCYCA01	Yuba City / Marysville						
707336	YNVLCA11	Yountville						
530524	YREKCA11	Yreka						
714802	YRLNCA11	Yorba Linda						
714809	YRLNCA12	Gypsum Canyon						
209240	YSMTCA11	Yosemite Main						
209241	YSMTCA12	El Portal						
TOTALS								

Table 14.9

AT&T CALIFORNIA
VoIP TROUBLE REPORTS PER HUNDRED ACCESS LINES (TRPH) BY WIRE CENTER
AVERAGE PER MONTH
2015-2019

WC	CLLI	WC Name	2015	2016	2017	2018	2019
661410	ACTNCA11	Acton	13.1410	13.3903	11.3695	10.6481	13.1373
818600	AGORCA11	Agoura	6.1432	4.6244	3.4294	2.9803	2.9544
661351	AGDLCA11	Agua Dulce	2.9116	2.8571	1.8152	1.5683	1.4069
510002	ALMDCA11	Alameda/Central	4.4552	3.6312	3.0032	2.0746	1.8401
510001	ALBYCA11	Albany/Solano	5.3508	4.8163	3.9750	2.6746	2.2536
626601	ALHBCA01	Alhambra	4.4423	3.5220	3.0113	2.3470	2.0678
619700	ALPICA12	Alpine	6.2809	5.5102	3.5118	2.8990	2.9086
714702	ANHMCA11	Anaheim Cypress	5.0254	4.0505	3.6670	2.8607	2.5691
714703	ANHMCA12	Anaheim La Palma	5.1267	4.5279	4.3975	3.3232	4.7181
714701	ANHMCA01	Anaheim Lemon	3.3106	2.7617	2.7833	2.0488	1.9138
530427	ARSNCA11	Anderson	4.5971	3.8249	3.1020	2.2648	3.0063
209150	ANCMCA01	Angels Camp	7.8829	5.2503	3.2114	2.3951	2.1667
707275	ANGWCA11	Angwin	5.0265	4.3371	2.8837	2.1497	2.1620
714811	ANHMCA17	ANHM Hills	4.7684	4.1641	3.1073	2.0213	2.3136
925003	ANTCCA11	Antioch	4.2318	3.2844	2.7425	2.0799	2.0108
831100	APTSCA12	Aptos	6.6288	5.0807	3.8355	2.8478	2.5473
626602	ARCDCA11	Arcadia	3.6009	3.0111	2.2678	1.8557	1.5665
707276	ARCTCA11	Arcata	2.2088	2.6738	2.2634	2.2828	2.0110
951704	ARTNCA11	Arlington	4.1430	3.3540	3.1865	2.3941	2.2122
209151	ARNLCA11	Arnold	15.4167	4.6816	3.5036	1.7121	2.5556
831144	ARMSCA11	Aromas	10.2778	7.3757	4.9371	5.0554	2.8067
805352	ARGRCA12	Arroyo Grande	3.3880	3.4496	2.6958	2.0434	2.1774
661353	ARVNCA11	Arvin	9.4578	7.8231	5.5668	3.9277	4.2693
805354	ATSCCA11	Atascadero	4.1667	3.9585	3.5737	2.4199	3.1123
209153	ATWRCA12	Atwater	4.9495	4.8330	3.9427	2.6285	2.7652
530428	AUBNCA01	Auburn - Main	3.8703	3.3563	2.6059	2.2148	2.0989
530429	AUBNCA11	Auburn - Placer Hills	6.1014	5.5753	4.8209	2.7574	3.7492
559154	AVNLCA12	Avenal	4.6454	4.6711	3.5616	2.8388	2.6851
661361	BKFDC17	Bakersfield West / Rosedale	4.4272	6.1828	5.4077	2.0368	1.8961
661358	BKFDC13	Bakersfield Columbus	5.7173	4.1641	4.0260	3.7489	3.1580
661356	BKFDC11	Bakersfield Empire	2.1906	3.2145	3.0939	1.1758	0.9654
661357	BKFDC12	Bakersfield Main / Fairview	5.0935	3.7596	4.0309	3.2547	3.0449
661360	BKFDC15	Bakersfield Mettler	-	-	0.0030	-	-
661409	BKFDC19	Bakersfield Nomad	5.8830	2.5370	2.2067	3.2338	2.5788
661359	BKFDC14	Bakersfield Temple	5.2693	5.5252	5.6153	3.0140	2.9570
949706	BALBCA01	Balboa	5.7662	4.8432	3.2667	2.6588	2.3156
805362	BYPKCA11	Baywood Park	5.3937	11.9266	7.6789	3.9007	3.3737
530431	BEALCA11	Beale	4.4218	2.8369	7.5000	1.1905	1.3889
209155	BVLYCA11	Bear Valley	8.7719	0.2692	0.1831	2.9052	2.0521
323604	BELLCA11	Bell	3.8551	3.7124	2.9985	2.3113	1.8918
831103	BNLMCA11	Ben Lomond	4.0776	1.0010	0.8855	1.7131	1.4295
707277	BNCICA11	Benicia	6.9387	10.9203	8.3129	3.4319	3.0600
510004	BKLYCA01	Berkeley/Bancroft	3.6275	3.5572	2.9882	1.9523	2.1633
925008	BTISCA11	Bethel Island	1.6726	4.3112	3.3055	1.4930	1.4765
310607	BVHLCA01	Beverly Hills	4.6368	7.3807	5.5904	2.3785	1.9450
530432	BGGSCA11	Biggs	8.3924	12.7148	8.3333	3.8549	4.0754
925082	BSRNCA70	Bishop Ranch	0.9703	1.2271	0.7772	0.6620	0.7062
831102	BLCKCA11	Boulder Creek	8.6283	0.5175	0.4825	3.3037	3.4973
760708	BRWLCA11	Brawley	4.2393	1.9927	1.4766	2.2763	1.8817
714709	BREACA12	Brea	5.5485	6.0046	5.7403	3.6778	3.4867
925007	BRWDCA12	Brentwood	8.9539	16.1826	9.9329	3.6859	3.7269
714789	SNANCA11	Bristol	4.7098	4.1077	4.3497	2.8136	2.6428
530434	BCWYCA11	Brockway	11.9205	3.4435	2.2152	2.2388	2.0784
714710	BNPKCA11	Buena Park	5.5511	8.1527	7.7134	3.1712	2.8302
818605	BRBNCA11	Burbank Palm	5.5101	5.7341	5.0765	3.1469	2.8581
818606	BRBNCA13	Burbank Thornton	0.4033	0.1650	0.0990	0.1888	0.2983
650006	BRLNCA01	Burlingame	5.3289	5.3619	4.1916	2.4357	2.5533
559242	BURLCA11	Burrell	1.9048	0.2387	0.1710	0.4154	0.3121
714788	SNANCA01	Bush	3.7292	5.4822	6.3299	2.5084	2.1825

WC	CLLI	WC Name	2015	2016	2017	2018	2019
818665	CLBSCA50	Calabasas / Los Virgenes	2.3126	1.6254	1.2370	1.3596	1.3008
818666	CLBSCA11	Calabasas / Park Sorrento	5.1891	6.8003	5.1459	3.1756	3.8983
760712	CLXCCA12	Calexico	6.2968	0.9028	0.6711	3.6895	2.5652
707282	CLSTCA11	Calistoga	5.1020	9.1747	6.9967	3.8069	3.8481
805364	CMBACA11	Cambria	4.1752	2.1959	1.5164	1.6949	1.9577
760714	CMPDCA01	Camp Pendleton	0.8349	0.4630	0.3169	0.2347	0.1098
818610	CNPKCA01	Canoga Park	5.3801	5.4063	5.0975	3.0111	2.8615
707327	UKIHCA12	Capella/Ivanhoe	91.1111	1.9037	1.2263	51.2821	39.5833
760716	CRLSCA11	Carlsbad Harding	7.0274	8.0700	8.2577	4.7094	4.2639
760717	CRLSCA12	Carlsbad La Costa	6.9698	6.6477	5.6303	3.9869	3.5323
831105	CRMLCA11	Carmel Main	11.7135	3.9028	3.2130	3.2835	4.0843
831106	CRVYCA11	Carmel Valley	5.0207	3.9048	3.2133	2.4727	2.0256
408138	SNVACA01	Carrol / Sunnyvale	4.0095	3.3977	2.6505	2.0464	2.1062
559157	CRTHCA11	Caruthers	8.3714	2.7541	3.0810	3.4326	3.2609
661408	CSTCCA11	Castaic	4.3861	3.1894	2.5418	2.0351	1.9770
831107	CSVLCA11	Castroville	4.1063	1.0003	0.8518	2.3381	1.8195
805366	CYCSCA11	Cayucos	4.0830	8.7097	5.0633	2.0050	1.9102
530528	CNVYCA11	Central Valley	4.4281	0.3529	0.2409	2.2569	4.3583
310663	WLANCA01	Century City	9.3962	19.1024	13.6816	5.3705	4.7619
530438	CHICCA01	Chico Main	4.3018	6.2888	5.8209	2.4510	2.5987
559158	CHWCCA11	Chowchilla	4.7686	0.6118	0.4859	2.9922	2.1902
619719	CHVSCA12	Chula Vista Apache	4.4391	4.4041	4.3647	2.7180	2.3512
619718	CHVSCA11	Chula Vista Third Avenue	4.5787	7.0764	8.6739	2.9300	2.6250
925081	CYTNCA11	Clayton	5.2840	8.0985	6.2171	3.0677	2.9052
707283	CLOKCA11	Clear Lake Oaks	9.2593	1.1696	1.0862	3.8871	3.1179
707284	CODLCA11	Cloverdale	4.5151	3.4301	3.1136	2.9544	2.9073
559159	CLVSCA11	Clovis	4.0140	5.8812	5.3590	2.1237	1.9916
559160	CLNGCA01	Coalinga	4.9003	1.4673	1.2754	3.1447	2.1419
707285	CBMTCA11	Cobb Mountain	-	-	1.1411	2.0440	3.8667
650010	COLACA01	Colma-Daly City	5.1277	7.1876	6.3224	2.4791	2.6158
909720	COTNCA11	Colton	4.1748	1.2395	1.1020	2.3602	2.0323
310609	CMTNCA01	Compton	5.9767	9.9764	8.3569	3.1558	3.5772
925009	CNCRCA01	Concord	4.7626	3.2415	2.7644	2.6029	2.5280
707286	CORDCA12	Cordelia	1.6173	0.6229	0.4002	1.0715	0.9643
530440	CRNGCA12	Corning	5.1264	2.0199	1.7723	2.4855	2.9399
951721	CORNCA11	Corona	5.2996	7.6306	6.9804	2.8234	2.4771
949722	CRDMCA11	Corona Del Mar	3.9489	7.3013	5.0776	2.4928	1.6798
619723	CRNDCA11	Coronado	4.6826	4.5590	3.7886	2.4575	2.2849
949725	CSMSCA11	Costa Mesa	5.7526	7.9186	8.9433	3.5203	3.2615
707287	CTTICA12	Cotati	5.1641	6.7652	5.5089	2.7937	2.7749
530441	CTWDCA11	Cottonwood	16.1871	18.0879	13.6132	9.5679	11.5213
510011	CRCTCA02	Crockett	4.3993	0.2212	0.2295	2.7778	1.4019
209162	CWLDCA12	Crows Landing	6.6667	1.1218	0.5650	2.2436	2.0833
310608	CLCYCA11	Culver City	5.0212	7.5348	6.3469	2.9413	2.8080
925085	DAVLCA13	Danville - Tassajara (13)	5.9457	3.0704	2.7553	3.1384	2.9695
925012	DAVLCA12	Danville-Main (12)	6.8620	8.6669	6.3044	2.7468	2.6157
530442	DAVSCA11	Davis	4.9214	5.0992	3.9061	2.1453	2.0353
858727	DLMRCA12	Del Mar	5.7152	6.4677	5.6783	3.0766	2.7220
559163	DLRYCA11	Del Rey	6.3406	0.1794	0.1263	3.2486	2.9514
661367	DELNCA11	Delano	6.1844	3.1030	2.5597	2.8347	2.5436
559164	DINBCA01	Dinuba	4.7256	3.2115	2.1215	2.5400	2.2964
707443	DIXNCA11	Dixon	3.2245	3.9286	3.2075	1.6685	1.7275
619728	DLZRCA11	Dulzura	5.3672	4.6667	4.3210	5.1282	3.2710
530445	DNGNCA12	Dunnigan	22.7778	15.7738	4.9679	4.1667	4.4715
530446	DNSMCA11	Dunsmuir	3.1130	3.2585	2.9412	1.1602	1.2644
661368	ERLMCA11	Earlimart	16.5888	0.6713	0.5257	4.2587	3.8367
916478	NHLDCA11	Edgewood/N. Highl	4.1836	5.9554	6.1884	2.3984	2.2155
661369	EDWRCA01	Edwards	0.8621	0.1520	-	4.3860	-
619729	ELCJCA11	El Cajon	5.2443	8.2611	8.1579	3.1127	2.8830
760730	ELCNCA01	El Centro	3.6521	2.1503	1.9874	2.6802	2.1090
626611	ELMNCA01	El Monte	3.4978	4.1148	3.3984	1.6501	1.7518
310613	ELSGCA12	El Segundo Douglas	12.8928	3.0471	2.2958	5.8964	4.9259
949731	ELTRCA11	El Toro	3.4629	5.0293	4.8291	1.7898	1.8355
760732	ENCTCA12	Encinitas	4.4328	3.2750	2.7468	2.4261	2.2264
209192	ESCLCA11	Escalon	2.4641	3.9564	2.5011	1.3998	1.1191
760733	ESCNCA01	Escondido	4.4534	5.5563	5.8016	2.7949	2.6263

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530450	ESPRCA11	Esparto	3.1031	0.4636	0.3088	1.4887	1.6567
714739	GRGVCA01	Euclid	4.8228	2.8173	2.7461	2.7582	2.6389
707289	EURKCA01	Eureka	3.2826	3.6244	3.4551	2.0626	1.7349
661383	OLDLCA11	Export / Oildale	4.2701	6.6826	6.9565	2.6194	2.2348
916451	FROKCA11	Fair Oaks	4.8710	5.5197	4.6281	2.5070	2.2637
707290	FRFDCA01	Fairfield	4.0904	6.7814	5.8570	2.3259	2.3237
760735	FLBKCA12	Fallbrook	5.1665	7.2436	6.6538	3.2463	2.9574
559165	FRVLCA11	Farmersville	5.5556	2.4404	1.9126	3.5992	2.7309
831108	FETNCA11	Felton	2.8084	2.3247	1.3863	1.4928	1.8318
805370	FLMRCA11	Fillmore	4.2698	1.5870	1.1265	1.9711	2.1385
559166	FRBHCA11	Firebaugh	4.7863	0.2679	0.2192	2.1161	1.4758
916536	FLSMCA14	Folsom - Blue Ravine	7.6550	4.0630	3.2495	3.9853	3.5810
916454	FLSMCA13	Folsom - El Dorado Hills	5.7176	4.3988	3.3682	2.8393	2.7468
916453	FLSMCA12	Folsom - Nimbus	2.8298	3.8189	3.0991	1.5352	1.2499
909736	FNTACA11	Fontana	5.0034	7.2797	7.0629	2.9821	2.9272
707291	FSVLCA11	Forestville	12.6016	5.6787	3.5494	4.1212	4.6512
707292	FTBRCA02	Fort Bragg	3.5183	6.2703	3.3008	1.6695	1.5248
707293	FTUNCA11	Fortuna	6.1789	2.3272	1.9080	3.8678	4.2453
510015	FRMTCA12	Fremont Adams (Oliver12)	4.3786	2.4726	1.9691	2.3115	2.1817
510014	FRMTCA11	Fremont Main 11	3.8603	6.1676	4.9440	1.8767	1.9124
559169	FRSNCA11	Fresno Baldwin	5.1780	4.8458	4.6644	2.5934	2.5973
559172	FRSNCA12	Fresno Clinton	3.8710	2.7431	2.9024	2.4006	1.9987
559168	FRSNCA01	Fresno Main	5.5404	1.9577	2.0273	4.0974	3.6569
559170	FRSNCA13	Fresno Sierra	5.2443	4.6859	4.3277	2.8418	2.8776
559245	FRSNCA14	Fresno West / Highway City	6.9401	3.9244	3.5762	3.9544	3.6032
559247	FRSNCA15	Fresno Woodward	6.2117	3.4812	2.7686	2.9802	3.2048
916519	WSCRCA11	Frontier	3.8864	7.2230	4.5579	2.0592	1.9052
714737	FUTNCA01	Fullerton	3.7534	6.3225	6.1719	2.3374	2.1886
209171	GALTCA11	Galt	4.4233	1.0830	0.9000	2.0168	1.9796
310615	GRDNCA01	Gardena	5.0979	8.4474	6.4355	2.5578	2.6525
858762	PCBHCA01	Garnet	4.3529	4.9764	7.5994	3.3842	3.1070
530457	GRTWCA11	Georgetown	-	-	-	-	10.5159
707294	GYVLCA11	Geyersville	5.9406	1.3316	0.9709	2.2523	2.0690
818614	GLDLCA11	Glendale	4.4183	5.5109	5.3211	2.4449	2.4065
831121	SLNSCA12	Glenview	1.1866	0.1985	0.1253	0.5389	0.5236
831110	GNZLCA11	Gonzales	7.8512	3.3517	2.4210	2.0481	1.6527
530459	GRVYCA01	Grass Valley	5.8875	11.1940	7.6014	3.3736	3.4107
831109	GNFDCA11	Green Field	5.7354	0.6980	0.4951	3.0146	2.6114
530461	GRDLCA11	Gridley	3.3652	4.4410	2.9603	1.9706	1.3913
707296	GUVLCA11	Guerneville	3.1667	1.4831	0.9792	1.3072	1.4214
209174	GUSTCA11	Gustine	4.2864	4.6566	2.9494	2.7376	2.9190
714809	YRLNCA12	Gypsum Canyon	3.5744	0.9530	0.7704	1.7241	1.9841
650016	HMBACA12	Half Moon Bay	13.8996	1.3650	1.1634	7.5464	6.3187
530462	HMCYCA11	Hamilton City	14.4231	2.8340	1.3062	2.2624	2.2989
559175	HNFRCA01	Hanford	4.4556	5.3853	4.7963	2.2861	2.2971
310618	HWTHCA01	Hawthorne	6.0096	9.0654	8.3645	2.9867	3.0955
510018	HYWRCA11	Hayward Depot	3.9291	2.2400	1.9290	2.0324	2.0386
510017	HYWRCA01	Hayward Main	4.0801	5.1232	3.9363	2.0510	1.8783
707297	HLBGCA11	Healdsburg	2.0566	3.1539	2.2327	1.2556	1.4971
209176	HERLCA11	Herald	4.9242	7.5130	5.8923	4.2222	2.8796
510080	HRCLCA11	Hercules-Pinole	4.1192	2.8628	2.2826	1.8856	1.8001
831120	SLNSCA11	Hickory/Salinas	3.4546	2.4215	2.1102	1.3839	1.5463
909741	HGLDCA11	Highland	5.1036	9.0711	7.7149	2.8105	2.4240
831111	HLSTCA11	Hollister	4.1898	4.5106	3.4596	2.0013	1.7171
323616	HLWDCA01	Hollywood	4.0697	5.6097	5.8256	2.3331	2.2088
760742	HLVLCA11	Holtville	4.3561	0.9835	0.9241	1.6553	2.0192
530463	HMWDCA11	Homewood	15.8951	12.9534	6.4352	2.5776	2.1368
858763	PCBHCA11	Hornblend	7.7730	1.4483	1.3347	6.0039	6.4493
209177	HGSNCA11	Hughson	5.1431	1.0261	1.0876	2.2578	2.4653
831122	SLNSCA13	Hunter	8.5341	7.0957	5.4192	3.5088	5.8244
323617	HNPKCA01	Huntington Park	4.2818	4.1667	4.2233	2.5468	2.3588
559178	HURNCA11	Huron	45.1149	1.0685	0.8232	7.3118	4.8043
415019	IGNCCA12	Ignacio	5.4535	1.7578	1.2538	2.3009	2.6149
760743	IMPRCA11	Imperial	2.7744	1.4613	1.0046	1.7193	1.5985
619744	IMBHCA11	Imperial Beach	5.8178	2.4979	2.9617	4.2830	3.8615
310619	IGWDCA01	Inglewood	5.1586	6.5082	5.5396	2.5363	2.6648

