



July 29, 2011

Chairman Julius Genachowski
Commissioner Michael Copps
Commissioner Robert McDowell
Commissioner Mignon Clyburn
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

Re: America's Broadband Connectivity Plan

Dear Mr. Chairman and Commissioners:

The companies listed below respectfully submit the attached proposal to reform the universal service and intercarrier compensation systems. We have been working in good faith for the past several months discussing reform amongst ourselves and with other stakeholders. After months of hard work, and significant concessions on the part of all signatories, we have attempted to develop a framework that balances the many policy and political challenges these issues present. Our proposal will ensure that four million rural homes and businesses in high-cost areas served by price cap carriers will have access to broadband, two million of which will enjoy the benefits of broadband for the first time.

We thank you all for your leadership in this area. We also thank the team that prepared the National Broadband Plan, which has served as a foundation for this proposal. As you know, we can no longer afford to continue to sidestep the urgent need to implement new policies in this space. The industry is ready. The Commission is ready, having studied both of these issues for years, providing multiple opportunities for public comment, and receiving thousands of filings. The time is now for meaningful, comprehensive reform of both the universal service and intercarrier compensation systems.

The framework we have developed will directly enable efficient deployment, operation, and enhancement of broadband networks in high-cost areas. The reforms we propose will simultaneously rationalize the universal service and intercarrier compensation systems. They will encourage additional private sector investment. And,

they will help narrow the “rural-rural divide” by targeting funding to areas that have been neglected under the current universal service program. As the National Broadband Plan and the FCC’s notice of proposed rulemaking acknowledged, a rural-rural divide exists because the current system supports upgrades to the best rural networks in the nation but does not address the needs of millions of others in rural areas that receive insufficient support. Addressing these disparities in the current system in a fair and equitable way will make substantial progress in closing this divide. Finally, and most importantly, these changes will produce enormous benefits to consumers.

RATIONALIZING AND REFORMING THE HIGH COST FUND

The plan proposes to create and fund a new broadband “Connect America Fund” that will focus on two important goals: (1) extending broadband to unserved areas within five years; and (2) maintaining and improving broadband service in other high-cost areas. Support would be awarded through a combination of a forward-looking cost model and competitive bidding. This proposal is designed to stay within a budget constraint of \$2.2 billion.

The main objective of the Connect America Fund will be to support broadband in areas in which there is no private sector business case. As a result, under our proposal, the system would no longer support services in areas in which another provider offers the defined service without a subsidy.

Providers that elect to receive support from the proposed Connect America Fund must offer broadband service that provides customers with a minimum actual bandwidth of 4 megabits per second downstream and 768 kilobits per second upstream. This service would also provide robust capacity that is sufficient for households to use education and health care applications. The broadband service obligation is technology neutral: providers could use any wireline or wireless technology that meets the Commission’s bandwidth and capacity requirements.

While focused on the nation’s broadband deployment goals, our plan also acknowledges and responds to additional policy concerns that may constrain the program’s ability to enable ubiquitous broadband access in the near term. Our initial projections determined that annual support would need to grow to approximately \$10 billion for all Americans to receive terrestrial broadband access. We, however, opted to pursue an alternative path to accomplish these critical goals without increasing the size of the high-cost fund. As Chairman Walden recently observed “...the support from the high-cost fund has not always been targeted to those consumers in those rural areas who need it most, which has created a rural/rural divide. And the mounting costs of the high-cost fund, along with declines in the USF funding base, have led to ever-increasing customer surcharges as high as 15% of the interstate portion of a customer’s phone bill. In a word, the Universal Service Fund has become unsustainable. ***Reform is no longer an aspiration; it is a necessity.***”¹

¹ Speech before the Oregon and Washington Telecommunications Associations (June 7, 2011) (emphasis added).

FIXING THE BROKEN INTERCARRIER COMPENSATION

Reforming the intercarrier compensation system is a critical component of our framework. As you know, new technologies and products are eating away at wireline carriers' access revenues. Carriers are losing access lines that provide the basis for access charges. Carriers are also increasingly unable to realize access revenues on their remaining lines because of the fraud and arbitrage schemes made possible by today's complicated, multi-tiered system. Today's status quo is not the basis for comparison – we must consider what will happen to our industry if intercarrier compensation reform does not take place. The future of continued intercarrier compensation losses has dire consequences, for both carriers and consumers, in the absence of reform. Although finding the right way to transition away from the policies of the circuit-switched world is difficult, consumers and the entire industry will benefit from the effort once it is completed.

This plan proposes reasonable reforms that include a five-year transition to a single, low default terminating rate of \$0.0007 per minute starting July 1, 2012 and completing July 1, 2017, coupled with essential opportunities for companies to recover these lost revenues from their customers as well as through a new temporary recovery mechanism that would be part of the universal service fund. In addition, the plan calls for immediate FCC action on compensation for Voice over IP traffic, access pumping, and phantom traffic. These reforms would go into effect on January 1, 2012. Moving all circuit-switched traffic to a uniform, low default rate and fixing the other persistent problems dogging the system will help prevent the arbitrage, disputes and litigation that have diverted resources and capital from productive uses. Carriers and policymakers will be freed of the burdens these intractable issues have imposed so they may put their resources to more productive use. And, the plan contains several backstops that will limit any annual increase in the federal subscriber line charge to modest amounts.

To ensure these major reforms do not destabilize carriers serving high-cost areas, it is critical that the Commission adopt and implement proposed universal service reforms at the same time as these intercarrier compensation reforms.

BENEFIT TO CONSUMERS

The consumer benefits of this plan are undeniable. Most importantly, the plan if adopted will make currently unserved households in high-cost rural areas eligible for broadband support. It will enable continued and enhanced broadband access in areas that are served today. Broadband services provide consumers with access to a wide array of education, health care, employment, and entertainment applications.² Thus plan will

² See Mark Dutz, Jonathan Orszag, and Robert Willig, *The Substantial Consumer Benefits of Broadband Connectivity for U.S. Households*, Internet Innovation Alliance (July 2009) (estimating that consumers receive more than \$30 billion of net benefits from the use of fixed-line broadband at home).

ensure that rural consumers also enjoy the extraordinary economic and social benefits of broadband.

Private sector investment will thrive under this regulatory regime, accelerating the transition from traditional circuit-switched networks to IP-based networks. The plan encourages this transition by supporting the deployment of broadband. Consumers benefit from the deployment of Voice over IP because network operators can reduce the cost of providing voice service. Consumers will see more and more new features that are possible with IP-based networks. For example, the estimated gain in consumer welfare from one IP-enabled feature alone – “voice-to-text” emails – exceeds \$1 billion.³

The plan’s intercarrier compensation reforms will also benefit consumers by reducing the cost of voice calling and stimulating an increase in demand for voice calling. It is possible to measure in dollars, for example, how much consumers would benefit overall from lower intercarrier compensation charges. One part of that calculation is what economists call “consumer surplus.” The plan proposes to reduce all rates to a small per-minute charge of \$0.0007, which translates into an estimated gain in consumer surplus of more than \$8 billion per year.⁴ And, as terminating access charges are reduced to the unified \$0.0007 terminating rate, carriers will be freer to offer the flat-rated bundles that consumers prefer. In addition, reductions in terminating access charges will eliminate the incentive to keep local calling areas artificially small. With larger calling areas, a rural consumer could call a hospital or business in a neighboring town without incurring toll charges.

The plan will also benefit consumers by moving to a more rational pricing structure for voice service. The plan encourages all voice providers to shift to a greater reliance on retail end user revenues, replacing a system that allowed some providers to use revenues from other carriers to keep retail prices artificially low. Because voice prices will continue to be constrained by competition from a wide array of wireline, wireless, and Voice over IP providers, the shift to a more rational pricing structure will only benefit consumers.

* * *

We ask that the Commission give careful consideration to this plan. We believe that it represents a fair and realistic approach to reform that will put the universal service and intercarrier compensation systems on a sustainable path. No doubt, some parties will complain that the plan goes too far; others will complain that it does not go far or fast enough. We ask you, however, not to let the perfect be the enemy of the good. We can no longer afford to delay action on these issues that are enormously important to our industry.

³ Attachment 4 – Professor Hausman Consumer Benefits Paper, ¶ 27.

⁴ Hausman Paper ¶ 24.

We look forward to working with you to cross the finish line and finally accomplish intercarrier compensation and universal service reform.

Sincerely,

Robert W. Quinn, Jr.
Senior Vice President - Federal Regulatory
& Chief Privacy Officer
AT&T

Steve Davis
Senior Vice President
Public Policy and Government Relations
CenturyLink

Michael T. Skrivan
Vice President
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Windstream

July 29, 2011

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
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; Universal Service Contribution Methodology, WC Docket No. 06-122; Numbering Resource Optimization, CC Docket No. 99-200; Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Docket No. 96-98; Intercarrier Compensation for ISP-Bound Traffic, CC Docket No. 99-68; IP-Enabled Services, WC Docket No. 04-36

Dear Ms. Dortch:

For filing in the above-referenced dockets, please find here a comprehensive universal service and intercarrier compensation plan, together with attachments. In addition to a Joint Letter from companies filing the proposal, exhibits include:

- Attachment 1 - Framework of the Proposal
- Attachment 2 - Summary of Model Results
- Attachment 3 - Model Description
- Attachment 4 - Professor Hausman Consumer Benefits Paper
- Attachment 5 - Legal Authority White Paper

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cc: Zac Katz
Margaret McCarthy
Christine Kurth
Angela Kronenberg
Sharon Gillett
Carol Matthey
Rebekah Goodheart

Attachment 1

Framework of the Proposal

America's Broadband Connectivity (ABC) Plan Framework

The ABC Plan consists of three inextricably-linked components that work together to ensure that all Americans have access to broadband service. First, the plan creates new universal service programs that explicitly support the provision of broadband service in high-cost areas, replacing the patchwork of legacy universal service programs that were designed to support plain old telephone service (POTS). Second, the plan reforms the intercarrier compensation system to reduce carriers' reliance on implicit support mechanisms that are no longer sustainable and were not designed to support the deployment of broadband. Third, the plan eliminates obsolete regulations that are no longer necessary as carriers transition from POTS to IP-based broadband networks.

1. Modernizing the Universal Service Fund to Support Broadband

The ABC Plan proposes two new universal service programs – a Connect America Fund (CAF) and an Advanced Mobility/Satellite Fund (AMF) – to support the provision of broadband service in high-cost areas. The CAF, which will begin disbursing support on July 1, 2012, will both support the deployment of broadband service to millions of unserved homes and also support the continued operation of existing broadband networks that have relied on legacy support mechanisms. The plan limits its specific recommendations for the CAF to areas currently served by price cap incumbent LECs.

The AMF is designed to support the provision of mobile broadband service in high-cost areas that would otherwise lack such service, and may also support the provision of broadband satellite service in the highest-cost areas.

The plan begins to phase out the support that incumbent price cap LEC Eligible Telecommunications Carriers (ETCs) and competitive ETCs (CETCs) receive from the legacy universal service programs on July 1, 2012, once the CAF begins to disburse broadband funding. The plan eliminates those ETCs' support from the legacy universal service programs entirely by July 1, 2016, when the CAF is fully funded. This framework – phasing out the legacy universal service programs and creating a broadband-focused CAF and AMF – reflects the National Broadband Plan's key universal service recommendations and advances the public interest in promoting broadband availability.

Constraint on Fund Size: Consistent with the *Joint Statement*, the combination of (i) the universal service mechanisms covered by this plan¹ and (ii) the universal service mechanisms proposed by the rate-of-return carrier associations is designed to operate within the current size of the high-cost program, which is estimated to be \$4.5 billion per year.

¹ The universal service mechanisms covered by this plan are the CAF for price cap LEC areas, the AMF, the transitional access replacement mechanism for price cap incumbent LECs, and the legacy high-cost mechanisms insofar as they disburse support to CETCs and price cap incumbent LEC ETCs. This plan does not address legacy high-cost support mechanisms as applied to rate-of-return carrier ETCs.

The Connect America Fund for Areas Served by Price Cap Incumbent LECs

The CAF is targeted to distribute \$2.2 billion per year to support the provision of broadband service to residential and business service locations in high-cost areas served by price cap incumbent LECs. Many of these high-cost areas currently receive little or no universal service support from the legacy universal service programs. Under the ABC Plan, the Commission will begin to narrow the “rural-rural divide” that has provided rural areas served by price cap carriers with less support than the rural areas served by rate-of-return carriers.²

The CAF will begin disbursing support on July 1, 2012. Some areas may begin to receive CAF support immediately, while other areas will begin to receive support after the Commission has conducted a competitive bidding process. Because the start dates for CAF disbursements will be staggered, and because the plan reduces legacy high-cost support each year, the overall level of universal service support will remain within the \$4.5 billion per year constraint. The Commission may, however, take additional steps to phase in the CAF in order to ensure that the universal service program operates within the \$4.5 billion per year constraint. For example, the Commission could phase in CAF recipients’ support over three years.

The design of the CAF reflects a procurement model, under which providers incur service obligations only to the extent they agree to perform them in explicit agreements with the Commission.

Term of Support

Broadband providers that elect to receive support from the CAF will receive a fixed level of support for a term of ten years from the date on which support is awarded. To the extent that the Commission phases in a CAF recipient’s support for an area by providing CAF support for some census blocks before it provides CAF support for other census blocks, each group of census blocks will have a separate ten-year term. A CAF recipient’s support may not be reduced once awarded, provided that the recipient meets the obligations associated with CAF support. At the end of the ten-year term, the CAF recipient’s support and obligations will both end. Before July 1, 2022, the Commission will complete a proceeding to evaluate whether to create a successor universal service fund.

Broadband Service Supported by the CAF

Providers that receive CAF support must make available broadband service that provides customers with a minimum actual downstream bandwidth of 4 Mb/s and a minimum actual upstream bandwidth of 768 kb/s, and also provides robust service that is sufficient for households to use education and health care applications specified by the Commission. The supported broadband service must

² *Connect America Fund NPRM* at ¶ 6.

provide access to voice service, but voice service is not supported by the CAF and CAF recipients are not required to offer voice service. The broadband service obligation is technology-neutral: providers can use any wireline or wireless technology that meets the specified bandwidth and service requirements.

Supported Areas

CAF support is available only in those high-cost areas in which there is no private sector business case to offer broadband. The assessment of whether an area is “high-cost” is made on a census block-by-census block basis.

No CAF support for census blocks served by an unsupported broadband competitor: CAF support is not available in any census block in which at least one unsupported broadband competitor is already offering broadband service as of January 1, 2012.³ An “unsupported broadband competitor” is a facilities-based competitor that has invested to provide broadband in the census block without using federal or state high-cost universal service support and without any state or federal service obligations. The availability of broadband service from an unsupported broadband competitor demonstrates that there is a private sector business case to offer broadband and that high-cost universal service support is not required. In order to provide the stability that is necessary for CAF recipients to take on broadband service obligations for ten years, the entry of an unsupported broadband competitor after January 1, 2012 does not affect the level of CAF support.

State commissions may elect to be responsible for determining whether an area is already served by an unsupported broadband competitor as of January 1, 2012. A state commission may make that determination using broadband deployment mapping information, but states must give parties the opportunity to challenge the mapping data and provide additional information that indicates the presence or absence of an unsupported broadband competitor. The Commission will assume this responsibility if the state commission does not elect to provide verified deployment information for unsupported broadband competitors by January 1, 2012.

Cost model to identify high-cost areas: For each census block that does not have an unsupported broadband competitor as of January 1, 2012, the Commission will use a forward-looking cost model to determine the cost of providing broadband service in the census block. A census block is eligible for support from the CAF if the average per-service location cost of providing broadband service in the census block, as determined by the cost model, exceeds a high-cost “benchmark” that the Commission will specify. If the modeled cost of providing broadband

³ A competitor’s service qualifies as “broadband service” if it has the same capabilities as the broadband service supported by the CAF, i.e., it provides customers with a minimum actual downstream bandwidth of 4 Mb/s and a minimum actual upstream bandwidth of 768 kb/s, and also provides robust service that is sufficient for households to use education and health care applications specified by the Commission.

service is below the benchmark, then the census block is not considered “high-cost” and is not eligible for CAF support.

