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June 30, 2015

VIA ECFS

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: *Technology Transitions*, GN Docket No. 13-5; *Windstream Petition for Declaratory Ruling Seeking to Confirm ILECs' Continued Obligation to Provide DS1s and DS3s on Unbundled Basis after Technology Transitions*, WC Docket No. 15-1

Dear Ms. Dortch:

On June 26, 2015, Tony Thomas, President and Chief Executive Officer of Windstream Holdings, Inc. (together with its subsidiaries "Windstream"), Eric Einhorn, Senior Vice President – Government Affairs and Strategy, Jennie Chandra, Vice President – Public Policy and Strategy, and I, on behalf of Windstream, met separately with the following: Commissioner Pai and his Legal Adviser, Nicholas Degani; Commissioner O'Rielly and his Legal Adviser, Amy Bender; and Commissioner Rosenworcel and her Legal Adviser, Travis Litman. John Nakahata also spoke separately with Daniel Alvarez, Legal Adviser to the Chairman. The Windstream participants urged the Commission to move forward to adopt as rules Section 214 wholesale service reforms proposed in its *Technology Transitions NPRM*, as well as to grant Windstream's Petition for Declaratory Ruling regarding the continued availability of unbundled DS1 and DS3 capacity loops after an incumbent local exchange carrier makes an IP or fiber transition. Whether together or separate, both of these actions are necessary merely to ensure that competitive carriers can migrate their customers from TDM to IP connectivity without incurring significant price hikes to attain comparable capacity.

Business consumers – including the small and medium-sized businesses that drive economic growth and job creation, state and local governments, schools and non-profit health care providers – will be hurt significantly if the IP transition deprives them of their choice of integrated communications solutions because the large incumbent LECs can raise prices for critical last-mile transmission, whether Ethernet or unbundled DS1/DS3 capacity loops. For example, the public at large will not be well served if the University of Arkansas Medical Service ("UAMS") must divert more of its limited telemedicine budget toward telecommunications costs, and away from delivering medical services to Arkansas' rural communities. Yet that will be the result if AT&T can evade the requirement to sell unbundled loops to Windstream at regulated rates simply by converting the transmission over those loops to Internet Protocol. This is true even though Windstream provides much of its service to UAMS over Windstream's own fiber facilities, including fiber last-mile facilities; to reach all of the locations to meet UAMS' needs, Windstream must also purchase last-mile facilities from the

incumbent LEC. Other small and medium-sized entities similarly will be harmed if AT&T or other large incumbent LECs can use the conversion to IP as an excuse to raise prices for special access services that competing providers today use to provide an alternative to the large incumbent LEC's services. Windstream has seen first-hand that direct, robust competition at the same location pushes the large incumbent LECs to offer better prices than at locations lacking alternatives.

We provided each Commissioner and their respective adviser with the attached copies of the following previously filed documents.[1] These documents collectively demonstrate that CLECs remain the most significant competitors to the incumbent LECs, and that CLECs cannot feasibly duplicate the incumbent LEC last-mile facilities to the vast majority of customer locations. For Windstream, these small to medium-sized entities – who by themselves are not large enough to sustain a buildout to their location – are a substantial majority of customers, but generate a minority of competitive business service revenues. Migration from TDM to IP without an equivalent access rule will demonstrably harm small and medium-sized businesses, state and local governments, schools and health care providers – forcing them to divert resources from their core missions delivering critical services and creating jobs.

Firming up the IP transition rules expeditiously is important. Companies like Windstream must continually evaluate where they can best invest, and must enter into contracts now that will govern the services provided to customers for the next three to five years. If the large incumbent LECs successfully free themselves of even the limited constraints on monopoly pricing that exist today, competitive carriers will have to reevaluate whether they have a feasible business case to support continued investment. Windstream today operates the nation's sixth largest fiber network. Windstream can continue to invest in that network, but only if the Commission ensures that Windstream, and other competitive providers, can economically serve smaller business consumers, who do not have sufficient purchasing power to make even a small last-mile network build economically feasible. These small businesses have a variety of

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[1] We provided confidential, rather than redacted versions. Because those confidential versions have been previously filed with the Commission and are available pursuant to the applicable Protective Orders, we are attaching only redacted versions to this letter, so that parties have notice of the materials provided.

competitive choices for telecommunications-dependent solutions today – and should be able to keep those choices at all their locations, not just at a handful of large downtown office buildings.

Sincerely,

John T. Nakahata
Counsel to Windstream Services, LLC

cc: Commissioner Michael O'Rielly
Commissioner Ajit Pai
Commissioner Jessica Rosenworcel
Daniel Alvarez
Amy Bender
Nicholas Degani
Travis Litman

Attachment A

REDACTED – FOR PUBLIC INSPECTION

Analysis of Fiber Deployment Economics for Efficient Provision of Competitive Service to Business Locations

