

6 | INFRASTRUCTURE POLICIES AND PROCEDURES: FRONTIER

Principal observations and takeaways

- In its economic assessment of the 2016 purchase of the three Verizon ILECs, Frontier had concluded that the intra-corporate transfer payments that the three companies had been making to various Verizon centralized services affiliates were excessive, and that Frontier could realize some \$700-million in annual cost savings by capturing these functions within its own organization.
- Frontier began shifting functions previously provided by Verizon service affiliates to its own organization almost immediately after completing the acquisition in April 2016. This strategy may well have contributed to many of the transition problems that Frontier had encountered.
- The general overview that Frontier has provided of its maintenance practices and policies does not provide any information as to the extent to which these policies and practices are actually being followed.
- Both Verizon and Frontier have invested heavily in upgrading and expanding Fiber-to-the-Premises (“FTTP”) services both before and after the April 2016 closing of the transaction. FTTP facilities are now available to more than two-thirds of all people living in Frontier-served areas.

INFRASTRUCTURE POLICIES AND PROCEDURES: FRONTIER

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Introduction

Although this study covers a 96-month period from January 2010 through December 2017, the current management of what is now Frontier California was in place for only 21 out of those 96 months. A substantial portion of the ongoing management and operation of the Verizon California entity was carried in several “centralized service organizations” – subsidiaries of the parent company that assumed specific areas of responsibility for management and certain specific functions of the various Verizon ILECs nationwide.



In its economic assessment of the 2016 purchase of the three Verizon ILECs, Frontier had concluded that the intra-corporate transfer payments that the three companies had been making to various Verizon centralized services affiliates were excessive, and that Frontier could realize some \$700-million in annual cost savings by capturing these functions within its own organization.

In its assessment of the economic efficacy of the proposed purchase of the three Verizon ILECs in California, Texas and Florida, Frontier had concluded that the intracorporate transfer payments that Verizon had been extracting from these three ILECs for its various centralized affiliate services were excessive, and that Frontier could realize significant cost savings by transferring these functions to its own organization. Frontier anticipated potential annual savings of some \$700-million by year 3 due primarily to the avoidance of certain Verizon “allocated costs” associated with centralized services furnished to the three Verizon ILECs by affiliates. As explained in the Joint Applicants’ Response to an FCC staff information request:

Frontier estimates \$700 million in annualized corporate consolidated cost efficiencies for the proforma combined company, primarily through costs that do not transfer to Frontier at the closing of the Transaction. As previously discussed in the record, \$525 million of that projected savings will come from elimination of Verizon corporate cost allocations for various shared services, like network operations, engineering, and accounting and administrative functions. Another \$175 million in savings will be based on managing other allocations and costs. Achievement of these cost efficiencies is expected to improve Frontier’s cash flows and overall financial strength, which will provide it with greater financial flexibility to invest in its network and expand the availability of new products and services, including broadband, for customers.¹⁰⁹

109. *Verizon Communications Inc. and Frontier Communications Corporation, Consolidated Application for the Partial Assignment and Transfer of Control of Domestic and International Section 214 Authorizations*, FCC WT Docket No. 15-44Frontier/Verizon July 1, 2015 Response to FCC Wireline Competition Bureau Information Request dated June 17, 2015, at p. 13, citation omitted.

The process of transferring functions that were previously provided by the various Verizon centralized service affiliates to Frontier commenced concurrently with Frontier’s takeover in April 2016, and may have contributed to the various transition problems that the Company encountered in the immediate aftermath of the transfer of control.¹¹⁰



Frontier began shifting functions previously provided by Verizon service affiliates to its own organization almost immediately after completing the acquisition in April 2016. This strategy may well have contributed to many of the transition problems that Frontier had encountered.

Frontier California’s Outside Plant Maintenance, Inspection, and Repair Programs

In response to DR-04F, Frontier described its “Outside Plant Maintenance, Inspection, and Repair Programs.” These are summarized below as taken from the descriptions provided by Frontier. These descriptions, however, provide only a *normative* picture of Frontier’s maintenance and inspection programs that, by themselves, teach little or nothing as to the actual extent to which these practices, priorities and performance are followed within the Frontier California maintenance organizations.



The general overview that Frontier has provided of its maintenance practices and policies does not provide any information as to the extent to which these policies and practices are actually being followed.