The plan supporters retained CostQuest Associates, Inc. (CostQuest) to develop the CostQuest Broadband Analysis Tool (CQBAT). CQBAT allows the calculation of the forward-looking cost of providing broadband, and the calculation of estimated support levels, on a census block basis. To ensure that the CAF can begin disbursing support by July 1, 2012, the Commission should adopt the CQBAT model prior to January 1, 2012.

Documentation for the CQBAT model is provided in Attachment 3. The model bases the support estimate on modeled network buildouts and capital and operating costs required for broadband deployments, as compared to a user-specified benchmark. CQBAT accounts for the impact of setting a target for the total support amount by relying on satellite broadband for extremely high-cost areas. It attempts to exclude from the support estimate any census blocks in which broadband service is already being provided by an unsupported broadband competitor. CQBAT includes unique detail for 8.2 million census blocks, and incorporates real-world engineering practices and a variety of real-world operating cost factors.

Aggregation of census blocks to Supported Area: By modeling the cost of broadband and applying the benchmark at the census-block level, the plan ensures that support is targeted precisely to high-cost areas in which support is necessary for providers to offer broadband. However, because it would be unwieldy to administer the disbursement of CAF support to millions of individual census blocks, the CAF disburses support to a “supported area” on a wire center-by-wire center basis. For each incumbent LEC wire center, the “supported area” consists of all census blocks that (1) are not served by an unsupported broadband competitor; and (2) whose cost exceeds the benchmark. Thus, each supported area is a collection of census blocks that is no larger than a wire center and typically smaller than a wire center. In a rural wire center, for example, the CAF might provide support for the sparsely populated outlying area while providing no support for the more densely populated “town” area. A CAF recipient’s obligations apply only in the supported area.

Baseline Support Amount

After the Commission has identified the supported area in a wire center, it will use the forward-looking cost model to calculate a baseline support amount for the supported area.

Census blocks whose cost is above the alternative technology threshold: The National Broadband Plan found that a small number of the most expensive locations represent a disproportionate share of the broadband availability “gap.”⁴

⁴ National Broadband Plan at 138.

In order to minimize the contribution burden on consumers, the National Broadband Plan recommended that the Commission consider satellite broadband for addressing the most costly areas of the country.⁵ Consistent with that recommendation, the plan excludes the highest-cost census blocks from the calculation of the baseline support amount available from the CAF. To identify the highest-cost census blocks, the Commission will specify an “alternative technology threshold.” If the average cost per-service location of a census block exceeds the alternative technology threshold, then the census block is excluded from the calculation of the baseline support available from the CAF. The census block remains part of the supported area. However, as is discussed below, the CAF recipient is permitted to exclude from its service obligation those service locations that could be served most efficiently using satellite broadband (up to the number of service locations in the highest-cost census blocks). The satellite broadband locations must fall within a supported area but do not need to be in the specific census blocks that are excluded from the baseline support calculation.

Calculation of baseline support amount: If the average per-service location cost of a census block is above a benchmark but below the alternative technology threshold, then the census block is included in the calculation of the baseline support amount. For each such census block, the Commission will determine the support amount by subtracting the benchmark cost⁶ from the modeled cost of providing broadband. The Commission will then aggregate the support amounts for all of the census blocks to determine the baseline support amount for the supported area.

Model estimates: As is discussed in Attachment 2, the results from the CQBAT model show that a CAF targeted to distribute \$2.2 billion per year in the areas served by price cap LECs would ensure that over four million homes and businesses in rural areas for which there is no private sector business case will have access to broadband, two million of which will enjoy the benefits of broadband for the first time.

The cost model analysis also demonstrates that \$2.2 billion per year is not sufficient to support the provision of broadband to all high-cost service locations in the territories served by price cap LECs. With the high-cost benchmark set at \$80 per line, the model estimates that \$5.9 billion per year is needed to support the provision of broadband to all high-cost service locations in the territories served by price cap LECs. To meet the \$2.2 billion target, the model excludes the highest-cost census blocks from the CAF support calculation by setting the alternative technology threshold at \$256 per month. With the alternative technology threshold set at \$256 per month, the model estimates that approximately 730,000 service locations in price cap territories would be excluded from CAF support. Those 730,000 locations, which the plan addresses

⁵ National Broadband Plan at 150.

⁶ The benchmark cost of a census block is determined by multiplying the number of service locations in the census block by the per-line high-cost benchmark specified by the Commission.

below in its discussion of the AMF, are well within the capacity of broadband satellites.

Distribution of CAF Support

Once the Commission has determined the supported area and the baseline support for each wire center, providers may apply to the Commission for CAF support. Providers apply for CAF support on a wire center-by-wire center basis. The application process varies depending on whether the incumbent LEC that serves the wire center has already made substantial broadband investments in the wire center.

Wire centers with substantial existing broadband investment (high-speed Internet service available to more than 35 percent of service locations): If the incumbent LEC that serves the wire center has already made high-speed Internet service available to more than 35 percent of the service locations in the wire center, the incumbent LEC is given an opportunity to accept or decline the baseline support and the associated broadband service obligations in the census blocks that make up the supported area within that wire center.⁷ If it accepts the offer of the baseline support, then the incumbent LEC assumes all of the broadband service obligations for the ten-year term of CAF support. By first offering support to an incumbent LEC that has already made substantial investments in the wire center, the CAF will accelerate the deployment of broadband and avoid inefficient duplication of facilities constructed with the help of legacy high-cost universal service programs.

Incumbent LEC has not made substantial investments or declines offer: If the incumbent LEC either has not made substantial broadband investments in the wire center or declines the baseline support offer, then any qualified wireless or wireline provider that can meet the specified broadband service obligations may apply for the baseline support and the obligation to serve the associated census blocks. If multiple providers apply for support, the Commission will use competitive bidding to select the support recipient. Support is provided to the lowest bidder that will meet the specified buildout and service requirements. The baseline support amount functions as the reserve price, i.e., support cannot exceed that amount in the area.

Adjust obligations and/or support if no provider applies: If no provider applies for the CAF baseline support amount available in a wire center, then the Commission may adjust the broadband obligations and/or the available support, subject to the overall constraint on high-cost universal service support.

⁷ We estimate that incumbent LECs would have the opportunity to accept or decline CAF support in 82.0 percent of the census blocks that are eligible for CAF support, representing 82.2 percent of the \$2.2 billion in support targeted to areas served by price cap LECs.

Unused funds: If the total support awarded is less than the \$2.2 billion target for the territories served by price cap incumbent LECs, the Commission should use any remaining support to further expand broadband service in the areas served by price cap incumbent LECs or reduce the size of the high-cost fund. This provision recognizes that the \$2.2 billion target does not fully eliminate the rural-rural divide.

Obligations of the CAF Recipient

Consistent with the procurement model of USF support, the Commission shall impose CAF obligations only on providers that elect to receive support from the CAF, and those obligations shall apply only in the supported areas and for the ten-year term for which support is provided. The Commission shall specify CAF recipients' obligations at the outset, and shall not modify the CAF obligations or other terms of the agreement between the Commission and the CAF recipient without the CAF recipient's consent. The Commission shall not impose broadband service obligations on existing Eligible Telecommunications Carriers (ETCs) that do not receive support from the CAF.

Five-Year Buildout Obligation: A CAF recipient has five years from the date on which it is awarded CAF support to build out its broadband network to any unserved areas and meet the broadband service obligation described below.

Broadband Service Obligation: No later than five years after it is awarded CAF support, the CAF recipient must make broadband service available to a minimum number of service locations in the supported areas for which it receives CAF support. The minimum number of service locations is determined by subtracting the number of service locations in census blocks whose cost exceeds the alternative technology threshold from the total number of service locations in the supported areas.

For example, if there are 100 service locations in the supported areas for which a provider receives CAF support, and 10 service locations are excluded from the baseline support calculation because they are in census blocks whose average per-line cost exceeds the alternative technology threshold, then the CAF recipient must make broadband service available to a minimum of 90 service locations in its supported areas. The ten locations that the CAF recipient does not serve can be anywhere in those supported areas, i.e., those ten locations need not be only in the census blocks that are excluded from the baseline support calculation, and some or all of those ten locations may be in a different wire center. By allowing the CAF recipient to select the service locations that will satisfy its broadband service obligation, the plan recognizes the limitations of census block-level modeling and allows CAF recipients to make efficient network design decisions.

Under the plan, consumers in locations that the CAF recipient is not required to serve would be able to purchase broadband service directly from a broadband

satellite provider. The Commission may provide support from the AMF to offset a portion of the installation costs for satellite broadband for a limited number of such consumers (see AMF discussion, below).

Ten-year term: The CAF recipient must continue to meet its broadband service obligation in its supported areas until the end of the ten-year term of its CAF support. All CAF obligations terminate at the end of the ten-year term.

Advanced Mobility/Satellite Fund

The Advanced Mobility/Satellite Fund (AMF), which would begin disbursing support at the same time as the CAF or after the CAF has begun disbursing support, has two functions. First, the AMF supports the provision of mobile broadband service in those high-cost areas that will not receive service as a result of planned commercial mobile broadband deployments. A provider may not receive AMF support and CAF support for the same facility. Second, the Commission may use support from the AMF to offset a portion of the installation costs for a limited number of broadband satellite customers in the highest-cost areas in which CAF recipients do not deploy broadband because of the limit on support available for such areas.

The available AMF support in a given year is the difference between the overall constraint on the size of the high-cost fund and the sum of support from the CAF for price cap LEC areas, support from the transitional access replacement mechanism for price cap LECs, any remaining legacy support provided to price cap incumbent LEC ETCs and CETCs, and any support provided to rate-of-return incumbent LECs. Furthermore, support from the AMF may not exceed \$300 million per year.

The ABC Plan does not include a detailed proposal for the operation of the AMF. The plan supporters look forward to working with providers of rural mobile broadband service, satellite broadband providers, and other interested parties to develop a complete proposal for the operation of the AMF.

Transition from Legacy Universal Service Programs

Phaseout of legacy high-cost programs: As the Commission begins to phase in support for the CAF and AMF (targeted for July 1, 2012), the Commission will at the same time begin phasing out all price cap ETC and competitive ETC support from legacy high-cost programs (IAS, ICLS, HCM, HCL, and LSS). The support that an ETC may receive from the legacy high-cost programs will be reduced by a factor of 20 percent effective July 1, 2012; 40 percent effective July 1, 2013; 60 percent effective July 1, 2014; and 80 percent on July 1, 2015. Price cap ETC and CETC support from the legacy high-cost programs will be eliminated entirely on

July 1, 2016, when the CAF is fully funded. As is discussed below, all legacy high-cost universal service obligations are eliminated when support from the legacy programs is eliminated and, in those geographic areas in which the current ETCs receive no legacy high-cost support, the legacy ETC service obligations are eliminated immediately.

Transition to CAF: If an existing ETC does not participate in the CAF, it may continue to receive legacy support, reduced by the factors specified above, until support from the legacy high-cost programs is fully eliminated on July 1, 2016. If an existing ETC elects to participate in the CAF, its support in a given year will be the higher of (1) the support available from the CAF; or (2) any remaining legacy support for which the ETC is eligible, calculated at the holding company level.

2. Reforming Intercarrier Compensation to Support Broadband

Consistent with the National Broadband Plan's intercarrier compensation (ICC) recommendations, the ABC Plan creates a glide path to phase down per-minute charges to a low uniform rate while providing carriers with a meaningful opportunity for revenue recovery, and includes interim solutions to address arbitrage.⁸ Under the plan, the regulated terminating intercarrier compensation rates of all carriers except rate-of-return incumbent LECs are phased down to a uniform default rate of \$0.0007 per minute by July 1, 2017. The specifics of the intercarrier compensation transition for rate-of-return incumbent LECs are outlined in the *Joint Statement*.

Reform of terminating intercarrier compensation rates will advance broadband deployment by reducing the disincentives to deploying IP networks and reducing carriers' reliance on unstable implicit support mechanisms. And, by eliminating the disparities between intrastate and interstate access rates, and between access rates and rates for other traffic, the plan will end arbitrage schemes and disputes that divert resources from broadband deployment. Without reform, the ongoing decline in intercarrier compensation revenue will be an impediment to broadband deployment and may jeopardize universal service.

The intercarrier compensation reform and universal service reform provisions of the ABC Plan are inextricably linked. Carriers are able to reduce their reliance on implicit support from intercarrier compensation because the plan provides support from new explicit mechanisms – the CAF and the access replacement mechanism. And, to ensure that carriers are able to sustain and expand broadband networks during the transition, the plan begins disbursements from the CAF on the same date – July 1, 2012 – that the plan begins reducing terminating intercarrier compensation rates.

⁸ National Broadband Plan at 136.

Interim Rules

Voice over Internet Protocol (VoIP): The intercarrier compensation treatment of VoIP traffic that is exchanged between LECs and other carriers has been the subject of long-running disputes. This plan does not take a position on the appropriate intercarrier compensation treatment of VoIP traffic prior to January 1, 2012. Under the plan, the Commission will adopt a new rule, effective January 1, 2012, to govern the intercarrier compensation rates applicable to VoIP traffic exchanged between LECs and other carriers. Such traffic will be rated at interstate access rates if the call detail indicates an “access” call, or at reciprocal compensation rates if the call detail indicates a “non-access” call.⁹ All “toll” traffic that originates in IP or terminates in IP will be subject to current interstate access rates (regardless of whether it is interstate or intrastate); local termination rates would not be affected. All such traffic is incorporated into the overall transition as rates for terminating interstate access traffic are reduced and eventually unified at \$0.0007 pursuant to the comprehensive reform plan described below. Under the plan, intrastate access rates will not be applied to VoIP traffic.

Measures to address arbitrage: The Commission should adopt rules to address phantom traffic and arbitrage schemes involving both originating and terminating traffic, including traffic pumping. The plan does not recommend specific rules, but the plan supporters agree that the Commission should adopt an order addressing phantom traffic, traffic pumping, and other arbitrage schemes that is effective no later than January 1, 2012.

Comprehensive Reform: Measured Transition to a Unified \$0.0007 Rate for Transport and Termination

The plan transitions all price cap incumbent LEC, CLEC, and CMRS terminating intercarrier compensation rates to a uniform default rate of \$0.0007 per minute by July 1, 2017.¹⁰ The five-year transition is designed to give carriers adequate time to prepare and make adjustments to offset the lost revenues.¹¹ The scheduled July 1, 2012 start date for the transition, and the specific transition schedule, both presume that the CAF begins disbursing support on July 1, 2012 and is funded according to the timeline specified above. Any changes to the proposed timeline for funding the CAF would necessitate corresponding changes to the timeline for implementing intercarrier compensation reforms.

⁹ The MTA rule would continue to apply to wireless VoIP traffic. For example, intraMTA VoIP traffic originated by a wireless carrier would be subject to reciprocal compensation rates.

¹⁰ This framework applies only to TDM interconnection. IP-IP interconnection would continue to be governed by commercial agreements.

¹¹ National Broadband Plan at 149.

The rates specified in the transition schedule and the ultimate \$0.0007 rate are default rates. Carriers are free to enter into negotiated arrangements that depart from the default rates.

- **July 1, 2012**: Each carrier reduces its reciprocal compensation rate and intrastate terminating access rate for transport and switching, if above the carrier's interstate access rate, by 50% of the differential between the rate and the carrier's interstate access rate;
- **July 1, 2013**: Each carrier reduces its reciprocal compensation rate and intrastate terminating access rate for transport and switching, if above the carrier's interstate access rate, to parity with the carrier's interstate access rate;
- **July 1, 2014**: Each carrier reduces its terminating end office rates by one-third of the differential between its end office rates and \$0.0007. Transport rates remain unchanged from the previous step;
- **July 1, 2015**: Each carrier reduces its terminating end office rates by an additional one-third of the differential to \$0.0007. Transport rates remain unchanged;
- **July 1, 2016**: Each carrier reduces its terminating end office access rate to \$0.0007. Transport rates remain unchanged;
- **July 1, 2017**: Each carrier unifies all terminating traffic under 251(b)(5) at a rate of \$0.0007 for transport and termination consistent with some existing interconnection agreements that have adopted the "ISP remand" rate. Beginning with this step, the rate for transport and termination shall only apply to termination at the end office where the terminating carrier does not own the serving tandem switch (in which case, additional charges may or may not apply depending on the arrangement used to deliver traffic), and it shall only apply to transport and termination within the tandem serving area where the terminating carrier does own the serving tandem switch.