CostQuest and Windstream

Presentation to FCC Staff

June 4, 2015

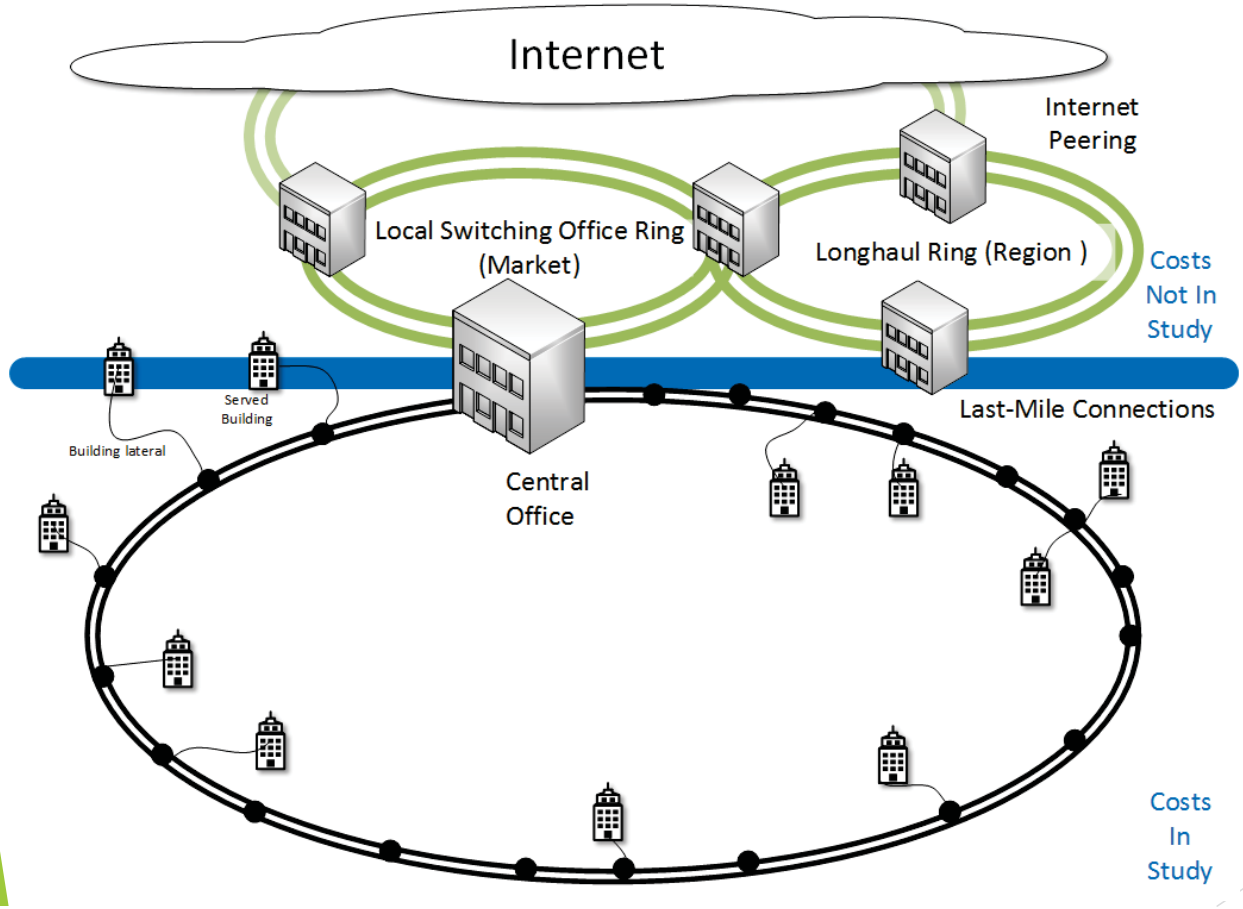
Summary

- Last-mile cost model was developed to address the economics of overbuilding last-mile facilities and under what conditions an overbuild is economically viable. This model is highly configurable and thereby allows for testing sensitivities of various conditions.
- This analysis employs deployment assumptions from a prior AT&T study and, wherever possible, uses modern-day technologies and inputs that are publicly available.
- Findings of the analysis include the following:
  - It continues to be uneconomic for a CLEC to build out its own last-mile networks facilities unless it can attain substantial end user penetration. Costs to install last-mile facilities (fiber ring, laterals, and electronics) and establish new building entries remain significant.
  - Increased market penetration dramatically reduces per-location cost. Thus, the early entrant (usually ILEC) possesses a significant unit cost advantage.
  - Some data suggest that retail Ethernet rates may be lower than wholesale rates for some service speeds. In such cases, leasing will not be a viable alternative because the CLEC cannot expect to recover its lease expense.
  - Current wholesale Ethernet rates, even if less than retail rates, may have little or no impact on a CLEC's decision to deploy its own-last mile facilities.
- In addition, a review of network cost differentials over time shows that—while new deployment costs still pose a high hurdle for market entry—overall costs for building, operating, and maintaining fiber/IP services generally are less than those for TDM services.

Model Development

- **Cost model developed with flexibility to modify**
  - Mostly used CAF Phase II cost model (CAM) input assumptions for CapEx and OpEx
  - Ring construction parameters (size of ring, number of customers) and presumed building entry fees are derived from a prior AT&T last-mile cost study
  - Electronic costs, fiber sizes, and presumed conduit availability are based on Windstream experience
  - Develops investments and monthly costs per building in a manner consistent with CAM (annual charge factors, useful lives, etc.)
  - Highly configurable model, so assumptions can be varied to explore sensitivities
- **Three sensitivity analyses**
  - Revenue Hurdle Analysis (based on Telogical retail rates survey)
  - Build vs. Buy Analysis (based on AT&T and CenturyLink published wholesale rates)
  - Density and Market Share Analysis (using GeoResults non-residential market data)

The Modeled Network



Costs associated with collocation are attributed to the local service office ring (i.e., not in the study)

Network Component Investments

Network Component	Capital Investment
Building Ring	$2,082,446
Building Lateral (20 buildings)	$80,281
Customer Premise 1 Gbps Electronics (20 buildings)	**BEGIN HIGHLY CONFIDENTIAL [redacted] END HIGHLY CONFIDENTIAL**
Customer Premise 10 Gbps Electronics (20 buildings)	**BEGIN HIGHLY CONFIDENTIAL [redacted] END HIGHLY CONFIDENTIAL**
CO Electronics – Ethernet	**BEGIN HIGHLY CONFIDENTIAL [redacted] END HIGHLY CONFIDENTIAL**
Total: Up to 1 Gbps Ethernet in each building	$2,327,257
Total: 1 Gbps to 10 Gbps Ethernet in each building	$2,591,256
Per Building: Ethernet, Up to 1 Gbps	$116,362
Per Building: Ethernet, 1 Gbps to 10 Gbps	$129,563