Frontier describes these programs as consisting of the following principal elements:

- *Maintenance programs*, consisting of (1) a Copper Rehab Program that tracks trouble areas and aids in identifying copper plant for repair and replacement, (2) the California Copper Rehab website, which also tracks issues that require repair or replacement, and (3) Pole Maintenance.
- *Quality Inspection Program*
- *GO 95 Inspection and Maintenance Program*

110. See, e.g., “Nightmarish Transition from Verizon to Frontier Has No End in Sight,” *ARS Technica*, May 5, 2016, available at (accessed 1/24/19) <https://arstechnica.com/information-technology/2016/05/frontier-outages-persist-35-days-after-switch-from-verizon/>

- Maintenance of Underground Facilities in accordance with General Order 128. Frontier has provided details of the various activities included within each of these programs in a confidential response to DR-04F, which is summarized as follows:

Maintenance Programs

1. *Copper Rehabilitation Program*

The Copper Rehabilitation Program is a preventative maintenance program used to identify, track, monitor and measure the repair and replacement of defective copper outside plant. The program proactively identifies facilities with the highest potential for reduction in customer trouble and associated operating costs, and tracks funding for cable repair or replacement. A Copper Rehab “work package” is created in the database when previously closed customer trouble tickets indicate a pattern of cable trouble. Work packages are available for the “Rehab Group” to test, isolate, and repair. Repairs are completed using expense funding but, if the repair identified through this system requires capital dollars, it is managed through the Defective Cable Repair (DCR) process.

2. *The California Copper Rehab website*, which also tracks issues that require repair or replacement

Frontier California employees provide data to Frontier’s California Copper Rehab database which is a program that requires company technicians to identify and document OSP plant that requires repair or replacement. If a technician identifies an outside plant condition in need of repair, he or she is to submit it through Frontier California’s Copper Rehab website. Plant issues entered in the CA Copper Rehab website are identified while technicians are conducting regular maintenance and installations in the field or through the T-Zone Inspection and Maintenance Protocols.¹¹¹ T-Zone inspections require Frontier California field technicians to perform inspections for specific types of outside plant including the following:

- a. Aerial Outside Plant T-Zone inspection, where a technician is dispatched to repair a customer affecting condition.
- b. Buried Outside Plant T-Zone inspection, which requires technicians to examine the pedestal and surrounding work area for possible defects, and to look for any exposed cable leading to and from the pedestal.

111. T-Zone forms are used to report irregular plant conditions.

- c. Manhole T-Zone inspections, with field technicians examining the entire manhole for defects.

3. *Pole Maintenance*

This maintenance includes transferring cables, drops (the cable from the pole to the customer's house or business), and down guys (support wires extending from the pole to the ground) from old poles to new poles. It also includes Frontier's collaboration with Southern California Edison for inspections and vegetation removal (i.e., tree trimming) for jointly owned poles.

Quality Inspection Program

The company describes its long-standing quality inspection program as an effort that aims to proactively identify and repair problems with outside plant:

1. A group of experienced Frontier Inspectors (Quality Assurance Organizational Review ("QAOR") Inspectors) who do not manage line technicians but instead work to inspect and improve Frontier California's network. The QAOR Inspectors conduct random inspections throughout each Local Manager territory annually. They focus on the quality of the work orders, installations, and repair jobs. They also audit the customer service provided to confirm the customer's satisfaction, and check the coding of the job. They evaluate safety conditions, proper placement of equipment, and adherence to proper methods and procedures. The inspections cover a detailed checklist of items. The results are communicated to the team upon completion, and audit scores are recorded in performance-assessment scorecards.
2. "Local inspections" are conducted by Frontier California Supervisors or Local Managers, who manage technicians. The Local Managers are required to perform ten (10) inspections per month. In addition, construction Inspectors/Coordinators are required to perform ten (10) inspections on vendor work. These local inspections also focus on the customer service provided and compliance with installation or maintenance guidelines. Some inspections can be done post-installation, but most are done during installation. The Local Managers and Inspectors go through a detailed checklist and score the technician on how well he or she did with the work order. Half of these inspections are performed on Frontier's aerial facilities and the other half are performed on Frontier's underground facilities. These inspections impact annual technician performance ratings, which are used for determining satisfactory job performance and career progression.

Frontier explains that, while it is satisfied with scores of 90 percent, it still requires that the technician immediately follow up on *any* problems identified in the scorecard. The technician must return to the customer site within 14 days to repair anything that fell short

of 100 percent. After that repair, the technician must send a photograph of the finished repair to his or her manager to confirm that the work is complete. These inspection results are tracked in the Copper Rehab database.

GO 95 Inspection and Maintenance Program

Frontier explains that GO 95 sets forth design, construction, maintenance and safety requirements for electrical and communications aerial plant. GO 95, Rule 18, directs utilities to correct nonconformance based upon three priority levels:

1. Priority Level 1 issues are those that create an “immediate safety and/or reliability risk with high probability for significant impact.” For these issues, GO 95 requires companies to “[t]ake action immediately (within 24 hours), either by fully repairing the condition, or by temporarily repairing and reclassifying the condition to a lower priority.”
2. Priority Level 2 conditions pose a “[v]ariable (non-immediate high to low) safety and/or reliability risk.” Corrective action for these conditions must be taken (a) within nine months for nonconformance that “compromise worker safety” or that “create a fire risk and are located in an Extreme or Very High Fire Threat Zone in Southern California”; (b) within 59 months for all other Level 2 nonconformance. These deadlines run from the date the nonconformance is first identified.
3. Priority Level 3 items are an “acceptable safety and/or reliability risk” and action should be taken “as appropriate” within 59 months.