No terminating or other intercarrier compensation rates may increase. A carrier may not, for example, increase interstate or intrastate originating access rates from the rates in effect as of January 1, 2012. All bill and keep arrangements remain in place.

During the first two steps of the transition, both originating and terminating intrastate dedicated transport rates are transitioned to interstate levels.

Price Cap Incumbent LEC Subscriber Line Charges

As terminating intercarrier compensation revenue is reduced, price cap incumbent LECs are given the opportunity to adjust their business plans and rely to a greater extent on retail customer revenue. To facilitate that shift, the plan lessens restrictions on incumbent LECs' federal subscriber line charge (SLC) rates and pricing flexibility. Although any increases in SLC rates will be significantly

constrained by competition from wireless carriers, cable companies, “over the top” VoIP providers, and other competitors, the plan nonetheless retains a SLC cap and benchmark mechanism as consumer backstops.

The plan provides two separate paths for reducing constraints on price cap LEC SLC rates. If a price cap LEC elects to receive support from the transitional access replacement mechanism described below, the cumulative increase in the SLC may not exceed \$0.50 effective July 1, 2012; \$1.00 effective July 1, 2013; \$1.50 effective July 1, 2014; \$2.00 effective July 1, 2015; and \$2.50 effective July 1, 2016. If a price cap LEC does not elect to receive support from the transitional access replacement mechanism, the cumulative increase in the SLC may not exceed \$0.75 effective July 1, 2012; \$1.50 effective July 1, 2013; \$2.25 effective July 1, 2014; \$3.00 effective July 1, 2015; and \$3.75 effective July 1, 2016.

In addition, any SLC increase may not cause the sum of the local residential rate, federal SLC, state SLC, mandatory EAS, and per-line contribution to the state’s high-cost fund, if the state has a high-cost fund, to exceed a benchmark of \$30 per month. The benchmark comparison uses the local rate, state SLC, and EAS rate in effect on January 1, 2012.

Transitional Access Replacement Mechanism

The plan provides a transitional access replacement mechanism for price cap incumbent LECs that experience exceptionally large reductions in intercarrier compensation revenue. Such LECs, if they elect the appropriate SLC cap progression specified above, may recover a limited portion of their intercarrier revenue reductions from universal service support. The transitional access replacement mechanism is necessary to ensure that the intercarrier compensation reforms do not jeopardize the operations of broadband providers that rely on intercarrier compensation revenues for implicit support of networks in high-cost areas.

To the extent that the impact of the reductions in access rates under the plan and the net impact of the reduction in reciprocal compensation rates exceeds an imputed SLC increase of \$0.50 effective July 1, 2012; \$1.00 effective July 1, 2013; \$1.50 effective July 1, 2014; \$2.00 effective July 1, 2015; and \$2.50 effective July 1, 2016, or exceeds the maximum SLC increase permitted by the \$30 benchmark, the incumbent LEC may recover 90 percent of any revenue reduction greater than the imputed SLC increase. The impact of the reduction in access rates is calculated relative to the rates in effect on January 1, 2012, and is recalculated each year to reflect changes in traffic volumes. Support from the access replacement mechanism is calculated at the holding company level, i.e., by comparing the total holding company-level impact of the rate reductions to the imputed SLC increase applied to all holding company lines. The access replacement support available to price cap incumbent LECs is transitional: beginning on July 1, 2018, the incumbent LEC’s access replacement support is

reduced each year by one-third of the July 1, 2017 amount until the access replacement support is eliminated entirely on July 1, 2020.

We estimate that the transitional access replacement mechanism will disburse approximately \$60-\$80 million in the peak year and then decline over time as access demand declines. We estimate that the mechanism will disburse approximately \$40-\$60 million in support in the year beginning July 1, 2017. That amount will be reduced by one-third each year, beginning on July 1, 2018, until access replacement support is eliminated entirely on July 1, 2020. The transitional access replacement mechanism shall be fully funded during the transition.

3. Regulatory Framework

The transition from POTS to IP-based broadband networks that serve all Americans will require hundreds of billions of dollars of private sector investment. To encourage that investment, the Commission must follow a policy of nonregulation of broadband and other information services, which permits those services “to flourish in an environment of free give-and-take of the marketplace.”¹² The Commission must conclude that VoIP services are interstate services, and reaffirm that broadband services are interstate services. The Commission must also preempt any state regulation of those services that is inconsistent with the federal policy of nonregulation.

In addition, the Commission should eliminate legacy regulations that act as a barrier to the transition to IP broadband networks. In particular, the Commission must eliminate legacy ETC regulations and requirements imposed on price cap incumbent LEC ETCs and CETCs when it eliminates those carriers’ support from the legacy universal service programs, no later than July 1, 2016, and before then, make clear that any such requirements apply only in the particular areas that receive support and end whenever an ETC no longer receives any legacy high-cost or CAF support for a given area. At the same time, the Commission should eliminate all remaining federal rate and other service regulations imposed on price cap incumbent LECs.

If a state maintains obligations to serve, including carrier of last resort (COLR) obligations for price cap incumbent LECs, the Commission must preempt such obligations as inconsistent with federal broadband policy unless the state fully funds the obligations with explicit support and the ILEC agrees to accept the obligations in exchange for funding. Otherwise, COLR obligations are incompatible with the transition to broadband networks because in many cases they require incumbent LECs (and only incumbent LECs) to divert resources from the deployment of broadband networks.

¹² *Vonage Order* at ¶ 21 (internal quotations and citations omitted).

Attachment 2

Summary of Model Results

CostQuest Broadband Assessment Tool – Model Scenarios

This document provides a description of the parameters and results of four different model scenarios, including Scenario #3, which is the Coalition’s solution for the distribution of Connect America Fund (“CAF”) support. These scenarios provide insight into parameter values required to balance the goals of making robust broadband service available to the highest possible number of high-cost service locations while holding the total size of the High Cost Fund to \$4.5B.

Key elements affecting the model scenario outputs are as follows:

- All model scenarios assessed the costs for telecommunications companies to deploy wireline broadband service that is capable of delivering actual speeds of 4 Mbps download and 768 Kbps upload.
- For all model scenarios, areas already served by a cable company offering broadband were not considered eligible for CAF support. Therefore, the results of all scenarios are highly influenced by available data regarding cable-provided broadband coverage. For scenarios 1, 2, and 3 below, an NTIA/Warren Media Blend was the model input for cable coverage.¹
- Cost estimates presume that supported networks would need to offer capacity sufficient to enable broadband service to all service locations in areas qualifying for CAF support, while it was assumed that 90 percent would be active customers.
- In scenarios where the CAF is purposely constrained, CAF support was limited by use of an Alternative Technology Cost Threshold, whereby a threshold for CAF support would apply on a per Census Block basis and that threshold, if exceeded, would result in exclusion of the Census Block from the calculation of high-cost support available to a wire center (rather than serve merely as a cap on the amount of CAF support allocated to the Block). Locations excluded from CAF support pursuant to this threshold would be served by an alternative broadband technology (i.e., satellite).
- An \$80 per service location benchmark was used on all scenarios. Only Census Blocks where average monthly costs exceed \$80 per service location would be eligible for CAF support.

¹ “NTIA/Warren Media Blend” is a combination of cable coverage data from both the National Telecommunications & Information Administration (“NTIA”) and Warren Media. The blend is accomplished by augmenting the NTIA data on cable-provided broadband coverage with Warren Media data on Census-designated places that are addressed by cable-provided broadband and have a density of greater than 35 service locations per linear mile.

No Limits Placed on the CAF

Scenario	Scope	Parameters				Results	
		CAF Fund Limit	Source of Cable Coverage Data	Benchmark	Alternative Technology Cost Threshold	Service Locations ² Served by an Alternative Technology	CAF Fund
1	National - All ILEC Areas	none	NTIA/Warren Media Blend ¹	\$80	none	none	\$9.7 B
2	Price Cap Incumbent LEC Areas Only	none	NTIA/Warren Media Blend	\$80	none	none	\$5.9 B

Coalition Solution

3	Price Cap Incumbent LEC Areas Only	\$2.2B	NTIA/Warren Media Blend	\$80	\$256	728 K	\$2.2B
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Model Scenarios

- Scenario #1 provides the estimated annual CAF support needed to offer wireline broadband to all high-cost service locations in the United States.² This scenario did not employ an Alternative Technology Cost Threshold. The annual CAF support required was estimated at \$9.7 billion.
- Scenario #2 provides an estimated annual CAF requirement for only areas currently served by price cap incumbent LECs. This scenario also did not employ an Alternative Technology Cost Threshold. The annual CAF support needed to offer wireline broadband to all households and businesses in these areas is \$5.9 billion.
- Scenario #3 is the Coalition’s recommended solution. It focuses exclusively on areas currently served by price cap incumbent LECs, and limits the total annual disbursements from CAF to \$2.2 billion for these areas. The \$2.2 billion cap is maintained by setting the Alternative Technology Cost Threshold at \$256 per service location, which means that the approximately 728 thousand highest-cost service locations will be served by an alternative broadband technology (i.e., satellite). This scenario would support wireline broadband for 4.2 million high-cost service locations. ILEC-provided broadband is currently offered in 2 million of these locations; the remaining 2.2 million locations would be addressed by new build-out funded by CAF support.

Impact of Cable Coverage Data Source

NTIA’s State Broadband Data and Development (“SBDD”) cable coverage data are generally known to understate cable-provided broadband coverage, but in some instances may overstate pockets of coverage at a granular level. There are a number of alternative commercial sources of cable coverage data, two of which are Warren Media and Nielsen. These sources reflect dramatically more cable-provided broadband coverage than NTIA’s SBDD data.

The Coalition attempted to correct flaws in the NTIA data by blending the NTIA data with Warren Media data, which were readily available to the Coalition (unlike the Nielsen data). As compared to the NTIA data alone, use of the NTIA/Warren Media Blend had a significant impact on the analysis when a benchmark below \$80 was employed, but produced little difference when the \$80 benchmark was used.

² “Service Locations” refers to locations of both active and potential residential and small-business subscribers that are not covered by cable broadband.

The importance of accurate cable broadband coverage data cannot be overstated. Incorrectly excluding or including high-cost service locations will lead to an avalanche of challenges for the FCC to work through as the CAF program is rolled out, resulting in more administrative cost and delay. The release of an updated set of NTIA SBDD data scheduled for August 2011 should be an improvement over the current release.

Because one of the Coalition members had access to Nielsen cable coverage data, a variation of the Nielsen data also was created to gauge the sensitivity of model results. The alternative Nielsen-based cable coverage data set was termed “Nielsen 2% Red Within Green.”³

Scenario	Scope	Parameters				Results	
		CAF Fund Limit	Source of Cable Coverage Data	Benchmark	Alternative Technology Cost Threshold	Service Locations ² Served by an Alternative Technology	CAF Fund
4	Price Cap Incumbent LEC Areas Only	\$2.2B	Nielsen 2% Red within Green ²	\$80	\$369	347 K	\$2.2 B

Scenario #4, a variation of Scenario #3, illustrates the impact of using this alternative source of cable coverage data when targeting the same amount of support. The Nielsen-based cable coverage reflects more cable-provided broadband coverage than the NTIA/Warren Media Blend that was used as inputs to Scenarios 1, 2 and 3. Compared to Scenario #3, fewer Census Blocks were modeled to receive CAF support, so wireline broadband could be used to address a larger percentage of the high-cost service locations while maintaining annual CAF support at \$2.2 billion. The Alternative Technology Cost Threshold under Scenario #4 would be set at \$369, rather than the \$256 threshold used in Scenario #3.

³ “Nielsen 2% Red Within Green” reflects an adjustment to the Nielsen cable coverage made at the Census Block level based upon a combination of CQBat CB cost and NTIA cable coverage that amounts to converting the top 2% most costly potential subscriber locations of the Nielsen cable coverage to be converted from covered (green) to uncovered (red).

Attachment 3

Model Description

**CostQuest Associates (CQA)
Economic Research & Analysis**

**Coalition Implementation of
CostQuest Associates Broadband
Analysis Tool (CQBAT)
July 29, 2011**

CostQuest Associates (CQA) Economic Research & Analysis

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Executive Summary

CostQuest has developed and populated, with the help of a broad wireline coalition (the “CQBAT Coalition” or “Coalition”), the CostQuest Broadband Analysis Tool (“CQBAT”) to allow calculation, on an individual Census Block basis, of (1) the forward-looking cost of deploying and operating broadband services and (2) universal service support levels required to support these broadband services.

The CQBAT – which is consistent with the FCC’s Broadband Assessment Model (“BAM”) – offers a detailed assessment of the economics of both deploying and maintaining broadband service. It acknowledges and accommodates the substantial diversity across geography and business needs, and among consumers. The underlying database, which is several hundred gigabytes in size, is among the largest, most granular, and robust broadband databases ever assembled on a consistent, national scale.

Baseline conditions in different regions of the country are addressed with substantial granularity. The CQBAT profiles 8.2 million Census Blocks using unique/relevant demographic, geographic, and communications infrastructure detail (such as population, housing counts, road density, business counts). The model further captures a view of existing cable broadband coverage (and coverage gaps) through use of the National Broadband Map, which was produced by the National Telecommunications & Information Administration (“NTIA”), and additional, granular data from third-party vendors.

The CQBAT assessment of cost-effective and efficient broadband network is similarly rigorous. The model replicates real-world engineering practices to “build” (model) network deployments, including the consideration of network component exhaust points that drive network costs through time as demand and use expand. Each deployment is scaled to reflect the realities on the ground at the Census Block level, as well as achieve the selected broadband speed outcome.

With respect to operating expenditures, the model uses real-world cost factors built by a careful examination of available operating cost information specific to wireline technology. The model also considers unique factors, such as company size, customer density, terrain, and technology deployed in estimating operating costs.

The CQBAT concludes with the computation of an estimated economic support level required for specific Census Blocks in the country. This computation is based on modeled (technology-specific) network build outs and the resulting capital-related costs and operating costs compared to a benchmark level. The model includes the capability to cap support levels and exclude extremely high-cost areas.

The documentation that follows provides insight into how the model is designed, how it works, and the inputs, toggles, and parameters used to produce the results shown in the CostQuest Broadband Assessment Tool – Model Scenarios (Attachment 2).

1.0 - Benefits of CQBAT

CQBAT allows policymakers to examine potential support approaches with what economists like to refer to as an “all else equal” approach. That is, it allows one to examine how terrain, density, service area demographics, and other objective factors impact costs while holding the impact of other factors equal.

CQBAT provides assistance for choices regarding universal service support, such as:

- Appropriate benchmark level,
- Identification of high-cost areas for targeting purposes, and
- Impact of support caps.

In addition to these key metrics, CQBAT can help one understand

- Technology choices,
- Engineering choices (copper distance, bandwidth changes, etc.),
- Geographic choices (even down to the Census Block), and
- Service choices

Overall, the CQBAT is an instrument that evaluates where (in what areas) broadband support is necessary and in what amount within the parameters of the tool – i.e., the underlying assumptions discussed herein and the input data that were used.

2.0 - CQBAT Introduction

The two primary CQBAT Modules (and the underlying modeling processes) are discussed in this section. Where relevant the discussion will touch on the *purpose* (the fundamental goal of the component), the *strategy* (the high-level logic, data development, and computational strategy employed), and relevant *inputs* and *outputs*. As additional context for the material that follows, it is important to understand the nature of design criteria and simplifying assumptions that underpin the logic. Appendix 1 defines terms used in the text below.

2.1 - High-Level Design Principles

Three broad principles guided our approach to determining the most efficient network configuration to achieve a designated speed:

2.1.a - Economically efficient, forward-looking network engineering

First, a key principle is that the modeled network must be both cost-effective and efficient and designed to achieve a desired standard of speed / reliability. Accomplishing this objective includes the consideration of issues such as the following: whether we are building a Greenfield network; what measure of population density should be used within the market area; what terrain characteristics impact costs; and whether and how to incorporate the size and technology-type of firm providing broadband services.