AT&T study assumptions: 30-mile ring, 20 laterals, 20 active buildings

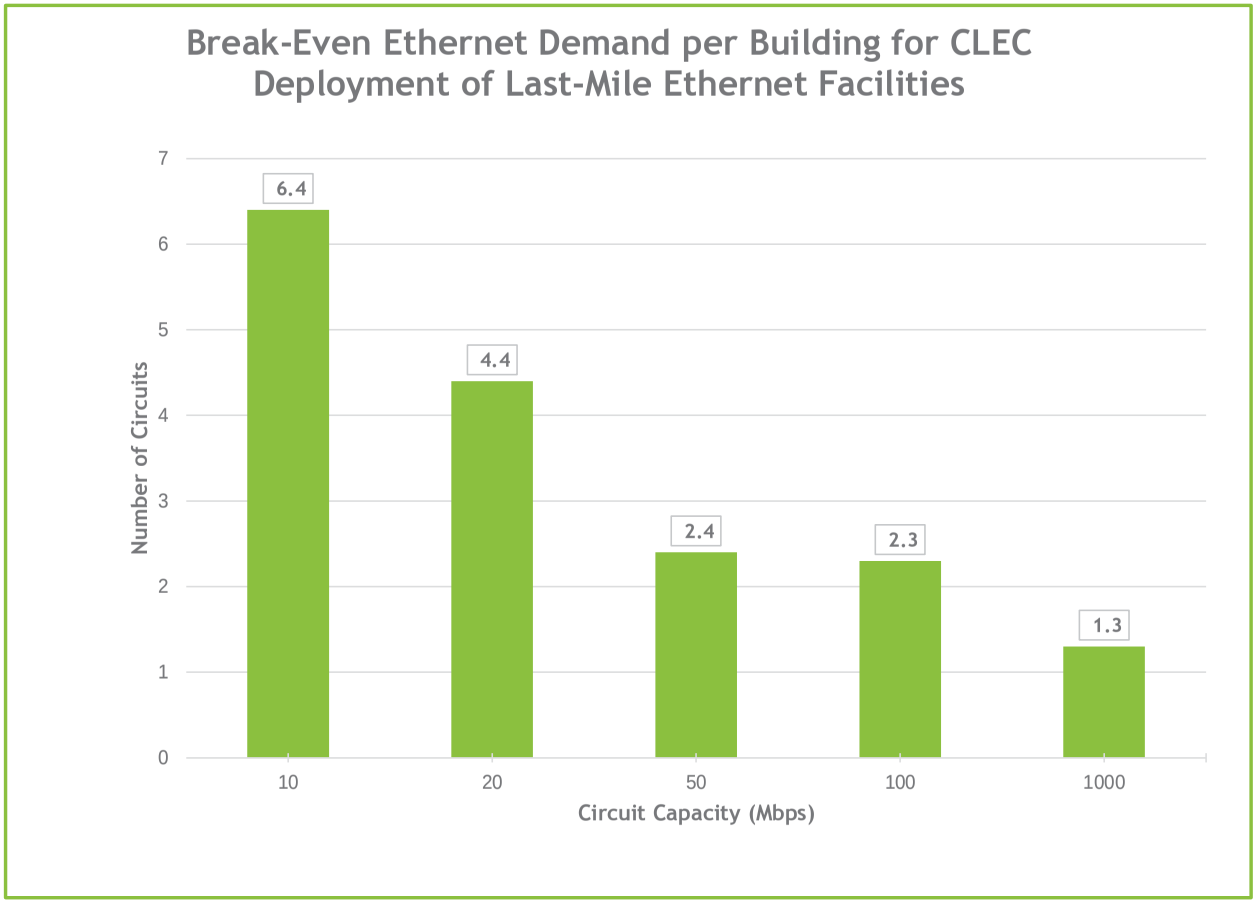
AT&T study: Letter from Joan Marsh, AT&T, to Marlene Dortch, Secretary, FCC, CC Docket Nos. 01-338, 96-98, 98-147, Attachment B (Nov. 25, 2002) (study cited favorably in the TRO).

CAM: Input workbooks are available for download at http://www.fcc.gov/bureaus/onnect_America_Cost_Model_v4.1.1Default%20Inputs.zip. The CAM Capex inputs provided labor, material, and structure values. Capital Cost (Annual Cost factors) and Operating Expense factors also were taken from the adopted CAM (ACF8 50 V6 and Opex V8).