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415020	INVRCA11	Inverness	10.0660	1.8357	1.2857	2.0227	1.1084
209179	IONECA11	Ione	45.3431	16.7385	14.0741	21.2963	20.9480
949745	IRVNCA01	Irvine	5.5660	8.1325	9.5282	3.4732	3.0165
949807	IRVNCA11	Irvine/Airport	0.8624	1.0429	1.2723	1.0042	1.0810
559180	IVNHCA11	Ivanhoe	4.7200	5.0452	5.1620	4.3210	2.3256
209181	JCSNCA01	Jackson	3.4214	6.0701	2.9450	1.5319	1.3038
209182	JMTWCA11	Jamestown	109.0909	2.4096	2.5950	75.6944	64.1026
619851	JAMLCA60	Jamul	15.1667	3.8432	3.7457	8.1439	7.9418
760748	JULNCA12	Julian	2.5831	4.3142	2.3201	1.3493	1.5793
831112	KGCYCA11	King City	4.4720	3.6387	2.5471	2.6629	1.8784
559183	KGBGCA11	Kingsburg	5.1897	3.2125	2.8912	2.6876	2.2982
530465	KYBRCA11	Kyburz	0.8258	0.3497	0.5005	0.7527	0.6127
818621	LACRCA11	La Crescenta	5.6635	11.2177	6.7862	2.5294	2.6582
858750	LAJLCA11	La Jolla / Girard	6.9783	3.2239	2.8758	4.5227	3.7846
619752	LAMSCA01	La Mesa	3.8687	4.8272	5.2070	2.5585	2.4140
925022	LFYTCA11	Lafayette	5.1782	9.5596	7.2781	2.7379	2.5761
209185	LGRNCA12	LaGrande/D Pedro	3.5441	2.4837	2.1693	1.9144	2.2556
949749	LGNGCA12	Laguna Niguel	5.4468	6.8757	7.0574	3.1238	2.8137
661405	LKLACA11	Lake Los Angeles	2.9762	4.5550	3.5439	1.9144	1.6618
530532	GRVYCA11	Lake of the Pine	10.3348	1.8364	1.4234	6.3373	7.7815
707302	LKPTCA02	Lakeport	3.6475	3.9495	2.9700	2.0320	1.9439
619751	LKSDCA12	Lakeside	4.2688	4.8077	4.5709	2.3087	2.3374
661372	LAMTCA11	Lamont	6.4783	0.8643	0.6670	3.6047	2.2501
415023	LRKSCA11	Larkspur/Corte Madera	6.6427	2.2603	1.6044	3.0091	3.0448
209187	LGRDCA11	Le Grande	6.5657	0.2587	0.1762	2.0022	1.5931
661373	LEBCCA11	Lebec	5.1336	3.7651	2.9595	1.6741	1.9048
559188	LEMRC A11	Lemore Main	5.3866	5.7450	5.5093	2.8035	3.1667
559189	LEMRC A12	Lemore Wyman	18.9815	0.3974	0.2335	0.9174	0.1667
661374	LNVC A11	Leona Valley	1.9477	1.1678	1.0236	1.5859	0.9503
916467	LNCLCA11	Lincoln	3.8889	5.3878	4.8936	2.0686	2.2051
661375	LTRKCA11	Little Rock	18.9815	4.8160	4.8913	6.2169	6.9554
530468	LVOKCA11	Live Oak	5.0838	0.5508	0.5634	3.0475	2.9136
925025	LVMRC A11	Livermore	4.0047	7.3537	4.8659	1.8401	1.7873
209190	LCFRCA11	Lockeford	9.7424	2.8535	2.3939	3.6062	4.4365
209191	LODICA01	Lodi	4.0685	6.2197	4.7779	1.9007	1.9777
707303	LOLTCA11	Lolita	1.0234	0.0526	0.0348	0.1996	0.1623
310622	LOMTCA11	Lomita	5.7372	9.2263	6.7954	2.9865	2.9554
916470	LOMSC A11	Loomis	11.7080	17.4754	10.9795	7.1484	5.7381
707319	SNRSC A11	Los Alamos	4.5527	1.9626	1.5496	2.1004	2.0005
650024	LSATCA11	Los Altos	15.2677	5.1480	3.8974	8.4058	8.0863
209193	LSBNCA12	Los Banos	4.1918	4.9524	3.2949	2.0242	1.8899
530469	LSMLCA11	Los Molinos	12.2984	1.9138	2.0175	4.6315	3.8838
707304	LWLKCA11	Lower Lake	5.9930	6.5760	4.0063	2.0991	3.0322
323635	LSANCA14	LSAN Adams	4.3209	2.5578	2.3383	2.4490	2.3309
310628	LSANCA07	LSAN Airport	5.1427	5.7294	4.9330	2.5801	2.7778
323641	LSANCA34	LSAN Angeles	4.4559	5.7372	5.4639	2.8718	2.4731
323636	LSANCA15	LSAN Axminster	7.5150	8.3813	6.1983	3.5020	3.5857
323638	LSANCA23	LSAN Capitol	3.9702	2.1936	1.9400	2.7167	2.4614
323644	LSANCA56	LSAN Clinton	5.3673	4.0881	3.3169	3.1057	2.9252
323629	LSANCA08	LSAN Melrose	4.3673	4.0472	3.9698	2.4814	2.1159
323642	LSANCA35	LSAN Montebello	4.3623	3.8664	3.7951	2.4841	2.4851
323626	LSANCA05	LSAN Pleasant	5.9522	9.0936	7.7477	3.6382	3.3385
323634	LSANCA13	LSAN Plymouth	7.3511	6.9410	5.5225	4.1713	4.4542
323643	LSANCA38	LSAN Republic	3.8663	3.2693	3.0617	2.4805	2.0633
323640	LSANCA29	LSAN Sunset	4.0044	2.5652	2.8024	3.0134	2.7709
323631	LSANCA10	LSAN Webster	5.8643	7.5737	6.9226	3.4649	3.1465
559243	MADRCA12	Madera Bonnadelli	1.2219	0.6157	0.4646	0.6457	0.6989
559194	MADRCA11	Madera Main	4.0920	4.6381	3.8841	2.3071	2.0302
213624	LSANCA02	Madison 02 / MO	4.3936	4.0512	4.2970	2.9925	2.3569
213625	LSANCA03	Madison 03 / MA	2.5831	1.7843	2.3725	2.1190	1.8509
831113	MARNCA11	Marina	6.6019	4.5310	3.4875	3.2646	3.4940
925030	MRTZCA11	Martinez	5.0109	4.7330	4.1701	2.5999	2.6555
530472	MYVICA01	Marysville	4.4780	2.0704	1.7927	2.4666	2.5883
408139	SNVACA11	Mathilda / Sunneyvale	2.0211	0.5298	0.5513	1.3995	1.0901
707307	MKVLCA11	McKinleyville	3.9711	4.1973	3.8726	2.4644	2.6957
707305	MNDCCA11	Mendocino	14.9306	0.7906	0.4724	3.3333	2.3333

WC	CLLI	WC Name	2015	2016	2017	2018	2019
559195	MNDTCA11	Mendota	10.7407	11.2195	8.3761	6.5000	5.4890
650028	MNPKCA11	Menlo Park	10.2381	17.5000	10.4647	4.3983	5.0207
209196	MRCDA01	Merced	4.0292	4.8979	4.1267	1.8815	1.8052
707306	MDTWCA11	Middletown	6.3441	0.9146	0.7084	2.5561	2.5386
415027	MLVYCA01	Mill Valley	5.4038	2.3556	2.1731	2.4733	2.5170
650026	MLBRCA11	Millbrae	4.7183	7.0764	5.2910	2.4729	2.8567
408114	MLPSCA11	Milpitas	3.6018	4.1106	3.8601	1.9098	1.9260
949806	MSVJCAAT	Mission Viejo	5.9241	7.4943	8.0882	4.1009	4.3381
209200	MDSTCA03	Modesto Kellog / South / Ceres	4.9343	1.9111	1.6262	2.6406	2.5192
209201	MDSTCA04	Modesto Kingswood / Curtis / Salida	3.4808	1.9057	1.7169	1.5056	1.6879
209199	MDSTCA02	Modesto Main	6.4057	9.0592	7.3475	2.9175	2.9491
209248	MDSTCA05	Modesto Tally	1.8092	2.1319	1.4946	0.8143	0.7216
661376	MOJVCA01	Mojave	6.3298	2.5383	1.7515	6.2883	3.8333
530529	MTAGCA11	Montague	2.7473	0.9354	0.6260	0.8922	1.0929
831115	MTRYCA01	Monterey	5.4563	8.0321	5.7840	2.4034	2.6329
805377	MRPKCA12	Moorpark	5.7529	7.2502	6.0072	2.5720	2.3598
925029	MORGCA12	Moraga	6.2197	8.0620	5.1806	3.1333	3.4553
831123	SLNSCA14	Moro	71.3542	51.3889	40.5039	22.6397	18.1435
805378	MRBACA11	Morro Bay	1.8084	2.1535	1.6817	1.1499	1.0221
650031	MSBHCA11	Moss Beach	10.1010	1.0124	0.8559	2.7236	2.4116
530474	MTSHCA12	Mount Shasta	4.7459	0.9793	0.9137	2.1470	1.8069
650032	MTVWCA11	Mountain View	3.8284	6.7388	4.4521	1.8971	1.7789
209203	MRPHCA11	Murphys	10.8059	18.1818	10.0000	2.5522	3.4606
707310	NAPACA01	Napa	4.7175	5.9978	4.7046	2.5625	2.3728
619754	NTCYCA11	National City - Highland	3.7324	4.9499	4.8896	3.0711	2.6392
530475	NVCYCA11	Nevada City	8.0169	4.2903	4.2444	4.3900	5.8637
916476	NWCSCA11	Newcastle	6.3866	6.1085	4.7502	3.8260	3.9909
661379	NHLLCA01	Newhall	4.6055	4.2594	4.0437	2.6550	2.4267
209204	NWMNCA12	Newman	3.7674	4.4748	3.7265	2.2329	1.8610
818646	NHWDCA01	NHWD / Lankershim	4.0788	2.7425	2.7746	2.5554	2.5685
818647	NHWDCA02	NHWD / Magnolia	4.5627	4.5550	4.7157	2.9797	2.7429
707311	NICECA11	Nice	12.6126	0.3465	0.3299	3.4953	4.2457
530477	NCLSCA11	Nicolaus	0.2618	0.0370	0.0397	0.6041	0.3925
760855	NILDCA11	Niland Main	31.2500	2.7778	3.4014	16.6667	9.8039
805380	NIPMCA11	Nipomo	3.4442	3.9607	2.7152	1.8687	1.3480
323633	LSANCA12	Normandy	4.6631	3.7796	3.2409	2.5149	2.4737
916537	NSCRCA12	North Natomas	4.5822	2.6524	2.6196	2.6391	2.4821
530480	NSJNCA11	North San Juan	2.4590	0.2049	0.1776	1.0417	1.3770
818648	NORGCA11	Northridge	4.3624	6.6702	7.0265	2.6983	2.7344
209205	OKDLCA11	Oakdale	3.5857	4.1445	3.1875	1.8765	1.7183
510038	OKLDCA11	Oakland 45th/Olympic(Central)	4.9675	5.0908	4.2081	2.4571	2.5891
510036	OKLDCA03	Oakland Franklin	4.7499	4.4755	4.2565	3.0448	2.9024
510039	OKLDCA12	Oakland Holly	4.5795	5.3205	4.2861	2.7315	2.5481
510037	OKLDCA04	Oakland Kellog(Fruitvale)	5.8140	4.7317	4.7959	2.9559	2.8211
510040	OKLDCA13	Oakland Mountain	4.2973	2.7150	1.8273	2.0712	2.0591
925041	OKLYCA11	Oakley	4.4834	2.5017	2.0131	2.0642	1.9252
805381	OKVWCA11	Oakview	446.6667	1.1200	1.0897	61.6667	60.5556
760758	OCSDCA11	Oceanside / Mission	4.8936	6.4194	7.7479	3.0840	2.9935
805382	OJAICA11	Ojai	3.4095	1.3366	1.1400	2.3401	2.1244
714759	ORNGCA11	Orange Chapman	3.9142	6.5306	6.1611	2.3309	2.1447
559206	ORCVCA11	Orange Cove	6.7691	1.7220	1.2149	5.1587	3.2878
714760	ORNGCA13	Orange Olive	5.9986	4.7727	3.6892	2.8521	2.6804
714761	ORNGCA14	Orange West	3.6395	1.7060	1.5348	2.6133	2.2274
916482	ORVACA11	Orangevale	2.5307	3.8662	2.6626	1.5434	1.3453
925042	ORNDCA11	Orinda	14.5276	3.7281	3.4801	8.7459	9.8797
530483	ORLDCA11	Orland	4.7878	4.6318	3.5454	2.2706	1.9043
559207	ORSICA11	Orosi	3.7787	2.2815	2.1435	2.7555	2.0888
530485	ORVLA12	Oroville East	5.6868	5.0732	4.1630	2.5741	2.8620
530484	ORVLA11	Oroville Main	5.8881	1.9059	1.5557	3.9661	3.1496
619853	OTMNSCA11	Otay Mesa	2.8278	2.6304	3.1569	1.7605	2.1212
650043	PCFCCA11	Pacifica	7.1204	10.2199	7.7558	3.3501	3.5012
661384	PLDLCA01	Palmdale	5.2204	3.6853	2.9733	2.9067	2.6794
661412	PLDLCA11	Palmdale East / 47TH ST	3.0641	1.6181	1.4363	1.7974	1.7478
650045	PLALCA02	Palo Alto Main	3.8510	6.4688	4.6509	1.8463	1.9468
650046	PLALCA12	Palo Alto South	3.7821	1.8815	1.3137	1.4549	1.5037
530486	PRDSCA11	Paradise Main	7.4520	6.5094	5.5472	5.0758	5.0641

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530487	PRDSCA12	Paradise Pines	5.5205	4.0435	3.5001	3.1919	5.4577
562649	PRMTCA01	Paramount	4.1040	6.2056	6.1424	2.4509	2.4633
415073	SNRFCA11	Parkway	3.7745	3.8429	2.7681	1.6484	1.5307
559208	PRLRCA11	Parlier	4.3548	2.4788	1.4777	3.8221	3.3654
626651	PSDNCA12	Pasadena / Lake	4.8460	5.2176	4.0249	2.5781	2.3616
626650	PSDNCA11	Pasadena / Mt Wilson / Green	4.0944	7.0261	5.5479	2.2584	2.2425
805385	PSRBCA01	Paso Robles	2.8544	0.3598	0.3788	1.5887	1.5358
760764	PALACA11	Pauma Valley	0.3602	0.2231	0.2064	0.3228	0.2933
951765	PDLYCA11	Pedley	2.9519	4.1635	4.3279	2.0629	1.6938
650051	PSCDCA11	Pescadero	7.0755	2.1968	1.4620	0.9443	1.6616
707314	PTLMCA01	Petaluma	4.6118	6.5558	4.7448	1.8700	1.9988
619766	PNVYCA11	Pine Valley	3.3658	3.2300	1.9573	1.6667	2.3810
805386	PIRUCA11	Piru	0.2734	0.0703	0.0590	0.1779	0.1792
805387	PSBHCA11	Pismo Beach	2.3913	1.0164	0.6694	1.5066	1.1594
925050	PSBGCA11	Pittsburg Bay Point / Willow	4.4293	2.6072	2.2311	2.4866	2.3041
925049	PSBGCA01	Pittsburg Main	4.6587	3.3721	2.9711	2.4648	2.5603
559210	PXLYCA11	Pixley	5.0813	7.1946	4.9315	3.0425	1.9522
714767	PLCNCA11	Placencia	4.7258	5.4957	5.1035	2.8462	2.4425
530489	PLVLCA11	Placerville - Main	5.2068	8.2746	6.3310	3.0763	3.7224
530490	PLVLCA12	Placerville - Niagara	11.8421	3.2938	2.7187	8.9041	8.5470
925083	PLTNCA13	Pleasanton Hacienda	0.7446	0.2233	0.2318	0.5348	0.6606
925047	PLTNCA12	Pleasanton Main/Hopyard	5.1455	9.7972	7.1219	2.5231	2.3346
209212	PLMOCA11	Plymouth	12.1622	0.6223	0.5696	2.7397	3.3011
559213	PTVLCA11	Porterville	4.5548	2.1243	1.5608	2.1283	1.9319
858768	POWYCA11	Poway Midland	5.1578	6.3506	6.4431	3.7084	3.8499
949808	RSMGCA11	R. S. Margarita	4.6902	5.7012	5.5108	2.6611	2.2299
760769	RAMNCA11	Ramona	5.1613	6.1278	4.5148	2.1797	2.3084
213632	LSANCA11	Rampart	2.9443	2.3527	2.2358	1.9114	1.8146
858770	RBRNCA11	Rancho Bernardo	3.3790	3.9022	3.7669	2.0790	1.8320
858854	RNPSCA11	Rancho Penasquitos	4.2937	2.3928	1.9838	2.2397	2.1285
619852	RNSDCA11	Rancho San Diego	3.7412	2.1050	2.1247	2.4823	2.1088
858771	RSFECA12	Rancho Santa Fe	49.9045	8.3416	6.0988	6.2289	5.6702
530494	RDBLCA01	Red Bluff	4.3007	1.0014	0.8714	2.3823	2.0753
530531	RDNGCA11	Redding Enterpr	3.7486	2.6091	3.3077	2.7322	2.7318
530495	RDNGCA02	Redding Main	9.2094	1.9983	2.1678	4.9932	4.9641
650053	RDCYCA01	Redwood City	5.0995	6.9160	5.4032	2.4441	2.5945
818652	RESDCA01	Reseda	6.2195	7.9728	7.7709	3.3863	3.3930
909773	RILTCA11	Rialto	5.8048	7.1292	7.5396	3.5993	3.0582
510013	ELSBCA11	Rich-Appian Way/El Sobrante	5.4014	4.7017	3.6696	3.0253	2.9432
213630	LSANCA09	Richmond	5.2530	1.9845	1.9427	3.3060	3.2194
510052	RCMDCA11	Richmond-SF	4.8780	7.3436	6.2852	2.9894	2.6442
707317	RIDECA11	Rio Dell	3.4591	0.2048	0.1825	3.2300	2.5588
916526	RILNCA12	Rio Linda	2.7498	4.1572	4.0949	2.1085	1.7210
209214	RVRBCA11	Riverbank	7.8602	9.4742	7.1408	3.1008	3.3378
559215	RVDLCA11	Riverdale	3.5240	0.8766	0.7172	2.1597	2.1807
951774	RVSDCA01	Riverside Orange	4.2197	5.4060	6.1362	2.7141	2.4389
916527	RCKLCA11	Rocklin	6.4014	1.4995	1.1661	3.2647	2.9163
707337	RTPKCA11	Rohnert Park	4.9515	2.4425	1.6170	2.5333	2.4881
661388	RSMDCA11	Rosamond	5.5556	5.7479	4.7040	3.4694	3.1476
626654	ROSMCA11	Rosemead	3.9768	4.4341	3.7010	2.2001	2.1515
949791	SJCPCA12	S. J. Capistrano	6.3618	1.8336	1.7021	3.9439	3.4698
916497	SCRMCA01	Sacramento Mn	2.8452	3.4201	3.2519	1.6701	1.6424
831119	SLNSCA01	Salinas Main	4.1935	3.1029	2.4987	1.8026	1.9274
650055	SNBUCA02	San Bruno	4.7164	5.8974	4.3839	2.4152	2.3205
650056	SNCRCA11	San Carlos	3.7152	4.4528	3.1960	1.7738	1.7152
949776	SNCLCA12	San Clemente	4.8879	1.4833	1.5682	2.5027	2.5544
626658	SNGBCA01	San Gabriel	6.5813	10.5934	8.2481	3.2432	3.4689
408134	SNJSCA18	San Jose Almaden Valley	5.9699	3.7881	2.7214	2.6470	2.4482
408131	SNJSCA13	San Jose Chynoweth	4.8006	3.7846	3.1720	2.4258	2.4455
408130	SNJSCA12	San Jose Dial Way	5.3762	4.9185	3.7380	2.8479	2.7682
408133	SNJSCA15	San Jose Evergreen / San Felipe	5.4288	2.1458	1.7287	2.3035	2.5254
408132	SNJSCA14	San Jose Foxworthy	4.2763	4.1759	3.4559	2.2563	2.1514
408145	SNJSCA21	San Jose Junction	4.9321	1.4601	1.7889	4.1338	3.1704
408128	SNJSCA02	San Jose Main	3.3899	5.4190	5.2506	2.0115	1.9861
408129	SNJSCA11	San Jose White Rd	3.9423	3.5705	3.1661	2.0147	1.9284
831127	SNJNCA11	San Juan Baustista	2.5292	0.2874	0.3587	0.8646	0.7014

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510070	SNLNCA11	San Leandro	5.6479	9.9375	6.8088	2.8343	2.8421
805389	SNLOCA01	San Luis Obispo	2.1582	0.5124	0.4353	1.5743	0.8805
408136	SNMACA11	San Martin	4.3981	3.0540	3.3923	3.5477	2.8309
650071	SNMTCA11	San Mateo	5.3138	9.4905	6.4314	2.4610	2.3746
310659	SNPDCA01	San Pedro	4.7827	3.8581	3.4262	2.9833	2.7792
415072	SNRFCA01	San Rafael Main	7.9460	9.1429	7.2542	4.0110	4.1274
925074	SNRMCA11	San Ramon	5.1992	4.9369	4.5918	2.5534	2.4402
619794	SNYSCA12	San Ysidro	5.2806	5.2399	5.1165	3.5042	3.4082
714804	SNANCA12	Santa Ana West / SNAN Bolsa	4.1214	1.8864	1.8782	2.8312	2.7458
408137	SNTCCA11	Santa Clara Bellomy	4.2114	6.7995	5.5793	2.3167	2.3060
408143	SNTCCA01	Santa Clara Spacepark	2.1277	0.9243	0.8461	1.9082	1.8027
831125	SNCZCA01	Santa Cruz	7.2318	2.6792	2.1439	3.5969	2.6038
831126	SNCZCA11	Santa Cruz-Capitola	4.2552	4.9179	3.8766	1.9396	1.7520
707320	SNRSCA01	Santa Rosa Main	4.7376	5.7615	4.5886	2.2485	2.2091
619795	SANTCA01	Santee	3.5610	2.1292	2.2473	2.3301	2.0710
805391	SATCCA12	Saticoy	3.8503	1.9271	2.0761	1.9843	2.0764
661407	SAGSCA11	Saugus	5.3176	4.5742	3.8417	2.4556	2.5717
415075	SSLTCA11	Sausalito Larkspur	4.6399	2.1088	1.6417	2.4438	2.5602
831116	SCVYCA01	Scotts Valley	5.9269	2.7425	2.4718	2.9675	2.8092
916501	SCRMCA12	SCRM - Empire	5.0716	4.0637	3.6636	2.7005	2.5428
916502	SCRMCA13	SCRM - Fruitridge	5.6631	2.4154	2.1508	2.7647	2.8211
916499	SCRMCA03	SCRM - Garden	5.3607	5.0750	4.5347	2.8549	2.8523
916500	SCRMCA11	SCRM - Gladstone	4.2223	2.2938	2.2983	2.4486	2.3123
916498	SCRMCA02	SCRM - Ivanhoe	5.8294	6.7729	5.8905	3.2370	3.1373
831117	SESDCA11	Seaside	3.4904	4.3106	3.8752	1.9249	1.7341
707321	SBSTCA11	Sebastapol	6.3228	4.6472	3.7847	2.7263	2.6913
559217	SELMCA11	Selma	4.9863	8.3231	6.3303	2.5071	2.2214
415058	SNFCCA01	SF Bush Pine	2.3819	1.1143	1.1852	2.0598	1.6606
415064	SNFCCA13	SF Evergreen-9th Ave	4.7889	2.5327	1.9661	2.3722	2.1567
415068	SNFCCA21	SF Folsom	2.6907	1.9322	2.3104	1.9785	2.0440
415061	SNFCCA06	SF Juniper-Onondaga	4.9936	5.2883	4.0017	2.2559	2.2376
415067	SNFCCA12	SF Larkin-Steiner	4.2201	3.2721	2.8412	2.0361	2.0216
415059	SNFCCA04	SF Market-McCoppin	3.4847	3.7806	2.9613	1.7473	1.7698
415060	SNFCCA05	SF Mission-25th St	4.7867	4.2525	3.1067	2.1522	1.9848
415065	SNFCCA14	SF Montrose-19th	3.8837	5.2237	3.9232	1.8519	1.9236
415066	SNFCCA17	SF Third St.	3.9714	1.6258	1.5042	2.1003	2.0548
661392	SHFTCA11	Shafter	6.4879	1.9072	1.3079	3.3728	2.9306
818656	SHOKCA01	Sherman Oaks	5.9200	9.2757	8.0005	3.3373	3.2190
530504	SGSPCA11	Shingle Springs	4.2897	3.4742	2.8974	2.0443	1.9595
714797	SLVRCA11	Silverado	15.9420	2.9536	2.3551	1.2195	1.6667
805393	SIMICA11	Simi	5.0088	5.1764	4.2552	2.5351	2.4558
530507	SMAVCA11	Smartsville	6.8376	6.0000	5.0926	2.6316	2.2472
619781	SNDGCA06	SNDG 37th Street	2.4789	2.2286	3.0455	2.2364	2.2986
619777	SNDGCA01	SNDG C Street	3.0051	2.5677	3.6033	2.6514	2.6133
619782	SNDGCA11	SNDG College	4.1815	2.9687	3.0907	2.7556	2.7881
858779	SNDGCA03	SNDG Linda Vista	3.7361	3.7736	4.7987	2.7443	2.4170
619783	SNDGCA12	SNDG Market Street	5.7906	4.7798	4.8922	3.3205	3.2909
858786	SNDGCA16	SNDG Mira Mesa	3.3144	3.3675	3.3650	2.1695	2.1641
858785	SNDGCA15	SNDG Regents	2.6683	2.5463	3.6480	2.1996	2.3302
619780	SNDGCA05	SNDG Saipan	4.6628	2.8665	2.9796	3.2776	2.6847
619784	SNDGCA14	SNDG Tennyson	4.2695	3.1313	3.5413	3.1041	2.9085
619778	SNDGCA02	SNDG University	3.0166	2.8487	3.8721	2.4199	2.5078
530508	SDSPCA11	Soda Springs	55.5556	2.6427	4.3575	7.0743	16.4083
831118	SLDDCA11	Soledad	5.7214	2.4904	1.8553	2.7676	2.2597
661394	SLMNCA11	Solemint	4.7927	5.9031	5.9137	2.8531	2.5452
707323	SONMCA12	Sonoma	5.6155	6.6044	4.3267	2.4294	2.6400
209218	SNRACA13	Sonora	3.5448	1.1631	1.1560	1.9750	1.9522
626660	SPSDCA11	Sout Pasadena / Mission	4.5356	3.6198	2.9705	2.6313	2.2404
323655	SGATCA01	South Gate	3.7831	4.2937	3.6903	2.4566	1.9968
530512	STAHCA13	South Tahoe - Meyers/Apache	6.4738	11.7253	5.9051	2.6397	1.9628
530509	STAHCA01	South Tahoe - Sussex	5.4426	3.3830	2.6767	2.4201	2.1095
530511	STAHCA12	South Tahoe - Tamarack	10.7843	0.1375	0.7353	5.1587	3.1250
949810	IRVNCA12	Spectrum-Irvine	1.2614	0.4219	0.4928	1.5873	2.0266
707318	STHNCA11	St. Helena	5.4209	3.7317	2.7273	2.9371	3.1683
916541	RCKLCA01	Stanford Ranch	5.2596	5.3899	3.7214	2.3510	2.2789
415076	STBHCA11	Stinson Beach	9.5710	3.5590	1.9849	2.2097	1.7464