2.1.b - Reflective of prudent business practices

Second, another important principle is that the modeling of economic costs assumes business decisions are made in a prudent manner consistent with choices that would be made by a viable company facing at least the potential for market competition, even in areas where that competition may not currently exist. Key to abiding by this principle is the model's adherence to contemporary engineering practices.

2.1.c - Consistency with known public policy decisions

Third, a final important principle is that the modeling of broadband network economic costs must consider (and fit with) the foreseeable public policy and regulatory environment. For example, federal and state universal service policies can selectively influence costs (both operating expenditures and capital expenditures) for individual companies, as well as economic choices among alternative network technology options for individual telecommunication companies. Public policy choices to provide grants, loans, tax incentives, technical assistance, regulatory flexibility, and other mechanisms to encourage expanded utilization of broadband communications can change the demand-side revenue equation for supplying telecommunications companies. Inconsistency among state telecommunications regulatory and policy frameworks in areas, such as rate-of-return regulation and carrier of last resort obligations, can influence operating expenditures and investment choices selectively in different geographies.

With consideration of these three broad principles, the logic-block specific sections that follow include an inventory (and brief discussion) of the design parameters identified as important to the CQBAT model. These design parameters framed the modeling approach and process.

2.2 - High-Level Assumptions

The logic that underlies the operation of the CQBAT also incorporates simplifying assumptions that fall into at least two general categories:

2.2.a - Assumptions necessary to address data limitations

Granular data to support the development and analytical implementation of the CQBAT have been assembled. The data sources are documented in relevant Appendix material. However, the modeling of real-world wireline broadband costs and revenues is complex, making it necessary to formulate and employ assumptions to accommodate data limitations. For example, costs are projected over a defined time period. Precise data on future costs and demand does not exist. While a combination of statistical estimation approaches and expert

industry knowledge are incorporated into those projections, it is generally necessary to assume that the fundamental industry and policy structure will continue into the future

2.2.b - Assumptions necessary for practical modeling

Additional assumptions are required to reduce real-world complexities to a level that can be handled for practical model development. For example, the actual level of sharing of buried plant in a Greenfield build could vary substantially across geographic areas. However, for practical modeling considerations, it is necessary to adopt assumptions for buried plant consistent with what has been generally accepted and tested against real-world data. Without assumptions of this type, the development of the CQBAT would be impracticable.

The more significant assumptions are outlined below.

2.3 - Strengths and Limitations

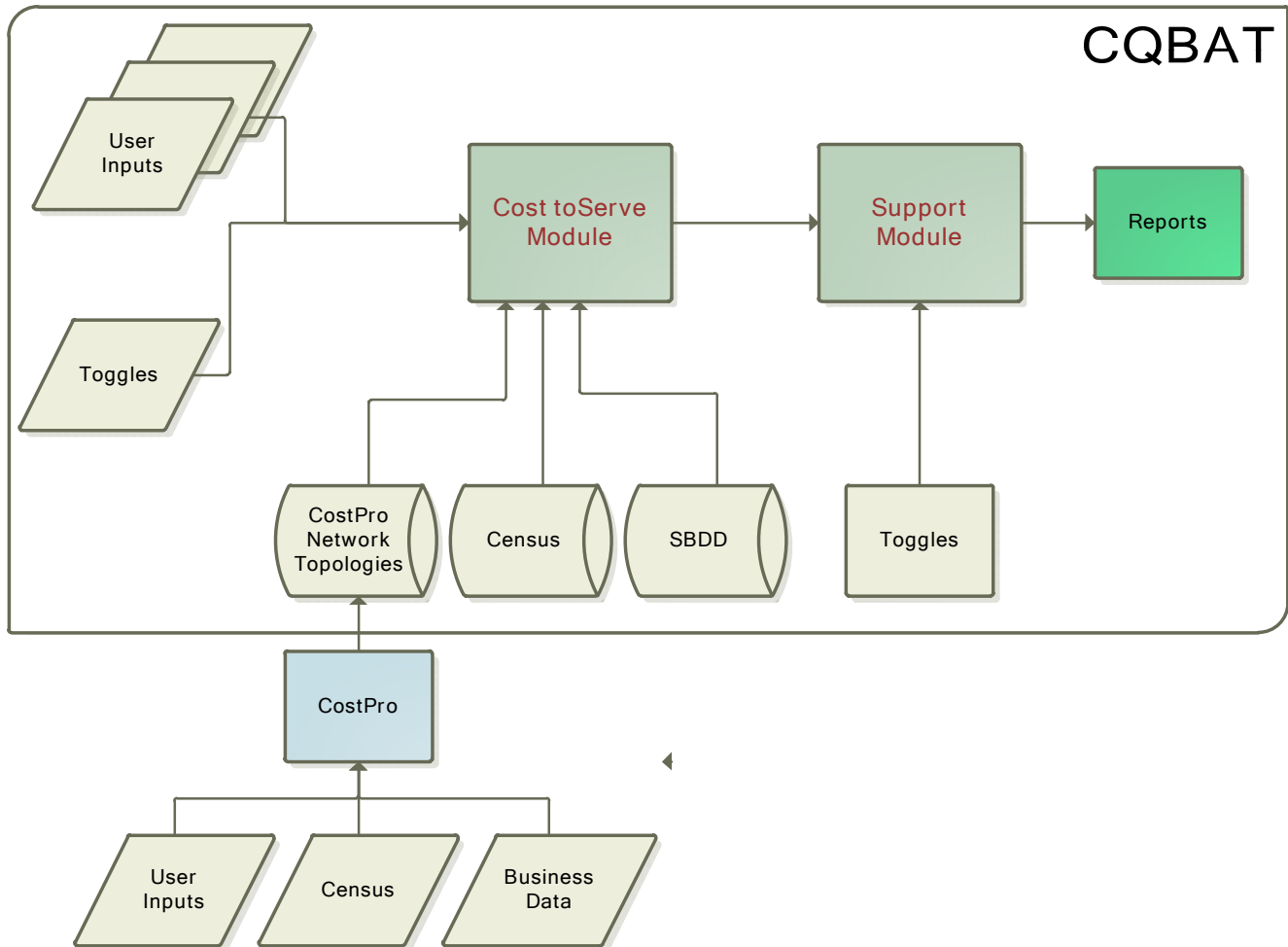
Through the model design and development process certain strengths and limitations emerged with respect to the approach (and the underlying available information). These strengths and limitations are summarized below. Notably the precision of model outcomes will be impacted by the quality of available input data. In general, these limitations will have a more significant impact on the precision of derived results for a small area (such as Census Block) than for larger areas, such as wire centers, counties, states, or the nation.

Strengths
<p>Granularity of Data</p> <ul style="list-style-type: none"> Detailed data on broadband infrastructure (by technology), factors impacting capital and operating expenditures (e.g., terrain, company size), and service locations (e.g., housing units) are developed at the Census Block level. This granularity helps ensure that results reflect the nation's diversity. <p>Consistency with real-world engineering standards</p> <ul style="list-style-type: none"> For terrestrial wireline technology, network inputs and the underlying logic used are based on a consortium of current broadband provider information and are consistent with prior data that have been tested and confirmed in numerous federal and state regulatory proceedings.
Limitations
<p>Availability of Data</p> <ul style="list-style-type: none"> National data to pinpoint the precise location of both business and residential customers do not exist (and currently are not economically feasible to obtain). As such, service location data must be estimated using a combination of secondary data sources. Current information available on cable broadband deployment has some known issues in regard to the extent of coverage and the reported speed. Infrastructure data (e.g., wire center locations and service area boundaries) are based on third-party sources. <p>Limitations in Predicting the Future</p> <ul style="list-style-type: none"> Future uncertainties exist in both broadband technology and customer service demand, creating challenges in forecasting broadband cost of providing services in outlying years.

2.4 - CQBAT Architecture and Logic

The CQBAT modeling processes are organized around two integrated modules: (1) Cost to Serve Module and (2) Support Module. Associated with each module is an underlying input data set and architectural design parameters that are applicable to the implementation of these main modules.

A depiction of the overall model is as follows:



The “Cost to Serve Module” is a systematized collection of mathematical procedures that takes as inputs geographic and non-geographic data and then produces an estimate of the cost of providing a broadband service. As such, it provides unitized measure of costs for comparisons.

The “Support Module” contains a mathematical procedure that takes cost data as an input and produces a universal service support amount.

3.0 - Cost to Serve Module

3.1 - Overview

Based on relevant demographic, geographic, and infrastructure characteristics associated with each identified service area and coverage requirements defined by a set of assumptions (outlined below), estimated build-out investments and operating costs are developed for each Census Block.

This section of the model begins with contemporary topology-specific networks being “built” (modeled using output from CostQuest’s industry recognized CostPro platform), according to real-world engineering rules, constraints, and key characteristics of modeled technologies. Designed network solutions were developed for contiguous service areas (e.g., wire centers), and where appropriate, these network costs are driven to the Census Block level based upon cost-causative drivers.

For wireline technology several alternative broadband topologies are available (e.g., Fiber to the Premise, Fiber to the Node, and Fiber to the DSLAM). The Coalition focused on a topology with a subscriber loop of up to 12,000 feet of copper and fiber to the DSLAM. An estimated capital expenditure (“capex”) level required to meet a discrete broadband standard set by the user for a model run is developed within this Module. In a corresponding component of work within this Module, operating costs (“opex”) for service areas are estimated based on certain user-defined criteria (e.g., company size) and certain Census Block-specific profile data (e.g., terrain, density).

The Cost to Serve Module considered both capital expenditures (“Capex Sub-Module”) and operating expenditures (“Opex Sub-Module”). Where relevant, the following discussion of the module will explain in greater detail the purpose (the fundamental goal of the component), the strategy (the high level logic, data development, and computational strategy employed), and relevant inputs and outputs. As context for the material that follows, this section also describes the nature of design criteria and simplifying assumptions that underpin the logic.

3.2 Capex Sub-Module

3.2.a - Build Assumptions and Attributes

Key to any economic cost model approach is defining the key architectural assumptions and design criteria used to construct the network.

The following table summarizes key assumptions and design attributes:

Category	Assumptions
Overall Design	Scorched node
	Forward looking
	New network built to all locations
	All service locations have access to broadband
	Contemporary / real-world wireline systems engineering standards are to be used for the modeling of broadband networks. More specifically, the use of industry standard engineering practices for wireline deployments are to be used.
	The model employs long-standing capacity costing techniques to estimate economically rational deployment investments reflecting real-world engineering capacity exhaust dynamics.
	Network build out will be based on deployment from known/existing LEC central offices.
	The current service provider will continue to supply the service area.
	Smaller companies have the opportunity to join purchasing agreements

	with other small companies, reducing scale economies.
Coverage	Cable broadband coverage based on NTIA's National Broadband Map
	Wireline broadband coverage based on NTIA's National Broadband Map
Network	IP-based network
	Focus on cost of data "Pipe"
	No Video gear (including Set Top Boxes) installed
	No Voice Gateway installed
	Network is built to a steady state, and results represent a steady state valuation.
	Plant mix will be specific to each state.
	Structure apportionment and fiber will be based on active terminations, and copper will be based on pairs or active terminations.
	The build should include special service terminations required by businesses.
	The supported model ends at the fiber termination on the cloud.

3.2.b – Service Location Data

Regulated wireline carriers often have an obligation to provision new service within a short period of time. Significant components of wireline networks are engineered to meet residential and business service demand within an area in recognition of this requirement. That is, wireline networks are typically built and sized to serve all locations. Service location data are, therefore, key drivers of the network build, and a reasonable service location data set must be created.

For CQBAT, the following provides an overview of the creation of a service location data set.

- For residential data, Census Block-based estimates were used (see Appendix 2 for details). Using CostPro, these residential data were then randomly placed along the roads in a Census Block, to arrive at an unbiased estimate of residential locations to drive the network build.
 - The services assumed at each household are described below.
- For business data, a multi-step process was used.
 - A count of business locations by Census Block was obtained from Geolytics (see Appendix 2 for details)
 - To estimate the type and size of the firms, business data from the Economic Census (2007) were utilized (<http://www.census.gov/econ/census07/>). These data were provided at the ZIP Code level and include the firm type (North American Industry Classification System NAICS code) and size (number of employees) distribution within each ZIP Code.
 - ZIP Code boundaries were overlaid on top of Census Block boundaries to create an association between Census Blocks and ZIP Codes.
 - The Economic Census business data were allocated into Census Blocks based on the prevalence of ZIP data points
 - Within each Census Block, the Economic Census count of firms was then compared to the Geolytics count of firms. The differences in firm counts were assumed to be Single Office or Home Office ("SoHo") business locations, and each was assigned a fictitious NAICS and an employee count less than 4.
 - Once all the firms' locations in Census Block were classified by type and size, the firm points were randomly assigned to eligible road segments within the blocks. The business firm points were placed at random locations along their assigned road segments.
 - As a final step, wireless towers were added to the business demand point data set.
 - The services assigned to each firm or tower are described in 3.2.d.2

3.2.c - Network Architecture

With the service location data in hand, CQBAT models expected outcomes in terms of broadband coverage and related financial requirements (i.e., capex and opex) for contemporary wireline broadband deployments.

The schematic that follows (Figure 1) reflects the fundamental technology architecture (topology) assumed within the CQBAT. Nodes (e.g., Node 0 thru Node 4) are used to help bridge the understanding of functionality through the selected topology. The “nodes” are significant in that they represent the way in which costs are assigned / aggregated.

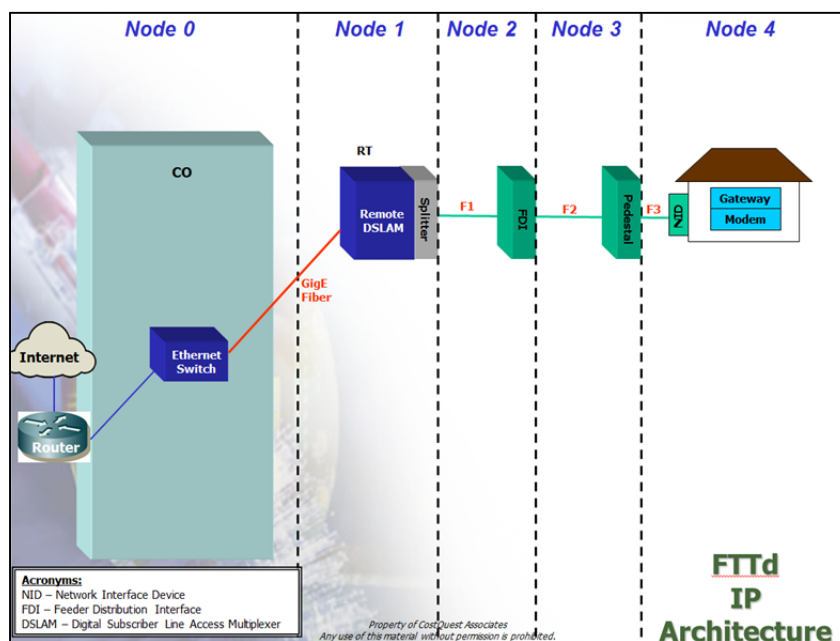


Figure 1 - Fiber to the DSLAM with up to 12,000 ft. of copper cable. (FTTd)

3.2.d – Network Component Development

The Capex Sub-Module employs a granular approach, the use of spatial analysis, and a set of defined real-world engineering rules as the approach to modeling the network design. The resulting costing takes into account service locations; efficient road pathing; traffic demanded at or traversing a network node; sizing and sharing of network components resulting from all traffic; and capacity and component exhaustion. Output unit costs, which were developed using a classic Capacity Costing technique, address all necessary plant, structure, and electronics to support the designed network. The modeled network design also is grounded in actual central office location data (where available).

The broadband network is broken into two key components: loop and middle mile. First, the loop portion captures the routing of network facilities from the service location up to a serving central office. This routing captures both the “last mile” (facilities from the customer to the serving Feeder Distribution Interface)(FDI) and the “second mile” (facilities from the FDI to the central office). Second, the middle mile captures what one might typically refer to as the interoffice network transport. It captures the routing from the End Office up to the point at which traffic is passed to “the cloud.” For this effort, the connection to the cloud occurs at a tandem location within a LATA.