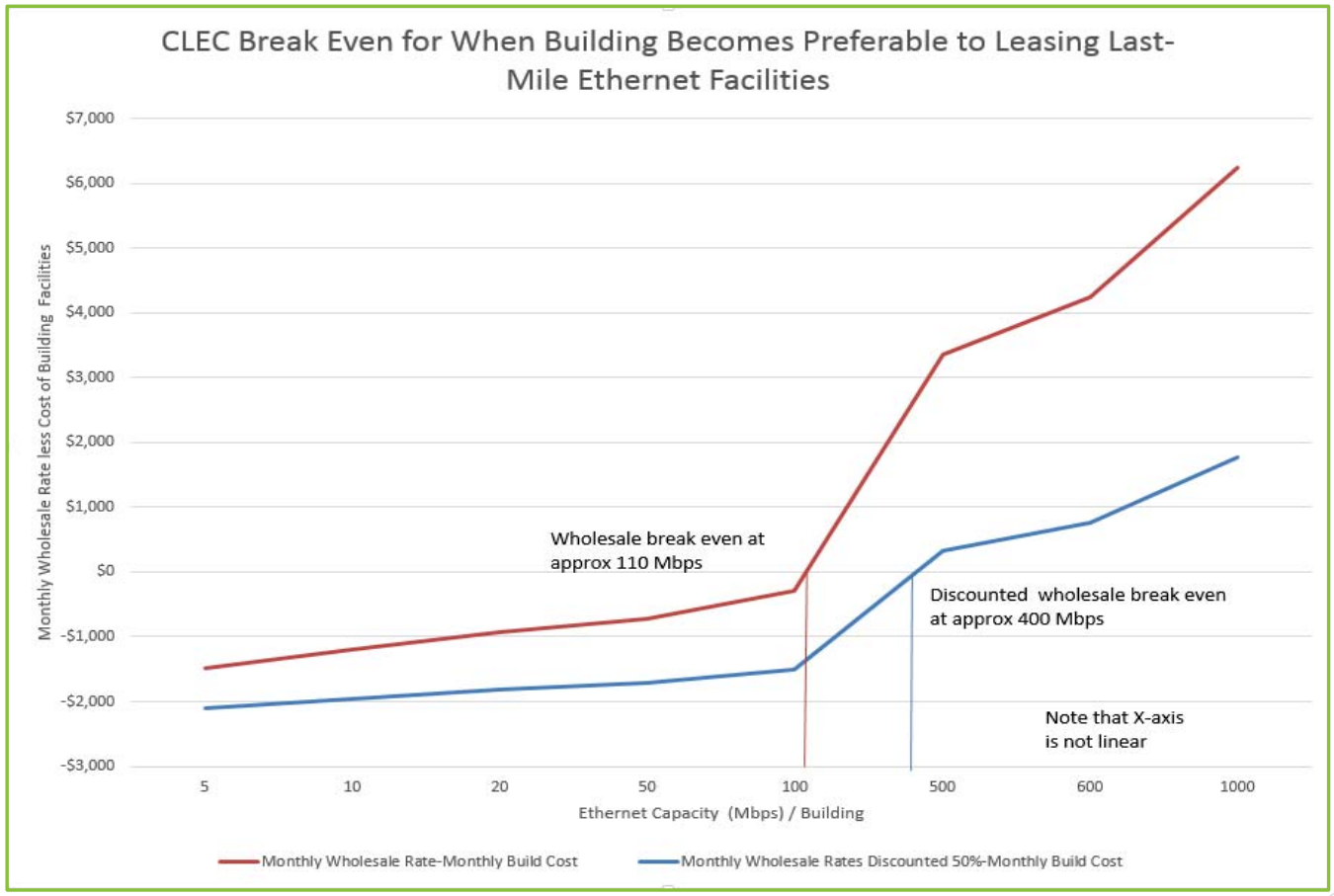
Monthly Costs of Network Components

Network Component	Monthly Cost
Building Ring	$35,764
Building Lateral (20 buildings)	$1,402
Building Rent (20 buildings @ $678/month/building)	$13,560
Premise if 1 Gbps Electronics (20 buildings)	**BEGIN HIGHLY CONFIDENTIAL [redacted] END HIGHLY CONFIDENTIAL**
Premise if 10 Gbps Electronics (20 buildings)	**BEGIN HIGHLY CONFIDENTIAL [redacted] END HIGHLY CONFIDENTIAL**
CO Electronics – Ethernet	**BEGIN HIGHLY CONFIDENTIAL [redacted] END HIGHLY CONFIDENTIAL**
Total: Up to 1 Gbps Ethernet in each building	$54,238
Total: 1 Gbps to 10 Gbps Ethernet in each building	$59,874
Per Building: Ethernet, Up to 1 Gbps	$2,712
Per Building: Ethernet, 1 Gbps to 10 Gbps	$2,994

Revenue Hurdle Analysis



Build-Versus-Buy Analysis



Retail Price Constraints May Limit Viability of Using ILEC Leased Wholesale Access

Ethernet Bandwidth (Mbps)	Average Retail Pricing (Telogical Survey)	AT&T and CenturyLink Average Wholesale Pricing *3-Year Term – Non-Critical*	
		Public	With 50% Discount
10	$427	$1,510	$755
20	$616	$1,790	$895
50	$1,122	$1,994	$997
100	$1,196	$2,413	$1,206
1000	$2,157	$8,958	$4,479

Sources: Telogical Systems DIA retail rates survey data (obtained 4/20/15); AT&T Switched Ethernet Guidebook (12/15/14), Port, Bandwidth & Network to Network Interface, Non-Critical class of service; Qwest Communications Rates and Services Schedule Interstate No. 1 (5/19/14) Metro Optical Ethernet (MOE) Port, Bandwidth Profile & CO MOE and CO Connecting Channel, 3-year term, Non-Critical class of service.

Current Wholesale Ethernet Rates May Not Impact a CLEC's Fiber Deployment Decision

- The analyses suggest that an economically rational CLEC will base its decision to self-deploy on the revenue hurdle analysis, which establishes that self-deployment to serve a single customer with less than 1 Gbps of capacity per building (i.e., $2,712/month in revenue) would be uneconomic.
- In this situation, the fact that wholesale lease payments may present a more appealing option at certain speed tiers below 1 Gbps (e.g., at/below 400 Mbps when a 50% wholesale discount is presumed) would appear to be irrelevant to the CLEC's decision to build; the only way in which wholesale rates would impact the CLEC's decision making is if leasing appeared to be preferable at levels above 1 Gbps of capacity, i.e., at levels where self-deployment presents an economically viable alternative for the CLEC.
- As modeled, the availability of wholesale Ethernet alternatives, therefore, does not appear to crowd out economically efficient construction of CLEC fiber facilities in the last mile.

GeoResults Non-Residential Market Data

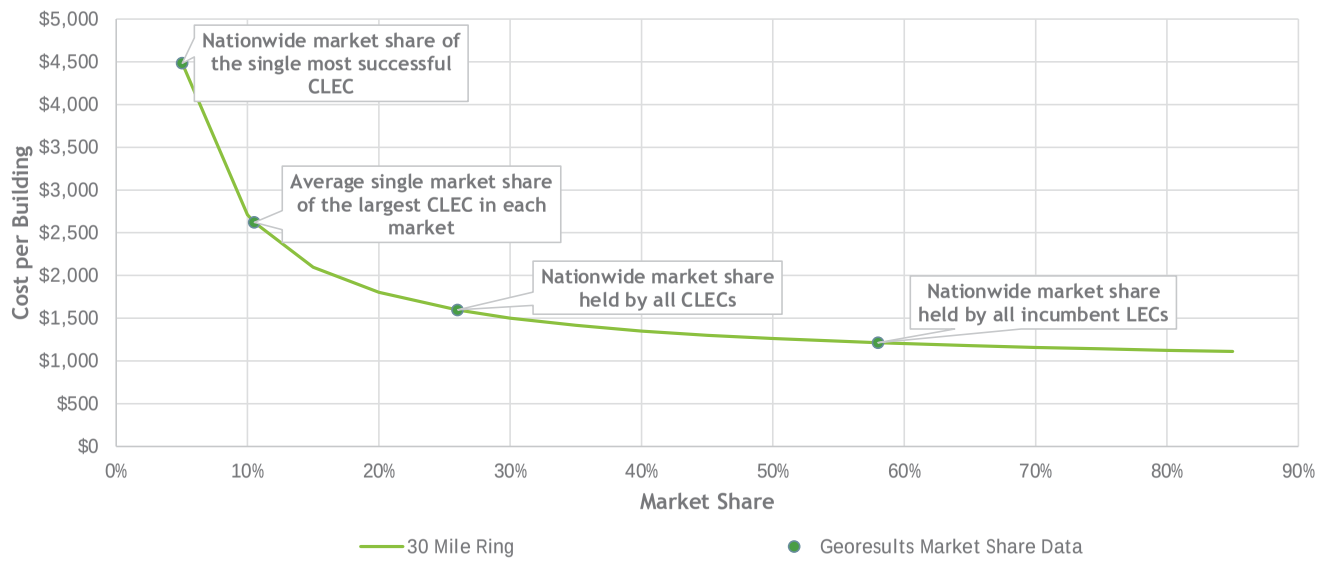
Market Share	Percentage of Total Marketplace
Nationwide market share of the single most successful CLEC	5.0%
Average single market share of the largest CLEC in each market	10.5%
Nationwide market share held by all CLECs	26.0%
Nationwide market share held by all incumbent LECs	58.0%

