



Federal Communications Commission
Washington, D.C. 20554

October 7, 2011

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

Re: Connect America Fund, WC Docket No. 10-90; A National Broadband Plan for our Future, GN Docket No. 09-51; Establishing Just and Reasonable Rates for Local Exchange Carriers, WC Docket No. 07-135; High-Cost Universal Service Support, WC Docket No. 05-337; Developing an Unified Intercarrier Compensation Regime, CC Docket No. 01-92; Federal-State Joint Board on Universal Service, CC Docket No. 96-45; Lifeline and Link-Up, WC Docket No. 03-109

Dear Ms. Dortch:

In order to comprehensively reform and modernize the universal service fund (USF) and intercarrier compensation (ICC) system in light of recent technological, market, and regulatory changes, on February 4, 2011, the Commission released the *Universal Service and Intercarrier Compensation Transformation Notice of Proposed Rulemaking (USF-ICC Transformation NPRM)*.¹ The NPRM sought public comment on reforms to modernize USF and ICC for broadband, control the size of the USF as it transitions to support broadband, require accountability from companies receiving support, and use market-driven and incentive-based policies that maximize the value of scarce program resources for the benefit of consumers.

In this letter, the Bureau provides a list of publically available information it may consider as part of this proceeding. Also included is a description of the basic statistical methods

¹ *Connect America Fund; A National Broadband Plan for Our Future; Establishing Just and reasonable Rates for Local Exchange Carriers; High-Cost Universal Service Support; Developing a Unified Intercarrier Compensation Regime; Federal-State Joint Board on Universal Service; Lifeline and Link-Up*; WC Docket Nos. 10-90, 07-135, 05-337, 03-109, CC Docket Nos. 01-92, 96-45, GN Docket No. 09-51, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, 26 FCC Rcd 4554 (2011). Previously, on October 14, 2010, the Commission released the *Universal Service Reform – Mobility Fund Notice of Proposed Rulemaking (Mobility Fund NPRM)*, which proposed to expand mobile voice and data service availability by using a market-based mechanism to award one-time support from accumulated USF reserves. On August 3, 2011, the Wireline Competition Bureau released a PN seeking additional comment. *Further Inquiry into Certain Issues in the Universal Service-Intercarrier Compensation transformation Proceeding*, WC Docket Nos. 10-90, 07-135, 05-337, 03-109, CC Docket Nos. 01-92, 96-45, GN Docket No. 09-51, Public Notice, DA 11-1348 (Wireline Comp. Bur. rel. Aug. 3, 2011) (*August 3 PN*).

used for developing the updated corporate operations expense limitation formula that was presented in our prior Public Notice.² Please enter the attached appendices into the Record.

Sincerely,



Jennifer Prime
Legal Counsel
Wireline Competition Bureau

² Further Inquiry into Certain Issues in the Universal Service-Intercarrier Compensation transformation Proceeding, WC Docket Nos. 10-90, 07-135, 05-337, 03-109, CC Docket Nos. 01-92, 96-45, GN Docket No. 09-51, Public Notice, DA 11-1348 (Wireline Comp. Bur. rel. Aug. 3, 2011).

APPENDIX I: PUBLICLY AVAILABLE SOURCES

1. FCC's Office of Engineering and Technology and Consumer and Governmental Affairs Bureau, *Measuring Broadband America: A Report on Consumer Wireline Broadband Performance in the U.S.* (Aug. 2011) (*SamKnows Report*).
2. Federal Communications Commission, *Connecting America: The National Broadband Plan* (rel. Mar. 16, 2010).
3. FCC's Omnibus Broadband Initiative, *The Broadband Availability Gap: OBI Technical Paper No. 1* (April 2010).
4. FCC's Omnibus Broadband Initiative, *Broadband Performance: OBI Technical Paper No. 4* (Aug. 2010).
5. FCC's Omnibus Broadband Initiative, *Health Care Broadband in America, Early Analysis and a Path Forward* (Aug. 2010).
6. Comcast Announcement Regarding an Amendment to Our Acceptable Use Policy, <http://xfinity.comcast.net/terms/network/amendment/>.
7. Verizon Wireless, Nationwide Single-Line Plans, <http://www.verizonwireless.com/b2c/plans/?page=single>.
8. Center for Technology and Aging, *Technologies for Remote Patient Monitoring for Older Adults*, Position Paper (April 2010), available at <http://www.techandaging.org/RPMPositionPaper.pdf>.
9. Cisco, Cable and Telco Service Provider Abstract Network Model, http://www.cisco.com/web/siteassets/legal/terms_condition.html.
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11. GeoLytics, Inc., Census 2000™ Demographic Data Products, available at <http://geolytics.com/USCensus,Census-2000-Products,Categories.asp>
12. GeoLytics, Inc., Estimates and Projections, available at <http://geolytics.com/USCensus,Estimates-Projections,Products.asp>.
13. Industry Analysis and Technology Division, Wireline Competition Bureau, Reference Book of Rates, Price Indices, and Household Expenditures for Telephone Service (2008).
14. National Exchange Carrier Association, Inc., *Universal Service Fund Data: NECA Study Results*, 2006 through 2011, <http://transition.fcc.gov/wcb/iatd/neca.html>.
15. National Exchange Carrier Association, Inc., *NECA's Overview of Universal Service Fund*, Submission of 2010 Study Results (filed Sept. 30, 2011), <http://transition.fcc.gov/wcb/iatd/neca.html>.
16. 2010 United States Census Data, http://www2.census.gov/census_2010/01-Redistricting_File--PL_94-171/ and documentation at <http://www.census.gov/prod/cen2010/doc/pl94-171.pdf>:
17. Study Area Boundaries: Tele Atlas Telecommunications Suite, June 2010.
18. House Energy and Commerce Committee Letter to FCC on USF and FCC Responses (July 28, 2010), <http://energycommerce.house.gov/news/PRArticle.aspx?NewsID=8737>.