The following discussion provides an overview of how the two key portions of the broadband network are developed.

3.2.d.1 - The Loop

Rather than rebuild the logic captured in CostQuest's industry recognized CostPro Economic Network model platform, CQBAT accepts as inputs key files produced by runs of CostPro. These files include the distribution (last mile) and feeder topologies (second mile) of the wireline network. The workings of CostPro are described in attachments to the National Broadband Plan.¹

At a high level, CostPro is a "spatial" model in that it identifies where customers are located and "lays" cable along the roads of a service area. For example, a cable path can literally be traced from each customer's premises to the serving central office, a path that follows the actual roads in the area.

From the output of CostPro, a network topology is built that captures the equipment and facilities required for delivery of broadband services to an entire service area. Within the CQBAT capex logic, the network topologies are combined with equipment prices, labor rates, contractor costs, and key engineering parameters to arrive at the investments required.

The Capex Sub-Module uses the topology as the basis for a logical economic scorched node build given the technical parameters.

3.2.d.2 - CostPro Network Assignment

As noted above, CostPro was populated with data that incorporate various types of business locations in addition to Census-based residential locations. Based on this road-located service location data set, CostPro then created the network topology required by customers and their associated service requirements.

The following outlines what services were provisioned for each customer type:

- Residential
 - Broadband pipe
- Business
 - Technology-Oriented Business - (NAICS code > 50000)
 - Employee count < 10
 - Broadband pipe
 - Employee count > 10
 - Dedicated fiber service
 - All Other Business – (NAICS code < 50000)
 - Employee count < 10
 - Broadband pipe
 - Employee count between 10 and 50
 - Broadband Pipe
 - Non-broadband copper services
 - Employee count > 50
 - Dedicated fiber service
 - Wireless Towers
 - Dedicated fiber service

Once the network topology was designed, the network facilities associated with the build out were associated with each service (broadband pipe, dedicated fiber) either based upon cost-causative drivers or through an appropriate attribution and pushed to the subscribers in the Census Block. Only the facilities (or portions thereof) associated with the broadband services were extracted from the CostPro results and pulled into CQBAT. As such, the network topologies capture the full build of a broadband provider, and through appropriate economic rationale, only the portion of the network build associated with broadband was captured in the CQBAT results.

¹ Documentation of CostPro, which was used in the FCC's BAM, can be found at [http://download.broadband.gov/plan/fcc-omnibus-broadband-initiative-\(obi\)-working-reports-series-technical-paper-broadband-assessment-model-attachments.zip](http://download.broadband.gov/plan/fcc-omnibus-broadband-initiative-(obi)-working-reports-series-technical-paper-broadband-assessment-model-attachments.zip).

3.2.d.3 - Middle Mile

Middle mile connects central offices with “the cloud” (Internet gateways) via connection to point of interconnection at a tandem within the LATA. Efficient high-capacity Ethernet routes are created to move traffic from these central offices to the location of existing access tandems.

The material that follows provides information on how middle mile costs are developed within CQBAT.

The approach used to determine middle mile equipment required – and then to compute the related investment costs – is centered in the spatial relationship between the central office and the nearest access to a Tier 3 Internet gateway. A surrogate for such access is assumed to be on a regional access tandem ring within the LATA.

This approach starts with obtaining the location of each central office – also referred to as Point of Interconnection (“POIs”), Common Language Location Identifier (“CLLI”), and/or Node0 – from the TeleAtlas wire center boundary database. The result of this approach aligns the central office/Node0 locations used in the underlying CostPro model to middle mile investment calculations.

Regional tandem (“RT”) locations (and the relevant feature groups deployed) are obtained from the LERG database. Each tandem identified as providing Feature Group D access in LERG 9 is designated an RT. As with COs, a latitude and longitude is identified for each RT.

The underlying logic (and the process) of developing middle mile investment requirements are grounded in the assumption that the Internet Gateway peering point is located on the RT ring – meaning that if the modeled design ensures each central office is connected to an RT ring, the corresponding Node0 customers all have access to the Internet.

Given this baseline data on central office and RT locations and working under the assumption outlined above, the middle mile processing logic proceeds as follows:

- The Middle Mile process is run state by state. All CLLIs in a state are homed to a RT in that same state. The RT location is assumed to be where the Internet Gateway is located.
- Within a state, each CLLI location is assigned to its nearest RT (parent RT) to create the initial spatial relation of Central Office locations to RT locations.
- CLLI locations are then routed to other CLLI locations with the same RT parent using a spanning tree approach based on the shortest distance routing back to their parent RT location.
- For cases where multiple RTs exist within a LATA, all the RTs within the same LATA are routed together in a ring. To ensure an efficient design the shortest ring distance is used. The shortest ring is chosen by starting at each RT point and examining the ring route distances. After stepping through each potential ring route, the shortest ring distance is then used for further computations.

With this information in hand, the CQBAT develops middle mile costs with the following steps:

- 1) The distance of the RT rings is attributed to each CLLI on the ring in proportion to the number of service locations at each CLLI as compared to the total service locations for all the CLLIs attached to the RT Ring.
- 2) The distance from the CLLI back to the RT is attributed much in the same way as the routing to DSLAMS is attributed. That is, CQBAT attributes each route based on the cumulative service locations that can use the route.
- 3) For electronics, CQBAT places an Ethernet switch in each CLLI. This Ethernet switch is connected to a router that may serve one CLLI or multiple (based on demand). If the distance to the RT exceeds a user-specified distance, a regeneration unit is placed to extend the distance. This router/regenerator is then assumed to be the last piece of costed equipment in the broadband costs that are developed.

- 4) For the fiber placement, CQBAT assumes a percentage of conduit and poles are included in the Loop plant. As such, only an increment of these costs is assumed to be incurred on the routes. All costs are incorporated for fiber and trenching related to the portion of the route that is assumed buried.
- 5) For the route-related costs, CQBAT assigns only a portion to the broadband network (current value set at ½) based on the assumption that the transport network is built for multiple purposes (CQBAT broadband services and leased dedicated data services)
- 6) Finally, CQBAT apportions the middle mile cost out to each Census Block (the basic unit of geography in CQBAT) based on the proportion of service locations in the Census Block (as compared to the total service locations in the wire center/CLLI serving area).

3.2.d.4 - Capex Accuracy

It is important to note that variances in capex accuracy (somewhat driven by the quality of service location data) at the Census Block level will tend to be mitigated as the model results are viewed at larger area aggregations. Examples of design logic intended to improve the accuracy of capex estimates at the small region level include, but are not limited, to the following:

- Terrain: The Capex Sub-Module is sensitive to terrain characteristics faced in wireline construction via the use of a variable factor.
- Density: The Capex Sub-Module is sensitive to aggregate density of a Census Block through multiple factors, including user quantity driven wireline costs and scaled backhaul (second and middle mile) costs based on aggregated demand in a given serving area.

3.3 – Opex Sub-Module

3.3.a - Introduction:

The CQBAT Opex Sub-Module is designed to estimate wireline telecommunication operating expenses in provisioning broadband in service areas by company size (i.e., Large, Medium, Small, Extra Small, and Extra-Extra Small) and by density (i.e., Demographic, Geographic, and Terrain). The CQBAT Opex Sub-Module is designed to be applied to Census Block profiles with consideration of coverage requirements defined by a set of user assumptions and investments.

The CQBAT opex cost profiles are presented within a hierarchy of costs referred to as the CostFACE. From the highest level in the hierarchy down, the CostFACE is comprised of the following:

- F – Cost **F**AMILY (e.g., Network vs. Customer Operations vs. General and Administrative)
- A – Cost **A**REA (e.g., Plant Specific vs. Plant Non-Specific)
- C – Cost **C**ENTER (e.g., Cable & Wire vs. Circuit Equipment vs. Switching)
- E – Cost **E**LEMENT (e.g., Copper Aerial vs. Fiber Aerial vs. Copper Buried vs. Fiber Buried)

The purpose of the CostFACE is to facilitate organizing and aligning costs with relevant cost drivers (e.g., associated capex investment and subscribers).

The model input is rendered in a set of static tables made available to CQBAT for purposes of aligning the selected operating costs to the selected provider type, size, and density requirements based on cost drivers, such as investment or active service locations.

To provide estimated operating expense for the difference in operating characteristics noted above, relevant provider data available within the public domain were gathered and analyzed to develop a set of neutral baseline cost profiles and a corresponding set of factors or cost functions designed to adjust the baseline views by provider size and density. These publicly available values were then compared to proprietary data provided by Coalition members to test for reasonableness.

The steps in the operational cost development process vary by provider size, but are summarized generally below:

- Research and gather operating expense data;
- Segmentation of data to uniform expense lines;
- Analysis of data;
- Identification of appropriate CQBAT Opex Sub-Module cost drivers based on best “available” data;
- Development of baseline opex detail;
- Development of factors for size and density adjustments;
- Development of property tax location adjustments; and
- Validation and revalidation of results.

3.3.b - Assumptions

While the process noted above provides results within an acceptable range for the designed purpose of the sub-module, consideration was given to certain assumptions and existing limitations that constrained the absolute predictability of the Opex Sub-Module, as listed below:

- a) Industry reported financial data are reasonably accurate and sufficiently segregated to develop opex drivers to model operating expenses at geographic granular levels (i.e., Census Blocks);
- b) Varying formats and expense-detail levels of publically available financial data can be reconciled to provide unitized detail;
- c) Compilation of publicly available information can be analyzed using regression equations and other acceptable analysis supported with industry information to derive valid baseline opex detail;
- d) Resulting unitized baseline expense detail can be modeled against CQBAT forward-looking cost drivers to approximate reasonable estimates of opex for a selected provider, size, and density characteristics;
- e) Historic financial data comprised of mixed technological generations can be adjusted to reasonably predict the operating expense of deployed new technology; and
- f) Validation of varying types of expense detail against sufficient industry- or company-specific data will produce acceptable variance metrics.

3.3.c - Sources of Information

The following information sources are publicly available through free media or by subscription and were the primary sources from which the opex data were derived, analyzed, and tested:

- FCC ARMIS Data;
- NECA Data;
- Thomson Reuters Checkpoint, RIA. (2011);
- Wolters Kluwer, CCH. (2011);
- Various comments filed with the FCC regarding the National Broadband Plan;
- Public Financial Statements;
- Standard & Poor’s Industry Surveys: Telecommunications: Wireline, April 2011;
- Business Monitor International, United States Telecommunications Report, Q1 2011;
- Morgan Stanley, The Mobile Internet Report, December 15, 2009;
- R.S. Means, Building Construction Cost Data 69th Annual Edition (Massachusetts: R.S. Means Company, Inc. 2010);
- Marshall & Swift, Marshall Valuation Services (U.S.A.: Marshall & Swift/Boeckh, LLC, 2010); and
- Other related industry analysis, research, and publically available information.

We also relied on and/or considered certain proprietary information, including data provided by the CQBAT Coalition members.

3.3.d - Development of Opex Factors

Below is an overview of the methodology used to develop the CQBAT Opex Sub-Module factors and related adjustment factors for the following FACE elements:

- Network Operation Expense
 - Plant Specific
 - Outside Plant Cable by Cable Type
 - Poles
 - Conduit
 - Circuit / Transport
 - Plant Non-Specific
 - Network Operating Expense
 - General Support and Network Support
- General and Administrative
- Selling and Marketing
- Bad Debt

3.3.d.1 - Network-Operations Expense Factors

To estimate the CQBAT Network Operations Expenses, the relationship between capital investment and ongoing cost to operate and maintain the plant was determined. For this determination, we relied primarily on five years of NECA data (2006-2010), supplemented with financial data provided by the CQBAT Coalition company members. These NECA data report operating expenses, Investment by Plant Type in Service (“IPTS”), and Total Plant in Service (TPIS) amounts for companies across CO Transmission and Circuit Equipment, and Cable & Wire accounts. These data were further categorized with a size variable by classifying the parent company as follows:

- | | |
|-----------------------------------|--|
| ➤ Large Company: | Greater than 1,000,000 loops nationwide |
| ➤ Medium Company: | Between 100,000 & 1 million loops nationwide |
| ➤ Small Company (“Small”): | Between 4,000 & 100,000 loops nationwide |
| ➤ Extra-Small (“X-Small”): | Between 1,000 & 4,000 loops nationwide |
| ➤ Extra-Extra-Small (“XX-Small”): | Less than 1,000 loops nationwide |

The NECA rural classification was overlaid on the company size data. Furthermore, the cable and wire accounts were further broken out into Aerial Cable, Buried Cable, Conduit, Poles, and Underground Cable using industry data percentages of distribution plant (e.g., Opex & Plant Investment). Finally, the data were unitized on a per-loop basis to improve the accuracy of the results and facilitate the validation/testing of the results by company size and density.

Two analyses were considered to develop the set of baseline CQBAT Opex Sub-Module factors for each company size by density (e.g., rural, suburban,² and urban): (1) Regression analysis to develop opex regression coefficients; and (2) Data analysis to develop the average Opex / IPTS factors. Based on the results of the regression (e.g., Multiple R (R²)), we concluded the weighted average Opex / IPTS factors were more appropriate.

To develop the Opex / IPTS factors we relied on NECA data (2006-2010), segregated by company size and density. An analysis of the network operating expenses and investments on a per loop basis resulted in annual operating expense per loop factors by company size and density. These results were then adjusted from a historical cost basis to a contemporary topology-specific network build on a forward-looking cost (“FLC”) basis, resulting in the baseline CQBAT Opex Sub-Module factors.

From these data, a baseline view was extracted from the data based on the cost drivers noted in the Cost Face format illustrated above, and factors were derived to adjust for size, density, location, and property taxes. In addition, cable CQBAT Opex Sub-Module factors were further segregated between metallic and non-metallic to account for the significant operating differences between the two types of cable.

² For the Suburban companies, and given the limitations of the data, the CQBAT Opex Sub-Module factor was determined to be equivalent to the corresponding Urban CQBAT Opex Sub-Module factor.

3.3.d.2 - General and Administrative Operating Expense

To calculate the CQBAT General and Administrative (“G&A”) Opex sub-module factors, a regression analysis was employed using five years (2006 - 2010) of NECA G&A Opex (dependent variable) and TPIS (independent variable) data segregated by company size to determine the relationship between total plant investment and G&A operating expenses. Using the same NECA data unitized on a per loop basis, Forward-Looking Cost G&A Opex Component factors per loop were developed by company size and by density. Comparing the contemporary G&A Opex Component factors to the regression resulted in FLC to historical G&A adjustment factors by company size and by density to be determined. Applying these adjustment factors to the regression coefficients resulted in the CQBAT G&A Opex Component factors by company size by density. The Large Company baseline results were validated then by comparing them G&A operating expense data provided by the Coalition companies.

3.3.d.3 - Customer Operations Marketing & Service Operating Expenses

To determine the CQBAT customer selling and marketing (“S&M”) Opex Sub-Module factor, we relied on publicly available ARMIS data and CQBAT Coalition company data. Based on the CQBAT Coalition company data, S&M costs were estimated to be 12.8 percent of revenue. A review of the latest ARMIS data available for large incumbent local exchange carriers (“ILECs”) (2007) and mid-sized ILECs (2010) indicates S&M operating expenses are 12.97 percent of revenue.

3.3.d.4 - G&A Opex Property Tax Location Adjustment

Property taxes are typically a subset of the G&A operating expense. Property taxes, which are based on the value of the property owned by the taxpayer in the taxing jurisdiction as of a particular lien date, vary by state and, to some degree, by taxing authority within each state. As such, location-specific property tax indices to be applied to the G&A Opex Component factors were developed.

To develop the location-specific indices, total corporate operations expenses (G&A plus Executive & Planning) and the net plant in service, based on the NECA data, were summarized by state. We then developed the average property tax levy rates by state. Applying these levy rates to the net plant in service (e.g., proxy for the taxable property tax value) resulted in the implied property tax expense by state. Comparing these figures to the overall national weighted average property tax levy rate, property tax indices by state were developed. Applying these indices to the G&A operating expense adjusts for location-specific differences in property taxes.