Source: Non-residential market share values used in this analysis were based on estimated expenditures by non-residential customers on wireline communications during Second Quarter of 2014, as compiled by the independent market research firm GeoResults. CLEC market shares include revenues from services both over CLECs' network facilities as well as last-mile facilities leased from incumbent LECs.

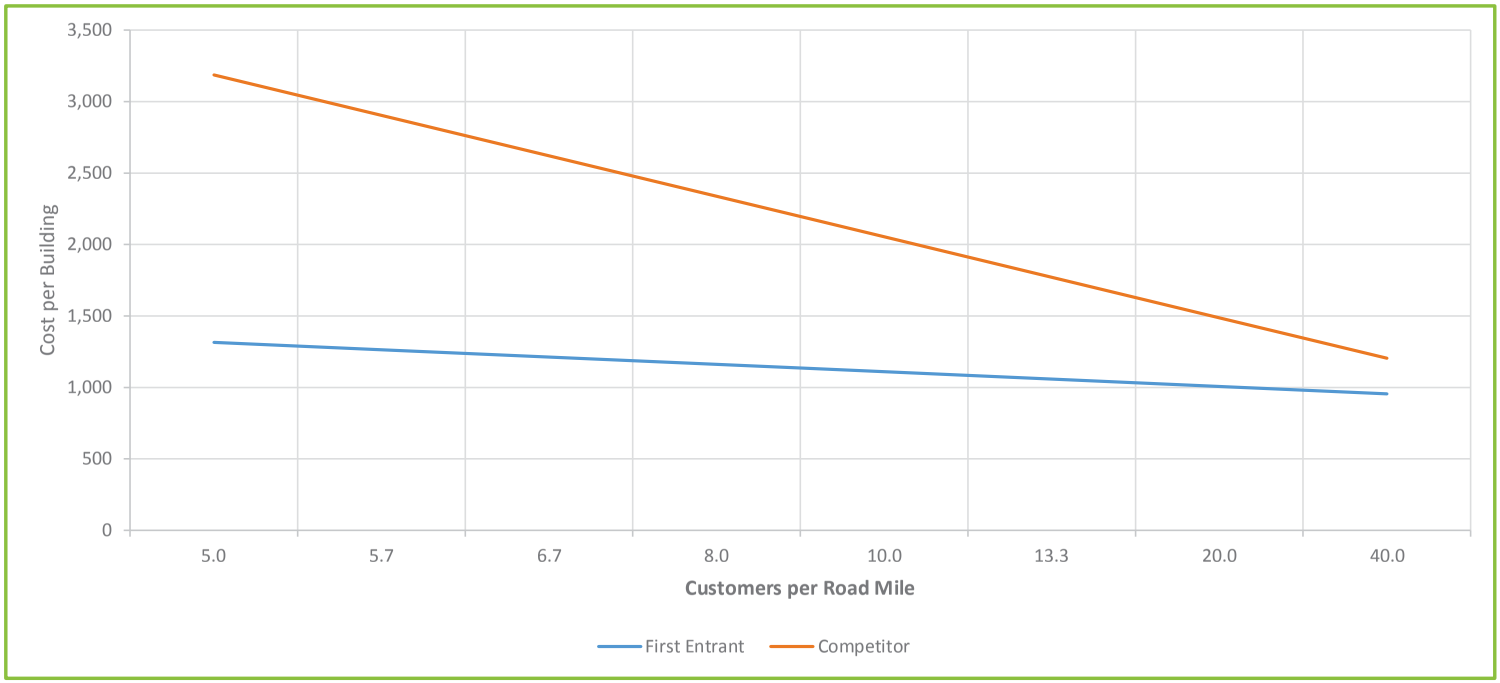
Cost per Customer Location for a 200-Location Market Area: Varying Density and Market Share