WC	CLLI	WC Name	2015	2016	2017	2018	2019
209222	SKTNCA12	Stockton Ashley	0.9322	0.2675	0.2633	0.6971	0.6603
209221	SKTNCA11	Stockton Granite	6.3730	5.9351	5.0261	3.2147	3.2084
209220	SKTNCA01	Stockton Main	5.0459	5.5175	5.4077	2.8253	2.9347
209223	SKTNCA14	Stockton Redwood	4.3460	3.5423	3.0603	1.8350	2.0819
707324	SUISCA11	Suisun City	10.3333	3.5674	4.5131	14.3275	9.0136
209225	STCKCA11	Sutter Creek	3.9058	3.6745	2.6256	1.4119	1.8403
530514	THCYCA01	Tahoe City	5.8081	0.7182	0.6148	1.2333	2.1238
661395	THCHCA01	Techachapi	2.7630	3.5542	2.6383	1.4368	1.3094
805396	TMTNCA11	Templeton	3.1783	4.7386	3.6210	1.4583	1.3675
209227	THTNCA11	Thornton	6.0000	2.6042	2.4494	3.8288	2.6144
415005	TBRNCA11	Tiburon	2.6667	5.3753	3.6683	1.4787	1.4392
559229	TPTNCA11	Tipton	9.2141	2.6440	3.3172	3.3987	4.1284
310661	TRNCCA11	Torrance	4.3993	2.9556	2.3299	2.1612	2.0258
209230	TRACCA11	Tracy	4.8855	7.7376	6.7154	2.5978	2.5367
530515	TRUCCA11	Truckee	4.7882	7.4245	4.3681	1.2756	1.1045
559231	TULRCA11	Tulare	4.3362	4.4825	3.9857	2.1790	2.2642
209232	TRLCCA11	Turlock	4.2014	3.3732	2.9349	2.2836	2.1540
714798	TUSTCA11	Tustin 11	5.0934	5.6848	4.4628	2.5473	2.3472
209233	TWHRCA11	Twain Harte	7.7617	0.6813	0.7002	3.2268	3.8867
707328	UKIHCA01	Ukiah Main	4.5501	6.4295	4.9515	2.9915	2.7230
213627	LSANCA06	Union	3.5531	1.6585	1.6650	2.5165	2.4519
510078	UNCYCA11	Union City	5.7497	9.2013	7.5077	2.9132	2.9968
707329	UPLKCA11	Upper Lake	6.6872	0.3919	0.2585	2.7348	2.4892
707330	VCVLC A12	Vacaville	4.4216	7.2369	6.0218	2.3026	2.2809
707331	VLLJCA01	Vallejo	4.9754	6.0413	5.2842	2.4520	2.3961
760799	VLCTCA11	Valley Center	6.1594	1.9499	1.6592	2.9201	2.4941
818662	VNNYCA02	Van Nuys	4.5387	3.3530	3.2282	2.8693	2.7570
805400	VNTRCA02	Ventura / Fir	4.0980	0.9524	0.8855	2.4446	2.3631
805399	VNTRCA11	Ventura Main / Montalvo	4.7383	4.4471	3.6126	2.4611	2.2093
559235	VISLCA11	Visalia Main	4.4386	3.8472	3.3277	2.3382	2.2468
760800	VISTCA12	Vista	3.4725	3.0068	3.4990	2.4386	2.4036
916479	NSCRCA11	Wabash	3.9558	2.8844	2.8283	2.5576	2.3512
209236	WLLCCA11	Wallace	4.3210	10.9756	5.8608	1.0300	1.9309
925079	WNCKCA11	Walnut Creek	4.4991	7.4008	5.2306	2.1686	2.0496
661402	WASCCA01	Wasco	3.1123	2.1510	1.6343	2.1082	1.7963
209237	WTFRCA11	Waterford	5.1039	1.1377	0.9023	3.3469	2.6547
831141	WTVLCA01	Watsonville	3.7312	6.0875	4.5169	1.6398	1.5218
530518	WEEDCA01	Weed	5.2846	2.3139	2.1441	1.7456	2.0492
530520	WTL DCA12	Wheatland	1.1111	1.3486	0.5890	0.6318	0.6441
530535	GRVYCA12	Wildwood	5.5342	7.3815	4.9314	2.0857	2.2642
707334	WLTSCA12	Willits	3.6822	0.6946	0.4296	2.1916	2.4249
530521	WLWSCA11	Willows	4.7346	4.6916	2.6893	2.6646	2.0949
310664	WLMGCA01	Wilmington	5.1972	8.7795	7.4579	2.5572	2.5517
707335	WNDSCA11	Windsor	5.7712	1.8789	1.2594	2.7431	2.2543
530522	WNTRCA11	Winters	16.5698	13.8441	8.8542	9.6065	6.2738
951775	RVSDCA11	Woodcrest	5.9260	3.0166	2.2311	2.6056	2.4585
559239	WDLKCA11	Woodlake	7.6000	1.0039	0.9335	5.0432	2.5087
530523	WDL DCA11	Woodland	4.6767	6.8469	5.1506	2.2975	2.3740
714802	YRLNCA11	Yorba Linda	4.5488	7.4491	5.2123	2.1576	2.1597
707336	YNV LCA11	Yountville	5.3407	0.2763	0.2574	2.3810	3.3794
530524	YREKCA11	Yreka	3.8050	5.4593	3.3333	2.5641	2.0657
530525	YBCYCA01	Yuba City / Marysville	3.9746	2.5839	2.1931	2.0957	2.1292

Table 14.10

AT&T CALIFORNIA
VoIP OUT-OF-SERVICE REPORTS PER HUNDRED ACCESS LINES (TRPH) BY WIRE CENTER
AVERAGE PER MONTH
2015-2019

WC	CLLI	WC Name	2015	2016	2017	2018	2019
661410	ACTNCA11	Acton	6.7308	5.4131	6.9767	6.0185	9.2157
818600	AGORCA11	Agoura	2.8607	2.5277	2.0538	1.7768	1.8766
661351	AGDLCA11	Agua Dulce	1.4056	1.7143	1.1826	0.9533	1.0462
510002	ALMDCA11	Alameda/Central	2.4765	2.2767	1.9667	1.3648	1.2003
510001	ALBYCA11	Albany/Solano	2.9510	3.0068	2.6360	1.7490	1.5629
626601	ALHBCA01	Alhambra	2.5097	2.2541	2.0751	1.6158	1.4303
619700	ALPICA12	Alpine	3.2641	2.9965	2.1731	1.7590	1.9465
714702	ANHMCA11	Anaheim Cypress	2.8022	2.4929	2.5244	2.0076	1.8301
714703	ANHMCA12	Anaheim La Palma	2.7875	2.9287	2.8144	2.3592	3.3395
714701	ANHMCA01	Anaheim Lemon	1.8427	1.7269	1.9098	1.3884	1.3225
530427	ARSNCA11	Anderson	2.6343	1.9746	1.8139	1.6405	1.9987
209150	ANCMCA01	Angels Camp	4.6171	2.9915	2.3910	1.7037	1.6944
707275	ANGWCA11	Angwin	2.9982	2.6022	1.9306	1.4922	1.5599
714811	ANHMCA17	ANHM Hills	2.3868	2.3633	1.9633	1.1822	1.4723
925003	ANTCCA11	Antioch	2.2612	1.9440	1.7424	1.3301	1.3242
831100	APTSCA12	Aptos	3.6661	2.9751	2.3636	1.7981	1.7910
626602	ARCDCA11	Arcadia	2.0189	1.7865	1.5096	1.2765	1.0891
707276	ARCTCA11	Arcata	1.2048	1.6934	1.3489	1.6200	1.5427
951704	ARTNCA11	Arlington	2.2330	2.0591	2.1557	1.6088	1.5442
209151	ARNLCA11	Arnold	10.0000	2.5749	2.5213	1.0832	1.8148
831144	ARMSCA11	Aromas	5.9028	4.5640	2.9245	3.3268	2.1830
805352	ARGRCA12	Arroyo Grande	1.8834	2.0774	1.7035	1.3074	1.5162
661353	ARVNCA11	Arvin	5.9269	5.4601	3.9305	3.0341	3.6125
805354	ATSCCA11	Atascadero	2.3611	2.4125	2.1223	1.6026	2.3573
209153	ATWRCA12	Atwater	2.8788	2.9922	2.6262	1.7259	2.0256
530428	AUBNCA01	Auburn - Main	2.0968	1.9923	1.5686	1.4247	1.4450
530429	AUBNCA11	Auburn - Placer Hills	3.6186	3.1831	3.1987	1.7004	2.5704
559154	AVNLCA12	Avenal	2.9769	2.9393	2.1727	1.9994	2.1289
661361	BKFDCA17	Bakersfield West / Rosedale	2.1386	3.4805	3.2536	1.2380	1.2418
661358	BKFDCA13	Bakersfield Columbus	2.9042	2.5241	2.5797	2.4024	2.0747
661356	BKFDCA11	Bakersfield Empire	1.2892	2.1256	2.1910	0.8333	0.6625
661357	BKFDCA12	Bakersfield Main / Fairview	2.9881	2.4499	2.7698	2.2265	2.2352
661360	BKFDCA15	Bakersfield Mettler	-	-	0.0030	-	-
661409	BKFDCA19	Bakersfield Nomad	2.8454	1.4095	1.3947	1.9429	1.5933
661359	BKFDCA14	Bakersfield Temple	2.8525	3.3768	3.7034	1.9807	2.0395
949706	BALBCA01	Balboa	3.1280	2.8958	1.9871	1.7400	1.4311
805362	BYPKCA11	Baywood Park	2.6160	7.5306	4.6830	2.3493	2.3068
530431	BEALCA11	Beale	1.0204	2.1277	5.4167	0.5952	1.3889
209155	BVLYCA11	Bear Valley	5.7018	0.2273	0.1259	2.4465	1.4014
323604	BELLCA11	Bell	2.3602	2.4554	2.2047	1.8092	1.3949
831103	BNLMCA11	Ben Lomond	2.1378	0.5806	0.5313	1.0163	1.0071
707277	BNCICA11	Benicia	3.6227	6.2402	5.2594	2.1237	2.0721
510004	BKLYCA01	Berkeley/Bancroft	2.2492	2.3726	2.0278	1.3015	1.4939
925008	BTISCA11	Bethel Island	1.0083	2.7938	1.9514	0.9742	1.1386
310607	BVHLCA01	Beverly Hills	2.5350	4.5609	3.5038	1.5113	1.3543
530432	BGGSCA11	Biggs	4.3735	7.7320	5.4825	2.3810	3.1630
925082	BSRNCA70	Bishop Ranch	0.5169	0.6570	0.3454	0.4186	0.3585
831102	BLCKCA11	Boulder Creek	4.6460	0.3061	0.2357	2.3669	2.4044
760708	BRWLCA11	Brawley	2.6647	1.2874	0.8918	1.5438	1.4382
714709	BREACA12	Brea	2.9612	3.4844	3.8286	2.4220	2.1899
925007	BRWDCA12	Brentwood	4.3996	9.5513	6.1167	2.2513	2.3534
714789	SNANCA11	Bristol	2.6083	2.6041	3.0520	1.9435	1.8209
530434	BCWYCA11	Brockway	6.0706	2.4334	1.3361	1.6702	1.3725
714710	BNPKCA11	Buena Park	3.1339	4.9703	5.3531	2.2016	2.0047
818605	BRBNCA11	Burbank Palm	2.7631	3.2555	3.2270	1.9890	1.8286
818606	BRBNCA13	Burbank Thornton	0.2598	0.1084	0.0580	0.1416	0.2434

WC	CLLI	WC Name	2015	2016	2017	2018	2019
650006	BRLNCA01	Burlingame	2.7514	3.1063	2.6051	1.5444	1.6619
559242	BURLCA11	Burrell	1.1905	0.1302	0.1140	0.4154	0.1873
714788	SNANCA01	Bush	2.1790	3.5477	4.5392	1.8480	1.6153
818665	CLBSCA50	Calabasas / Los Virgenes	1.3078	0.8481	0.7161	0.9211	0.8455
818666	CLBSCA11	Calabasas / Park Sorrento	2.6099	3.7081	2.9844	1.9095	2.7387
760712	CLXCCA12	Calexico	4.0621	0.6254	0.4388	2.7933	2.0165
707282	CLSTCA11	Calistoga	3.2158	4.7276	3.9934	2.5070	2.8236
805364	CMBACA11	Cambria	2.5325	1.3586	0.9548	1.1299	1.2698
760714	CMPDCA01	Camp Pendleton	0.4496	0.4085	0.1901	0.1369	0.1098
818610	CNPKCA01	Canoga Park	2.6800	3.0754	3.2003	1.9257	1.8701
707327	UKIHCA12	Capella/Ivanhoe	55.5556	1.2691	0.7990	39.7436	27.0833
760716	CRLSCA11	Carlsbad Harding	3.5324	4.4051	5.2503	2.9764	2.7155
760717	CRLSCA12	Carlsbad La Costa	3.3015	3.5897	3.2795	2.4075	2.3041
831105	CRMLCA11	Carmel Main	6.3922	2.3748	2.1077	2.0644	2.7009
831106	CRVYCA11	Carmel Valley	2.7433	2.1429	1.6949	1.5093	1.5636
408138	SNVACA01	Carrol / Sunnyvale	2.1527	2.0390	1.7683	1.3321	1.4683
559157	CRTHCA11	Caruthers	5.0989	1.7604	2.2319	2.3987	2.4909
661408	CSTCCA11	Castaic	2.1252	1.6847	1.5890	1.2727	1.3168
831107	CSVLCA11	Castroville	2.4155	0.6214	0.5859	1.5987	1.4556
805366	CYCSCA11	Cayucos	2.6774	4.8387	3.4459	1.1696	1.1939
530528	CNVYCA11	Central Valley	2.4922	0.1962	0.1555	1.2346	2.9785
310663	WLANCA01	Century City	5.1447	11.8227	9.0231	3.6257	3.2080
530438	CHICCA01	Chico Main	2.3498	3.6232	3.7811	1.5144	1.9637
559158	CHWCCA11	Chowchilla	2.3139	0.3779	0.3231	1.9845	1.4957
619719	CHVSCA12	Chula Vista Apache	1.9701	2.4248	2.6666	1.7191	1.4625
619718	CHVSCA11	Chula Vista Third Avenue	2.4518	4.2811	5.9444	1.9781	1.8169
925081	CYTNCA11	Clayton	2.3484	4.2465	3.4247	1.9629	1.9322
707283	CLOKCA11	Clear Lake Oaks	4.9858	0.6213	0.6280	2.7689	1.9841
707284	CODLCA11	Cloverdale	2.6198	2.1328	2.0757	2.1876	2.1554
559159	CLVSCA11	Clovis	2.0692	3.4815	3.4756	1.4055	1.3818
559160	CLNGCA01	Coalinga	3.0039	0.9446	0.8261	2.3795	1.5801
707285	CBMTCA11	Cobb Mountain	-	-	0.7261	1.2579	2.8000
650010	COLACA01	Colma-Daly City	2.7315	4.4827	4.0862	1.6823	1.8017
909720	COTNCA11	Colton	2.3860	0.7339	0.7627	1.5950	1.4463
310609	CMTNCA01	Compton	3.5837	6.6205	6.0525	2.2683	2.6143
925009	CNCRCA01	Concord	2.5248	1.8797	1.7756	1.6937	1.7181
707286	CORDCA12	Cordelia	0.8272	0.3985	0.2303	0.7570	0.7558
530440	CRNGCA12	Corning	2.7126	1.2828	1.1478	1.5222	2.1997
951721	CORNCA11	Corona	2.7218	4.3886	4.4137	1.8221	1.6170
949722	CRDMCA11	Corona Del Mar	2.2067	4.6211	3.2440	1.4783	1.0371
619723	CRNDCA11	Coronado	2.5937	2.5785	2.2237	1.5152	1.5507
949725	CSMSCA11	Costa Mesa	3.1743	4.8730	6.0488	2.2794	2.1954
707287	CTTICA12	Cotati	2.8297	4.3426	3.5993	1.8821	1.9433
530441	CTWDCA11	Cottonwood	10.7914	9.9483	8.1425	5.8642	7.3826
510011	CRCTCA02	Crockett	2.3689	0.1250	0.1578	1.7806	1.0903
209162	CWLDCA12	Crows Landing	2.0000	0.8013	0.4237	1.6026	1.7361
310608	CLCYCA11	Culver City	2.7233	4.6046	3.9913	1.9188	1.9430
925085	DAVLCA13	Danville - Tassajara (13)	2.6919	1.6478	1.5870	1.6979	1.7967
925012	DAVLCA12	Danville-Main (12)	3.1780	4.6858	3.8803	1.8033	1.6291
530442	DAVSCA11	Davis	2.5788	3.0371	2.4723	1.3579	1.3283
858727	DLMRCA12	Del Mar	2.7915	3.5072	3.5186	1.8218	1.6850
559163	DLRYCA11	Del Rey	5.0725	0.1182	0.0937	2.8249	2.2569
661367	DELNCA11	Delano	3.8899	2.1273	1.9177	2.0926	1.8588
559164	DINBCA01	Dinuba	3.0996	1.9269	1.3099	1.6354	1.6031
707443	DIXNCA11	Dixon	1.9154	2.3529	1.9307	1.0376	1.1912
619728	DLZRCA11	Dulzura	3.1073	2.1667	1.8519	4.2735	2.1807
530445	DNGNCA12	Dunnigan	14.1667	10.4167	3.1250	2.7778	3.3198
530446	DNSMCA11	Dunsmuir	1.7720	2.5107	1.5931	0.7357	0.6897
661368	ERLMCA11	Earlimart	10.4361	0.4624	0.3686	3.1020	2.8852
916478	NHLDCA11	Edgewood/N. Highl	2.3440	3.5494	4.2478	1.6556	1.5915
661369	EDWRCA01	Edwards	0.2874	0.0507	-	3.5088	-
619729	ELCJCA11	El Cajon	2.6677	4.4964	5.1961	2.0260	1.9709
760730	ELCNCA01	El Centro	2.2599	1.3834	1.2712	1.8268	1.4279