3.3.d.5 - Validation

The accuracy of the CQBAT Network Opex Sub-Module factors was tested by applying them to the estimated CQBAT Capital Investment Module factors per loop and comparing the results to the NECA network operating expenses per loop by company size and by density. The Large Urban Companies returned a variance of 1.2 percent and the Medium Urban Companies return a variance of 2.7 percent. For the rural density, the variance for the Large Companies was 0.8 percent, Medium Companies were -3.2 percent, and the Small Companies 1.8 percent. The overall weighted average variance by density was 1.2 percent for Urban Companies and 0.5 percent for “Rural” Companies.

The CQBAT operating expenses per customer output by cost element also were reviewed for reasonableness, and we found that they adequately reflected differences in density, technology, and other factors. General and Administrative and Selling & Marketing expenses fell within a reasonable range in connection with the provisioning of broadband services. In addition, and throughout the entire process, we considered the feedback and analysis from the CQBAT Coalition as well as relied upon our industry experience.

3.4 - Cost to Serve Inputs

As noted above, CQBAT captures the capex, opex, and demand attributes in the model. All key inputs to and/or from the Capex and Opex Sub-Modules are captured or controlled by user input tables. The user then assembles the appropriate inputs into an “Input Collection” that then guides the processing of CQBAT.

Before we outline the user input tables, it is important to first understand what has been developed externally and loaded into databases within CQBAT:

- Current broadband coverage pulled from NTIA's National Broadband Map is captured in the CBMaster database.
- The network topology, as produced by CostPro, is captured in the CostPro databases (one for each state). These topology capture the size and type of plant required. These are then converted into investments (i.e., capex) applying costs for material and labor provided in user input tables. Included in these databases are topology tables for Distribution, Feeder, and Middle Mile.

What follows is an inventory of the User Inputs that control CQBAT at processing time:

- Annual Charge Factor (ACF)
 - This table captures the Annual Charge Factors that convert Investment into its monthly costs. The values loaded into CQBAT are produced by CostQuest's CapCost model. This model has been used in the Benchmark Cost Proxy Model ("BCPM") (universal service model) and by various telecommunications companies. The basis of the model is the economic determination of the depreciation, cost of money, and income taxes associated with various plant categories. The calculation incorporates industry standard procedures, such as Equal Life Group methods, inclusion of future net salvage, impact of deferred taxes, and mid-year conventions.
 - Key inputs into the derivation are lives of plant, assumed tax lives, survival curve shapes, cost of money, cost of debt, debt/equity split, and future net salvage
 - Inputs
 - Cost of Money set at 9 percent
 - Use Depreciation lives consistent with those prescribed by the FCC's Wireline Competition Bureau's latest general depreciation order – CC Docket No. 98-137
 - Used to convert Investment into monthly values of Depreciation (DEPR), Cost of Money (COM), and Income Taxes (TAX)
- Bandwidth
 - Provides the busy hour bandwidth
 - Used to size the appropriate network components
- Business Take
 - Set at 90 percent of service locations
 - Used to derive the demand for the business market
- Capex
 - Provides the material and installation costs for the plant build
 - Data were applied against the network topology data from CostPro to derive total build-out investment levels
 - Inputs capture technology, network node, network function, and plant sharing
 - Used to derive the total capex
- COSize Adjustment
 - Defaulted to 1 (no impact)
 - Provides the user the capability to adjust the assumed purchasing power of small, medium, and large providers
 - The inputs assume that all providers can achieve the same purchasing power (either as a result of their size or their ability to buy as a consortium)
 - Used to adjust up or down the capex costs in the model
- Opex
 - Discussed in the Opex Sub-Module above
 - Provides the estimated operation costs to run and maintain a broadband network.
 - Used to develop the operation costs
- PlantMix
 - Provides the estimated mix of cable by type: aerial, buried, and underground

- Used in drive to determine the type of cable required to serve a Census Block
- PTax
 - Sourced from property tax rates in each state
 - Provides the impact of property tax to various operating costs
 - Captured in the multiplier used for the operational element
 - Used to capture the impact of property tax in the operation costs
- RegionalCostAdjustment
 - Sourced from third party source - RSMeans
 - Provides the estimated difference in the cost to build and operate in each part of the county
 - Captures material and labor costs difference
 - Captured at the ZIP3 level
 - Used to drive differences in Capex and Opex costs due to labor and material cost differences across the country
 - Applied to All Capex and specific Opex components
- StateSalesTax
 - Sourced from appropriate tax rates in each state
 - Used in Capex derivation
- Residential TakeRate
 - Set at 90 percent of service locations
 - Used to derive the demand for the residential market

In addition to the User Inputs, there are a number of run-time toggles. The most significant are number of competitors and cable coverage. We assumed that in cable unserved areas there will be zero broadband competitors. With this assumption we established that the takerate would not be affected by satellite or alternative broadband services.

4.0 - Support Module

Once the Cost to Serve Module has run, a large amount of information is available for analysis and decision making. As described earlier, the Support Module takes the output from the Cost to Serve Module along with user-defined parameters to calculate a result representing universal service support specific to the user request. Put another way, the support module works as a sophisticated calculator on-top of the cost-to-serve information. The support module examines the granular cost information and calculates those areas requiring support given a specific set of parameters.

A few of the critical considerations in evaluating high-cost universal service support and included in the Support Module are:

averaging criteria (targeting); benchmark above which support is eligible; federal portion of funding; monthly cap in the highest cost areas which may be better served by an alternative technology; monthly subscriber cap on funding; and an overall cap on total funding.

4.1 - Coalition Parameters

The following parameter elections were used in the Coalition solution to determine the support amount needed for each Census Block addressed by the CQBAT Support Module:

- States - All states were run.
- Total Max Funding - The variable was suppressed by using an arbitrarily large value.
- FCC Portion - Set to 100%.
- Monthly Support Funding Cap - The variable was suppressed by using an arbitrarily large value.
- Cable Unserved - Funding is only areas that lack cable broadband service.
- Geographic Level - The averaging of cost was performed at the Census Block level.
- Benchmark - A benchmark of \$80 was used.
- Alternative Technology Threshold – Set to \$176.

- Calculate Benchmark Testing - The comparison to the benchmark was performed at the Census Block level.

5.0 - CQBAT Results

The model is functional and capable of producing results. The following are some preliminary findings/summaries from the platform.

5.1 - Cost Chart

The following represents the average cost per service location across all potential broadband customers in the United States and captures the percentage of customers at each cost. This figure displays the classic “hockey stick” shape of costs (y-axis), showing that there is steady increase in cost until you reach approximately the 95th percentile (x-axis), where costs grow exponentially.

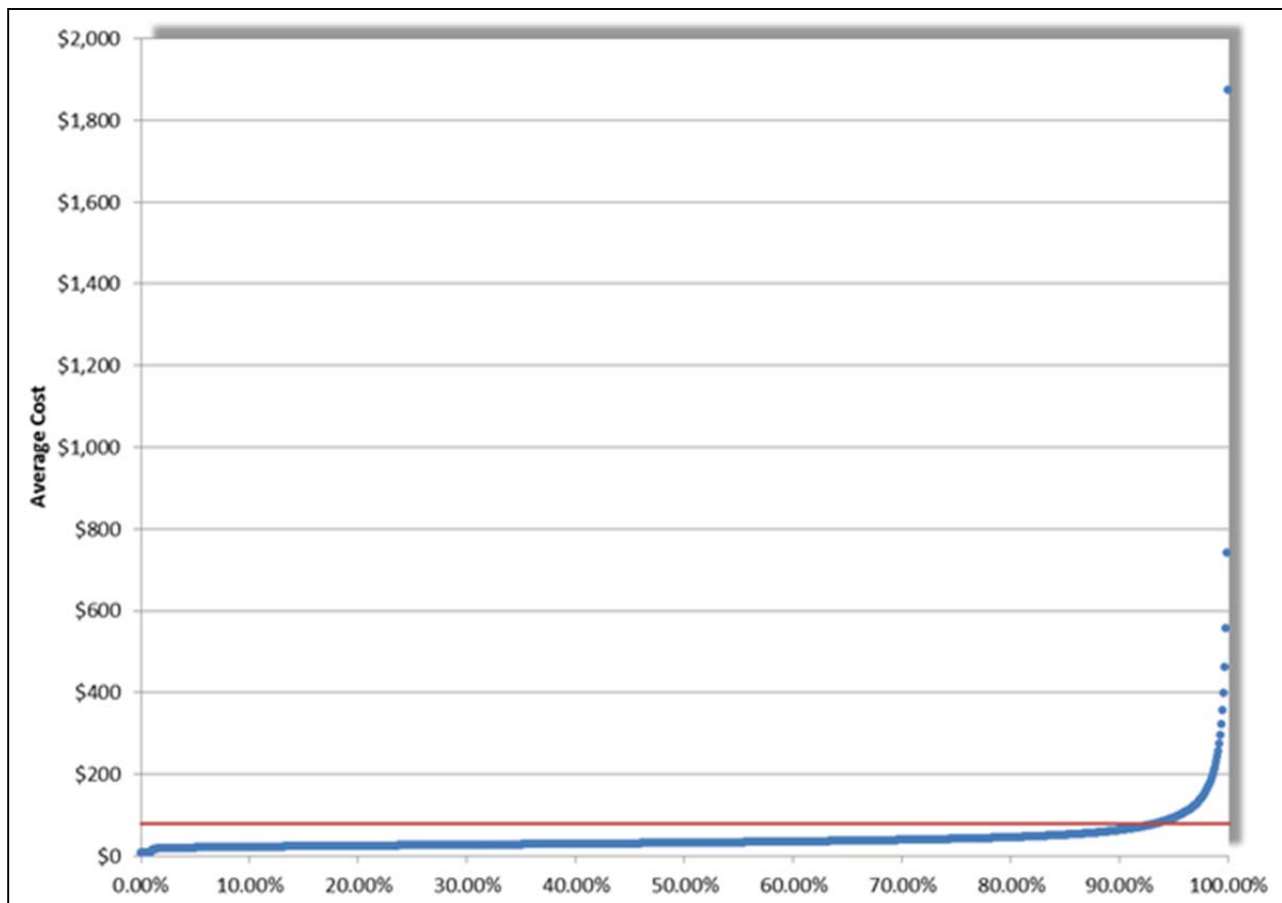


Figure 2 – Average Cost Per Service Location

5.2 – Implementation Results

Refer to the CostQuest Broadband Assessment Tool – Model Scenarios (Attachment 2) documentation for the Coalition solution results.

Appendices

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CQBAT Appendix 1 - Glossary

Across the modeled technologies (and the related operational environments) there are a number of terms that are vital to hold in common when working with CQBAT logic, inputs, and outputs. Key terms include the following:

<u>Term/Phrase</u>	<u>Definition and Issues Relevant to CQBAT</u>
ARPU	Average Revenue Per User – a measure / estimate of the average revenue from a subscriber relative to a defined unit of sale.
Broadband	Generally used to refer to a high data rate Internet access capability typically contrasted with dial-up access using a 56k modem.
Capacity Threshold	A threshold demand level based on total demand at an existing fiber-fed POI.
Capex	Capital expenditures representing the investments required to design and install communications facilities – including the related cost of money associated with capital investments.
Census Block	The smallest geographic unit used by the United States Census Bureau for tabulation of 100 -percent data (i.e., data collected from all houses, rather than a sample of houses). Within CQBAT, the Census Block is the most granular geography for which service availability is assessed.
FTTd	Fiber to the DSLAM. - a transmission system in which optical fiber is carried to a DSLAM which serves a relatively large area. The final connection to the service location is copper.
FTTh	Fiber to the home – a transmission system in which optical fiber is carried all the way to the service location.
FTTn	Fiber to the neighborhood (or node) – a hybrid transmission system involving optical fiber from the broadband provider network to a neighborhood node. The final connection to the service location can be twisted pair (copper), fiber, or coaxial cable.
GIS	Geographic Information System – computer applications involving the storage and manipulation of maps and related data in electronic format.
Greenfield	A term used to describe the situation where service is provided to an area where, to this point, there has been no such service.
IP	Internet Protocol – a protocol describing software used on the Internet that routes outgoing messages, recognizes incoming messages, and keeps track of address for different nodes.
Last Mile	This is the link between the customer (end user) and the service provider's network node. Also referred to as a local loop, this

	connection can be fiber, copper, wireless, or coaxial.
Latency	Refers to a short period of delay (usually measured in milliseconds) required for the conversion of analog and digital representations of the sound data.
Middle Mile	High High-capacity transport connections between a service provider's network core and its second and last mile network. In CQBAT the middle mile reaches the POI (which is a designated existing fiber location), with second and last mile network built to serve areas.
Opex	Operating expenses generally experienced by broadband providers, including network-related operating costs, sales and marketing costs, and a wide range of administrative costs (including bad debt).
POP	Point of Presence – a physical location that allows an interexchange company ("IXC") to connect to a local exchange company ("LEC") within a LATA.
POTS	Plain Old Telephone Service – the basic service supplying standard telephone single line service and access to the public switched telephone network.
QoS	Quality of Service – a measure of the quality of telephone service provided to a subscriber, which embraces a wide range of specific definitions depending on the type of service provided,
Scorched Node	A cost modeling approach wherein the central office, middle mile, and service locations are based upon current locations, but the construction of the network between the serving CO and customer is modeled using forward-looking algorithms.
Second Mile	Transport connections between the middle mile and last mile. In CQBAT the second mile is the transport between middle mile connection and network nodes (e.g., DSLAMs and ONT's) providing Last Mile customer connections.
Sharing Effect	Dealing with potential shared use of backhaul built by first carrier serving an unserved area.
xDSL	Digital Subscriber Line – a generic name for a family of digital lines being provided by CLECs and local telephone companies for high-speed data services, including broadband Internet access. [The "x" notation refers to an unspecified underlying technology (e.g., ADSL, VDSL, HDSL) and the attending speed realized.]

CQBAT Appendix 2 - Data Source and Model Application Summary

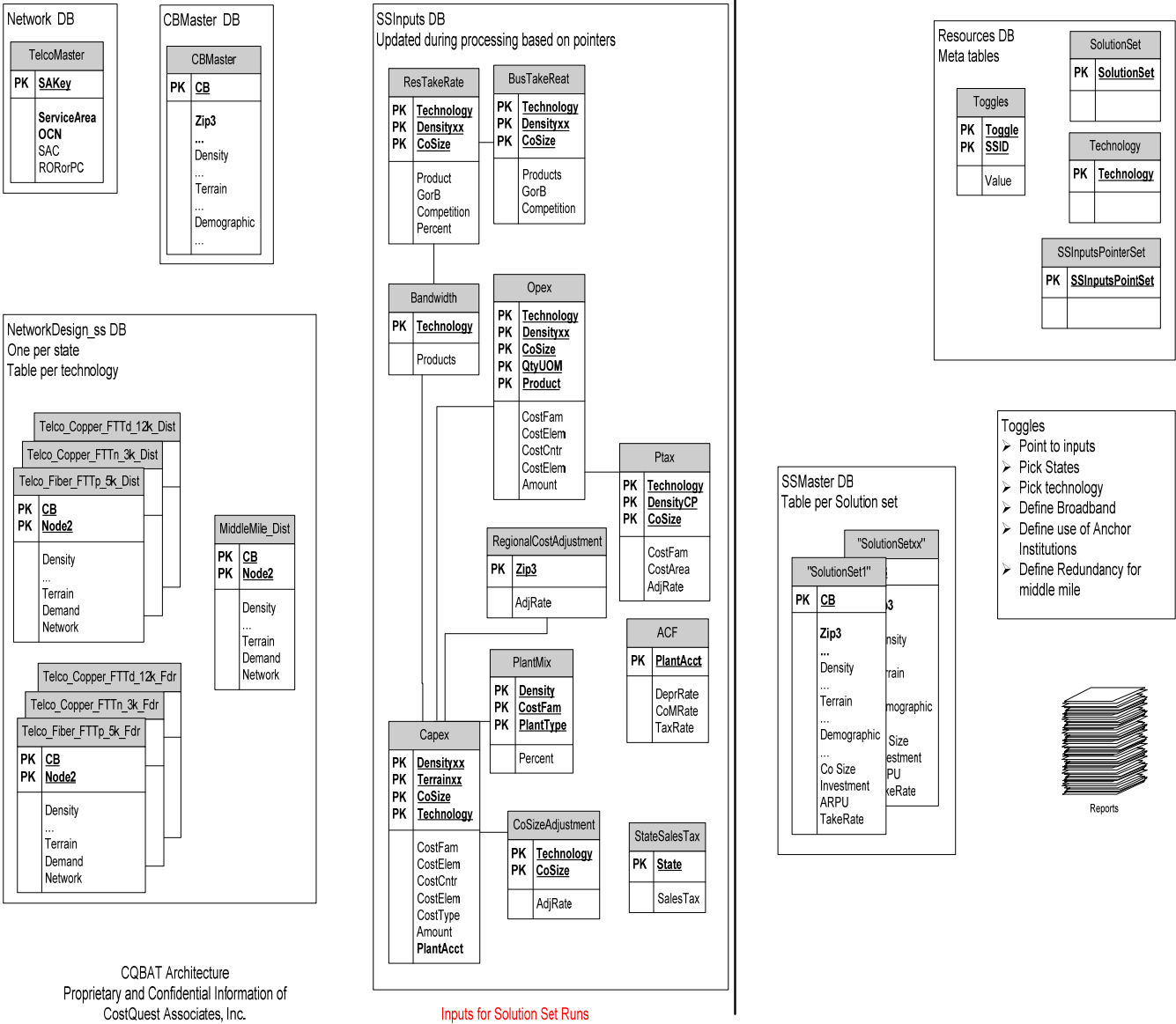
The table below provides a summary (inputs grouped by category) of the major data inputs to the CQBAT along with the underlying source for that data and a reference to where that data were used within the model.