Market Share	Density	5.00 Bldgs/Mile	5.71 Bldgs/Mile	6.67 Bldgs/Mile	8.00 Bldgs/Mile	10.00 Bldgs/Mile	13.33 Bldgs/Mile	20.00 Bldgs/Mile	40.00 Bldgs/Mile
	Ring Size:	*40 Mile*	*35 Miles*	*30 Miles*	*25 Miles*	*20 Miles*	*15 Miles*	*10 Miles*	*5 Miles*
5.03%	10 Bldgs	5,669	5,076	4,484	3,891	3,299	2,706	2,114	1,521
10.00%	20 Bldgs	3,308	3,010	2,712	2,414	2,116	1,818	1,520	1,222
10.52%	21 Bldgs	3,187	2,904	2,621	2,338	2,054	1,771	1,488	1,204
15.00%	30 Bldgs	2,495	2,297	2,098	1,899	1,701	1,502	1,303	1,105
20.00%	40 Bldgs	2,101	1,952	1,803	1,654	1,505	1,356	1,207	1,058
26.00%	52 Bldgs	1,826	1,711	1,597	1,482	1,368	1,253	1,138	1,024
30.00%	60 Bldgs	1,699	1,599	1,500	1,401	1,301	1,202	1,103	1,003
35.00%	70 Bldgs	1,587	1,502	1,417	1,332	1,246	1,161	1,076	991
40.00%	80 Bldgs	1,498	1,423	1,349	1,274	1,200	1,125	1,051	976
45.00%	90 Bldgs	1,433	1,367	1,301	1,235	1,168	1,102	1,036	970
50.00%	100 Bldgs	1,382	1,322	1,263	1,203	1,143	1,084	1,024	965
58.00%	116 Bldgs	1,315	1,264	1,212	1,161	1,110	1,058	1,007	956
65.00%	130 Bldgs	1,271	1,225	1,179	1,133	1,088	1,042	996	950
70.00%	140 Bldgs	1,242	1,200	1,157	1,115	1,072	1,029	987	944
75.00%	150 Bldgs	1,221	1,181	1,141	1,102	1,062	1,022	982	943
80.00%	160 Bldgs	1,199	1,162	1,124	1,087	1,050	1,013	975	938
85.00%	170 Bldgs	1,182	1,147	1,112	1,077	1,042	1,007	972	937

Monthly Ethernet Deployment Cost per Building: Impact of Market Share



Monthly Ethernet Deployment Cost per Building: Impact of Density

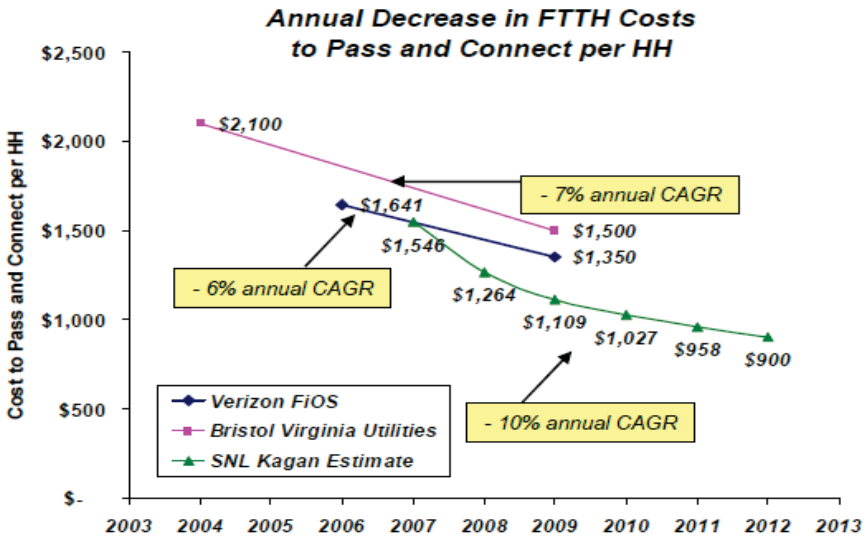


Network Cost Differentials Over Time

- **Labor**: While the overall cost of labor per hour has increased (up by 22% since 2002), significant labor productivity improvements have been achieved with new efficiencies in network construction practices.
- **Fiber**: Price of fiber-optic cable has decreased ~19% since 2003.
- **Electronics**: Cost of electronics for comparable business service has decreased dramatically in recent years.

Source: *Series Report*, Bureau of Labor Statistics, U.S. Dep't of Labor, Produced Price Index Industry Data, Series ID "PCU3359213359210".

Reports Show Lower FTTH Costs



- These reductions in investment required over time are driven by three major factors:
  - Field efficiency improvements by service providers through improved procedures, training and use of innovative labor-saving methods
  - Materials cost reductions through increasing purchase volumes and manufacturing efficiency
  - Fixed cost allocation across a larger number of passed households and subscribers
- It is noteworthy that multiple service providers (not just Verizon) have achieved cost declines – we expect future deployments by other service providers to reap many of these benefits

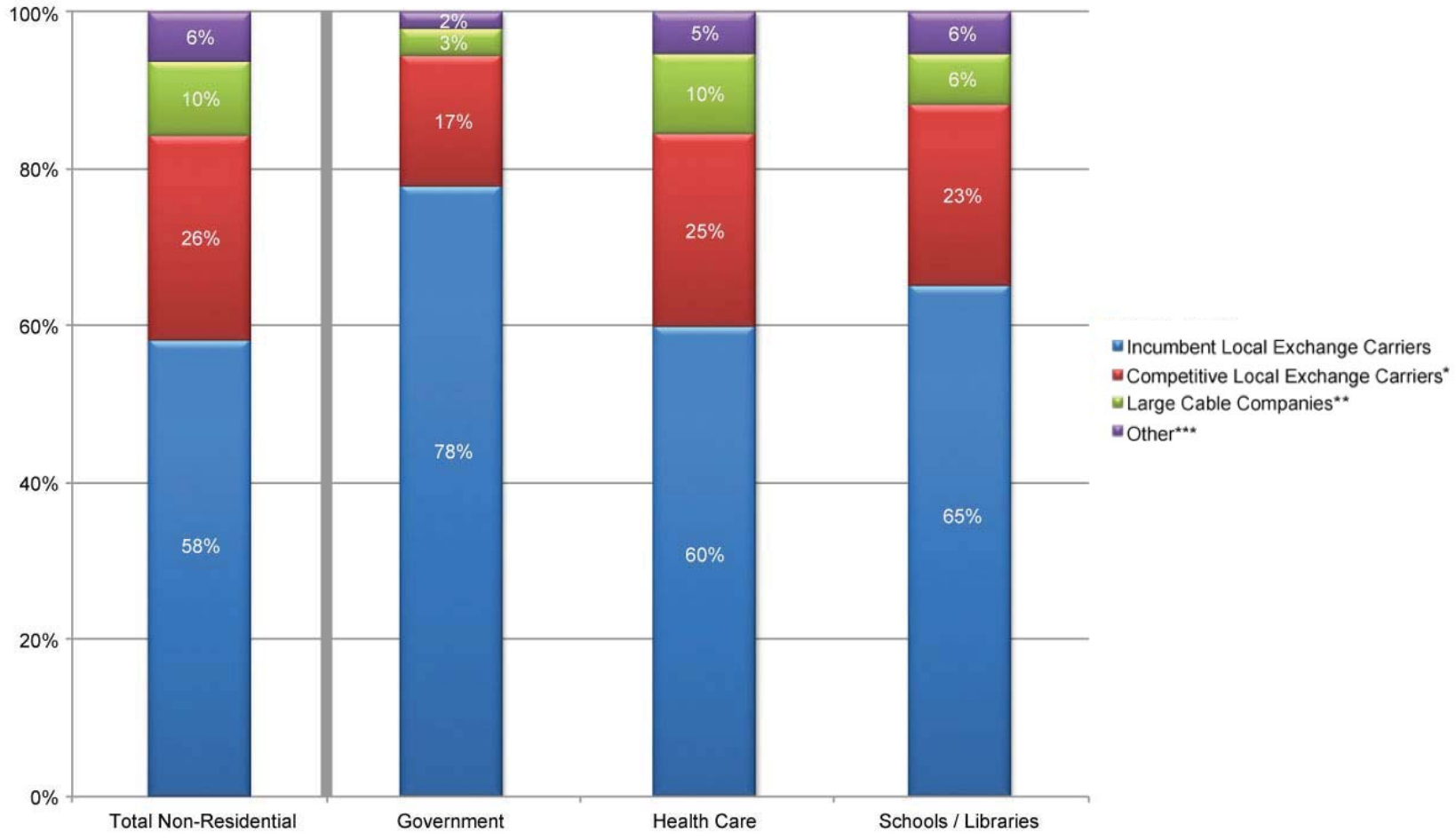
Source: CSMG FTTH Deployment Assessment (Oct. 13, 2009)