WC	CLLI	WC Name	2015	2016	2017	2018	2019
626611	ELMNCA01	El Monte	2.2137	2.7778	2.5280	1.2122	1.3013
310613	ELSGCA12	El Segundo Douglas	6.1510	1.6903	1.4203	3.4174	3.5019
949731	ELTRCA11	El Toro	1.7955	2.9637	3.0074	1.1753	1.2567
760732	ENCTCA12	Encinitas	2.1523	1.7935	1.7295	1.4898	1.4088
209192	ESCLCA11	Escalon	1.3366	2.5503	1.6039	0.9076	0.7748
760733	ESCNCA01	Escondido	2.1875	3.1135	3.8503	1.8984	1.8182
530450	ESPRCA11	Esparto	1.6266	0.2776	0.1463	0.8533	1.1377
714739	GRGVCA01	Euclid	2.8033	1.8064	1.9031	1.8877	1.8285
707289	EURKCA01	Eureka	2.3246	2.4115	2.2983	1.4396	1.0824
661383	OLDLCA11	Export / Oildale	2.2686	4.1783	4.4075	1.6556	1.6011
916451	FROKCA11	Fair Oaks	2.5822	3.1914	2.9569	1.6049	1.5115
707290	FRFDCA01	Fairfield	2.1911	3.9600	3.7730	1.4447	1.5472
760735	FLBKCA12	Fallbrook	2.7826	4.2298	4.2804	2.3031	1.9985
559165	FRVLCA11	Farmersville	3.2282	1.6308	1.1840	2.2698	1.6867
831108	FETNCA11	Felton	1.6010	1.2876	0.8100	0.9816	1.1986
805370	FLMRCA11	Fillmore	2.4399	0.8264	0.5693	1.1710	1.5109
559166	FRBHCA11	Firebaugh	2.9345	0.1792	0.1204	1.6143	1.0687
916536	FLSMCA14	Folsom - Blue Ravine	3.7537	2.0880	1.9916	2.4296	2.2910
916454	FLSMCA13	Folsom - El Dorado Hills	2.7846	2.3522	2.0794	1.6165	1.7009
916453	FLSMCA12	Folsom - Nimbus	1.3641	1.9949	1.8774	1.0045	0.7716
909736	FNTACA11	Fontana	2.7433	4.5333	4.7254	2.1014	2.0195
707291	FSVLCA11	Forestville	6.9106	3.5088	2.2377	2.4848	3.0362
707292	FTBRCA02	Fort Bragg	2.3906	3.9311	2.3013	1.0753	1.1021
707293	FTUNCA11	Fortuna	3.9837	1.5985	1.1954	2.6723	3.1447
510015	FRMTCA12	Fremont Adams (Oliver12)	2.3258	1.4156	1.2898	1.5795	1.5079
510014	FRMTCA11	Fremont Main 11	1.9900	3.6189	3.2713	1.2468	1.3121
559169	FRSNCA11	Fresno Baldwin	3.0708	3.1195	3.2960	1.9028	1.8677
559172	FRSNCA12	Fresno Clinton	2.2741	1.7554	2.0195	1.7138	1.4313
559168	FRSNCA01	Fresno Main	3.4476	1.3102	1.3644	2.9851	2.6569
559170	FRSNCA13	Fresno Sierra	3.0218	2.8435	2.9652	2.0130	2.1391
559245	FRSNCA14	Fresno West / Highway City	3.8419	2.4271	2.3487	2.5999	2.4444
559247	FRSNCA15	Fresno Woodward	2.9494	2.0956	1.7923	1.9735	2.0342
916519	WSCRCA11	Frontier	2.1275	4.5510	2.9882	1.3913	1.2730
714737	FUTNCA01	Fullerton	2.0403	3.7517	4.2030	1.5778	1.5289
209171	GALTCA11	Galt	2.5993	0.6034	0.5967	1.3312	1.3629
310615	GRDNCA01	Gardena	2.8506	5.2302	4.4921	1.7766	1.8603
858762	PCBHCA01	Garnet	2.1724	2.8845	5.0604	2.1355	1.9942
530457	GRTWCA11	Georgetown	-	-	-	-	7.7381
707294	GYVLCA11	Geyersville	4.4554	1.0309	0.6068	1.6892	1.6092
818614	GLDLCA11	Glendale	2.2804	3.1980	3.1951	1.5893	1.6418
831121	SLNSCA12	Glenview	0.5933	0.1126	0.0888	0.3079	0.4363
831110	GNZLCA11	Gonzales	5.1423	2.2652	1.5205	1.5784	1.2104
530459	GRVYCA01	Grass Valley	2.8326	6.2367	4.2630	2.1596	2.3629
831109	GNFDCA11	Green Field	3.4173	0.4554	0.3145	2.2975	1.9794
530461	GRDLCA11	Gridley	1.9617	2.6920	1.8798	1.5198	1.0252
707296	GUVLCA11	Guerneville	1.6667	1.0593	0.6732	0.7793	0.8082
209174	GUSTCA11	Gustine	2.5466	2.4231	1.9372	1.8079	2.1281
714809	YRLNCA12	Gypsum Canyon	1.7914	0.4765	0.4655	1.0400	1.3779
650016	HMBACA12	Half Moon Bay	7.5933	0.8649	0.7233	4.8426	4.4872
530462	HMCYCA11	Hamilton City	7.6923	1.6869	0.6270	1.2066	1.8883
559175	HNFRCA01	Hanford	2.4349	3.3136	3.3599	1.5302	1.6590
310618	HWTHCA01	Hawthorne	3.2617	5.9044	5.7559	2.1957	2.1784
510018	HYWRCA11	Hayward Depot	2.2533	1.3920	1.2879	1.4344	1.4054
510017	HYWRCA01	Hayward Main	2.1637	3.1121	2.5956	1.3028	1.2858
707297	HLBGCA11	Healdsburg	1.1238	1.8606	1.4321	0.8278	1.1516
209176	HERLCA11	Herald	3.1061	5.6995	4.2929	3.1111	1.5707
510080	HRCLCA11	Hercules-Pinole	2.1467	1.7022	1.5449	1.2467	1.2538
831120	SLNSCA11	Hickory/Salinas	1.8930	1.4975	1.4580	0.9979	1.0597
909741	HGLDCA11	Highland	2.8641	5.6143	5.3577	1.8903	1.6607
831111	HLSTCA11	Hollister	2.2557	2.7074	2.2815	1.3488	1.1474
323616	HLWDCA01	Hollywood	2.3524	3.6353	3.8853	1.5985	1.5921
760742	HLVLCA11	Holtville	2.6831	0.6247	0.6052	0.9989	1.3005
530463	HMWDCA11	Homewood	9.4136	8.2902	4.3981	1.5516	1.6453

WC	CLLI	WC Name	2015	2016	2017	2018	2019
858763	PCBHCA11	Hornblend	4.1965	0.9241	0.7765	3.6089	4.1667
209177	HGSNCA11	Hughson	2.8036	0.6450	0.7392	1.4895	1.7014
831122	SLNSCA13	Hunter	4.9197	4.4554	4.1922	2.4721	4.6595
323617	HNPKCA01	Huntington Park	2.7342	2.8869	3.0856	1.9494	1.7254
559178	HURNCA11	Huron	30.1724	0.6615	0.5070	5.6452	3.7367
415019	IGNCCA12	Ignacio	2.8129	1.1051	0.8348	1.2481	1.7720
760743	IMPRCA11	Imperial	1.3366	0.9383	0.5923	1.1529	1.0220
619744	IMBHCA11	Imperial Beach	3.0686	1.5365	2.0325	3.0105	2.7230
310619	IGWDCA01	Inglewood	2.8770	4.1028	3.7643	1.7934	1.8625
415020	INVRCA11	Inverness	6.1056	1.1946	0.7857	1.4159	0.7389
209179	IONECA11	Ione	27.4510	11.5661	9.3210	14.1534	14.0673
949745	IRVNCA01	Irvine	2.9483	4.8527	5.7107	2.3342	1.9185
949807	IRVNCA11	Irvine/Airport	0.4332	0.6901	0.8429	0.7429	0.7691
559180	IVNHCA11	Ivanhoe	3.0262	3.4388	3.4871	3.3011	1.9380
209181	JCSNCA01	Jackson	1.7954	3.3229	1.6946	1.0336	0.9438
209182	JMTWCA11	Jamestown	61.3636	1.4056	1.7361	50.6944	48.0769
619851	JAMLCA60	Jamul	9.3333	2.3592	2.0619	5.3977	5.1454
760748	JULNCA12	Julian	1.7296	2.8761	1.6177	0.8405	1.0170
831112	KGCYCA11	King City	2.9634	2.3229	1.6784	1.8519	1.3372
559183	KGBGCA11	Kingsburg	3.2738	2.1280	2.0277	1.9439	1.7767
530465	KYBRCA11	Kyburz	0.5255	0.3497	0.3504	0.4301	0.4902
818621	LACRCA11	La Crescenta	3.0773	6.2458	4.4163	1.6700	1.7579
858750	LAJLCA11	La Jolla / Girard	3.6863	1.7816	1.8437	2.6450	2.4646
619752	LAMSCA01	La Mesa	2.0046	2.8021	3.4299	1.7271	1.6005
925022	LFYTCA11	Lafayette	2.5409	5.6807	4.6351	1.6080	1.6056
209185	LGRNCA12	LaGrande/D Pedro	2.0115	1.3725	1.5344	1.1261	1.6917
949749	LGNCA12	Laguna Niguel	2.5246	3.7203	4.3388	2.0008	1.8021
661405	LKLACA11	Lake Los Angeles	1.5625	2.2380	2.2342	1.2950	1.2219
530532	GRVYCA11	Lake of the Pine	6.1863	1.2320	0.7734	4.0918	6.0155
707302	LKPTCA02	Lakeport	1.9546	2.3271	1.6706	1.4213	1.4378
619751	LKSDCA12	Lakeside	2.1544	2.5304	3.0789	1.5132	1.5295
661372	LAMTCA11	Lamont	4.1330	0.6314	0.4860	2.8295	1.9362
415023	LRKSCA11	Larkspur/Corte Madera	3.4734	1.3242	0.9789	1.8456	1.9827
209187	LGRDCA11	Le Grande	4.1414	0.1752	0.1270	1.0281	1.4093
661373	LEBCCA11	Lebec	2.6723	2.0582	1.9315	1.0832	1.5686
559188	LEMRC A11	Lemore Main	3.1052	3.6866	3.3951	1.9676	2.3939
559189	LEMRC A12	Lemore Wyman	4.1667	0.1104	0.1062	0.3058	0.1667
661374	LNVC A11	Leona Valley	0.9460	0.5767	0.5479	1.0772	0.5117
916467	LNCLCA11	Lincoln	1.9390	2.8896	3.0851	1.3593	1.4986
661375	LTRKCA11	Little Rock	13.8889	3.1926	3.0193	4.4974	4.0682
530468	LVOKCA11	Live Oak	2.8307	0.2864	0.3102	1.9966	1.9012
925025	LVMRCA11	Livermore	2.0513	4.1405	3.1573	1.1557	1.2219
209190	LCFRCA11	Lockeford	6.1192	1.5657	1.4453	2.8752	3.4772
209191	LODICA01	Lodi	2.1945	3.6993	3.0605	1.2441	1.3844
707303	LOLTCA11	Lolita	0.4386	0.0351	0.0244	0.0998	0.1623
310622	LOMTCA11	Lomita	3.2952	5.7256	4.6210	2.0710	2.1263
916470	LOMSCA11	Loomis	5.8678	9.2124	5.6872	3.9692	3.4166
707319	SNRSCA11	Los Alamos	2.4579	1.1769	0.9960	1.3127	1.3829
650024	LSATCA11	Los Altos	8.1980	2.9777	2.4701	5.2508	5.6520
209193	LSBNCA12	Los Banos	2.2780	2.9351	2.1350	1.3295	1.2908
530469	LSMLCA11	Los Molinos	7.2581	1.1356	1.3417	2.9750	2.7217
707304	LWLKCA11	Lower Lake	3.5262	4.1140	2.6265	1.4414	2.3766
323635	LSANCA14	LSAN Adams	2.6703	1.7304	1.6790	1.8191	1.8059
310628	LSANCA07	LSAN Airport	2.7886	3.3293	3.2491	1.6569	1.8553
323641	LSANCA34	LSAN Angeles	2.8612	3.8775	4.2006	2.2471	1.9929
323636	LSANCA15	LSAN Axminster	4.2188	5.2498	4.1942	2.3090	2.4664
323638	LSANCA23	LSAN Capitol	2.4504	1.4099	1.4173	2.0553	1.8302
323644	LSANCA56	LSAN Clinton	3.0318	2.5750	2.2996	2.1157	2.0150
323629	LSANCA08	LSAN Melrose	2.2849	2.2551	2.4751	1.5901	1.3991
323642	LSANCA35	LSAN Montebello	2.5944	2.4484	2.7225	1.7955	1.8062
323626	LSANCA05	LSAN Pleasant	3.7100	6.2463	5.6180	2.7342	2.4665
323634	LSANCA13	LSAN Plymouth	4.4356	4.5219	3.8991	2.9222	3.1129
323643	LSANCA38	LSAN Republic	2.3126	2.1737	2.1736	1.7663	1.5613

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323640	LSANCA29	LSAN Sunset	2.0781	1.4105	1.7741	1.9584	1.8747
323631	LSANCA10	LSAN Webster	3.1835	4.6821	4.5863	2.3412	2.1171
559243	MADRCA12	Madera Bonnadelli	0.5840	0.3711	0.3018	0.4600	0.5242
559194	MADRCA11	Madera Main	2.5220	2.9900	2.7370	1.6479	1.4583
213624	LSANCA02	Madison 02 / MO	2.6790	2.5264	2.7214	2.0673	1.7255
213625	LSANCA03	Madison 03 / MA	1.4496	1.1309	1.6299	1.5485	1.3778
831113	MARNCA11	Marina	3.4878	2.7186	2.3758	2.2108	2.3591
925030	MRTZCA11	Martinez	2.4647	2.7901	2.5891	1.6405	1.8926
530472	MYVICA01	Marysville	2.3994	1.2427	1.1482	1.5778	1.6679
408139	SNVICA11	Mathilda / Sunneyvale	1.2302	0.3339	0.3986	0.9368	0.7618
707307	MKVLCA11	McKinleyville	2.2563	2.6961	2.4957	1.7530	1.9420
707305	MNDCCA11	Mendocino	7.2917	0.5483	0.2907	2.6190	1.7500
559195	MNDTCA11	Mendota	6.9630	7.4797	6.4957	4.9167	4.2914
650028	MNPKCA11	Menlo Park	5.3968	9.6552	6.7780	2.6273	3.3773
209196	MRCDA01	Merced	2.2977	3.0784	2.6335	1.2658	1.2907
707306	MDTWCA11	Middletown	4.1667	0.5618	0.4226	1.6926	1.7660
415027	MLVYCA01	Mill Valley	2.7888	1.3157	1.3816	1.5281	1.5954
650026	MLBRCA11	Millbrae	2.5565	4.2565	3.5714	1.5876	1.7892
408114	MLPSCA11	Milpitas	2.0524	2.4082	2.6941	1.2463	1.2707
949806	MSVJCAAT	Mission Viejo	2.9620	3.9342	4.9885	2.5329	2.8349
209200	MDSTCA03	Modesto Kellog / South / Ceres	2.6011	1.1233	1.1636	1.7718	1.7366
209201	MDSTCA04	Modesto Kingswood / Curtis / Salida	1.7433	1.1571	1.0213	0.9503	1.0449
209199	MDSTCA02	Modesto Main	3.3530	5.3422	4.9561	1.9667	1.9267
209248	MDSTCA05	Modesto Tally	0.8250	1.1093	0.9406	0.4875	0.4628
661376	MOJVCA01	Mojave	3.2520	1.5864	1.1246	4.1411	2.7222
530529	MTAGCA11	Montague	1.6484	0.5272	0.3912	0.4996	0.5855
831115	MTRYCA01	Monterey	2.8569	4.5769	3.7398	1.4741	1.7639
805377	MRPKCA12	Moorpark	2.8038	3.9565	3.5864	1.5721	1.3877
925029	MORGCA12	Moraga	3.6618	4.9612	3.4340	2.0889	2.4390
831123	SLNSCA14	Moro	40.6250	32.2917	26.3566	15.6069	13.2911
805378	MRBACA11	Morro Bay	1.0264	1.3572	1.0811	0.8284	0.7524
650031	MSBHCA11	Moss Beach	5.7800	0.5725	0.5488	1.6492	1.4737
530474	MTSHCA12	Mount Shasta	2.7653	0.5170	0.4916	1.3944	1.2126
650032	MTVWCA11	Mountain View	2.0629	4.0010	2.9296	1.2776	1.2197
209203	MRPHCA11	Murphys	5.7692	11.2121	6.8992	1.6628	2.7446
707310	NAPACA01	Napa	2.5038	3.4756	3.0804	1.6246	1.6734
619754	NTCYCA11	National City - Highland	2.3005	3.1798	3.3824	2.3925	2.0058
530475	NVCYCA11	Nevada City	4.5992	2.5071	2.5187	2.9862	3.9356
916476	NWCSCA11	Newcastle	3.6695	3.5282	2.8665	2.6031	2.9266
661379	NHLLCA01	Newhall	2.2822	2.3201	2.5606	1.6851	1.6380
209204	NWMNCA12	Newman	1.9042	2.5597	2.2393	1.5899	1.4268
818646	NHWDCA01	NHWD / Lankershim	2.3470	1.7403	1.9180	1.8498	1.8585
818647	NHWDCA02	NHWD / Magnolia	2.5622	2.7333	3.0606	1.9798	1.8557
707311	NICECA11	Nice	6.0811	0.2256	0.2659	2.5575	2.9810
530477	NCLSCA12	Nicolaus	0.1745	0.0313	0.0255	0.3844	0.2717
760855	NILDCA11	Niland Main	20.8333	2.1242	2.0408	10.7143	7.8431
805380	NIPMCA11	Nipomo	1.8097	2.4081	1.5598	1.1364	0.9498
323633	LSANCA12	Normandy	2.6774	2.3831	2.1330	1.7374	1.7693
916537	NSCRCA12	North Natomas	2.2817	1.4811	1.5997	1.6099	1.5166
530480	NSJNCA11	North San Juan	1.9809	0.1446	0.1420	0.7699	0.9497
818648	NORGCA11	Northridge	2.2244	3.9555	4.5980	1.7238	1.8395
209205	OKDLCA11	Oakdale	1.9115	2.4524	1.9750	1.2485	1.1846
510038	OKLDCA11	Oakland 45th/Olympic(Central)	2.7221	3.0998	2.8006	1.6219	1.8113
510036	OKLDCA03	Oakland Franklin	2.7956	2.8234	2.8673	2.0841	2.1037
510039	OKLDCA12	Oakland Holly	2.5552	3.3368	3.0076	1.8318	1.6757
510037	OKLDCA04	Oakland Kellog(Fruitvale)	3.5450	3.1053	3.3498	2.1497	1.9662
510040	OKLDCA13	Oakland Mountain	2.3503	1.6089	1.1372	1.2902	1.3462
925041	OKLYCA11	Oakley	2.1495	1.4346	1.2539	1.3104	1.3557
805381	OKVWCA11	Oakview	230.0000	0.5561	0.6193	46.1111	43.3333
760758	OCSDCA11	Oceanside / Mission	2.5803	3.8398	5.1882	2.0919	2.1158
805382	OJAICA11	Ojai	1.7958	0.7915	0.6999	1.4818	1.5596
714759	ORNGCA11	Orange Chapman	2.1212	4.0373	3.9813	1.5084	1.5073
559206	ORCVCA11	Orange Cove	4.1809	1.1413	0.8390	4.3651	2.7344

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714760	ORNGCA13	Orange Olive	3.1149	2.7907	2.4642	1.7836	1.7957
714761	ORNGCA14	Orange West	1.9802	1.1313	1.0812	1.9011	1.4980
916482	ORVACA11	Orangevale	1.3593	2.2251	1.5772	0.9819	0.8262
925042	ORNDCA11	Orinda	7.5758	2.2417	2.2017	5.3630	6.5292
530483	ORLDCA11	Orland	2.4120	3.0233	2.1376	1.3747	1.2753
559207	ORSICA11	Orosi	2.5978	1.6573	1.4906	2.1848	1.6514
530485	ORVLCA12	Oroville East	3.1934	3.0725	2.6370	1.7107	2.0015
530484	ORVLCA11	Oroville Main	3.5329	1.2110	1.0652	2.4675	2.2474
619853	OTMSCA11	Otay Mesa	1.4171	1.3908	1.8725	1.1168	1.4417
650043	PCFCCA11	Pacifica	3.5789	5.8721	5.1465	2.0769	2.2768
661384	PLDLCA01	Palmdale	2.7784	2.0134	1.8976	1.8495	1.7547
661412	PLDLCA11	Palmdale East / 47TH ST	1.7062	0.9479	0.8106	1.2329	1.1128
650045	PLALCA02	Palo Alto Main	2.1039	3.7707	3.1730	1.2444	1.2596
650046	PLALCA12	Palo Alto South	1.9355	1.0877	0.8073	0.9519	1.0208
530486	PRDSCA11	Paradise Main	4.6862	3.9327	3.8145	3.3839	3.7821
530487	PRDSCA12	Paradise Pines	3.1546	2.5362	2.2492	2.0531	3.9403
562649	PRMTCA01	Paramount	2.5005	3.9971	4.3580	1.7519	1.7915
415073	SNRFCA11	Parkway	2.0180	2.2373	1.7846	1.0486	1.0073
559208	PRLRCA11	Parlier	2.7151	1.4840	1.0309	3.0388	2.3638
626651	PSDNCA12	Pasadena / Lake	2.6626	3.1106	2.5662	1.6224	1.5540
626650	PSDNCA11	Pasadena / Mt Wilson / Green	2.2391	4.0005	3.6418	1.4636	1.4701
805385	PSRBCA01	Paso Robles	1.5224	0.1988	0.2249	0.9965	1.0820
760764	PALACA11	Pauma Valley	0.2402	0.1339	0.1376	0.1761	0.2281
951765	PDLYCA11	Pedley	1.7258	2.6613	2.9732	1.4123	1.2169
650051	PSCDCA11	Pescadero	4.0881	1.2416	1.0599	0.6138	0.9567
707314	PTLMCA01	Petaluma	2.3834	3.7748	2.9058	1.1691	1.3285
619766	PNVYCA11	Pine Valley	2.0276	2.2825	1.0973	1.0502	1.7043
805386	PIRUCA11	Piru	0.2051	0.0370	0.0406	0.0890	0.0717
805387	PSBHCA11	Pismo Beach	1.4130	0.5313	0.3971	1.1927	0.9783
925050	PSBGCA11	Pittsburg Bay Point / Willow	2.4943	1.7428	1.5208	1.7552	1.5841
925049	PSBGCA01	Pittsburg Main	2.5772	1.9811	2.0819	1.7105	1.8920
559210	PXLYCA11	Pixley	3.7398	4.9172	3.3790	2.2617	1.5734
714767	PLCNCA11	Placentia	2.4479	3.0900	3.3085	1.8143	1.6880
530489	PLVLCA11	Placerville - Main	2.7573	4.7975	3.8657	1.9983	2.6260
530490	PLVLCA12	Placerville - Niagara	6.2281	1.8660	1.7862	5.9361	5.9354
925083	PLTNCA13	Pleasanton Hacienda	0.2673	0.1468	0.1546	0.4234	0.5081
925047	PLTNCA12	Pleasanton Main/Hopyard	2.4403	5.2421	4.7065	1.6179	1.5277
209212	PLMOCA11	Plymouth	8.7838	0.4604	0.4210	1.4460	2.8180
559213	PTVLCA11	Porterville	3.0097	1.5229	1.1163	1.5269	1.5753
858768	POWYCA11	Poway Midland	2.4891	3.5182	3.9941	2.4676	2.6966
949808	RSMGCA11	R. S. Margarita	2.2222	3.0671	3.2490	1.5311	1.4322
760769	RAMNCA11	Ramona	2.6667	3.4748	2.9666	1.4621	1.5704
213632	LSANCA11	Rampart	1.8541	1.5944	1.5728	1.4369	1.4064
858770	RBRNCA11	Rancho Bernardo	1.6158	2.1339	2.4353	1.3479	1.1779
858854	RNPSCA11	Rancho Penasquitos	2.0823	1.3409	1.1506	1.3600	1.3607
619852	RNSDCA11	Rancho San Diego	1.7808	1.0781	1.4856	1.5524	1.4521
858771	RSFECA12	Rancho Santa Fe	23.3524	4.5949	3.6024	3.7313	3.4813
530494	RDBLCA01	Red Bluff	2.3137	0.6026	0.4967	1.4157	1.6559
530531	RDNGCA11	Redding Enterpr	2.3414	1.5550	1.9394	1.7234	1.7973
530495	RDNGCA02	Redding Main	4.6916	1.0138	1.2480	3.2771	3.2985
650053	RDCYCA01	Redwood City	2.7092	4.0360	3.3590	1.5504	1.6969
818652	RESDCA01	Reseda	3.2743	4.6313	4.7893	2.2188	2.2057
909773	RILTCA11	Rialto	3.3765	4.5837	5.1956	2.6305	2.2036
510013	ELSBCA11	Rich-Appian Way/EI Sobrante	2.9821	2.9540	2.4601	2.0956	2.0963
213630	LSANCA09	Richmond	3.0935	1.2548	1.2942	2.4959	2.5136
510052	RCMDCA11	Richmond-SF	2.9454	4.8265	4.4597	2.0685	1.8405
707317	RIDECA11	Rio Dell	2.0440	0.1483	0.1158	2.1318	1.8672
916526	RILNCA12	Rio Linda	1.3330	2.2482	2.6865	1.4186	1.1775
209214	RVRBCA11	Riverbank	4.3754	5.8366	4.4955	2.1221	2.2440
559215	RVDLCA11	Riverdale	2.2388	0.5283	0.4376	1.3040	1.3499
951774	RVSDCA01	Riverside Orange	2.3274	3.3851	4.1231	1.8064	1.6657
916527	RCKLCA11	Rocklin	3.0819	0.8328	0.7448	2.0304	1.7897
707337	RTPKCA11	Rohnert Park	2.6204	1.4365	1.0106	1.5556	1.7553