For all GO 95 conditions, correction times may be extended under reasonable circumstances, such as lack of access to the area, or where a permit must be obtained, or where an emergency exists, such as a fire or severe weather condition.

Frontier has adopted the following protocols regarding GO 95:

1. *Identifying conditions that need remediation.* Frontier California learns of potential GO 95 nonconformance in four principal ways:
 - (1) The company identifies conditions when it performs the inspections required by GO 95, Rule 80.1, which include visual inspections, periodic detailed inspections, and periodic intrusive inspections.
 - (2) Company employees or agents are required to report GO 95 conditions they discover during the course of performing their work.

- (3) In compliance with Rule 18(B) of GO 95, other entities that occupy joint poles will report conditions to Frontier. These third-party reports are a significant source of information because most poles in California are jointly used by electric utilities (which have additional inspection obligations pursuant to GO 165) and communication infrastructure providers (CIPS). For example, a particular pole may have five providers attached to it, each of which may inspect facilities at different times and report GO 95 conditions to all other attaching entities.
 - (4) Frontier California and other companies may learn of conditions during Safety and Enforcement Division (“SED”) audits.
2. *Categorizing nonconforming conditions for remediation and tracking to ensure repair by deadline*

When Frontier California employees or agents receive any notice of a potential Priority Level 1 condition, they act as soon as possible to contact the group or person responsible for investigating and fixing it. In general, when Frontier California learns of a nonconformance, an e-mail notice is sent to the Local Manager assigned to the geographic area where the nonconformance has been located. The email identifies the level of the nonconformance and the time by which it is required to be corrected (e.g., a notice could describe a GO 95 Level 2 nonconformance that must be corrected within 59 months). Thereafter, an email notification update is issued every six months up to the required completion date. Once the required completion date is within eleven months, Frontier sends emails more frequently with notification of the approaching deadline. If Frontier learns in its inspections of a potential nonconformance related to another utility, then pursuant to GO 95, this condition is reported promptly to the other utility.

Underground Facilities Maintenance.

GO 128 was enacted to “formulate, for the State of California, uniform requirements for underground electrical supply and communication systems, the application of which will insure adequate service and secure safety to all persons engaged in the construction, maintenance, operation or use of underground systems and to the public in general.”¹¹² It applies to underground electrical supply and communication systems used in connection with public utility service. It requires that these systems be maintained in “such condition as to secure safety to workmen and the public in general.”¹¹³

112. GO 128, Rule 11.

113. GO 128, Rule 12.2.

GO 128 requires communications systems to be “inspected by the operator frequently and thoroughly” to ensure that they are in “good condition.”¹¹⁴ Frontier California complies with this requirement. Frontier has regular Manhole T-Zone inspections, which require that Field Technicians examine the entire manhole for defects. For the line of sight inspection required by the Manhole T-Zone inspection protocol, field technicians must make sure that the manhole floor is clear of debris and adjacent cables, splice cases, and that sleeves are properly supported and secured. Frontier also conducts frequent quality inspections on recently completed work orders on existing underground facilities. Local Managers, Coordinators, and Frontier California Quality Inspection Experts (who do not manage technicians but instead travel throughout the wireline network inspecting technicians’ work) are required to routinely inspect completed work orders. For new construction, Substructure Inspectors are responsible for ensuring underground facilities are consistent with GO 128. This includes inspecting new manholes, handholes, and conduits to ensure they are constructed according to GO 128 standards.

Plant maintenance and capital investment

Frontier was requested (in DR-03F) to “provide the dollar amount of Gross Plant Additions as recorded on each of the following 47 CFR Part 32 Uniform System of Accounts (“USOA”) Telecommunications Plant in Service (“TPIS”) accounts separately for each central office building and its associated wire center serving area for the period June 30, 2010 through December 31, 2017, in six-month intervals ...” Frontier was also requested (in DR-04F) to provide “specific data on annual outside plant undertakings from 2010-2017 [consisting of] (a) Spreadsheet with financial data for Construction project investment by wire center (former Verizon territories); and (b) Spreadsheet with financial data for Maintenance and Repair expenses by wire center (former Verizon territories).”¹¹⁵ Frontier responded that it only had data for the time period beginning April 2016, and provided the requested data separately for April 1-December 31, 2016 and for the full calendar year 2017.



Frontier was unable to provide wire center account-level data on Gross Plant Additions, Retirements, and maintenance costs for the period when the California ILEC was under Verizon ownership.

Tables 6.1 and 6.2 summarize Frontier’s 2016 and 2017 outside plant Gross Plant Additions (accounts 24XX). Table 6.1 is based upon data provided by Frontier in response to DR-03F, Request 1, Attachment 1; Table 6.2 is based upon data provided by Frontier in response to DR-04F, Request 3(a), Attachment 1. These figures should be the same, but they are not.