Data Category	Model Variables	Data Source	Wireline Coverage	Capex	Opex
Census boundaries	Full Census Block; full Census Block Group; full Census Tract; full Census County; Census State	2009 TIGER	X	x	x
Wire center boundaries and switch locations	Wire center code; wire center area	TeleAtlas 2010	X	x	
Geographic characteristics	Land area; total road length; x and y coordinates by fragment	Tiger Roads 2009;	X	X	
Terrain	Terrain characteristics	USDA, NRCS-Statsgo	X	x	
Population size	Population by block; population density by block and road length	2010 Geolytics and 2000 Census	X	x	
Housing units	Occupied housing units; total housing units; total households by block	2010 Geolytics	X	x	
Provider size and organizational structure	Corporate ownership; size of parent company; number of wire centers operated by carrier	Coalition Members	X	x	x
Company opex financial data	A wide array of company-specific financial information (and underlying business volumes) from public and subscription service sources. Data centers on operating expense by category (e.g., maintenance, sales, interconnection, sales and marketing, G&A, bad debt, taxes, etc.).	See Appx. 4 for a comprehensive list of opex data sources			x
High capacity locations	High capacity locations will be used to represent high demand business points and will be used to improve business location points for sizing the network.	County Business Patterns http://www.census.gov/econ/cbp/	X	x	
Wireless tower location	Wireless tower locations will be used to represent locations requiring fiber service and will be used to supplement business and residential customer points for sizing the network.	Towersource (2008 extract)	X	x	
Wireless broadband service	Wireless provider broadband speed for wireless area coverage within a Census Block	National Broadband Map (as downloaded)			

		on 3/22/11)			
Wireline broadband service	Telecommunications provider broadband speed for wireline area coverage within a Census Block	National Broadband Map (as downloaded on 3/22/11)			
Cable broadband service	Cable provider broadband speed for cable area coverage within a Census Block	National Broadband Map (as downloaded on 3/22/11)			

CQBAT Appendix 3 – Model Data Relationships

The schematic provides an overview of how data are organized and related within the model. While the figure should capture most of the design, there may be differences with the final model.



CQBAT Architecture
Proprietary and Confidential Information of
CostQuest Associates, Inc.

Attachment 4

Professor Hausman Consumer Benefits Paper

**Consumer Benefits
of Low Intercarrier Compensation Rates**

Professor Jerry Hausman, MIT

I. Introduction

1. I am the MacDonald Professor of Economics at the Massachusetts Institute of Technology (“MIT”) in Cambridge, Massachusetts. I received a D.Phil. (Ph.D.) in economics from Oxford University in 1973, where I was a Marshall Scholar. My academic specialties are econometrics, the application of statistical methods to economic data, and applied microeconomics, the study of behavior by firms and by consumers. I have published over 170 academic research papers in leading economic journals including the *American Economic Review*, *Econometrica*, and the *Rand (Bell) Journal of Economics*, and I have studied telecommunications markets since the 1970s. Exhibit A sets forth my academic and professional credentials.

2. I have been asked to analyze the likely effects of a Federal Communications Commission (“Commission”) policy establishing, on a national basis, low (near zero) default intercarrier compensation rates. I understand that the Commission is considering such a policy, and that a transition to a uniform, low default per-minute intercarrier compensation rate is part of a compromise proposal to reform the Commission’s intercarrier compensation and universal service programs. Among my findings, I conclude that a Commission policy setting all intercarrier compensation rates near zero would produce a **consumer welfare gain of approximately \$9 billion per year nationwide.**

3. In my analysis below, I first find that past Commission policies that set low intercarrier compensation rates on emerging communications services have led to significant consumer welfare and economic efficiency gains. I find that a policy that sets a default rate for intercarrier compensation near zero would lead to significant gains in consumer welfare, as well as significant efficiency gains for the U.S. economy. My more specific findings include:

- In part as a result of Commission policies reducing intercarrier compensation rates for wireless traffic, consumer surplus from 1996-2008 was approximately \$115 billion per year, or approximately \$64.50 per month, \$744 per year for each cellular subscriber.
- From 1996-2008, economic efficiency increased by \$45.20 per month per cellular subscriber, or \$542 per year. This outcome produced an average annual gain in economic efficiency in this period of approximately \$80.2 billion per year – again in part as a result of Commission policies reducing intercarrier compensation rates for wireless traffic.
- Given that wireless intercarrier compensation rate reductions led to significant benefits for consumers, the consumer welfare gains from a low intercarrier compensation rate on emerging Voice Over Internet Protocol (“VoIP”) traffic would likely also be significant.
- Nearly 100% of input cost reductions from lower intercarrier compensation rates as a result of Commission policy changes have in the past, and would likely in the future, flow through to consumers and result in wireline and wireless price reductions, additional investment and innovation, or both. Regulatory mandates requiring pass-through of such rate reductions would artificially distort the market and potentially would harm consumers.
- A Commission policy setting all intercarrier compensation rates near zero would result in a consumer welfare gain of approximately \$9 billion per year. Of that gain, approximately \$3.81 billion per year is attributable to wireless consumers, and approximately \$4.96 billion per year is attributable to wireline long distance consumers. The opposite also is true; for example, if the Commission’s policies that reduced rates for wireless were traffic were undermined, the result would be significant consumer welfare losses up to and potentially exceeding the gains given the greater significance of wireless services generally.
- Commission policy setting intercarrier compensation rates near zero would also lead to dynamic gains from innovative new products and services, on an additive basis, to consumer welfare and economic efficiency gains. While difficult to measure in dollars on a predictive basis, these gains also benefit consumers in a tangible way and typically are significantly larger than static gains in consumer welfare and economic efficiency.

II. Goals and Outcomes of Regulation

A. Identifying and Measuring Effects of Regulation on Consumers

4. Economists agree that the goal of regulation should be to increase consumer welfare.

Alfred Kahn, in his path-breaking study, The Economics of Regulation, identified “consumer

protection” as one of the chief goals of regulation.¹ In my academic research and in advising regulatory bodies, I have also recommended that consumer welfare be the primary goal of regulation.² Thus, consumer welfare should be the focus of regulation, not the protection of firms who compete in regulated industries.

5. Gains in economic efficiency are the chief means of increasing consumer welfare.

Economic efficiency is often considered within the following categories:

- Productive economic efficiency: society makes the best use of its resources and produces the greatest output possible so it is on its production possibility frontier.³
- Allocative economic efficiency: relative prices reflect relative costs so that no possible reorganization of production would allow for a “Pareto improvement” (*i.e.*, make no one worse off and some people better off).
- Dynamic economic efficiency: investment incentives are set correctly so that in the long run when capital is flexible society will be on its long run “utility possibility frontier” (*i.e.*, society will achieve maximum consumer welfare. New products and services are created at the “optimal” rate).

6. The first two types of efficiency are often referred to as static efficiency concepts

¹ A.E. Kahn, The Economics of Regulation, (1970-71, 1988: MIT Press), p. 9.

² See, e.g., J. Hausman, “Economic Welfare and Telecommunications Welfare: The E-Rate Policy for Universal Service Subsidies,” *Yale Journal on Regulation*, 1999; “Valuation and the Effect of Regulation on New Services in Telecommunications,” *Brookings Papers on Economic Activity: Microeconomics*, 1997; “A Consumer-Welfare Approach to the Mandatory Unbundling of Telecommunications Networks,” *Yale Law Journal*, 109, 1999; and “Efficiency Effects on the U.S. Economy from Wireless Taxation,” *National Tax Journal*, 53, 2000.

³ See P. Samuelson and W. Nordhaus, Economics, (McGraw Hill, 12 ed., 1985), pp. 28-29. (“Efficiency is a central (perhaps *the* central concern in economics. Efficiency means there is no waste...” Productive efficiency occurs when society cannot increase the output of one good without cutting back on another. An efficient economy is on its production-possibility frontier.”)

since they hold the capital stock fixed. However, dynamic economic efficiency allows the amount of capital to vary and determines whether the economy has an efficient stock of capital and whether the innovation rate is optimal.

7. Economists have well-accepted tools to measure consumer welfare arising from static economic efficiency. The approach is called a “consumer surplus” calculation, and it has been used in economics for over 100 years. Consumer surplus is the monetary amount (measured in dollars) of the difference between the maximum amount a consumer would be willing to pay to purchase a product, and the market price of the product. For example, a given consumer could be willing to pay \$125 per month for unlimited voice and data cellular service, but the market price might be \$110. In that example, the consumer surplus is \$15 per month, per user.

8. For new products consumer surplus is the difference between the “virtual” (reservation) price for the product where demand would be zero at a particular market price.⁴ Thus, for example, the price at which demand for an Apple iPhone which sets demand to zero could be \$1,200. However, an Apple iPhone’s retail price is about \$600, so the consumer surplus is \$600.

9. I have previously used this economic approach in my academic research and publications in telecommunications industry. My related research topics include:

- Consumer welfare effect of Universal Service Fund (USF) subsidies (1998)⁵

⁴ Sir John Hicks pioneered this technique to measure the effect of rationing, and I have used it extensively to value new products. *See, e.g.,* J. Hausman, “Valuation and the Effect of Regulation on New Services in Telecommunications,” *Brookings Papers on Economic Activity: Microeconomics*, 1997; and “Sources of Bias and Solutions to Bias in the CPI,” *Journal of Economic Perspectives*, 17, 2003.

⁵ “Economic Welfare and Telecommunications Welfare: The E-Rate Policy for Universal Service Subsidies,” *Yale Journal on Regulation*, 1999.

- Consumer welfare effects of introduction of cell phones (1997, 2002)⁶
- Consumer welfare effects of taxation of cellular revenue (2000)⁷

Numerous other studies have adopted and applied my techniques.

B. Positive Consumer Benefits from Previous Commission Action to Reduce Intercarrier Compensation Rates

10. Previous Commission actions to reduce intercarrier compensation rates have led to significant gains in consumer welfare. From 1996-2001 the Commission effectively decreased, for the substantial majority of all wireless traffic, the price of wireless termination to the PSTN to rates that ultimately reached \$0.0007 or below per minute.⁸ Over the ensuing period from 1996-2008, consumers benefitted, and will continue to benefit, from these lower intercarrier compensation rates and increased wireless innovation. These innovations include, for example, expansive offerings of digital “One Rate Plan” and other “bucket” rate type plans that consumers widely adopted, as well as effective elimination of national “roaming” charges. Overall, prices

⁶ “Valuation and the Effect of Regulation on New Services in Telecommunications,” *Brookings Papers on Economic Activity: Microeconomics*, 1997; and “Mobile Telephone,” in M. Cave et al. eds., *Handbook of Telecommunications Economics*, 2002.

⁷ “Efficiency Effects on the U.S. Economy from Wireless Taxation,” *National Tax Journal*, 53, 2000.

⁸ See *Implementation of the Local Competition Provisions in the Telecommunications Act; Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers*, First Report and Order, 11 FCC Rcd 15499 (1996) (establishing the Commission’s “MTA rule,” which deemed wireless traffic terminated to the PSTN within the same geographically large Metropolitan Trading Area subject to typically lower “local” or “reciprocal compensation” intercarrier compensation rates); and *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996; Intercarrier Compensation for ISP-Bound Traffic*, Order on Remand and Report and Order, 16 FCC Rcd 9151 (2001) (establishing the Commission’s “mirroring rule,” which effectively set the reciprocal compensation rate for most wireless traffic at or below \$0.0007 per minute).

decreased and quantities of use increased over this period in part due to Commission action lowering intercarrier compensation rates. Both outcomes demonstrate increased consumer welfare.

11. More specifically, over the period 1996-2008 the increase in consumer surplus for cellular usage totaled approximately \$64.50 per month or \$774 per year per cellular subscriber.⁹ In total the gain in consumer surplus was approximately \$114.5 billion per year over the period using the average number of subscribers of approximately 148 million nationwide over the period.¹⁰ While many economic factors contributed to this gain in consumer surplus, this significant gain arises in part from Commission regulatory policy in decreasing the price of wireless termination to the PSTN. That action caused elimination of most roaming charges and long distance cellular charges. Other Commission actions that contributed to this gain in consumer surplus include Commission spectrum auctions, which increased competition among wireless providers.

12. Economic efficiency also increased significantly as a result of the Commission's action. Economic efficiency increased by \$45.20 per month per cellular subscriber or \$542 per year. Given the average over the period of approximately 148 million cellular subscribers

⁹ Data from Table 20, *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Fifteenth Report, FCC 11-103 (June 27, 2011). Over this period average revenue per minute (price) decreased from \$0.38 per minute to \$0.07 per minute. Average minutes of use increased from 125 minutes per month to 708 minutes per month. This is a lower bound estimate. See, e.g., J. Hausman, "Sources of Bias and Solutions to Bias in the CPI," *Journal of Economic Perspectives*, 17, 2003. It has been estimated that as of Q4 2002 average household cellular minutes exceeded average household landline minutes. See, e.g., "Cell Phone Usage Overtakes Landlines in the US," <http://www.cellular-news.com/story/8773.php>.

¹⁰ See "Wireless Quick Facts," http://www.ctia.org/media/industry_info/index.cfm/AID/10323.

nationwide, the average gain in efficiency is approximately \$80.2 billion per year.

13. From an economic perspective Commission policy in reducing intercarrier compensation rates can have major, positive effects on both consumer welfare and economic efficiency.¹¹ These positive effects on both consumer welfare and economic efficiency – resulting in part from Commission action reducing intercarrier compensation rates – are confirmed by data reflecting the increasing replacement (in whole or in part) of wireline service in favor of wireless service by consumers. Significant change in consumer behavior is a good measure of actual consumer welfare gains and new economic efficiencies realized from shifts in regulatory policy and other market changes. And it is now clear that a significant shift away from wireline and toward wireless voice services has occurred. The most recent survey of cellular users found that 29.7% of all U.S. households subscribed only to cellular service and did not subscribe to wireline service.¹² Further, even among households that also had wireline service, a significant portion received almost all of their calls on cellular telephones. Generally, consumers can be expected to purchase services based on their perception of the services that provide the greatest benefit (consumer welfare) at the lowest relative cost (efficiency).

14. As it did when wireless service emerged, the Commission is currently considering the most appropriate intercarrier compensation rates for another currently developing type of services, namely VoIP services. VoIP is expected to, over the next several years, become the dominant technology for both wireline and wireless voice service. From an economic

¹¹ See, e.g., J. Hausman, "Valuation and the Effect of Regulation on New Services in Telecommunications," *Brookings Papers on Economic Activity: Microeconomics*, 1997; and "Mobile Telephone," in M. Cave et al. eds., Handbook of Telecommunications Economics, 2002.