WC	CLLI	WC Name	2015	2016	2017	2018	2019
661388	RSMCA11	Rosamond	2.8031	3.4400	2.5546	2.3129	2.3736
626654	ROSMCA11	Rosemead	2.6221	2.8947	2.5955	1.7071	1.6180
949791	SJCPCA12	S. J. Capistrano	3.0789	0.9814	1.0672	2.4862	2.2891
916497	SCRMCA01	Sacramento Mn	1.6282	2.0316	1.9806	1.1096	1.1182
831119	SLNSCA01	Salinas Main	2.3416	1.9530	1.6484	1.2426	1.2977
650055	SNBUCA02	San Bruno	2.4826	3.5501	2.8250	1.4993	1.4886
650056	SNCRCA11	San Carlos	1.9810	2.4332	2.0072	0.9894	1.1370
949776	SNCLCA12	San Clemente	2.5595	0.9225	0.9500	1.5071	1.8212
626658	SNGBCA01	San Gabriel	3.9091	6.4411	5.5220	2.2278	2.4099
408134	SNJSCA18	San Jose Almaden Valley	3.3366	2.1961	1.8024	1.7064	1.7052
408131	SNJSCA13	San Jose Chynoweth	2.6411	2.3837	2.1983	1.6870	1.6877
408130	SNJSCA12	San Jose Dial Way	2.8417	2.8012	2.4469	1.8150	1.9472
408133	SNJSCA15	San Jose Evergreen / San Felipe	2.9145	1.2788	1.1708	1.5638	1.7159
408132	SNJSCA14	San Jose Foxworthy	2.1583	2.4088	2.2503	1.4529	1.4320
408145	SNJSCA21	San Jose Junction	2.3077	0.8607	1.0957	2.7646	2.4724
408128	SNJSCA02	San Jose Main	1.7280	3.3098	3.4344	1.3603	1.3437
408129	SNJSCA11	San Jose White Rd	2.2301	2.2993	2.2096	1.3973	1.3619
831127	SNJNCA11	San Juan Baustista	1.6213	0.1786	0.2342	0.4770	0.6346
510070	SNLNCA11	San Leandro	3.1534	6.2257	4.6092	1.8714	1.9491
805389	SNLOCA01	San Luis Obispo	1.2253	0.2968	0.2624	0.9991	0.6289
408136	SNMACA11	San Martin	2.5463	1.7519	2.5706	2.4760	1.9936
650071	SNMTCA11	San Mateo	2.6069	5.2134	4.0674	1.5633	1.5324
310659	SNPDCA01	San Pedro	2.8820	2.3220	2.3146	2.1046	1.9306
415072	SNRFCA01	San Rafael Main	4.4239	5.3547	4.5787	2.6124	2.8376
925074	SNRMCA11	San Ramon	2.4964	2.7778	2.7996	1.5604	1.5471
619794	SNYSCA12	San Ysidro	2.9188	3.1983	3.6867	2.5768	2.5829
714804	SNANCA12	Santa Ana West / SNAN Bolsa	2.3612	1.1992	1.2929	2.0373	2.0498
408137	SNTCCA11	Santa Clara Bellomy	2.2532	4.0698	3.6359	1.5120	1.5777
408143	SNTCCA01	Santa Clara Spacepark	1.3446	0.6894	0.5454	1.4609	1.3602
831125	SNCZCA01	Santa Cruz	4.0715	1.6450	1.3516	2.3187	1.8291
831126	SNCZCA11	Santa Cruz-Capitola	2.4063	2.9057	2.5324	1.3460	1.2154
707320	SNRSCA01	Santa Rosa Main	2.4572	3.4179	2.9725	1.4494	1.5022
619795	SANTCA01	Santee	1.6966	1.1663	1.4856	1.4902	1.3365
805391	SATCCA12	Saticoy	2.2473	1.1788	1.2190	1.4075	1.5135
661407	SAGSCA11	Saugus	2.3266	2.4076	2.3359	1.4700	1.4869
415075	SSLTCA11	Sausalito Larkspur	2.5241	1.3757	1.0707	1.5483	1.8574
831116	SCVYCA01	Scotts Valley	2.9004	1.4604	1.5540	2.0157	1.9706
916501	SCRMCA12	SCRM - Empire	2.7555	2.4997	2.4258	1.7558	1.7739
916502	SCRMCA13	SCRM - Fruitridge	3.2277	1.5817	1.5290	1.9900	1.9070
916499	SCRMCA03	SCRM - Garden	2.9052	3.0473	2.9795	1.8642	1.9413
916500	SCRMCA11	SCRM - Gladstone	2.3374	1.3464	1.5012	1.6032	1.6059
916498	SCRMCA02	SCRM - Ivanhoe	3.0881	3.9575	3.7875	2.1370	2.0807
831117	SESDCA11	Seaside	1.9195	2.6222	2.6975	1.3457	1.2294
707321	SBSTCA11	Sebastapol	3.4957	2.6683	2.3404	1.8460	1.8082
559217	SELMCA11	Selma	3.4281	5.9976	4.4218	1.8095	1.6882
415058	SNFCCA01	SF Bush Pine	1.5271	0.7291	0.7580	1.4132	1.1394
415064	SNFCCA13	SF Evergreen-9th Ave	2.9390	1.5586	1.3208	1.5425	1.5855
415068	SNFCCA21	SF Folsom	1.5208	1.2366	1.4405	1.2764	1.4521
415061	SNFCCA06	SF Juniper-Onondaga	2.8480	3.4349	2.7624	1.5635	1.5367
415067	SNFCCA12	SF Larkin-Steiner	2.5301	2.0752	1.9416	1.4558	1.4319
415059	SNFCCA04	SF Market-McCoppin	1.9946	2.4557	1.9608	1.1210	1.2558
415060	SNFCCA05	SF Mission-25th St	2.8447	2.7087	2.0563	1.4208	1.3918
415065	SNFCCA14	SF Montrose-19th	2.1495	3.1697	2.5157	1.1960	1.2757
415066	SNFCCA17	SF Third St.	2.4093	1.0762	1.0383	1.4436	1.4167
661392	SHFTCA11	Shafter	4.1543	1.2672	0.9342	2.2869	2.4161
818656	SHOKA01	Sherman Oaks	3.0725	5.1219	4.9896	2.0650	2.0781
530504	SGSPCA11	Shingle Springs	2.2901	2.0358	1.7374	1.2276	1.3637
714797	SLVRCA11	Silverado	6.5217	1.8987	1.9928	0.4065	1.1111
805393	SIMICA11	Simi	2.4725	2.9614	2.6445	1.6514	1.6400
530507	SMAVCA11	Smartsville	3.8462	4.3333	2.5463	1.7544	2.0599
619781	SNDGCA06	SNDG 37th Street	1.3323	1.4175	1.9701	1.5649	1.5712
619777	SNDGCA01	SNDG C Street	1.5683	1.5749	2.3934	1.7776	1.7535
619782	SNDGCA11	SNDG College	2.0923	1.7409	1.9839	1.7841	1.8417

WC	CLLI	WC Name	2015	2016	2017	2018	2019
858779	SNDGCA03	SNDG Linda Vista	1.8707	2.2106	3.1126	1.8723	1.6690
619783	SNDGCA12	SNDG Market Street	3.2049	2.9336	3.3725	2.3639	2.3319
858786	SNDGCA16	SNDG Mira Mesa	1.6002	1.9150	2.2284	1.4595	1.4620
858785	SNDGCA15	SNDG Regents	1.3949	1.3518	2.3953	1.4798	1.6730
619780	SNDGCA05	SNDG Saipan	2.4439	1.7372	2.0261	2.2854	1.8186
619784	SNDGCA14	SNDG Tennyson	2.2091	1.8343	2.1536	1.9142	1.7767
619778	SNDGCA02	SNDG University	1.5072	1.6020	2.3370	1.5787	1.5837
530508	SDSPCA11	Soda Springs	37.5000	1.7266	3.4033	4.4365	9.9483
831118	SLDDCA11	Soledad	3.4680	1.7652	1.2225	2.1673	1.6066
661394	SLMNCA11	Solemint	2.2966	3.4209	3.6127	1.8436	1.6748
707323	SONMCA12	Sonoma	3.0610	3.9092	2.8299	1.5708	1.8091
209218	SNRACA13	Sonora	2.0522	0.6187	0.7356	1.3100	1.4331
626660	SPSDCA11	Sout Pasadena / Mission	2.4793	2.1003	1.9429	1.7823	1.5788
323655	SGATCA01	South Gate	2.4052	2.8999	2.6723	1.8663	1.5379
530512	STAHCA13	South Tahoe - Meyers/Apache	3.6731	5.9464	3.4216	1.7188	1.6529
530509	STAHCA01	South Tahoe - Sussex	3.1100	2.0174	1.7450	1.6134	1.5516
530511	STAHCA12	South Tahoe - Tamarack	7.8431	0.0825	0.5719	3.9683	2.0833
949810	IRVNCA12	Spectrum-Irvine	0.7246	0.3027	0.3092	0.8254	1.5374
707318	STHNCA11	St. Helena	2.9630	1.9918	1.7045	1.8182	2.1565
916541	RCKLCA01	Stanford Ranch	2.5596	2.9899	2.2320	1.4133	1.3692
415076	STBHCA11	Stinson Beach	6.2706	2.2135	1.2917	1.4607	1.2149
209222	SKTNCA12	Stockton Ashley	0.5143	0.1946	0.1593	0.5387	0.4650
209221	SKTNCA11	Stockton Granite	3.3775	3.5187	3.2733	2.0942	2.1362
209220	SKTNCA01	Stockton Main	2.9568	3.5500	3.8666	1.9903	2.0435
209223	SKTNCA14	Stockton Redwood	2.3226	2.2181	1.9909	1.2119	1.4051
707324	SUISCA11	Suisun City	5.5000	2.1404	2.5337	10.3801	5.6122
209225	STCKCA11	Sutter Creek	2.0871	2.0013	1.7352	0.9737	1.2674
530514	THCYCA01	Tahoe City	3.0303	0.4953	0.4024	0.8667	1.4039
661395	THCHCA01	Techachapi	1.4589	2.1960	1.8015	0.9031	0.8628
805396	TMTNCA11	Templeton	1.8217	3.1046	2.0337	1.0069	0.9402
209227	THTNCA11	Thornton	3.6667	1.5625	1.1715	2.7778	2.0261
415005	TBRNCA11	Tiburon	1.4701	2.6081	2.4987	0.8318	0.8884
559229	TPTNCA11	Tipton	6.5041	1.8886	2.1036	2.6797	2.8287
310661	TRNCCA11	Torrance	2.5104	1.8633	1.6222	1.4868	1.4610
209230	TRACCA11	Tracy	2.3140	4.3989	4.2744	1.6779	1.6716
530515	TRUCCA11	Truckee	3.0571	4.3438	2.9014	0.6920	0.7364
559231	TULRCA11	Tulare	2.4953	2.8318	2.7709	1.5512	1.5502
209232	TRLCCA11	Turlock	2.1860	1.9971	1.8523	1.4102	1.4642
714798	TUSTCA11	Tustin 11	2.7458	3.3345	2.9100	1.6217	1.6672
209233	TWHRCA11	Twain Harte	4.9338	0.4140	0.4751	2.2499	2.7339
707328	UKIHCA01	Ukiah Main	2.8616	3.5404	3.1393	2.2047	2.0654
213627	LSANCA06	Union	2.2226	1.0791	1.1792	1.7734	2.0532
510078	UNCYCA11	Union City	3.0475	5.5085	5.0890	2.0457	2.0769
707329	UPLKCA11	Upper Lake	4.2181	0.2363	0.1349	1.9608	1.4610
707330	VCVLCA12	Vacaville	2.3166	4.0782	3.9238	1.4684	1.5585
707331	VLLJCA01	Vallejo	2.5969	3.5738	3.3715	1.6177	1.5726
760799	VLCTCA11	Valley Center	3.3358	1.1158	1.1587	2.0823	1.8296
818662	VNNYCA02	Van Nuys	2.5276	2.0072	2.1176	1.8926	1.9086
805400	VNTRCA02	Ventura / Fir	2.5298	0.5776	0.5502	1.6618	1.5847
805399	VNTRCA11	Ventura Main / Montalvo	2.6245	2.6698	2.3964	1.7538	1.5310
559235	VISLCA11	Visalia Main	2.3969	2.3205	2.2802	1.5424	1.5087
760800	VISTCA12	Vista	1.7486	1.7201	2.3789	1.6657	1.6439
916479	NSCRCA11	Wabash	2.2147	1.8029	1.8912	1.7191	1.6523
209236	WLLCCA11	Wallace	2.6749	5.2846	4.3956	0.5618	1.7276
925079	WNCKCA11	Walnut Creek	2.2504	4.2465	3.2666	1.3546	1.4139
661402	WASCCA01	Wasco	1.8137	1.3567	1.1015	1.5577	1.3277
209237	WTFRCA11	Waterford	2.6649	0.7151	0.5673	2.3327	1.7166
831141	WTVLCA01	Watsonville	2.1524	3.9264	3.1558	1.1442	1.1165
530518	WEEDCA01	Weed	2.4390	1.3759	1.4008	1.0391	1.4572
530520	WTLDC12	Wheatland	0.6233	0.7850	0.3184	0.3911	0.3865
530535	GRVYCA12	Wildwood	3.3589	4.5066	3.1382	1.4468	1.7400
707334	WLTSCA12	Willits	2.1318	0.3994	0.2774	1.2572	1.8639
530521	WLWSCA11	Willows	2.8238	2.8944	1.5930	1.6719	1.5758

WC	CLLI	WC Name	2015	2016	2017	2018	2019
310664	WLMGCA01	Wilmington	3.0155	5.5724	5.4624	1.8096	1.8425
707335	WNDSCA11	Windsor	3.0382	1.1391	0.8487	1.7639	1.5436
530522	WNTRCA11	Winters	10.8527	8.1317	5.4688	6.3079	4.6261
951775	RVSDCA11	Woodcrest	2.9805	1.7808	1.3750	1.7040	1.6339
559239	WDLKCA11	Woodlake	4.7000	0.6897	0.6582	3.7704	2.1050
530523	WDLCA11	Woodland	2.5990	3.9826	3.3354	1.5339	1.6142
714802	YRLNCA11	Yorba Linda	2.3013	4.2539	3.3531	1.3552	1.4133
707336	YNVLCA11	Yountville	3.1308	0.1758	0.1832	1.6534	1.9201
530524	YREKCA11	Yreka	1.8430	3.2062	1.8905	1.4768	1.4477
530525	YBCYCA01	Yuba City / Marysville	2.1336	1.4592	1.3664	1.3578	1.4174

VoIP service quality metrics: Frontier California

On the day it took over control of the California ILEC from Verizon, Frontier California had [REDACTED] VoIP lines in service. By the end of December 2019, that number had decreased to [REDACTED], a roughly 50% erosion in the number of VoIP subscribers between the April 1, 2016 acquisition date and December 31, 2019. Not all of Frontier’s VoIP customers were being served out of *FiOS*-equipped locations,¹⁰⁴ although the precise breakdown has not been provided. As of the acquisition date (April 1, 2016), Frontier was providing *FiOS* services in approximately 75 of its 201 reporting units (which, as discussed in Chapter 4F above, in some cases represented administrative consolidations of two or more individual wire centers) although there were fewer than 10 VoIP lines in five of these; by the end of 2019, the number of reporting units where *FiOS* was being provided had decreased to 68. Frontier states that, as of October 2018, it was offering *FiOS* to about [REDACTED] homes passed out of 118 of its total 270 wire centers.¹⁰⁵ However, as of the end of 2018, Frontier states that it was providing *FiOS* service to a total of [REDACTED] residential and business customers in only 76 of its wire centers.¹⁰⁶ By the end of 2019, Frontier had only about [REDACTED] residential and business *FiOS* customers, a loss of more than [REDACTED] over the previous year.¹⁰⁷ Frontier’s VoIP services were being targeted primarily at residential subscribers; as of the end of December 2019, only about [REDACTED] business customers were taking VoIP services from Frontier.¹⁰⁸



As of the end of December 2019, Frontier was serving only [REDACTED] residential VoIP subscribers, just under 50% of the VoIP lines in service as of the takeover date. In comparison, Frontier had experienced a far greater drop-off in legacy circuit-switched access lines over that same period.

Notably, Frontier experienced a far greater drop-off in legacy circuit-switched access lines over that same period; On April 1, 2016, the company had 1,201,218 POTS access lines in service; by the end of 2019, that number dropped by a slightly larger percentage -- 52.3% -- to 572,975 access lines, suggesting that the availability of FTTP-based *FiOS* has done little to help Frontier maintain its customer base overall.¹⁰⁹ Table 14.11 below compares Frontier’s POTS and

104. Frontier response to CD DR 13-F-3, “Att. 13-F-3 VoIP Line Count (CONFIDENTIAL).xlsx”

105. Frontier response to CD Data Request 15-F-06. Frontier’s response to 15-F-06(b) lists a total of 84 wire centers. However, 8 of these have either no *FiOS* customers at all, or only a low single-digit number of them.

106. *Id.*

107. *Id.*

108. Frontier California Response to CD Data Request 11-F-23, FCC Form 477 submissions June 30, 2016 through December 31, 2019,

109. Notably, in its Response to CD DR 11-F-3, Frontier identified 239 out of its total of 278 wire centers (as distinct from “reporting units”) as being “Broadband Enabled.” See “Attachment 11-F-3 - Confidential Central Office Data.xlsx”. In its response to CD DR 11-F-4, Frontier has provided a total of 139,335 VoIP trouble ticket

VoIP markets over the 2016-2019 period based upon the company’s FCC Form 477 submissions, which are provided at 6-month intervals:



Frontier suffered large losses both of POTS and VoIP access lines since assuming control of the company on April 1, 2016 with POTS losses slightly higher, suggesting that the availability of FTTP-based *FiOS* has done little to help Frontier maintain its customer base overall.

Table 14.11

**FRONTIER CALIFORNIA
POTS AND VoIP LINES IN SERVICE
2016-2019**

	VoIP			POTS			Total		
	Total	Consumer	Business	Total	Consumer	Business	Total	Consumer	Business
2016-06-30	████████	████████	██████	1,361,599	632,803	728,796	████████	████████	████████
2016-12-31	████████	████████	██████	1,089,685	513,784	575,901	████████	████████	████████
2017-06-30	████████	████████	██████	987,812	446,350	541,462	████████	████████	████████
2017-12-31	████████	████████	██████	905,236	397,378	507,858	████████	████████	████████
2018-06-30	████████	████████	██████	835,732	355,404	480,328	████████	████████	████████
2018-12-31	████████	████████	██████	733,922	324,528	409,394	████████	████████	████████
2019-06-30	████████	████████	██████	681,546	293,126	388,420	████████	████████	████████
2019-12-31	████████	████████	██████	635,325	265,520	369,805	████████	████████	████████

Source: Frontier California Response to CD Data Request 11-F-23, FCC Form 477 submissions.

Frontier has not provided a technology breakdown with respect to its VoIP services. In response to CD DR 11-F-3, Frontier identified a total of 278 central offices as being “broadband enabled,” and there were 274 different Frontier California wire centers identified in the 139,335 VoIP-related trouble reports that the company processed between July 2016 and December 2019. All else equal, one would expect that both the total number of trouble tickets and the number of out-of-service trouble tickets would experience a corresponding reduction over that same period. We don’t have trouble ticket reports for the April-June 2016 period and the trouble report data for July 2016 appears to be incomplete. Between April 1 and July 31, 2016 alone, Frontier VoIP subscribership dropped by 11.63%, from ██████████. Because we do not have complete trouble report counts prior to August 2016, this analysis will start with the average

records originated between April 1, 2016 and December 31, 2019. See “Attachment 11-F-25 - Revised VoIP Ticket Datas.xlsx” and “Att. 13-F-4 2019 VoIP Trouble Tickets (CONFIDENTIAL).xlsx”. 255 different wire centers are included in this dataset. We have determined, however, that the 75 wire centers with the largest numbers of trouble tickets account for more than 99% of all VoIP trouble tickets over the April 2016 through December 2019 period. For trouble tickets identifying a wire center for which no VoIP service count is available, we have ignored it.

number of VoIP lines in service for August 2016 and continue for the months thereafter.¹¹⁰ Table 14.12 below summarizes the results of this analysis:

By the end of 2019, Frontier California's average monthly VoIP lines in service had decreased by [REDACTED]. Total trouble reports experienced a much greater decrease, to 40.69% of the August 2016 number, indicating improvement overall. However, as far as out-of-service trouble conditions, those actually *increased* by 54.79% despite a 41.74% *decrease* in the number of VoIP lines in service.