114. GO 128, Rule 17.2.

115. DR-04F, Information Request 3.

Table 6.1			
FRONTIER CALIFORNIA GROSS OUTSIDE PLANT ADDITIONS PER FRONTIER RESPONSE TO DR-03F 2016-2017			
Account	2016	2017	Total
2411-Poles	80,283	44,477,174	44,557,457
2421-Aerial Cable	18,995,031	40,653,598	59,648,629
2422-Underground Cable	1,727,729	36,045,343	37,773,072
2423-Buried Cable	20,691,405	79,146,334	99,837,739
2426-Intrabuilding Cable	170,630	902,134	1,072,764
2431-Aerial Wire	0	0	0
2441-Conduit Systems	244,952	6,703,176	6,948,128
TOTAL	41,910,031	207,927,759	249,837,790

Source: Frontier response to DR-04F, Request 1, Attachment 1.

Table 6.2			
FRONTIER CALIFORNIA GROSS OUTSIDE PLANT ADDITIONS PER FRONTIER RESPONSE TO DR-04F 2016-2017			
Account	2016	2017	Total
2411-Poles	46,842,090	23,841,369	70,683,458
2421-Aerial Cable	39,339,561	29,235,997	68,575,558
2422-Underground Cable	25,813,905	34,365,255	60,179,160
2423-Buried Cable	35,762,705	75,492,338	111,255,042
2426-Intrabuilding Cable	780,228	352,474	1,132,702
2431-Aerial Wire	0	2,204	2,204
2441-Conduit Systems	11,667,689	10,689,764	22,357,453
TOTAL	160,206,178	173,979,403	334,185,581

Source: Frontier response to DR-04F, Request 3(a), Attachment 1.

Table 6.3 below breaks down the outside plant additions by wire center:

Table 6.3

**FRONTIER CALIFORNIA
OUTSIDE PLANT GROSS ADDITIONS BY WIRE CENTER 2016-17**

Wire Center	DR 03-F			DR 04-F		
	2016	2017	Total	2016	2017	Total
ADELANTO	-	61,448	61,448	674,096	2,360,582	3,034,678
ALDERPOINT	-	42,231	42,231	986,358	(239,816)	746,542
ALPAUGH	-	15,354	15,354	488,064	83,851	571,915
ANZA	-	4,283,384	4,283,384	554,641	8,691,268	9,245,909
APPLE VALLEY	-	368,694	368,694	1,398,825	672,720	2,071,546
ARROWHEAD FARMS	-	352,198	352,198	328,456	(459,445)	(130,989)
ARTESIA	72,318	1,320,282	1,392,600	4,815,267	1,352,413	6,167,679
AZUSA	126,010	357,166	483,176	160,160	315,309	475,468
BADGER	-	49,028	49,028	46,483	(14,873)	31,609
BALDWIN PARK	69,781	864,330	934,110	100,578	181,135	281,713
BANNING	35,067	696,825	731,892	189,422	242,411	431,833
BARSTOW	-	207,392	207,392	101,522	968,268	1,069,789
BEAUMONT	51,094	564,492	615,586	336,459	727,173	1,063,632
BEL AIR	28,310	266,393	294,702	40,978	121,668	162,647
BELL GARDENS	46	395,083	395,129	63,514	149,428	212,942
BELLFLOWER	473,959	644,078	1,118,037	168,398	(36,201)	132,197
BERMUDA DUNES	67,258	96,856	164,114	18,516	83,653	102,169
BIG BEAR CITY	-	253,477	253,477	18,811	44,500	63,311
BIG BEAR LAKE	-	153,623	153,623	4,063,930	800,420	4,864,350
BISHOP	-	268,724	268,724	65,943	87,421	153,364
Blythe	-	-	-	107	6,015	6,123
BORON	-	95,973	95,973	-	4,678	4,678
BRIDGEPORT	-	95,973	95,973	3,395	4,503	7,899
BUTTONWILLOW	-	26,877	26,877	913	(73,353)	(72,440)
CALIFORNIA CITY	-	188,107	188,107	29,475	32,351	61,826
CALIFORNIA HOT SPRINGS	-	26,877	26,877	-	7,000	7,000
CALIMESA	2,737	286,321	289,058	104,041	31,082	135,123
CAMARILLO	260,912	2,839,221	3,100,132	20,395,069	(15,008,007)	5,387,062
CANTUA CREEK	-	7,682	7,682	-	5,950	5,950
CARPINTERIA	-	240,595	240,595	32,358	96,671	129,030
CAZADERO	-	61,426	61,426	372,262	64,904	437,166
CHINA LAKE	-	34,550	34,550	4,006	13,414	17,420
CHINO	241,246	1,614,201	1,855,446	704,066	605,767	1,309,833
CLAREMONT	32,653	630,748	663,401	87,532	381,039	468,571
CLEMENTS	-	53,754	53,754	60,131	273,358	333,489
COACHELLA	44,823	32,703	77,526	10,545	26,039	36,584
COLFAX	-	176,616	176,616	3,737	9,835	13,572
CORCORAN	-	69,108	69,108	206,399	73,975	280,374
COVELO	-	119,021	119,021	-	5,717	5,717
COVINA	76,709	1,623,710	1,700,419	465,322	784,685	1,250,007
CRESTLINE	-	256,826	256,826	33,505	87,541	121,046
CROWLEY LAKE	-	69,100	69,100	(0)	31,462	31,462
CUCAMONGA	100,531	1,328,910	1,429,441	788,776	644,981	1,433,756