Attachment B

Competitive Carriers Are Ensuring Businesses, Government, and Nonprofits Have Cost-Effective Choices

windstream

Estimated Shares of Non-Residential Customer Expenditures on Wireline Communications



Source: Estimated monthly spending for wireline communications during 2nd Quarter of 2014, as compiled by the independent market research firm GeoResults.

* "Competitive Local Exchange Carriers" includes revenues from services both over CLECs' network facilities as well as last-mile facilities leased from incumbent LECs.

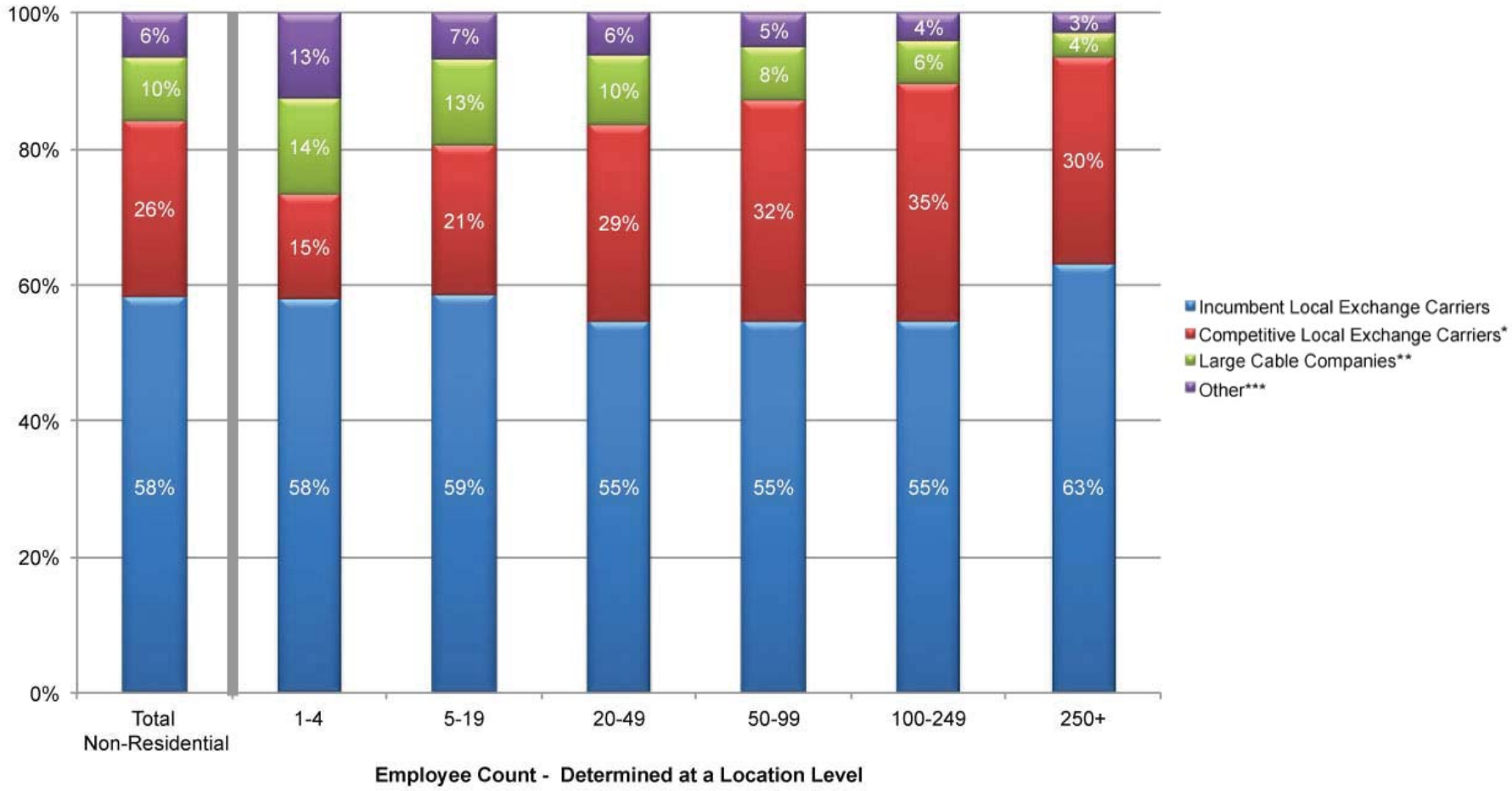
** "Large Cable Companies" are the top 15 cable providers, which together address more than 90% of non-residential locations in cable service areas. A de minimis market share is held by smaller cable companies, and the data source groups these into the "Competitive Local Exchange Carriers" category.