110. In order to compare trouble report counts, which arise throughout the month, to VoIP subscriptions in effect during that month, it is necessary to use the *average* number of VoIP subscriptions rather than the end-of-month figures. We calculate the average subscriptions by taking the average of the VoIP lines in service for the last day of the prior month and the last day of the current month.

End of Month	End-of-Month VoIP Lines in Service	Average VoIP Lines in Service for Month	Pct of August 2016	Total VoIP Trouble Reports for Month	Pct of August 2016	Out-of Service VoIP Trouble Reports for Month	Pct of August 2016
2016-03							
2016-04							
2016-05							
2016-06							
2016-07							
2016-08				1,132		162	
2016-09			100.00%	6,200	100.00%	825	100.00%
2016-10			97.10%	6,084	98.13%	753	91.27%
2016-11			94.27%	5,261	84.85%	676	81.94%
2016-12			91.49%	6,281	101.31%	628	76.12%
2017-01			88.86%	7,190	115.97%	769	93.21%
2017-02			86.63%	5,786	93.32%	666	80.73%
2017-03			84.40%	5,430	87.58%	592	71.76%
2017-04			82.57%	3,611	58.24%	636	77.09%
2017-05			80.97%	3,748	60.45%	1,114	135.03%
2017-06			79.52%	3,668	59.16%	998	120.97%
2017-07			78.48%	3,547	57.21%	1,075	130.30%
2017-08			77.74%	4,000	64.52%	1,094	132.61%
2017-09			77.27%	3,089	49.82%	1,023	124.00%
2017-10			76.90%	4,224	68.13%	1,072	129.94%
2017-11			76.41%	3,047	49.15%	1,036	125.58%
2017-12			75.95%	3,676	59.29%	1,100	133.33%
2018-01			75.40%	3,936	63.48%	1,106	134.06%
2018-02			74.74%	2,636	42.52%	746	90.42%
2018-03			74.32%	2,853	46.02%	963	116.73%
2018-04			73.91%	3,038	49.00%	981	118.91%
2018-05			73.37%	2,373	38.27%	987	119.64%
2018-06			72.95%	2,382	38.42%	1,229	148.97%
2018-07			72.49%	3,739	60.31%	1,969	238.67%
2018-08			72.05%	2,552	41.16%	1,292	156.61%
2018-09			71.78%	3,379	54.50%	2,171	263.15%
2018-10			71.46%	2,585	41.69%	1,287	156.00%
2018-11			70.92%	2,373	38.27%	1,256	152.24%
2018-12			70.16%	2,377	38.34%	1,152	139.64%
2019-01			69.27%	3,171	51.15%	1,433	173.70%
2019-02			68.22%	2,921	47.11%	1,332	161.45%
2019-03			67.05%	2,778	44.81%	1,351	163.76%
2019-04			65.86%	2,060	33.23%	975	118.18%
2019-05			64.75%	2,112	34.06%	1,001	121.33%
2019-06			63.89%	1,898	30.61%	961	116.48%
2019-07			63.14%	2,416	38.97%	1,350	163.64%
2019-08			62.42%	2,377	38.34%	1,303	157.94%
2019-09			61.70%	2,070	33.39%	1,090	132.12%
2019-10			60.91%	2,394	38.61%	1,294	156.85%
2019-11			60.06%	2,404	38.77%	1,370	166.06%
2019-12			59.26%	2,523	40.69%	1,277	154.79%

Over the 42-month period from July 2016 through December 2019, Frontier created a total of 139,324 VoIP service trouble tickets, of which less than one-third, 44,095, were associated with out-of-service conditions.¹¹¹ Each of Frontier’s trouble ticket records contain an indication as to the “cause” of the service outage. Combining the identified “cause” with the type of plant involved, there are roughly 300 such identifiers. Table 14.13 below details the number of out-of-service trouble reports associated with each of the top twenty Frontier “cause” descriptions, separately for those instances that did not involve a service outage and for those that did. These are presented in order of the highest to lowest instances of each such Cause.

Table 14.13

FRONTIER CALIFORNIA
VoIP SERVICE OUTAGE CAUSE INDICATIONS

Cause	No service outage	Service outage	Total	Percent of total
██████████	23,035	9,932	32,967	23.66%
██████████████████	10,093	6,344	16,437	11.80%
██████████	6,418	2,704	9,122	6.55%
██████████	5,179	3,077	8,256	5.93%
██████████████	6,263	1,905	8,168	5.86%
██████████	3,883	1,452	5,335	3.83%
██████████	3,479	1,636	5,115	3.67%
██████████	4,342	752	5,094	3.66%
██████████	3,269	982	4,251	3.05%
██████████████████	2,372	715	3,087	2.22%
██████████	1,858	1,041	2,899	2.08%
██████████	2,129	658	2,787	2.00%
██████████	2,036	644	2,680	1.92%
██████████	1,385	927	2,312	1.66%
██████████████	1,216	1,059	2,275	1.63%
██████████████	1,104	938	2,042	1.47%
██████████████	938	927	1,865	1.34%
██████████	1,373	489	1,862	1.34%
██████████████	1,177	583	1,760	1.26%
██████████████	1,214	414	1,628	1.17%
TOTAL				

We have attempted to classify each of the nearly 300 cause/plant type designations into one of thirteen (13) categories so as to facilitate identification of the principal types of VoIP service

111. Frontier Response to CD Data Request 11-F-25. Frontier did not provide any VoIP-related trouble ricket records for Sptil, May or June 2016. Its data did include eleven (11) trouble ticket records pre-dating its takeover of the California ILEC dating back to October 2011. We have ignored these records for purposes of our analysis.

outages that are being experienced by customers. Table 14.14 below summarizes the out-of-service trouble ticket counts for each of these categories:

Cause	No service outage	Service outage	Total	Percent of total
Determined to not be out-of-service or cleared	32,853	13,790	46,643	33.48%
Frontier-provided customer premises equipment	27,171	16,007	43,178	30.99%
Frontier VoIP or FiOS server/network	11,654	4,884	16,538	11.87%
Subscriber distribution outside plant	7,783	3,248	11,031	7.92%
Administrative	6,817	1,777	8,594	6.17%
Customer-provided equipment & Inside Wire Maintenance	4,744	2,118	6,862	4.93%
Frontier employee error	938	927	1,865	1.34%
Customer education	1,231	424	1,655	1.19%
Interexchange or connecting carrier issue	1,009	618	1,627	1.17%
Cause Not Specified	733	174	907	0.65%
Other	210	105	315	0.23%
Employee caused	86	23	109	0.08%
Total	95,229	44,095	139,324	100.00%

While our classifications may not be precise due to limitations in the descriptions provided by Frontier, it is apparent that the principal causes of VoIP-related trouble reports and, in particular, VoIP service outages involve Frontier equipment located on the customer's premises (30.99%), VoIP server or network issues (11.87%), outside plant (7.92%) and a variety of administrative issues (6.17%), some of which may be customer-driven (e.g., non-payment).



Out of the 44,095 VoIP out-of-service reports provided for the period from April 2016 through December 2019, only 25,089, or about 56.9%, appear to be the result of Frontier plant or equipment issues or employee actions.

As noted, not all out-of-service trouble conditions arise due to Frontier California plant failures. Out of the 44,095 VoIP out-of-service reports provided for the period from April 2016 through December 2019, only 25,089, or about 56.9%, appear to be the result of Frontier plant or equipment issues or employee actions.¹¹² Table 14.15 below compares the number of service outage reports associated with such Frontier California plant failures over the same August 2016 through December 2019 period with corresponding numbers of VoIP lines in service:

112. The following trouble report categories fall into this group: Frontier-provided customer premises equipment; Frontier VoIP or FiOS server/network; Subscriber distribution outside plant; Frontier Employee Error; and Employee Caused.

Table 14.15							
FRONTIER CALIFORNIA							
OUT-OF-SERVICE CONDITIONS DUE TO PLANT AND EQUIPMENT FAILURES							
2016-2019							
Service Outage Cause Category							
End of Month	Frontier Equipment	VoIP/FIOS Network / Server	Subscriber Distribution Outside Plant	Frontier employee error	Frontier employee caused	Total	Average VoIP Lines in Service
2016-03							
2016-04							
2016-05							
2016-06							
2016-07							
2016-08	54	23	7	2		86	
2016-09	142	94	31	6		273	
2016-10	233	104	40	8		385	
2016-11	190	105	30	2		327	
2016-12	201	91	48	7		347	
2017-01	210	95	76	10		391	
2017-02	203	75	56	13		347	
2017-03	176	78	34	10		298	
2017-04	231	84	39	6		360	
2017-05	521	155	85	20		781	
2017-06	437	139	70	27		673	
2017-07	476	154	91	17		738	
2017-08	449	129	89	19		686	
2017-09	441	109	85	25		660	
2017-10	433	128	77	19		657	
2017-11	423	186	60	29		698	
2017-12	457	115	83	30		685	
2018-01	542	103	91	44		780	
2018-02	333	75	79	33		520	
2018-03	382	124	108	33		647	
2018-04	392	149	84	43		668	
2018-05	405	125	69	27		626	
2018-06	463	137	94	21		715	
2018-07	662	274	114	30	1	1081	
2018-08	503	134	113	38	2	790	
2018-09	336	103	66	24	13	542	
2018-10	471	149	129	20	2	771	
2018-11	375	111	78	34	1	599	
2018-12	477	87	97	25		686	
2019-01	493	127	158	31	1	810	
2019-02	481	118	150	19	1	769	
2019-03	544	103	108	23		778	
2019-04	390	99	69	42	1	601	
2019-05	371	119	87	24		601	
2019-06	367	77	77	19		540	
2019-07	358	91	79	20		548	
2019-08	540	123	65	32		760	
2019-09	404	147	72	22	1	646	
2019-10	490	156	63	28		737	
2019-11	506	166	80	28		780	
2019-12	445	123	117	17		702	
Totals	16,007	4,884	3,248	927	23	25,089	

When breaking this analysis down to such a granular level, it is difficult to define a “base period” as we had done for Table 14.12 because there is considerable month-to-month variation. That said, it is clear that while the number of VoIP lines has fallen precipitously over the period, the month-to-month frequency of service outages caused by each of these categories of failures seems to have actually increased.

Conclusion

The massive and rapid migration of most California residential customers away from legacy circuit-switched (POTS) services over the past decade is clearly attributable to the increasing availability of competitive as well as technological alternatives to these primarily ILEC-provided services. Many customers have “cut the cord” and have replaced wireline services with wireless; for those who wanted to retain wireline services, VoIP is the principal alternative. Both AT&T California and Frontier California offer individual line VoIP services targeted at the residential and small business market, but demand for ILEC-provided VoIP has been on the decline for several years. Cable TV providers, mainly Comcast and Charter in California, provide VoIP-based telephone service to their residential customers as part of bundled packages that also include broadband Internet access and video content, but typically do not offer voice telephone service on a stand-alone basis. Although there does not appear to be any compelling reason for the Commission to regulate VoIP rates for the majority of customers, there are nevertheless several regulatory challenges that should not be lightly dismissed.

VoIP service is dependent upon locally-provided power, battery backup, and complex customer premises equipment that is not generally required for legacy circuit-switched services. The seemingly higher incidence of VoIP service outages *vis-à-vis* POTS could well be the result of customer premises conditions that are unique to VoIP. These conditions arise both for ILEC- and cable-provided VoIP services. For customers who have “cut the cord” and rely upon some type of over-the-top landline service and/or wireless, access to reliable location reporting for 911 emergency purposes is still far from achieving the accuracy available with fixed wireline services. Finally, the so-called “digital divide” -- an issue whose importance has increased as a result of the COVID-19 crisis -- raises the potential for the loss of high quality wireline voice services in rural and low-income populations. Although the Commission has created Lifeline programs that involve some (but not all) wireless providers, for wireline services the focus has traditionally been on ILEC circuit-switched offerings. As these services are phased out, new Lifeline initiatives that include all major VoIP providers (ILECs and cable MSOs) will need to be formulated. With the sunset of §710 that went into effect as of the beginning of 2020, a comprehensive regulatory approach that embraces all providers of VoIP type services should clearly be a top priority.

15 | CPUC CONSUMER AFFAIRS BRANCH COMPLAINTS

Principal observations and takeaways

- CAB collects geo-coded customer location information, but this is not consistent with the customer of record/account data that is contained in the ILECs' trouble report records, such as the customer's account or billing telephone number, serving wire center, or other location-specific information. Consequently, CAB complaint records cannot be directly linked to or correlated with carrier trouble tickets because CAB does not collect detailed customer account or location data.
- Less than a quarter of the total complaints received by CAB involved service outages and other service-related problems.
- The vast majority VoIP-related complaints received by CAB address issues other than VoIP service quality, such as billing disputes and other customer service issues.
- Although the absolute number of service-related complaints received by CAB is extremely small when compared with the number of complaints made directly with carriers, on a relative scale more than four times as many complaints involve legacy services provided by Frontier than those furnished by AT&T.
- CAB should undertake to collect customer account and location data as part of all service-related complaints.

CPUC CONSUMER AFFAIRS BRANCH COMPLAINTS

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Introduction

The mission of the CPUC’s Consumer Affairs Branch (“CAB”) is to assist consumers of public utility services address problems that may arise from time to time in connection with their service, billing issues, and/or other relationships with the utility. The CAB describes its role as follows:

The California Public Utilities Commission (CPUC) regulates privately owned California utilities that provide energy, water, and telecommunications services. If you have a question or complaint concerning one of these utility providers, help is available through the Consumer Affairs Branch (CAB).

CAB's team of representatives is ready to assist consumers with billing and service matters with regulated utilities. Through dedicated specialists, CAB assists consumers in resolving application denials (appeals) for the California LifeLine program participation. ...¹¹³

Within the overall scope of our work on Phase 1, ETI examined Consumer Affairs Branch complaint data with an attempt to correlate it with the more direct GO 133-C/D Trouble Report records submitted by the carriers. We determined that CAB complaint records do not typically include the complainant’s billing telephone number (BTN) or location, making it impossible to link individual consumer complaints as submitted to CAB with Trouble Ticket records maintained by the carriers and furnished to us for purposes of this Study. For Phase 2, ETI has been tasked with examining (1) whether wire centers with a high number of consumer complaints have worse service quality metrics than the statewide average; and (2) the breakdown of complaints of VoIP versus traditional telephone service.

CAB handles both informal complaints as well as formal complaints that are ultimately adjudicated by the CPUC. Our examination was, however, limited to informal complaints. CAB collects geo-coded customer location information, but this is not consistent with the customer of record/account data that is contained in the ILECs’ trouble report records, such as the customer’s account or billing telephone number, serving wire center, or other location-specific information. Because CAB complaint records do not typically include the complainant’s billing telephone number (BTN), it is usually not possible to link individual consumer complaints as submitted to CAB with Trouble Ticket records maintained by the carriers and furnished to us for purposes of this Study. As a result, we are able to address only limited aspects of issue (1). However, we have reviewed records of all complaints received by CAB pertaining to AT&T California (U-1001) and Frontier California (U-1002) over the 24 month period from January 2018 through December 2019, and are able to provide an overall assessment of the relationship between service outages as reported to the carriers vs. service-related complaints submitted to CAB.

113. <https://www.cpuc.ca.gov/cab/>



CAB collects geo-coded customer location information, but this is not consistent with the customer of record/account data that is contained in the ILECs' trouble report records, such as the customer's account or billing telephone number, serving wire center, or other location-specific information. Consequently, CAB complaint records cannot be directly linked to or correlated with carrier trouble tickets because CAB does not collect detailed customer account or location data.

Types and quantities of consumer complaints received by CAB

Over the Phase 2 2018-2019 study period, CAB received a total of 5,729 Complaints pertaining to AT&T California and 2,925 Complaints pertaining to Frontier California. In its complaint data records, CAB identifies approximately 75 principal types of complaints by their subject. Tables 15.1 and 15.2 below summarize these, and provide the quantities received in each subject category, for AT&T California and Frontier California, respectively.

To support our analysis, we have associated each of the CAB complaint types with one of six (6) principal complaint categories, as follows:

- Service Quality issue
- Billing / Commercial Dispute
- Customer service issue
- VoIP
 - Service quality issues
 - Other issues (e.g., billing, customer service)
- Non-phone issue (Cable, Internet)
- Unknown

These principal complaint category assignments are also shown on Tables 15.1 and 15.2.

Table 15.1

**CPUC CONSUMER AFFAIRS BRANCH
TYPES OF CONSUMER COMPLAINTS RECEIVED
RELATING TO AT&T CALIFORNIA
2018-2019**

Complaint type	Category	Count	Pct of Total
Abusive Marketing	Customer service	112	1.95%
Bill Adjustment	Billing / Commercial	118	2.06%
Bill Format	Billing / Commercial	12	0.21%
Bill Not Received	Billing / Commercial	72	1.26%
Bundled Services	Customer service	62	1.08%
Call Quality	Service issue	144	2.51%
Commission Policy/Rules	Customer service	22	0.38%
Cramming/3rd Party Billing	Billing / Commercial	33	0.58%
Cramming/3rd Party Billing	Billing / Commercial	3	0.05%
Dead Zones/Dropped Calls	Service issue	6	0.10%
Deaf and Disabled Programs (DDTP)	Customer service	2	0.03%
Delayed Orders/Missed Appointments	Service issue	293	5.11%
Deposits	Billing / Commercial	1	0.02%
Disconnected In Error	Customer service	62	1.08%
Disconnection Non Payment	Billing / Commercial	136	2.37%
Disputed Customer of Record	Billing / Commercial	28	0.49%
Early Termination Fee - ETF	Billing / Commercial	28	0.49%
Fraud	Billing / Commercial	2	0.03%
Health	Customer service	1	0.02%
High Bill	Billing / Commercial	666	11.63%
Late Payment Charge - LPC	Billing / Commercial	56	0.98%
LL Consumer Did Not Return Form	Customer service	5	0.09%
LL Documents Not Provided/Does Not Meet Guidelines	Customer service	3	0.05%
LL Form Complexity	Customer service	1	0.02%
LL IDV Identity Verification	Billing / Commercial	14	0.24%
LL No Carrier Authority	Customer service	1	0.02%
LL Nondeliverable	Customer service	2	0.03%
LL Policy/Practices	Customer service	6	0.10%
LL SSN/DOB/TRIBAL ID Not Provided	Customer service	1	0.02%
LLB Address Error	Billing / Commercial	29	0.51%
LLB Application Request	Billing / Commercial	557	9.72%
LLB Approved for Discount	Billing / Commercial	244	4.26%
LLB Discount Switched to Other Carrier	Billing / Commercial	73	1.27%
LLB Federal Program/Equipment	Customer service	2	0.03%
Low Income/Special Needs	Customer service	1	0.02%
NJ Cable/Satellite TV	Non-phone issue	278	4.85%
NJ Claims for Damages	Customer service	21	0.37%
NJ Company Practice	Customer service	65	1.13%
NJ Customer Service	Customer service	70	1.22%
NJ Easements/Right of Way	Customer service	24	0.42%
NJ Equipment	Service issue	40	0.70%

Complaint type	Category	Count	Pct of Total
NJ Inability to Serve	Service issue	14	0.24%
NJ Inside Wiring	Non-phone issue	3	0.05%
NJ Internet Billing	Non-phone issue	150	2.62%
NJ Internet Service/Equipment	Non-phone issue	318	5.55%
NJ Landlord/Tenant Issues	Billing / Commercial	2	0.03%
NJ Not Listed	Customer service	102	1.78%
NJ Out of State Consumer	Customer service	8	0.14%
NJ Property Restoration/Debris Removal	Service issue	7	0.12%
NJ Rebates/Promotions	Billing / Commercial	25	0.44%
NJ Surcharges/Taxes	Billing / Commercial	27	0.47%
NJ VOIP (Voice Over Internet Protocol)	VoIP	318	5.55%
NJ Yellow Page Directory	Non-phone issue	2	0.03%
Number Portability - Wireless or Landline	Customer service	47	0.82%
Numbering Plan Area - Area Code Changes	Customer service	4	0.07%
Obscene/Threatening/Harassing Calls	Customer service	31	0.54%
Operator Services	Service issue	2	0.03%
Other Charges	Billing / Commercial	335	5.85%
Out of Service Credit - OOS	Billing / Commercial	13	0.23%
Outage	Service issue	623	10.87%
Payment Arrangements	Billing / Commercial	60	1.05%
Payment Error	Billing / Commercial	61	1.06%
Premise Visit Charges	Billing / Commercial	4	0.07%
Rate Design	Billing / Commercial	4	0.07%
Rate Protest	Billing / Commercial	1	0.02%
Refusal To Serve	Customer service	55	0.96%
Robo Calls/ADAD	Customer service	44	0.77%
Safety	Service issue	79	1.38%
Slamming	Billing / Commercial	30	0.52%
Toll Dispute	Billing / Commercial	21	0.37%
Unknown	Unknown	32	0.56%
VoIP (Voice over Internet Protocol)	VoIP	1	0.02%
Whistleblower	Customer service	1	0.02%
White Page Listings - Telephone Directory	Non-phone issue	4	0.07%
Wildfires	Service issue	5	0.09%
TOTAL		5729	100.00%