Table 6.3 (page 2 of 5)

Wire Center	DR 03-F			DR 04-F		
	2,016	2,017	Total	2,016	2,017	Total
CULVER CITY	6,623,516	6,882,846	13,506,361	11,145,722	2,039,083	13,184,805
DESERT HEIGHTS	-	10,113	10,113	19,436	866	20,302
DESERT HOT SPRING	86,076	309,519	395,595	296,529	451,618	748,147
DESERT KNOLLS	-	96,014	96,014	43,092	5,867	48,960
DIAMOND BAR	17,680	67,267	84,946	39,776	144,464	184,240
DOS PALOS	-	145,898	145,898	-	19,903	19,903
DOWNEY	68,879	1,367,828	1,436,707	389,869	407,705	797,574
DUNLAP	-	161,252	161,252	-	217,858	217,858
EDGEMONT	5,063	504,993	510,055	549,342	276,480	825,823
EL MIRAGE	-	23,042	23,042	2,035	55,561	57,596
EL RIO	15,667	194,052	209,720	218,284	302,378	520,662
ELLWOOD	109,003	220,932	329,934	127,936	798,908	926,844
ELSINORE	172,793	1,224,446	1,397,239	490,502	373,018	863,520
ETIWANDA	49,226	348,553	397,779	167,257	195,776	363,033
EXETER	-	115,180	115,180	88,968	280,780	369,748
FARMERSVILLE	-	19,195	19,195	17,713	47,096	64,809
FARMINGTON	-	30,718	30,718	18,682	51,216	69,897
FELLOWS	-	49,913	49,913	(161,438)	364,948	203,510
FORT IRWIN	-	7,682	7,682	82,781	73,553	156,333
FOWLER	-	306,817	306,817	181,771	236,608	418,379
GARBERVILLE	-	168,934	168,934	12,133	93,166	105,300
GILROY	-	264,919	264,919	4,445,478	2,296,537	6,742,016
GLENDORA	55,406	6,874,117	6,929,523	5,684,022	922,771	6,606,793
GLENNVILLE	-	65,267	65,267	7,266	4,678	11,943
GOLETA	-	448,139	448,139	135,877	146,278	282,155
GRANADA HILLS	78,522	629,210	707,732	54,858	119,360	174,218
GRANT GROVE VILLA	-	23,227	23,227	13,206	9,995	23,201
GUADALUPE	17,416	122,843	140,258	1,176	110,858	112,034
HAYFORK	-	157,411	157,411	-	267	267
HELENDALE-SILVER L	-	-	-	201,045	(532,024)	(330,979)
HEMET	20,599,586	8,066,680	28,666,266	28,044,615	6,430,305	34,474,920
HERMOSA BEACH	170,338	651,466	821,804	166,785	107,466	274,250
HESPERIA	-	664,241	664,241	599,703	825,064	1,424,767
HOMELAND	127,032	928,255	1,055,287	656,044	421,313	1,077,357
HOOPA	-	115,180	115,180	56,687	144,239	200,926
Huntington Beach	517,706	1,428,121	1,945,827	1,193,172	1,248,405	2,441,577
IDYLLWILD	-	298,434	298,434	2,724	84,638	87,362
INDEPENDENCE	-	15,358	15,358	-	5,443	5,443
INDIO	72,753	963,650	1,036,403	691,353	366,501	1,057,855
INYOKERN	-	126,684	126,684	32,596	19,586	52,182
JOSHUA TREE	-	52,606	52,606	16,499	13,448	29,947
JUNE LAKE	-	42,228	42,228	1,398	94,090	95,488
KENWOOD	-	94,752	94,752	310,455	(458,072)	(147,617)
KERNVILLE	-	241,851	241,851	63,427	41,157	104,584
KNIGHTS LANDING	-	23,036	23,036	393	1,018	1,412
LA HABRA	-	454,468	454,468	67,080	49,257	116,337

Table 6.3 (page 3 of 5)