19. High-Cost Program Quarterly Statistics, “High-Cost Support Distribution by Wireless & Wireline CETCs, 1998-1Q2011,” *available at* <http://www.usac.org/about/universal-service/fund-facts/fund-facts-high-cost-quarterly-program-statistics.aspx>.
20. Stephen J. Blumberg, Ph.D., & Julian V. Luke, Division of Health Interview Statistics, National Center for Health Statistics, CDC, *Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, July – December 2010*, (June 8, 2011), *available at* <http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201106.pdf>.
21. Universal Service Administrative Company, FCC Filings, <http://www.usac.org/about/governance/fcc-filings/>.
22. Universal Service Administrative Company, Disbursement Data, <http://www.usac.org/hc/tools/disbursements/default.aspx>.
23. Federal-State Joint Board on Universal Service, *Universal Service Monitoring Report* (2010), <http://transition.fcc.gov/wcb/iatd/monitor.html>.
24. National Broadband Map *available at* <http://broadbandmap.gov/>
25. Jay Atkinson et al., *The Use of Computer Models for Estimating Forward-Looking Economic Costs*, FCC Staff Analysis, Jan. 9, 1997
26. U.S. General Accounting Office, TELECOMMUNICATIONS: FCC NEEDS TO IMPROVE PERFORMANCE MANAGEMENT AND STRENGTHEN OVERSIGHT OF THE HIGH-COST PROGRAM (GAO-08-633, June 2008), <http://www.gao.gov/new.items/d08633.pdf>
27. “To Cap, or Not,” *New York Times*, July 21, 2011, *available at* <http://www.nytimes.com/2011/07/22/opinion/22fri2.html>
28. Wireline Competition Bureau staff analysis of 2010 high-cost program disbursements by study area, program mechanism, and regulation type *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-310281A1.xls
29. IP/MPLS Forum White Paper, <http://www.broadband-forum.org/marketing/download/mktgdocs/IPMPLSMobileBackhaulWhitePaper.pdf>
30. ATIS Exchange Message Interface 22 Revision 2, ATIS Document number 0406000-02200 (July 2005)
31. TRAVIS RUSSELL, SIGNALING SYSTEM #7 McGraw-Hill Communications (Fifth Edition 2006)
32. DEBRA J. ARON, *ET AL.*, AN EMPIRICAL ANALYSIS OF REGULATOR MANDATES ON THE PASS THROUGH OF SWITCHED ACCESS FEES FOR IN-STATE LONG-DISTANCE TELECOMMUNICATIONS IN THE U.S. (Oct. 14, 2010), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1674082
33. Industry Analysis and Technology Division, Wireline Competition Bureau, Trends in Telephone Service (Sept. 2010).
34. Network Usage by Carrier, Annual Submission by NECA of Access Minutes of Use, *available at* <http://transition.fcc.gov/wcb/iatd/neca.html>
35. U.S. General Accounting Office, TELECOMMUNICATIONS: FEDERAL AND STATE UNIVERSAL SERVICE PROGRAMS AND CHALLENGES TO FUNDING, (GAO-02-187, Feb. 4, 2002), <http://www.gao.gov/new.items/d02187.pdf>

APPENDIX II: EXPLANATION OF METHODOLOGY FOR MODIFICATIONS TO CORPORATE OPERATIONS EXPENSE FORMULAE

1. This appendix describes procedures used to derive the formulae for determining the maximum allowable corporate operations expenses recoverable through universal service support mechanisms as set forth in the *August 3 PN*.

The Basic Formulae

2. We conducted a statistical analysis using actual incumbent local exchange carrier data submitted by NECA.³ We used statistical regression techniques that focused on corporate operations expense per-loop and the number of loops, in which the cap on corporate operations expense per-loop declines as the number of loops increases so that economies of scale, which are evident in the data, can be reflected in the model. As in the previous corporate operations expense limitation formulae, the linear spline model developed has two line segments joined together at a single point or knot. In general, the linear spline model allows the per-line cap on corporate operations expense to decline as the number of loops increases for the smaller study areas having fewer loops than the knot point. Estimates produced by the linear spline model suggest that the per-loop cap on corporate operations expense for study areas with a number of loops higher than the spline knot is constant.