Table 15.2

**CPUC CONSUMER AFFAIRS BRANCH
TYPES OF CONSUMER COMPLAINTS RECEIVED
RELATING TO FRONTIER CALIFORNIA
2018-2019**

Complaint type	Category	Count	Pct of Total
Abusive Marketing	Customer service	73	2.50%
Bill Adjustment	Billing / Commercial	99	3.38%
Bill Format	Billing / Commercial	3	0.10%
Bill Not Received	Billing / Commercial	20	0.68%
Bundled Services	Customer service	33	1.13%
Call Quality	Service issue	85	2.91%
Commission Policy/Rules	Customer service	13	0.44%
Cramming/3rd Party Billing	Billing / Commercial	27	0.92%
Cramming/3rd Party Billing	Billing / Commercial	1	0.03%
Dead Zones/Dropped Calls	Service issue	5	0.17%
Deaf and Disabled Programs (DDTP)	Customer service	2	0.07%
Delayed Orders/Missed Appointments	Service issue	168	5.74%
Deposits	Billing / Commercial	3	0.10%
Disconnected In Error	Customer service	29	0.99%
Disconnection Non Payment	Billing / Commercial	42	1.44%
Disputed Customer of Record	Billing / Commercial	9	0.31%
Early Termination Fee - ETF	Billing / Commercial	27	0.92%
Fraud	Billing / Commercial	1	0.03%
High Bill	Billing / Commercial	325	11.11%
Late Payment Charge - LPC	Billing / Commercial	6	0.21%
LL IDV Identity Verification	Billing / Commercial	3	0.10%
LL Policy/Practices	Customer service	3	0.10%
LL Signature/Printed Name Does Not Match/Missing	Billing / Commercial	1	0.03%
LLB Address Error	Billing / Commercial	1	0.03%
LLB Application Request	Billing / Commercial	89	3.04%
LLB Approved for Discount	Billing / Commercial	49	1.68%
LLB Discount Switched to Other Carrier	Billing / Commercial	19	0.65%
LLB Federal Program/Equipment	Customer service	3	0.10%
NJ Cable/Satellite TV	Non-phone issue	73	2.50%
NJ Claims for Damages	Customer service	5	0.17%
NJ Company Practice	Customer service	32	1.09%
NJ Customer Service	Customer service	36	1.23%
NJ Easements/Right of Way	Customer service	8	0.27%
NJ Equipment	Service issue	30	1.03%
NJ Inability to Serve	Service issue	4	0.14%
NJ Internet Billing	Billing / Commercial	162	5.54%
NJ Internet Service/Equipment	Non-phone issue	255	8.72%
NJ Not Listed	Customer service	39	1.33%
NJ Out of State Consumer	Customer service	3	0.10%
NJ Property Restoration/Debris Removal	Service issue	3	0.10%
NJ Rebates/Promotions	Billing / Commercial	8	0.27%
NJ Surcharges/Taxes	Billing / Commercial	22	0.75%
NJ VOIP (Voice Over Internet Protocol)	VoIP	244	8.34%

Complaint type	Category	Count	Pct of Total
NJ Yellow Page Directory	Non-phone issue	1	0.03%
Number Portability - Wireless or Landline	Customer service	42	1.44%
Numbering Plan Area - Area Code Changes	Customer service	1	0.03%
Obscene/Threatening/Harassing Calls	Customer service	1	0.03%
Operator Services	Service issue	1	0.03%
Other Charges	Billing / Commercial	279	9.54%
Out of Service Credit - OOS	Billing / Commercial	9	0.31%
Outage	Service issue	399	13.64%
Payment Arrangements	Billing / Commercial	12	0.41%
Payment Error	Billing / Commercial	22	0.75%
Payphone	Billing / Commercial	1	0.03%
Premise Visit Charges	Billing / Commercial	8	0.27%
Rate Design	Billing / Commercial	1	0.03%
Refusal To Serve	Customer service	12	0.41%
Robo Calls/ADAD	Customer service	11	0.38%
Safety	Service issue	22	0.75%
Slamming	Billing / Commercial	14	0.48%
Toll Dispute	Billing / Commercial	3	0.10%
Unknown	Unknown	20	0.68%
VoIP (Voice over Internet Protocol)	VoIP	1	0.03%
White Page Listings - Telephone Directory	Non-phone issue	1	0.03%
Wildfires	Service issue	1	0.03%
TOTAL		2925	100.00%

Table 15.3 below provides the total number of complaints received by CAB over the 2018-2019 period in each of these principal complaint categories. The “Service Quality issue” category, which relates most directly with Trouble Reports submitted to the carriers for service outages and other service-related problems, represents less than a quarter of the total complaints received by CAB. For AT&T California, only 1,213, or 21.17%, of the 5,729 complaints received by CAB pertained to service outages and other telephone service related service quality issues. By comparison, over the 2018-2019 period, AT&T California customers reported some 573,585 service outages to the carrier. For Frontier California, only 718, or 24.55%, of the 2,925 complaints received by CAB during 2018-2019 pertained to telephone service related service quality issues, whereas Frontier California customers reported some 81,021 service outages to the carrier during 2018 and 2019.

Table 15.3				
CPUC CONSUMER AFFAIRS BRANCH PRINCIPAL CATEGORIES OF CONSUMER COMPLAINTS 2018-2019				
Complaint category	CAB Complaint Counts			
	AT&T	Pct of Total	Frontier	Pct of Total
Service Quality issue	1,213	21.17%	718	24.55%
Billing / Commercial Dispute	2,655	46.34%	1,266	43.28%
Customer service issue	755	13.18%	346	11.83%
VoIP Service issue	106	1.85%	245	8.38%
VoIP Billing issue	213	3.72%	37	1.26%
Non-phone issue (Cable, Internet)	755	13.18%	208	7.11%
Unknown	32	0.56%	20	0.68%
TOTALS	5,729	100.00%	2,925	100.00%



Less than a quarter of the total complaints received by CAB involved service outages and other service-related problems.

By far the largest number of Complaints submitted to CAB were associated with billing or other commercial interactions between the customer and the carrier. Billing and other commercial interaction issues accounted for 46.34% – nearly half – of all complaints received by CAB relating to AT&T California, and for Frontier California, these same types of complaints represented 43.28% of all those received. Other non-billing Customer Service complaints represented 13.18% and 11.83% of all complaints received relating to AT&T California and Frontier California, respectively. More than half of all complaints received by CAB fall into one of these two categories, neither of which has any direct counterpart with respect to service outages or other trouble tickets as reported to the carriers.

CAB also received many complaints that addressed services over which the CPUC has limited or no direct regulatory authority, such as cable TV, Internet access, and even inside wire issues.

VoIP Services

Also included in the CAB records were complaints dealing with VoIP services; however, the vast majority of these dealt with issues other than service-related problems, such as billing and related commercial matters, delayed service installations, and other customer service issues. Nevertheless, it may still be instructive to compare VoIP service quality-related complaints with those addressing service quality issues associated with legacy services, and to present these in the context of Trouble Reports both for VoIP and for legacy services as well as the number of lines in service for each of the two carriers. Table 15.4 below compares CAB VoIP Complaints, VoIP Trouble Tickets, and VoIP subscriptions for each of the two carriers over the Phase 2 2018-2019 study period, and provides similar data for legacy services as well. Subscription counts are averaged over the two years so as to correspond with the Complaint and Trouble Ticket totals over that same period.

VoIP AND LEGACY SERVICE COMPLAINTS, TROUBLE REPORTS AND SUBSCRIPTION COUNTS 2018-2018				
Complaint category	VoIP		Legacy telephone service	
	AT&T	Frontier	AT&T	Frontier
Service-related Complaints received by CAB	106	37	1,213	718
Service outage Trouble Reports received by carriers	400,577	63,726	573,585	81,021
Average subscriber counts 2018-2019	920,131	224,022	1,932,389	681,470
Service-related CAB Complaints per 100 lines in service (2018-19 average)	0.0115	0.0165	0.0628	0.1054
Total Out-of-Service Reports per 100 VoIP lines in service, 2018-2019	43.53	28.45	29.68	11.89
Average Out-of-Service Reports per month, per 100 VoIP lines in service	1.8138	1.1854	1.2367	0.4954

Both carriers appear to be experiencing higher rates of service-related trouble conditions (i.e., out-of-service reports per month per 100 lines in service) for VoIP services than for their legacy telephone services. Notably, the CAB service-related complaints per 100 lines in service are actually *lower* for VoIP services than for legacy services. However, these numbers are so small, and represent little more than a minuscule fraction of all trouble reports for both categories of

service, that no meaningful conclusions as to the reasons for this seemingly inverse relationship are possible.



The vast majority VoIP-related complaints received by CAB address issues other than VoIP service quality, such as billing disputes and other customer service issues.

CAB complaints vs. carrier trouble reports for legacy services

In that regard, while the total quantity of service-related complaints submitted to CAB is an extremely small fraction of the total number of trouble reports received by both carriers, the relative number of CAB complaints has been consistently and significantly greater for Frontier California than for AT&T California. As summarized on a monthly basis in Tables 15.5 and 15.6 below, over the 2018-2019 period, CAB received 1,213 service-related complaints from AT&T customers, representing 0.2115% of the 573,585 service outage trouble tickets processed by AT&T over that same period. In the case of Frontier, CAB received 718 service-related complaints, representing 0.862% of the 81,021 service outage trouble tickets processed by Frontier.

While the absolute number of complaints received by CAB are still extremely small relative to the number of service problems being reported directly to the carriers, the stark difference in the instance of such complaints as between customers of the two carriers is striking. On a relative basis, four times as many Frontier California customers saw fit to contact CAB to report service problems than did AT&T California customers, which is generally reflective of the persistent service problems that have been plaguing Frontier over the 2018-2019 period.



Although the absolute number of service-related complaints received by CAB is extremely small when compared with the number of complaints made directly with carriers, on a relative scale more than four times as many complaints involve legacy services provided by Frontier than those furnished by AT&T.

Table 15.5

AT&T CALIFORNIA
COMPARISON OF CARRIER OUT-OF-SERVICE TROUBLE REPORTS
VS. SERVICE QUALITY-RELATED COMPLAINTS RECEIVED BY
CPUC CONSUMER AFFAIRS BRANCH
2018-2019

Month	Out-of-Service Trouble Reports	CAB Service Quality Complaints	CAB Complaints as Pct of Total Trouble Reports
January 2018	39,512	76	0.1923%
February 2018	22,322	33	0.1478%
March 2018	33,342	68	0.2039%
April 2018	23,508	40	0.1702%
May 2018	20,218	44	0.2176%
June 2018	18,310	35	0.1912%
July 2018	19,693	43	0.2184%
August 2018	19,973	44	0.2203%
September 2018	16,289	45	0.2763%
October 2018	21,732	44	0.2025%
November 2018	19,125	53	0.2771%
December 2018	32,709	51	0.1559%
January 2019	39,635	55	0.1388%
February 2019	39,213	65	0.1658%
March 2019	31,845	45	0.1413%
April 2019	19,883	27	0.1358%
May 2019	19,706	56	0.2842%
June 2019	17,937	42	0.2342%
July 2019	16,458	41	0.2491%
August 2019	16,681	52	0.3117%
September 2019	17,085	46	0.2692%
October 2019	19,101	56	0.2932%
November 2019	16,724	41	0.2452%
December 2019	32,584	111	0.3407%
TOTALS	573,585	1,213	0.2115%

Table 15.6

**FRONTIER CALIFORNIA
COMPARISON OF CARRIER OUT-OF-SERVICE TROUBLE REPORTS
VS. SERVICE QUALITY-RELATED COMPLAINTS RECEIVED BY
CPUC CONSUMER AFFAIRS BRANCH
2018-2019**

Month	Out-of-Service Trouble Reports	CAB Service Quality Complaints	CAB Complaints as Pct of Total Trouble Reports
January 2018	4,079	36	0.8826%
February 2018	2,276	20	0.8787%
March 2018	4,421	29	0.6560%
April 2018	2,931	26	0.8871%
May 2018	2,755	23	0.8348%
June 2018	2,298	15	0.6527%
July 2018	2,493	19	0.7621%
August 2018	2,620	14	0.5344%
September 2018	2,027	24	1.1840%
October 2018	3,864	15	0.3882%
November 2018	3,112	8	0.2571%
December 2018	5,047	21	0.4161%
January 2019	5,489	40	0.7287%
February 2019	5,710	68	1.1909%
March 2019	4,793	62	1.2936%
April 2019	3,457	42	1.2149%
May 2019	3,077	33	1.0725%
June 2019	3,077	39	1.2675%
July 2019	2,593	48	1.8511%
August 2019	2,687	22	0.8188%
September 2019	2,513	27	1.0744%
October 2019	2,597	35	1.3477%
November 2019	2,287	21	0.9182%
December 2019	4,818	31	0.6434%
TOTALS	81,021	718	0.8862%

Conclusion

As noted earlier, the lack of customer-specific location and account data on CAB complaint data records does not allow for a direct examination of such complaints *vis-à-vis* the corresponding trouble ticket and its resolution by the carrier. That said, the substantially higher *rate* of complaints filed by Frontier customers experiencing service-related problems appears consistent with the company's difficulties over the 2018-2019 period.

CAB complaint data would be enormously more useful, going forward, if customer-specific service details, such as serving wire center, billing telephone number, and street address could be recorded along with the description of the problem being experienced by the customer. While these details may be of lesser importance for complaints that do not directly involve service outages and other service-related issues, at the very least this additional account-specific data should be collected where the complaint does involve service quality problems.



CAB should undertake to collect customer account and location data as part of all service-related complaints.

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Principal observations and takeaways

- The data that would be necessary to support an analysis of the effects of CAF II funding on legacy circuit-switched voice telephone service is not available and, as such, we are unable to offer an assessment as to whether areas receiving CAF II support exhibit improved POTS service quality.
- Housing Units passed by the two ILECs in areas eligible for CAF II support represent a minuscule fraction of all Housing Units within each company's California operating territories.
- GO 133-C/D service quality standards and metrics are compiled at the individual wire center level, whereas eligibility for CAF II funding is determined at the individual Census Block level. Since only a small fraction of all customers served by any given wire center are located in areas receiving CAF II funding support, there is no practical means for associating CAF II support (which is focused on broadband infrastructure) and service quality for legacy circuit-switched voice services.

CONNECT AMERICA FUND II FUNDING AND LEGACY SERVICE QUALITY

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Introduction

In establishing the Connect America Fund, the FCC created a funding mechanism “to be spent annually to make broadband-capable infrastructure available to as many unserved locations as possible within these areas served by price cap carriers, while sustaining voice and broadband-capable infrastructure in high-cost areas that would not be served absent support.”¹¹⁴ As noted, the focus of the Connect America Fund was to assure increased availability of *broadband* services to otherwise unserved areas. However, the focus of this study has been and remains service quality of *legacy circuit-switched basic voice telephone service*, which we have been referring to as “Plain Old Telephone Service” (“POTS”).

As we have observed and documented at several places in this and in our Phase 1 report, when examined at the full wire center level, POTS service quality is and has been noticeably better in wire center serving areas where the ILEC (AT&T California or Frontier California) has invested in broadband infrastructure, even though such investments have not been directed specifically at legacy services. For Phase 2, we have been asked to examine whether it is possible to determine if areas that have been recipients of Connect America Fund II (“CAF II”) funding exhibit identifiably better service quality for *legacy* circuit-switched basic voice telephone services than is evident for otherwise similar areas that have not benefitted from CAF II-funded broadband infrastructure upgrades. For the reasons discussed below, we have determined that the data that would be necessary to support such an analysis is not available and, as such, we are unable to offer an assessment as to whether areas receiving CAF II support exhibit improved POTS service quality.



The data that would be necessary to support an analysis of the effects of CAF II funding on legacy circuit-switched voice telephone service is not available and, as such, we are unable to offer an assessment as to whether areas receiving CAF II support exhibit improved POTS service quality.

Limitations of POTS service quality data

As reflected in our service quality analysis as presented in Chapters 4A and 4F above, the trouble report and other service quality data that has been provided by the two ILECs pursuant to GO 133-C/D and made available to ETI in both Phases 1 and 2 of this study is in all instances *at the wire center level*. We do not have specific location data sufficient to identify individual

114. *Connect America Fund et al.*, WC Docket Nos. 10-90 *et al.*, *Report and Order*, Rel. December 18, 2014, at para. 9, citing *Connect America Fund et al.*; WC Docket Nos. 10-90 *et al.*, *Report and Order and Further Notice of Proposed Rulemaking*, 26 FCC Rcd 17663 (2011) (*USF/ICC Transformation Order and/or FNPRM*) *aff'd sub nom.*, In re: FCC 11-161, 753 F.3d 1015 (10th Cir. 2014), at 17725, para. 158.

customers within a wire center serving area and, in particular, to identify those customers that are served by broadband infrastructure that has been constructed with CAF II funding.

Qualification for CAF II funding is based upon certain attributes that are determined at the individual *Census Block* level. There are 710,145 census blocks in California,¹¹⁵ 500,454 of which are in the areas served by AT&T California. Only 9,210 of these fall within the CAF II eligibility standards. And those 9,210 Census Blocks contain a total of 33,761 individual housing units out of the total 11,018,714 housing units, representing only 0.31% of all housing units located in areas served by AT&T California (see Table 16.2 below). Frontier has provided data on its operating areas at the Census Tract level. Frontier provides service in 1,991 Census Tracts containing a total of 3,414,452 housing units. However, it is likely that some of these Census Tracts extend into areas not served by Frontier, so the total number of housing units where Frontier service is available is likely somewhat lower. There are 3,928 Census Blocks falling with Frontier operating areas containing a total of 12,812 housing units (see Table 16.3 below).



Housing Units passed by the two ILECs in areas eligible for CAF II support represent a minuscule fraction of all Housing Units within each company's California operating territories.

We have also been advised by Communications Division staff that, unlike Frontier California, which has used CAF II funding to support construction of *wireline* broadband infrastructure, AT&T California's approach to broadband deployment in CAF II-funded locations has been almost exclusively through the use of fixed wireless technology. Accordingly, since AT&T California has apparently not been using CAF II support for any *wireline* broadband upgrades, there is no *a priori* basis to expect any residual result of *wireless* upgrades to be an improvement in *wireline* service quality.

Figure 16.1 below provides an example of the relatively sparse extent of CAF II deployment relative to the total area served by a wire center, AT&T's Caruthers, California wire center (CRTHCA11) in this instance. The area within the wire center serving area is not coincident with census block boundaries, so some census blocks fall may fall within several wire centers.

115. https://www2.census.gov/geo/pdfs/reference/guidestloc/ca_gslcg.pdf (accessed 1/20/21).



Figure 16.1. Example of CAF II Eligibility areas (shaded gray) for AT&T (blue) and Frontier (pink). [Map was produced using GeoResults/ShareTracker.]

Figure 16.2 covers the same area as in Figure 16.1, but includes CAF II deployments as represented by the dots on the map. A “deployment” for this purpose represents a single location where some type of (wireline or fixed wireless) broadband facilities needed to serve that specific location has been constructed.



Figure 16.2. Example of Deployed CAF II Locations within Eligibility areas (shaded gray) for AT&T (blue) and Frontier (pink). [Map was produced using GeoResults/ShareTracker.]

Figure 16.3 below shows all California CAF II-eligible areas (light blue) and specific locations where CAF II-funded broadband facilities have been deployed (dark blue):

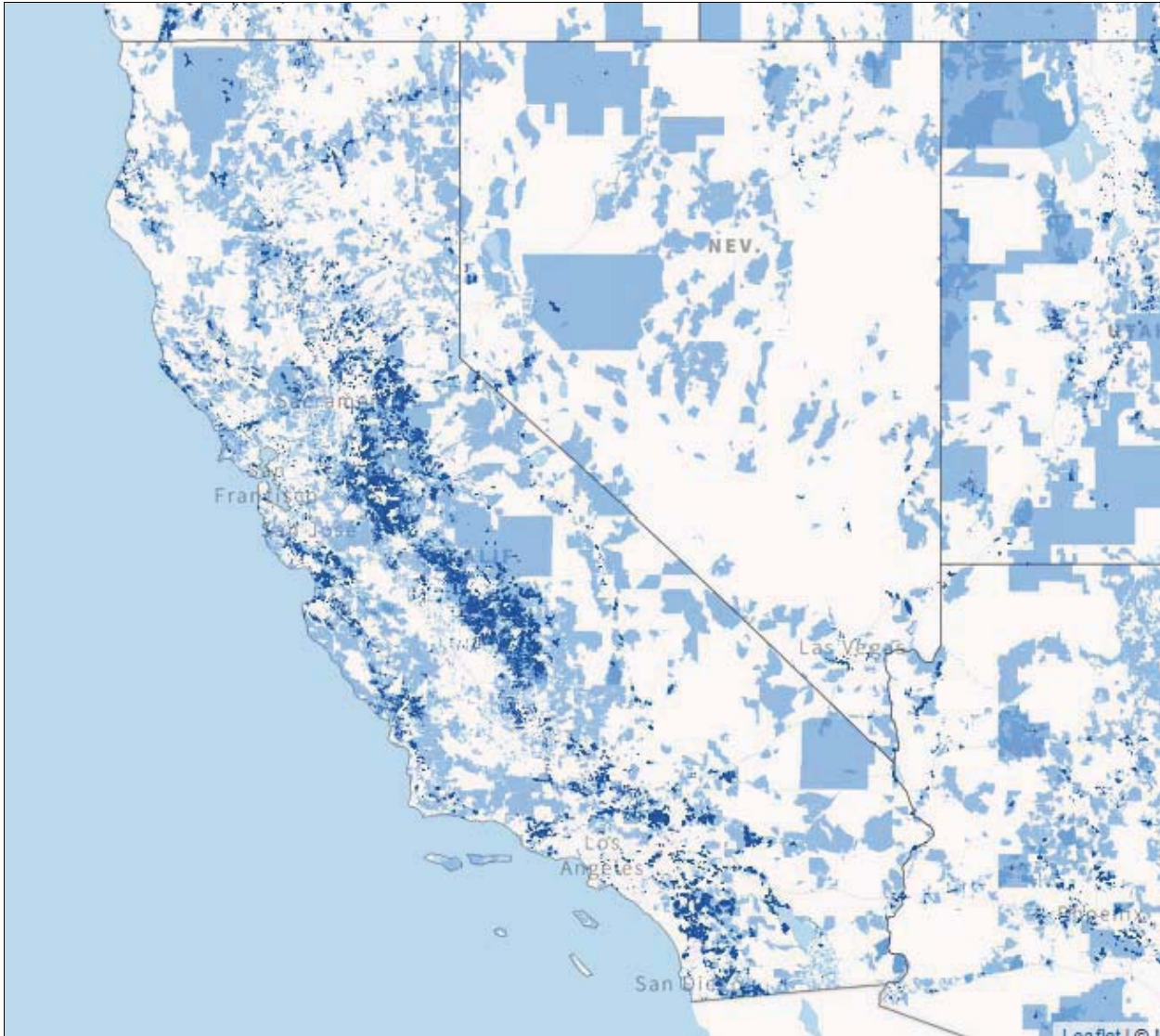


Figure 16.3. California CAF II Eligibility and Deployment areas [Source: <https://data.usac.org/publicreports/caf-map/> (accessed 1/13/21)]

Table 16.1 summarizes each of the two ILEC's CAF II deployment locations for each of the past several years, showing for each the number of CAF II locations that have been approved ("obligated") for upgrades, and the number of actual deployments that have been completed.