Wire Center	DR 03-F			DR 04-F		
	2,016	2,017	Total	2,016	2,017	Total
LA PUENTE	166,597	7,891,051	8,057,648	3,834,187	2,664,364	6,498,551
LA QUINTA	80,105	787,541	867,646	170,933	183,343	354,277
LA VERNE	10,939	19,377,545	19,388,484	1,093,605	27,486,659	28,580,264
LAGUNA BEACH	413	103,142	103,555	422,428	33,100	455,528
LAKE HUGHES	-	250,091	250,091	48,801	223,466	272,267
LAKE ISABELLA	-	153,467	153,467	588,899	104,695	693,594
LANCASTER	105,895	4,462,332	4,568,227	1,945,400	6,793,480	8,738,880
LATHROP	-	19,195	19,195	1,743	17,239	18,982
LAYTONVILLE	-	211,165	211,165	3,492	30,897	34,389
LEE VINING	-	34,541	34,541	13,410	9,241	22,651
LEGGETT	-	23,036	23,036	-	2,080	2,080
LEMON COVE	-	23,036	23,036	(5,410)	32,351	26,941
LENWOOD	-	107,535	107,535	1,804,994	151,252	1,956,247
LINDEN	-	57,595	57,595	97,061	159,366	256,426
LINDSAY	-	283,503	283,503	70,950	86,563	157,513
LOMA LINDA	1,022	656,948	657,969	244,454	390,497	634,951
LOMPOC	16,074	673,802	689,876	112,354	198,004	310,358
LONE PINE	-	99,785	99,785	-	45,352	45,352
LONG BEACH	620,354	5,072,098	5,692,452	1,657,609	1,219,830	2,877,439
LOS ALAMOS	-	70,198	70,198	967	7,012	7,979
LOS ANGELES	-	152,863	152,863	210	8,328	8,538
Los Gatos	-	1,270,899	1,270,899	175,798	1,701,156	1,876,954
LOS SERRANOS	-	295,270	295,270	239,950	274,833	514,783
LOST HILLS	-	19,195	19,195	7,382	11,740	19,123
LUCERNE VALLEY	-	184,347	184,347	50,766	409,726	460,492
MALIBU	66,048	2,454,313	2,520,361	126,279	8,965,790	9,092,069
MAMMOTH LAKES	-	88,272	88,272	35,839	45,616	81,455
MANHATTAN BEACH	174,942	148,215	323,156	53,502	105,847	159,349
Manteca	-	191,970	191,970	222,775	(58,794)	163,982
MARICOPA	-	46,072	46,072	-	91,465	91,465
MCFARLAND	-	76,811	76,811	199,697	(30,717)	168,980
MCKITTRICK	-	38,411	38,411	11,460	1,351	12,811
MECCA	-	84,628	84,628	6,509	148,182	154,691
MENTONE	-	7,382	7,382	(112,193)	74,846	(37,347)
MIRAMONTE	-	69,098	69,098	18,005	5,000	23,005
MONROVIA	10,546	401,625	412,171	116,875	191,484	308,359
MONTECITO	13,722	250,478	264,200	71,746	(2,074)	69,672
MORGAN HILL	-	314,894	314,894	270,595	1,123,891	1,394,486
MORONGO VALLEY	-	61,425	61,425	188,345	(12,356)	175,988
MURRIETA	321,738	969,676	1,291,414	470,157	543,877	1,014,033
MUSCOY DEVORE	417,762	618,541	1,036,303	996,445	135,086	1,131,531
Needles	-	-	-	277	966	1,243
NEWBERRY SPRINGS	-	96,014	96,014	739	4,234	4,974
NEWBURY PARK	167,536	162,381	329,917	45,750	91,148	136,898
NORTH SHORE	-	33,882	33,882	12,280	475	12,755
NORWALK	97,846	1,028,597	1,126,443	175,745	1,090,398	1,266,143

Table 6.3 (page 4 of 5)