3. The linear spline model requires selecting a knot, the point at which the two line segments of differing slopes meet. We retained the knot point at 10,000 loops from the Commission's previous analysis. The regression results are as follows:

- for study areas having fewer than 10,000 total working loops, the projected monthly corporate operations expense per-loop equals $\$ 36.815 - 0.00285 \times (\text{number of working loops})$;
- for study areas with total working loops equal or greater than 10,000 loops, the projected monthly corporate operations expense per-loop equals \$8.12.

Correcting for Non-monotonic Behavior in the Model's Total Corporate Operations Expense

4. The linear spline model has one undesirable feature. For a certain range, it yields a total allowable corporate operations expense that declines as the number of working loops increases. This occurs because multiplying the linear function that defines the first line segment

³ See National Exchange Carrier Assoc., Inc., Universal Service Fund Data: NECA Study Results, 2010 Report, (filed Sept. 30, 2010). Non-rural study areas, as well as study areas with corporate operations expense exceeding \$200.00 per-loop per-month, were omitted from the sample.

of the estimated spline model ($36.815 - (0.00285 \times \text{the number of loops})$) by the number of loops defines a quadratic function that determines total allowable corporate operations expense. This quadratic function produces a maximum value at 6,459 loops, well below the selected knot point of 10,000.⁴ To correct this problem, we refined the formulae to ensure that the total allowable corporate operations expense always increases as the number of loops increases. We chose a point to the left of the point at which the total corporate operations expense estimate peaks. At that selected point, the slope of the function defining total corporate operations expense is positive. We then calculated the slope at that point and extended a line with the same slope upward to the right of that point until the line intersected the original estimated total operations expense, which is represented by $8.315 \times \text{the number of loops}$. Thus, we created a line segment with constant slope covering the region over which the original model of corporate operations expenses declines so that total corporate operations expense continues to increase with the number of loops. We chose the point that leads to a line segment that yields the highest R^2 .

5. Using this procedure, we selected 6,000 as the point. The slope of total operations expense at this point is 2.615 and the line extended intersects the original total operations expense model at 17,887. Accordingly, the line segment formed for total corporate operations expenses, to be applied from 6,000 loops to 17,887 loops, is $\$2.615 \times \text{the number of working loops} + \$102,600$. Dividing this number by the number of working loops defines the maximum allowable corporate operations expense per-loop for the range from 6,000 to 17,887 working loops, i.e., $\$2.615 + (\$102,600/\text{number of working loops})$. Therefore, the projected per-loop corporate operations expense formulae are:

- for study areas having fewer than 6,000 total working loops, the projected monthly corporate operations expense per-loop equals $\$ 36.815 - 0.00285 \times (\text{number of total working loops})$;
- for study areas having 6,000 or more total working loops, but less than 17,887 total working loops, the projected monthly corporate operations expense per-loop equals $\$2.615 + (102,600/\text{number of total working loops})$;
- for study areas having total working loops greater than or equal to 17,887 total working loops, the projected monthly corporate operations expense per-loop equals $\$8.315$.

6. The Commission concluded previously that the amount of corporate operations expense per-loop that is supported through our universal service programs should fall within a range of reasonableness.⁵ Consistent with the formulae currently in place, we define this range

⁴ The feature exists with all knot points considered. The practical effect of the function peaking at 6,459 loops is that a carrier with more than 6,459 loops, but less than 10,000 loops, will receive less corporate operations expense support than one with just 6,459 loops.

⁵ See *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, 12 FCC Rcd 8776, 8931, para. 284.

of reasonableness for each study area as including levels of reported corporate operations expense per-loop up to a maximum of 115 percent of projected level of corporate operations expense per-loop. Therefore, each of the above formulae is multiplied by 115% to yield the maximum allowable monthly per-loop corporate operations expense as follows:

- for study areas having fewer than 6,000 total working loops, the maximum allowable monthly corporate operations expense per-loop equals $\$42.337 - 0.00328 \times \text{number of total working loops}$;⁶
- for study areas having 6,000 or more total working loops, but less than 17,887 total working loops, the maximum allowable monthly corporate operations expense per-loop equals $\$3.007 + (117,990/\text{number of total working loops})$;
- for study areas with total working loops greater than or equal to 17,887 total working loops, the maximum allowable monthly corporate operations expense per-loop equals \$9.562.

7. Consistent with the existing rules, we also include a provision to adjust the monthly per-loop limit to reflect the annual change in GDP-CPI.

⁶ We also retain the existing rule that for incumbents LECs with fewer than 6,000 total working loops, the maximum allowable monthly corporate operations expense per-loop will be the amount produced by this formula or \$50,000/the number of total working loops, whichever is greater. *See* 47 C.F.R. § 36.621(a)(4)(ii)(A).