Table 16.1			
CONNECT AMERICA FUND II UPGRADED LOCATIONS DEPLOYED IN CALIFORNIA			
Year	Locations Obligations	Locations Deployed	Total Support Disbursed
AT&T CALIFORNIA			
2016	-	2,973	\$60,240,432
2017	56,616	51,953	\$120,480,864
2018	84,924	80,548	\$180,721,296
2019	113,232	163,076	\$240,961,728
TOTAL	254,772	298,550	\$602,404,320
FRONTIER CALIFORNIA			
2015	-	8,959	\$3,933,434
2016	-	10,148	\$10,538,311
2017	36,090	38,434	\$46,259,725
2018	54,135	53,492	\$84,449,286
2019	72,180	68,883	\$122,524,110
TOTAL	162,405	179,916	\$267,704,866
Source: https://data.usac.org/publicreports/caf-map/			

Table 16.2 below summarizes, for each county served by AT&T California, the number of CAF II-eligible Census Blocks and the total number of housing units in those portions of the county served by AT&T California, and the number of households located within AT&T-served CAF II-eligible Census Blocks within the county.¹¹⁶ As is evident from this data, the number of CAF II-eligible households (homes passed) is an extreme minute fraction of the total number of households in almost every California county that AT&T serves. Accordingly, and separate and apart from the fact that AT&T's approach to providing broadband in these areas is via fixed wireless rather than wireline, there is no realistic basis to expect any measurable impact of CAF II funding on POTS service quality.

116. "caf2_auction_publish_block_feb2018.csv", available at <https://www.fcc.gov/files/caf2auctionpublishblockfeb2018csv>

Table 16.2

AT&T CALIFORNIA
CAF II-ELIGIBLE HOUSING UNITS AS PERCENT OF TOTAL

County	Total AT&T Census Blocks	AT&T CAF II Census Blocks	Total AT&T Housing Units	AT&T CAF II Housing Units	Housing Units as Pct of Total
ALAMEDA	24,886	125	613,870	245	0.04%
ALPINE	78	2	1,037	39	3.76%
AMADOR	1,007	11	13,777	39	0.28%
BUTTE	7,012	320	99,860	1,046	1.05%
CALAVERAS	2,213	47	25,538	288	1.13%
COLUSA	309	1	565	1	0.18%
CONTRA COSTA	19,277	177	436,916	428	0.10%
EL DORADO	5,807	38	98,731	282	0.29%
FRESNO	17,723	259	297,180	749	0.25%
GLENN	2,739	43	11,232	71	0.63%
HUMBOLDT	6,480	15	54,275	70	0.13%
IMPERIAL	6,572	224	51,903	356	0.69%
INYO	214	16	552	62	11.23%
KERN	22,565	493	251,101	964	0.38%
KINGS	5,605	114	40,456	457	1.13%
LAKE	4,959	445	37,890	2,109	5.57%
LASSEN	105	27	174	85	48.85%
LOS ANGELES	69,334	204	2,402,156	327	0.01%
MADERA	3,941	102	36,067	274	0.76%
MARIN	4,277	65	103,526	157	0.15%
MARIPOSA	1,201	43	4,129	104	2.52%
MENDOCINO	5,774	215	38,802	732	1.89%
MERCED	6,346	175	78,045	862	1.10%
MONTEREY	10,442	264	151,927	734	0.48%
NAPA	3,104	155	59,267	1,542	2.60%
NEVADA	4,842	370	58,349	1,783	3.06%
ORANGE	31,467	145	924,002	424	0.05%
PLACER	6,570	25	101,568	179	0.18%
PLUMAS	2,441	255	9,514	838	8.81%
RIVERSIDE	8,056	19	229,881	64	0.03%
SACRAMENTO	16,853	155	469,051	654	0.14%
SAN BENITO	2,413	80	18,433	381	2.07%
SAN BERNARDINO	5,253	41	143,121	84	0.06%
SAN DIEGO	45,514	481	1,259,421	1,469	0.12%
SAN FRANCISCO	7,996	32	411,564	51	0.01%
SAN JOAQUIN	11,929	207	203,767	1,128	0.55%
SAN LUIS OBISPO	10,853	278	119,817	1,155	0.96%
SAN MATEO	9,891	96	292,658	357	0.12%
SANTA BARBARA	29	3	93	5	5.38%
SANTA CLARA	20,193	179	636,776	487	0.08%
SANTA CRUZ	5,215	69	111,151	321	0.29%
SHASTA	6,357	279	69,122	1,413	2.04%
SIERRA	1,582	165	2,457	616	25.07%
SISKIYOU	4,447	561	17,931	1,804	10.06%
SOLANO	9,867	531	153,322	1,277	0.83%
SONOMA	10,595	449	218,699	1,826	0.83%
STANISLAUS	8,561	98	181,509	579	0.32%
SUTTER	2,890	3	34,615	2	0.01%
TEHAMA	3,871	430	27,768	2,140	7.71%
TRINITY	372	17	974	48	4.93%
TULARE	11,950	216	132,584	695	0.52%
TUOLUMNE	3,890	132	32,397	705	2.18%
VENTURA	7,548	59	144,147	126	0.09%
YOLO	3,676	243	74,635	1,109	1.49%
YUBA	3,363	12	30,412	18	0.06%
TOTAL	500,454	9,210	11,018,714	33,761	0.31%

Frontier California has provided wire center mapping at the Census Tract level. As a result, we do not have corresponding Census Block population and housing unit count data for Frontier California. We do have CAF II Census Block data for Frontier. Table 16.3 provides data for Frontier California corresponding to that shown for AT&T California in Figure 16.2. As with AT&T, the number of housing units located in CAF II-eligible areas is a tiny fraction of all housing units passed by Frontier.

Note that the CAF II location deployment counts shown in Table 16.1 appear to be substantially greater than the number of housing units in CAF II-eligible Census Blocks as shown in Tables 16.2 and 16.3 based upon US Census Bureau population and housing data. We have been unable to identify any explanation for this apparent disparity. However, even if the figures in Table 16.1 are determined to be more accurate, they still do not cover more than a small fraction of total wire center serving areas.



GO 133-C/D service quality standards and metrics are compiled at the individual wire center level, whereas eligibility for CAF II funding is determined at the individual Census Block level. Since only a small fraction of all customers served by any given wire center are located in areas receiving CAF II funding support, there is no practical means for associating CAF II support (which is focused on broadband infrastructure) and service quality for legacy circuit-switched voice services.

Table 16.3

**FRONTIER CALIFORNIA
CAF II-ELIGIBLE HOUSING UNITS AS PERCENT OF TOTAL**

County	Total Frontier Census Tracts	Frontier CAF II Census Blocks	Total Frontier Housing Units	Frontier CAF II Housing Units	Housing Units as Pct of Total
Fresno	27	314	45,036	644	1.43%
Humboldt	5	96	9,915	277	2.79%
Imperial	3	35	4,329	94	2.17%
Inyo	6	134	9,478	315	3.32%
Kern	30	638	61,014	1,221	2.00%
Kings	9	88	9,278	327	3.52%
Los Angeles	845	200	1,285,897	329	0.03%
Marin	11	38	21,861	223	1.02%
Mendocino	5	78	9,929	189	1.90%
Merced	9	124	10,390	722	6.95%
Mono	4	95	17,724	497	2.80%
Monterey	4	95	10,484	563	5.37%
Orange	118	23	202,279	46	0.02%
Placer	8	32	20,399	599	2.94%
Riverside	320	191	611,305	536	0.09%
San Bernardino	290	681	575,579	1,625	0.28%
San Joaquin	28	31	44,295	376	0.85%
Santa Barbara	92	285	162,005	1,341	0.83%
Santa Clara	43	107	72,348	990	1.37%
Sonoma	6	87	13,487	200	1.48%
Stanislaus	3	16	6,129	215	3.51%
Trinity	5	184	9,767	597	6.11%
Tulare	18	212	35,663	505	1.42%
Ventura	100	73	163,598	52	0.03%
Yolo	2	71	2,263	329	14.54%
TOTAL	1,991	3,928	3,414,452	12,812	0.38%

NOTE: Some Census Tracts may extend beyond Frontier serving areas. As a result, the total number of housing units shown here for Frontier operating areas is likely somewhat overstated.

Conclusion

For the reasons discussed above, we are not able to provide an assessment as to the impact of CAF II funding for wireline or fixed wireless broadband deployment occurring in only a small portion of individual wire centers upon overall legacy circuit-switched voice telephone service quality as measured at the full wire center level.

17 | CONCLUSIONS AND RECOMMENDATIONS

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Managing the transition from legacy to current technology services

As we noted in our Phase 1 report, a substantial source of the persistent service quality shortcomings that have plagued legacy POTS services over the past decade has resulted from a failure to develop and manage the migration from legacy circuit-switched wireline technology to state-of-the-art IP-based and wireless services. Numerous technology transitions have occurred in the telecommunications industry over the past century or more, but the current one is unique in a number of critically important respects.

Past transitions, such as from manual switchboards to dial, from step-by-step to crossbar central office switches, from electromechanical to electronic switches, from analog to digital switching, from baseband twisted-pair copper to frequency-division multiplexing to digital time-division multiplexing, from rotary dial to touch-tone, and from copper to fiber optics, have all occurred through a process that took place in the background, one that was largely invisible to the consumer and which, in most cases, involved little affirmative customer decisions or actions.

This process for technology transition was successful largely because the regulatory regime within which it occurred was technology-blind – i.e., the regulatory model remained the same under the previous and the new technology. But with the onset of competition and deregulation that began in the 1980s, this is no longer the case. When a customer migrates from a legacy circuit-switched service to an IP service such as VoIP or to wireless, the regulatory regime that had overseen the legacy service ceases to apply. The *deregulation* that applies to post-transition services presents the service provider with a radically changed set of financial incentives that essentially compel it, acting in the best interests of its shareholders as it has a fiduciary duty to do, to shift management and financial resources to these potentially far more profitable nonregulated services. Both AT&T and Frontier have been doing exactly that. They have directed their capital investment away from legacy services and over to wireless, to broadband and, most recently, to *content*.

The scope of regulation should apply with respect to the set of *functionalities* that is deemed essential and in need of some level of regulatory protection, and *not* with respect to the particular technology that is involved. Thus, if basic voice and some minimal level of Internet access service is deemed essential, these services should be provided in the most efficient manner in each situation, whether by wireline or wireless, or by circuit- or packet-switching technology. If reliable access to emergency services (E911) and connectivity that can remain active in the event of a local power interruption are considered essential minimum service requirements from a public policy standpoint, efficient solutions can be developed under any of the technology platforms or market models.

Fixing this problem is, at bottom, a political matter, and we do not pretend to offer a political solution. However, what is clear is that the existing arrangement is not producing anything close to an optimal result, and needs to be reexamined and revised at a fundamental level.

Conclusions

Following is a brief summary of the principal conclusions resulting from Economics and Technology, Inc.'s ("ETI's") Phase 2 examination of the network infrastructures and quality of service of California's two principal Incumbent Local Exchange Carriers ("ILECs"), AT&T California and Frontier California for the 2018-2019 study period.

- *Ongoing deterioration of ILEC service quality.* The quality of AT&T and Frontier voice services, which had been steadily deteriorating throughout the 2010-2017 Phase 1 study period, has become decidedly worse over the 2018-2019 Phase 2 period; the frequency of service outages has been increasing, as has their average duration.
- *Persistent disinvestment.* The persistent disinvestment, payments of dividends in excess of earnings, and annual depreciation accruals that exceeded gross additions that had characterized the Phase 1 study period have persisted into Phase 2; moreover, the infrastructure investments that both ILECs did make appeared aimed primarily at nonregulated broadband service upgrades rather than at improving legacy service plant.
- *Further decline in the number of POTS customers.* By the end of 2019, 79.1% of the legacy service access lines that were being served by AT&T California at the beginning of 2010 had discontinued their service. Frontier had lost 52.3% of the legacy service customers it had on April 1, 2016, the date on which it took over the California ILEC from Verizon. Both companies have, for all practical purposes, stopped marketing legacy circuit-switched Plain Old Telephone Service ("POTS"), focusing instead on broadband service as their strategy for maintaining and growing their revenue stream while allowing POTS service quality to continue to degrade. This lack of interest in POTS, coupled with the inconsequential financial penalties imposed by GO 133-D for failure to meet minimal service quality performance metrics, would seem to explain why both ILECs have allowed POTS service quality to erode further. The potential revenue from migrating customers to broadband voice/Internet and video bundles, together with the costs the ILECs avoid by ignoring needed legacy service improvements, easily outweighs whatever financial penalties the Commission may impose for violating minimum service quality standards.
- *A focus upon broadband, not POTS.* Investments that were made during 2018-2019 continue to be primarily directed toward supporting new broadband services that bundle high-speed Internet access, Voice over Internet Protocol ("VoIP"), and Video. These broadband-focused upgrades have nevertheless conferred some benefit in improving POTS service quality in locations where such investments have been made. POTS service quality is decidedly better in such locations, but even in these locations, POTS service quality performance under most General Order 133-D metrics deteriorated even faster after 2017.
- *By the end of 2019, AT&T California had become an even smaller part of the overall AT&T corporate organization that it had been two years earlier.* Over the 2010-2017 period, AT&T California's parent AT&T Inc. had experienced significant growth in its overall

gross revenues, rising 29.2% from \$124.3-billion in 2010 to \$181.2-billion in 2019. The primary sources of AT&T's revenue growth have come from wireless services, where the number of AT&T Mobility connections nationwide grew by 73.9%, from 95.4-million in 2010 to 165.9-million in 2019,¹¹⁷ and from several key acquisitions, including DirecTV and Time Warner. AT&T California revenues have been moving in the opposite direction, falling from \$9.70-billion in 2010 to \$6.63-billion by the end of 2019. AT&T California's share of total AT&T Inc. revenues has fallen by an even greater amount, from 7.80% in 2010 to 3.66% in 2019. The parent company's willingness to allocate capital to the California ILEC has diminished accordingly.

- *Failure to adapt network infrastructure to withstand varying weather and environmental conditions.* The strong correlation between significant adverse weather conditions and the incidence of service outages that we had observed in the greater Los Angeles area in our Phase 1 study has now been confirmed to be occurring statewide. This pattern suggests that the networks of AT&T and Frontier are not as robust as they need to be to withstand weather and climate conditions in the state. The occurrence of extreme weather events in California certainly can be anticipated to a certain degree and should thus be incorporated into the companies' engineering, design and construction, and maintenance practices. These networks must be able to withstand all types of inclement weather and provide safe and reliable service to customers.
- *Effect of wildfires upon service quality and infrastructure investment.* Unlike for weather, we found no identifiable correlation between wildfire events and elevated service outage rates. Service outages are heavily impacted by rainfall, which tends to occur in the late fall and winter, whereas wildfires are most frequent in the summer, when rainfall is minimal. Restoration of landline telephone service, or even reporting of service outages themselves, is not likely to be of high priority in the aftermath of a destructive wildfire, so even if service has been interrupted, individual service outages may not be reported. We had also been asked to examine whether the ILECs had directed infrastructure investment to areas that had been heavily impacted by wildfires. However, no such investment pattern has been present for AT&T California, and only a minimal correlation could be identified for Frontier California.
- *Investment focus on higher income communities.* Both AT&T California and Frontier California appear to have prioritized their investments in fiber optic feeder and distribution facilities and in other broadband infrastructure to favor higher income communities. And since areas that have received such upgrades tend to perform better with respect to the various GO 133-D service quality metrics, the result is better service quality for these communities as well.
- *Increased focus on areas most heavily impacted by competition.* Both carriers continued to experience a persistent and massive erosion in demand for POTS lines over the 2018-2019

117. AT&T Inc. Annual Reports, 2010, 2019 .

study period. The greatest drop-offs – in some locations of as much as 90% or more – have occurred primarily in the more densely populated urban and suburban areas where customers have a wider choice of available providers and services. Notably, it is the areas with the lowest POTS drop-off rates that have experienced the steepest deteriorations in service quality. AT&T and Frontier appear to have focused most of their attention in those communities where competition and the potential for loss of customers is greatest. Where POTS demand erosion has been greatest, the availability of broadband has offset some of the revenue losses.

- *Financial Capability.* AT&T Inc. has the financial resources to maintain and upgrade its wireline network in California, but has been pulling capital out of the state rather than putting new capital into its network here. Frontier has a strong interest in pursuing such upgrades, but lacks the financial capacity to make the necessary investments. Moreover, Frontier has suffered a financial meltdown since its 2016 purchase of the Verizon ILECs in California, Texas and Florida. Having grossly overpaid for these assets, the company has been unable to achieve an adequate and sustainable revenue stream, and was forced to seek Chapter 11 bankruptcy protection in April 2020. Even if it is successful in emerging from bankruptcy, the company will have little ongoing ability to raise capital needed to maintain and upgrade its network.
- *VoIP service quality.* VoIP is the principal alternative to legacy POTS for those who want to retain a wireline connection. AT&T VoIP service experiences a slightly higher rate of service outages than AT&T legacy services. Unlike circuit-switched services, VoIP is dependent upon locally-provided power, battery backup, and complex customer premises equipment that is not generally required for legacy circuit-switched services. The seemingly higher incidence of VoIP service outages *vis-à-vis* POTS could well be the result of customer premises conditions that are unique to VoIP. Finally, the so-called “digital divide” -- an issue whose importance has increased as a result of the COVID-19 crisis – raises the potential for the loss of high quality wireline voice services in rural and low-income populations that have not been targeted for broadband upgrades. With the sunset of §710 that went into effect as of the beginning of 2020, a comprehensive regulatory approach that embraces all providers of VoIP type services should clearly be a top priority.
- *CPUC Consumer Affairs Branch (CAB) complaints.* The number of consumer complaints received by the CAB amounts to a minuscule fraction of the total number of trouble reports received and processed by the two ILECs. Moreover, the majority of CAB complaints relate mainly to billing and other business relationship issues, not to service outages. CAB collects geo-coded customer location information, but this does not include customer of record/account data that is contained in the ILECs' trouble report records. Consequently, CAB complaint records cannot be directly linked to or correlated with carrier trouble tickets. That said, complaints relating to Frontier service that CAB received in 2018-2019 were substantially greater on a relative basis than those pertaining to AT&T, which is consistent with the rapidly deteriorating service quality that Frontier experienced during these two years.

Recommendations

The overarching result of this Phase 2 examination is that the service quality failures that we had identified and documented in Phase 1 have actually become even more serious. Accordingly, we have expanded, revised and reiterated the specific recommendations that we had offered in our Phas 1 report:

- **Recommendation 1:** Given the enormous rate at which customers have been discontinuing legacy circuit-switched POTS-type services over the past decade, the Commission should reevaluate the role that regulation is to play with respect to legacy as well as current technology services going forward. If assuring universal availability of high quality public switched network access is to remain a central focus of regulatory policy, then advanced services, including VoIP and broadband, should be included within the scope of this policy review. There seems little reason to single out legacy services as the sole focus of service quality regulation.
- **Recommendation 2:** With §710 no longer in effect, GO 133 should be extended to apply to all wireline voice services whether furnished by ILECs or other large service providers.
- **Recommendation 3:** Expand the financial penalties for carriers that fail to meet the minimum GO 133-D service quality standards both with respect to the types of shortcomings that will be assessed and the financial magnitude of the fines or other penalties that will be imposed. We have seen no specific evidence that investments made in lieu of fines as permitted in GO 133-D §7 (a) would not have been made anyway, and (b) have resulted in specific remedial measures aimed at overcoming the service quality shortcomings. The practical result of these alternative investments is simply to negate the effectiveness of the financial penalty itself, and as such the program should be discontinued.
- **Recommendation 4:** In an effectively competitive market, persistently poor service quality is expected to drive customers to take their business elsewhere. The continuing erosion of both ILECs' legacy customer base that persisted throughout Phase 1 and that has continued through Phase 2 indicates that competition for and alternatives to legacy POTS-type services has been growing and "cord-cutting" has become even more pervasive. Yet even when faced with growing competition, both ILECs' POTS service quality has been on the decline. Whether due to inertia, the non-availability of cost-effective alternatives, or a perceived need to retain a telephone service that does not require local power, customers who retain their legacy service appear to be more captive to the ILEC than those able to switch. Where competition is limited or not present, continued regulatory monitoring and enforcement of minimal service quality standards remains necessary, and financial penalties imposed due to an ILEC's failure to meet service quality standards should be sufficiently high so as to have the same financial consequences as would poor service quality under competitive market conditions.

- **Recommendation 5:** The GO 133-D maximum Customer Trouble Report Rates of 6%, 8% or 10% (depending upon wire center size) of switched access lines per month remain far too generous, and failure rates as high as these can hardly constitute acceptable service quality. The carriers have had little difficulty in meeting these standards, and they should be revised downward.
- **Recommendation 6:** Fines imposed by GO 133-D §9 are currently applied for aggregate service quality shortfalls calculated on a companywide basis. Instead, these fines and other financial penalties should be imposed with respect to individual wire center service quality performance, and should escalate based upon the extent to which the carrier falls short of meeting the service quality standards for each such wire center. Frontier's practice of administratively consolidating groups of individual wire centers may have the effect of masking those with particularly poor performance and in so doing potentially escaping the imposition of a penalty. Frontier should not be permitted to continue reporting its results for consolidated "reporting units" rather than separately for each individual wire center. AT&T has not engaged in a similar type of administrative consolidation.
- **Recommendation 7:** Unless carriers can offer technically valid explanations as to how and why smaller wire centers experience the poorest service quality, a uniform set of minimum GO 133-D standards should be applied to each individual wire center.
- **Recommendation 8:** The GO 133-D fines should vary based upon the extent of a carrier's failure to meet any service quality standard, rising in magnitude as the extent of the shortfall increases and/or persists for an extended period of time.
- **Recommendation 9:** The Commission should retain its requirement that URF carriers maintain their Part 32 Uniform System of Accounts ("USOA") regulatory accounting records and continue to submit annual ARMIS-type financial reports using the same accounts and account definitions that they have been required by the CPUC to maintain notwithstanding the FCC's decision to discontinue ARMIS reporting requirements after 2007. If an ILEC wants to substitute GAAP reporting for Part 32 USOA, it should be required, first, to submit a formal application for the right to make this substitution and, in that application, demonstrate that GAAP-type reporting will still meet the Commission's need for financial data sufficient to permit the type of year-over-year monitoring of investment, retirements, depreciation accruals, write-offs and write-downs, operating results, debt and debt service payments, and other financial data necessary for the Commission to carry out its regulatory mission. If the CPUC authorizes the ILEC's use of GAAP, the ILEC should be required to retroactively restate its USOA reports consistent with GAAP for a minimum of five (5) prior years. The financial reporting requirement should be extended to also include wire center level accounting data, similar to those that ETI had obtained through multiple data requests in the course of both Phase 1 and Phase 2 of this study. The ILECs should be required to submit these reports separately for each physically distinct wire center rather than for the groups of wire centers that Frontier had administratively

consolidated for reporting purposes. The carriers should be required to submit these reports to the Communications Division on a semi-annual basis.

- **Recommendation 10:** The Commission should establish a process to proactively examine the alternatives that would be available to maintain adequate service to Frontier California customers in the event that the parent company no longer has the financial resources to provide safe and reliable services in California.



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