*** This category primarily includes wireless providers offering business phone line service.

Organizations of All Sizes Are Selecting Competitive Carriers to Meet Their Communications Needs

windstream

Estimated Shares of Non-Residential Customer Expenditures on Wireline Communications



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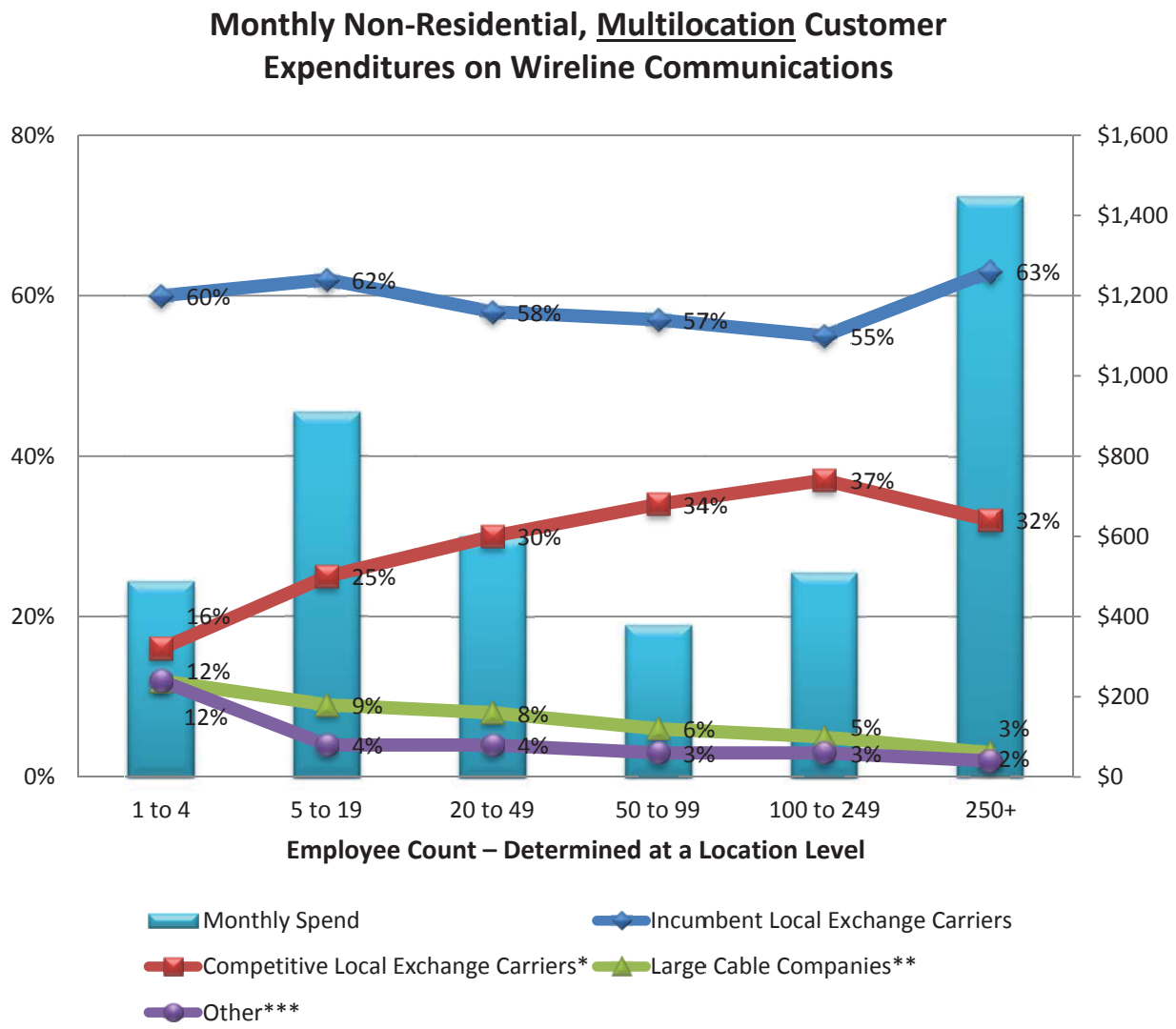
Attachment C

Figure 3



Source: Estimated for wireline communications during 3rd Quarter of 2014, as compiled by the independent market research firm GeoResults.

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Attachment D

Windstream Presentation – May 16, 2014

Price Comparisons – AT&T Special Access and Comparable Ethernet Services

(Kings Point, FL wire center)

Circuit Capacity (Mbps)	Interstate Special Access 36-month Rate (As Tariffed)[1]	Interstate Special Access Rates -- Area Commitment Plan [redacted][2]	Switched Ethernet (ASE) Interactive Class of Service, Publicly Available 36-Month Rate[3]	[redacted][4]
1.5	$126.00	[redacted]	N/A	[redacted]
2.0			$425.00	[redacted]
4.0			$465.00	[redacted]
5.0			$550.00	[redacted]
8.0			$635.00	[redacted]
10.0			$850.00	[redacted]
20.0			$1100.00	[redacted]
30.0			N/A	[redacted]
40.0			N/A	[redacted]
45.0	$1232.50	[redacted]	N/A	[redacted]
50.0			$1225.00	[redacted]
100.0			$1400.00	[redacted]
150.0			$1500.00	[redacted]

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1 Source: AT&T Tariffs, available at http://cpr.bellsouth.com/pdf/ilecmain.html. Many providers use product for Ethernet offerings. Price includes monthly recurring charge (MRC) only; does not include mileage or pricing flexibility discounts.

2 *Id.* AT&T Tariff FCC 1, Sec. 23, [redacted].

3 Source: AT&T Switched Ethernet Guidebook, Part 5—Special Access Services, Common, Section 4—AT&T Switched Ethernet Service. Price does not include $150 non-recurring charge or MRC for Network Node Interface port.

4 [redacted]

Note: This chart does not reflect the impact of certain [redacted].