Wire Center	DR 03-F			DR 04-F		
	2,016	2,017	Total	2,016	2,017	Total
NOVATO	-	434,060	434,060	62,373	664,593	726,966
OASIS	-	95,258	95,258	50,884	252,036	302,920
ONTARIO	309,079	3,241,286	3,550,365	1,358,690	3,033,385	4,392,075
ORCUTT	16,752	266,397	283,149	27,094	233,275	260,369
ORLEANS	-	15,364	15,364	-	130	130
ORO LOMA	-	15,364	15,364	7,989	2,637	10,626
OXNARD	343,418	1,157,199	1,500,617	274,049	205,823	479,872
PACIFIC PALISADES	153	208,142	208,295	85,760	86,034	171,794
PACOIMA	83,723	8,654,028	8,737,751	6,507,710	1,424,623	7,932,333
PALM DESERT	11,233	574,517	585,750	285,969	311,251	597,220
PALM SPRINGS	38,371	8,754,551	8,792,923	863,327	8,244,688	9,108,015
PALOS VERDES ESTA	36,016	415,849	451,865	147,230	107,115	254,344
PARKFIELD	-	-	-	333,737	1,064,666	1,398,403
PASADENA	-	8,553	8,553	22,310	14,188	36,498
PERRIS	97,224	1,615,269	1,712,493	353,951	840,713	1,194,664
PHELAN	-	80,633	80,633	52,331	36,742	89,073
PICO RIVERA	-	482,072	482,072	81,690	333,003	414,693
PIERCY	-	24,689	24,689	5,046	181	5,226
PLAYA DEL REY	19,989	973,464	993,453	329,189	598,596	927,785
POINT MUGU NAWC	-	52,164	52,164	20,165	89,978	110,144
POMONA	132,157	1,316,253	1,448,411	4,942,069	879,839	5,821,908
QUAIL VALLEY	106,415	633,080	739,494	453,246	564,954	1,018,200
QUARTZ HILL	106,646	149,506	256,152	50,729	195,646	246,376
RANCHO CALIFORNIA	137,863	860,300	998,163	282,879	1,448,737	1,731,616
RANCHO CORDOVA	-	-	-	-	304,791	304,791
RANCHO MIRAGE	88,904	180,678	269,582	150,678	36,553	187,231
RANDBURG	-	41,889	41,889	3,816	1,463	5,278
REDLANDS	54,581	1,003,464	1,058,045	430,292	261,792	692,084
REDONDO BEACH	125,335	360,154	485,489	105,913	277,401	383,314
REEDLEY	8,845	532,260	541,106	281,380	368,411	649,791
RIDGECREST	-	159,933	159,933	56,531	238,153	294,684
RIPON	-	-	-	18,043	283,264	301,307
RUNNING SPRINGS	-	84,472	84,472	7,429	47,023	54,452
SALTON CITY	-	32,539	32,539	1,499	97,948	99,447
SAN BERNARDINO	284,765	15,684,525	15,969,290	1,026,192	20,675,209	21,701,401
SAN DIMAS	90,671	507,262	597,932	182,125	193,646	375,771
SAN FERNANDO	18,322	355,759	374,080	86,390	384,079	470,469
SAN JACINTO	60,187	513,707	573,894	221,220	417,475	638,695
SAN MIGUEL	-	7,622	7,622	46,235	1,650	47,884
Sanger	-	-	-	47,075	392,828	439,902
SANTA BARBARA	6,450	6,403,155	6,409,605	772,380	7,612,596	8,384,975
SANTA MARIA	78,872	1,038,130	1,117,001	336,863	546,511	883,374
Santa Monica	1,408,311	684,833	2,093,144	133,938	167,460	301,398
SANTA PAULA	7,530	512,419	519,949	166,708	67,409	234,117
SEA RANCH	-	-	-	-	13,746	13,746
SEAL BEACH	38,736	526,574	565,310	780,194	(388,053)	392,141

Table 6.3 (page 5 of 5)

Wire Center	DR 03-F			DR 04-F		
	2,016	2,017	Total	2,016	2,017	Total
SEPULVEDA	102,278	746,284	848,562	179,518	27,403	206,921
SIERRA MADRE	-	316,666	316,666	58,553	25,750	84,303
SNELLING	-	-	-	-	165	165
SOLVANG	14,458	481,638	496,097	110,363	607,576	717,939
SOUTH LAGUNA BEACH	-	19,832	19,832	(16)	(7,507)	(7,523)
STRATHMORE	-	2,060	2,060	30,509	25,269	55,778
SUMMIT VALLEY	-	15,359	15,359	175,276	(7,770)	167,506
SUN CITY	886,622	897,268	1,783,890	354,575	507,437	862,012
SUNLAND	12,560	401,470	414,030	19,777	143,843	163,620
SUNNYMEAD	273,925	897,773	1,171,699	532,490	207,814	740,304
SYLMAR	4,934	441,509	446,443	46,524	88,413	134,937
TAFT	-	-	-	7,047	99,554	106,601
TEMECULA	81,133	920,768	1,001,902	275,883	635,406	911,289
THERMAL	-	97,675	97,675	57,400	169,989	227,388
THOUSAND OAKS	217,405	1,607,090	1,824,495	654,514	696,257	1,350,771
THOUSAND PALMS	-	46,071	46,071	5,978	14,701	20,679
TIVY VALLEY	-	-	-	464,207	1,787,060	2,251,267
TOPANGA	5,766	323,361	329,127	472,467	66,527	538,994
TORRANCE	137,603	15,287,472	15,425,075	321,841	21,628,178	21,950,019
TRANQUILLITY	-	-	-	(4,257)	(48,237)	(52,493)
TRONA	-	34,565	34,565	45,423	(5,558)	39,864
TWENTYNINE PALMS	-	88,632	88,632	13,879	17,004	30,882
UPLAND	2,608,794	14,153,991	16,762,785	12,965,051	2,640,895	15,605,946
VALLE VISTA	615,135	152,180	767,315	2,111	13,226	15,338
VANDENBERG AFB	-	3,836	3,836	-	10,002	10,002
VICTORVILLE	-	49,917	49,917	5,359,823	4,481,418	9,841,241
WALNUT	122,613	508,358	630,971	249,472	669,602	919,074
WEAVERVILLE	-	-	-	2,678	916,601	919,279
WEIMAR	-	4,144	4,144	-	6,914	6,914
WELDON	-	42,246	42,246	13,105	57,090	70,195
WEST LOS ANGELES	64,966	833,797	898,763	199,102	259,195	458,297
WESTMINSTER	95,630	1,613,818	1,709,448	4,806,666	968,342	5,775,008
WHITETHORN	-	20,719	20,719	403	87,284	87,687
WHITTIER	210,271	2,652,861	2,863,131	800,944	1,182,958	1,983,903
WILLOW CREEK	-	1,262	1,262	4,843	2,700,204	2,705,047
WRIGHTWOOD	-	65,290	65,290	689,114	(19,548)	669,566
YERMO	-	30,725	30,725	622	61,714	62,336
YUCAIPA	2,636	479,371	482,007	141,015	111,166	252,181
YUCCA VALLEY	-	76,874	76,874	76,540	2,607,673	2,684,212
TOTALS	41,916,992	207,549,872	249,450,732	160,183,942	173,987,471	334,155,282

Frontier has provided gross plant additions data from several sources that are not consistent with one another. Table 6.4 below summarizes the gross additions amounts provided by Frontier from each of the individual sources:

Table 6.4				
FRONTIER CALIFORNIA				
GROSS OUTSIDE PLANT ADDITIONS FROM VARIOUS SOURCES				
2016-2017				
Acct	O.P. Category	Form 43-02	DR-03F	DR-04F
2411	Poles	60,463,000	44,557,457	70,683,458
2421	Aerial Cable	75,864,000	59,648,629	68,575,558
2422	Underground Cable	55,325,000	37,773,072	60,179,160
2423	Buried Cable	110,421,000	99,837,739	111,255,042
2426	Intrabuilding Cable	1,074,000	1,072,764	1,132,702
2431	Aerial Wire			2,204
2440	Conduit Systems	23,489,000	6,948,128	22,357,453
	TOTAL	326,636,000	249,837,790	334,185,581
Source: Frontier response to DR-03F, Attachment 2;				

Table 6.5 below summarizes Frontier's outside plant maintenance expenses for 2016-17, by maintenance expense account:

Table 6.5				
FRONTIER CALIFORNIA				
GROSS OUTSIDE PLANT MAINTENANCE EXPENSES 2016-2017				
Account	O.P. Category	2016	2017	Total
6411	Poles	3,912,736	6,423,741	10,336,477
6421	Aerial Cable	29,009,338	43,123,060	72,132,398
6422	Underground Cable	11,791,084	13,010,315	24,801,399
6423	Buried Cable	33,389,710	46,177,738	79,567,448
6424	Submarine Cable	8,312	155,066	163,378
6426	Intrabuilding Network	100,656	(15,829)	84,827
6431	Aerial Wire	1,638,866	2,802,085	4,440,951
6441	Conduit	345,625	366,839	712,464
	TOTAL	80,196,327	112,043,015	192,239,342
Source: Frontier response to DR-04F, Request 3(b), Attachment 2.				

Because of these unexplained discrepancies in the data, ETI has been unable to develop meaningful assessments as to the nature of Frontier’s outside plant investments, specifically with respect to rehabilitation of copper distribution facilities used to provide legacy services vs. FTTP projects that are deployed for the purpose of offering *FiOS*.



Discrepancies in Frontier’s reporting of Gross Plant Additions for 2016 and 2017 undermine ETI’s ability to assess the nature and emphasis of the company’s outside plant investment strategy.

Fiber-to-the-Premises upgrades

While the investments in Fiber-to-the-Premises distribution plant made by both Verizon and Frontier cannot be directly tracked to individual wire centers or with respect to their timing, we do know that Frontier has considerably expanded the availability of FTTP and *FiOS* services since its acquisition of the company in April 2016. As of the closing date, Verizon had upgraded 55 wire centers with FTTP facilities passing approximately 1.5-million homes. Between April 2016 and December 2017, Frontier had added another 59 wire centers to the list of FTTP-enabled areas, bringing the total number of *FiOS*-capable COs to 114, with some 2.6-million homes being passed by these facilities.



Both Verizon and Frontier have invested heavily in upgrading and expanding Fiber-to-the-Premises (“FTTP”) services both before and after the April 2016 closing of the transaction. FTTP facilities are now available to more than two-thirds of all people living in Frontier-served areas.

Summary and conclusions

Our examination of Frontier’s infrastructure policies and practices was limited due to several factors:

- (1) Frontier was unable to provide data covering the period of Verizon ownership.
- (2) Frontier provided three separate sources of account- and wire center-level data covering the 21 months under its ownership and management (April 1, 2016 through December 31, 2017). There were numerous unexplained discrepancies among these three data sources.

- (3) Notwithstanding these discrepancies and other data limitations, Frontier, and Verizon before it, have expanded FTTP availability to more than two-thirds of homes passed within its service area.