¹² S. Blumberg and J. Luke, "Wireless Substitution: Early Release of Estimates from the National Interview Health Survey, July-December 2010," CDC, June 8, 2011.

perspective, the Commission could reasonably expect to achieve maximum positive effects on both consumer welfare and economic efficiency by setting low – near zero – intercarrier compensation rates for VoIP traffic. Established economic principles, as discussed below, demonstrate that VoIP prices will fall and usage will increase if a key input cost such as intercarrier compensation is kept low or reduced. The demonstrable results of Commission action with respect to wireless intercarrier compensation rates are also strong evidence that consumers will benefit from low intercarrier compensation rates for VoIP traffic.

C. Policy Considerations Regarding the Overall Intercarrier Compensation System

15. The Commission should adopt a comprehensive intercarrier compensation policy for a low, default intercarrier compensation rate, similar to its decisions to exempt the wireless industry from a substantial portion of the legacy intercarrier compensation regime. Similar to its wireless policy the Commission is considering changes to its intercarrier regulatory policy and whether to reduce default intercarrier rates. This policy would increase economic efficiency and also consumer welfare.

16. Also, lower rates for all intercarrier compensation will lead to lower prices for consumers, added investment an innovation, or both, as the wireless experience demonstrates. Lower prices and added investment and innovation lead to increased consumer welfare and increased demand and increased output. Economic analysis demonstrates that lower costs are passed through to consumer prices at a minimum rate of 50%, even for a monopolist.¹³

However, as competition increases the percentage of pass-through approaches 100% (and can

¹³ For a discussion *see, e.g.*, J. Bulow and P. Pfleiderer, “A Note on the Effect of Cost Changes on Prices,” *Journal of Political Economy*, 91, 1983; and J. Hausman and G. Leonard, “Efficiencies for the Consumer Viewpoint,” *George Mason Law Review*, 7, 1999. This finding is for a “normal” shaped demand curve that is convex to the origin.

even be greater than 100%). Empirical economic studies typically find pass-through in competitive industries of approximately 100%, especially when the cost change is common to the entire industry.¹⁴ Here, given the degree of competition among cellular carriers and the degree of competition between wireline telephone providers and all intermodal providers such as cable companies, so-called “over-the-top” VoIP services that ride broadband connections, and wireless services, I would expect approximately all of any intercarrier compensation rate decreases to be passed through in lower prices, added investment an innovation or both to consumers.

17. Empirical studies in telecommunications also demonstrate near 100% pass-through. Both Beard et al. (2005) and Aron et al. (2010) find that near 100% pass-through occurred for long distance rates when regulators reduced intercarrier compensation rates.¹⁵ In my own research, Hausman et al. (2002), I found similar results of a flow-through of lower costs into lower prices when the legacy Regional Bell Operating Companies were permitted to provide inter-LATA long distance service.¹⁶

18. Given the amount of competition present in wireless markets and among wireline telephone and cable companies, I conclude that a regulatory policy requiring that carriers flow through intercarrier compensation reductions would be unnecessary and potentially harmful.

¹⁴ See J. Poterba, “Retail Price Reactions to Changes in State and Local Sales Taxes,” *National Tax Journal*, 49, 1996; and T. Besley and H. Rosen, “Sales Taxes and Prices: An Empirical Analysis,” *National Tax Journal*, 52, 1999.

¹⁵ R. Beard et al., “The Flow through of Cost Changes in Competitive Telecommunications: Theory and Analysis,” *Empirical Economics*, 30, 2005; and D. 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. 2010.

¹⁶ J. Hausman et al., “Does Bell Company Entry into Long-Distance Telecommunications Benefit Consumers?” *Antitrust Law Journal*, 70, 2002.

Since the significant fixed costs of networks must be recovered through prices, the market will determine the most economically efficient means to recover these fixed costs. Further, the majority of both wireless service (at least for voice services) and wireline long distance service is sold in “bucket plans,” often of the “all you can eat variety,” meaning the price of those plans is generally the only variable that can and will be adjusted by firms when implementing input cost reductions in the telecommunications market.

19. A regulatory mandate that requires flow-through is likely to distort this type of competition in an artificial way and may lead to a reduction of bundled offerings from firms or reduced investment or both. These bundled offerings may be of the “triple play” or even the “quadruple play” type where a bundled price is charged for three or four services and the services do not each have a separate price. These types of bundled offerings have proven to be very popular with consumers. Any regulatory action which limits these types of bundled plans would create economic distortions and decrease both economic efficiency and consumer welfare.

20. Commission policy with respect to input costs in a correct manner is especially important now for the wireless industry. Investment in LTE and other 4G technologies is ongoing and will require billions of dollars of new investment by the cellular industry.¹⁷ LTE will provide significant benefits to consumers. LTE will provide much faster download speeds and less congestion on cellular networks. For example, some LTE specifications provide for 100 Mbps download speeds and 50 Mbps upload speeds, which will allow for content rich applications, including streaming HD video. LTE will also lead to approximately 2-4 times more efficient use of spectrum, compared with the current 3G technologies, CDMA2000 (EVDO) and WCDMA (UMTS), and HSPDA. Given the rapid growth in internet usage on cell phones,

¹⁷ LTE is often referred to as 3GPP in addition to LTE.

adoption of LTE will be an especially important development.

III. Expected Consumer Benefits of Lower Intercarrier Compensation Rates

21. Consumer benefits from new investment and new innovative products – which create increased dynamic economic efficiency – are significantly greater than the subsidies consumers receive from the economically inefficient framework of universal service subsidies which arise from the intercarrier compensation framework.¹⁸ Similarly, given the ongoing innovation in VoIP, wireless, and other communications technologies, correct regulatory policy is especially important to allow for the maximum increase in dynamic economic efficiency and consumer welfare, which I would expect to arise from the new LTE networks.

22. I now estimate the consumer benefits from the Commission adopting an intercarrier compensation policy that sets low (near zero) intercarrier rates. I first calculate the consumer benefits for wireless. From industry sources I find that the average wireless usage in 2009, which is the latest data available, is 696 minutes per month.¹⁹ The average voice ARPU for the same time period was \$34.34, and the average cost of intercarrier payments I estimate to be \$0.50 per user, per month based on my discussions with industry representatives. To estimate the effect of decreasing the intercarrier rate to near zero, I assume full pass-through given the

¹⁸ See, e.g., J. Hausman, “Valuation and the Effect of Regulation on New Services in Telecommunications,” *Brookings Papers on Economic Activity: Microeconomics*, 10, 1997. The importance of dynamic economic efficiency was first discovered by Prof. Robert Solow in the 1960s. Prof. Solow received the Nobel Prize in economics for his research. For the economic inefficiencies created by the USF framework, see J. Hausman and H. Shelanski, “Economic Welfare and Telecommunications Welfare: The E-Rate Policy for Universal Service Subsidies,” *Yale Journal on Regulation*, 16, 1999.

¹⁹ Data from Chart 19, *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Fifteenth Report, FCC 11-103 (June 27, 2011).

degree of competition among cellular carriers. For the elasticity of demand, which increases minutes, I make two estimates. First, I estimate the arc elasticity from the experience of the price decrease observed during 1996-2008, which I discussed above.²⁰ I estimate the price elasticity to be -1.05. This estimate implies that if the usage price decreases by 1% usage will increase by 1.05%. My other estimate of the usage elasticity arises from a regression log of minutes per month regressed on log price as well as an income variable or a time trend. Here I also used data over the 1993-2008 period. I calculate an elasticity estimate, which is very similar to the other estimate of -0.952 (t-statistic = 7.41). Thus, I find very similar estimates.

23. Using my assumption of full pass-through and the elasticity estimates along with the subscription elasticity of Hausman (1997), I find that consumer surplus increases by \$1.05 per month or \$12.60 per year per cellular subscriber.²¹ Using the estimate of 302 million cellular subscribers in 2010, I estimate the aggregate amount of consumer welfare gain is \$3.82 billion per year. Thus, I find a significant gain in consumer welfare from the proposed Commission policy for wireless intercarrier compensation rate reductions.

24. I now do a similar calculation for the change in consumer welfare from wireline long distance usage from a change in intercarrier compensation rates. I again assume full pass-through given the findings of Beard *et al.* (2005) and Aron (2010), which I discussed above. From industry sources, I estimate that the average cost of intercarrier compensation payments is \$1.50 per month per wireline long distance user, and that the ARPU for long distance service is

²⁰ The arc elasticity is estimated as the percentage change in quantity divided by the percentage change in price over the period.

²¹ See J. Hausman, "Valuation and the Effect of Regulation on New Services in Telecommunications," *Brookings Papers on Economic Activity: Microeconomics*, 10, 1997, for the subscription elasticity estimate; and "Wireless Quick Facts," http://www.ctia.org/media/industry_info/index.cfm/AID/10323.

approximately \$9 per month. Minutes of use per month in 2007 were, on average, 136.5 minutes.²² For the usage elasticity I use an estimate from the economic literature of -0.72.²³ I estimate the increase in consumer surplus to be \$3.64 per month or \$43.71 per year. Based on the number of 2010 wireline subscribers I find that the change in Commission policy would lead to a gain in consumer welfare of about \$4.96 billion per year.²⁴ Thus the total gain for both wireless and wireline usage is \$8.77 billion per year. This gain of almost \$9 billion per year for U.S. consumers demonstrates the potential importance of the Commission adopting a regulatory policy where intercarrier rates are low (allowing carriers to recover costs primarily from end-users, not implicit subsidies from other carriers) and the removal of the current policy distortion occurs.²⁵

25. The above estimates are “static estimates” in the sense that I estimate increases in usage that arise from lower prices. Even larger effects would arise from gains on a dynamic basis. Indeed, dynamic gains from new products or service that result from cost reductions (such as significant intercarrier compensation cost reductions) are typically significantly larger than

²² See Table 2.6, “Statistics of Communications Common Carriers,” FCC, http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-301505A1.pdf, 2006/2007 edition.

²³ This is the “Taylor estimate” which was found approximately in many studies of the long distance industry. See, e.g., W. Taylor and L.D. Taylor, “Postdivestiture Long-Distance Competition in the United States,” *American Economic Review*, 83, 1993.

²⁴ See FCC, “Local Telephone Competition: Status as of June, 30, 2010,” http://fjallfoss.fcc.gov/edocs_public/attachmatch/DOC-305297A1.pdf (Mar. 2011).

²⁵ These wireline consumer welfare gains (but not the gains on the wireless side) would be reduced to the extent wireline providers increase end-user prices to make up for lost intercarrier revenue. However, in at least a substantial portion of the country, competitive pressures would likely constrain many firms from increasing end-user rates by amounts equal to the lost intercarrier compensation revenue. Moreover, as discussed below, the *dynamic* consumer welfare gains associated with the greater pricing efficiency can be expected to be substantial – possibly greater than the static gain calculated above.

static gains in consumer welfare as my academic research has demonstrated.²⁶ While it is difficult to predict successful new services, I consider two new applications which might well be successful new applications. The first potential application is “voice-to-text” emails, or “text-to-voice” emails.²⁷ Subscribers may prefer one type of email over the other type of email depending on their circumstances. While driving an automobile, for example, a person cannot use text emails, but the use of voice emails may be acceptable, especially for non-complicated subjects. Also, a person may prefer to respond to text emails on a smartphone using voice emails which would then be delivered as a voice email and could be changed to a text email if the receiver wanted to do so. Another potential application is to use voice as means of personal authentication for use in financial applications.²⁸ The ability to recognize a “voice print” potentially offers greater security than the use of a password or PIN number, which can be “hacked” with sufficient computer time in some cases. By asking a person to say a random chosen password word the ability to bypass a security system becomes much more difficult.

26. Decreased input costs can make a new service possible which will satisfy consumer demand. For example, reduced long distance costs led to cellular service plans that eliminated out of region long distance charges. These new plans were very popular with consumers and are now chosen by nearly all post-paid cellular customers.

²⁶ See, e.g., J. Hausman, “Mobile Telephone,” in M. Cave et al. eds., Handbook of Telecommunications Economics, 2002. There I estimated that cell phones as a new product in 1999 I estimate that cellular telephone as a new product led to a consumer welfare gain of \$111 billion per year.

²⁷ These services have recently begun to be offered. See, e.g., “Google voice: Text message to email,” <http://www.google.com/support/voice/bin/answer.py?hl=en&answer=160203>.

²⁸ See, e.g., “How Biometrics Works: Voiceprints,” <http://science.howstuffworks.com/biometrics3.htm>.

27. To demonstrate how new applications can lead to significant gains in consumer welfare, I assume a yearly revenue average of \$36 per subscriber (\$3 per month) for each of these applications, and a take-up rate of 25%. I assume an elasticity of -1.2 and estimate a conservative lower bound consumer surplus amount. For just one new application, such as the voice-to-text and reverse email, I find the gain in consumer surplus to be \$1.3 billion per year.²⁹ Consumers benefit from these services, which is demonstrated by their willingness to purchase the services with their new features. Thus, dynamic efficiency gains from innovation that leads to successful new products and services typically creates large gains in consumer surplus and economic efficiency as academic research has demonstrated.

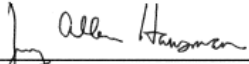
IV. Conclusion

28. The Commission should reform the intercarrier compensation regime and establish low, near zero intercarrier compensation rates for all traffic. The Commission followed that approach in the recent past with wireless traffic, and that led to significant gains in consumer welfare and economic efficiency. Technology is changing again as carriers switch from circuit-switched technology to wireless and VoIP services. The Commission should once again align rates more closely with costs by setting intercarrier compensation rates to near zero. My estimates here demonstrate significant gains in consumer welfare for both wireless users and wireline users – which is especially important as an increasing proportion of households use only wireless. Thus, a policy that encourages the transition to next generation technology and greater use of VoIP will create significant welfare gains for consumers and efficiency gains for the U.S. economy.

²⁹ There would also be a significant gain in producer surplus here as well. Thus the gain in economic efficiency would be significantly larger.

This concludes my paper. I declare under penalty of perjury that, to the best of my knowledge, the foregoing is true and correct.

Date: July 25, 2011



Jerry Allen Hausman

Exhibit A

JERRY A. HAUSMAN

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D. Phil. 1973 (Ph.D)

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BROWN UNIVERSITY

A.B. (Summa Cum Laude), 1968

THESIS: "A Theoretical and Empirical Study of Vintage Investment and Production in Great Britain,"
Oxford University, 1973.

FELLOWSHIPS, HONORS AND AWARDS:

Phi Beta Kappa

Marshall Scholar at Oxford, 1970-1972

Scholarship at Nuffield College, Oxford, 1971-1972

Fellow, Econometric Society, 1979

Frisch Medal of the Econometric Society, 1980

Fisher-Schultz Lecture for the Econometric Society, 1982

John Bates Clark Award of the American Economic Association, 1985

Smith Lectures, Brigham Young University 1986

Jacob Marschak Lecture for the Econometric Society, 1988

Hooker Lectures, Macmaster University 1989

Fellow, National Academy of Social Insurance, 1990

American Academy of Arts and Sciences, 1991

Fellow, Journal of Econometrics, 1998

Shann Memorial Lecture for the Australian Economics Society, 2003

Cenmap International Fellow, University College London, 2004

Honorary Professor, Xiamen University, 2005

Biennial Medal of the Modeling and Simulation Society of Australia and New Zealand, 2005

Fellow, Modeling and Simulation Society of Australia and New Zealand, 2005

Condliffe Memorial Lecture, University of Canterbury, NZ, 2005

Keynote Lecture, Far East Meetings of Econometric Society, Beijing 2006

Keynote Speaker, ACCC Conference, Australia, 2006

Keynote Speaker, Panel Data Conference, Xiamen China, 2007

Keynote Speaker, FTC/Northwestern Antitrust Conference, 2008

Honorary Fellow, Nuffield College, Oxford University, 2008

Journal of Applied Econometrics Lectures, 2009

Leigh Lecture, Washington State University, 2009

MIT UEA Teaching Award, 2009

Journal of Financial Economics "All Star Paper", 2009

Honorary Advisory Board, Chang Mai University, Thailand, 2009-

Honorary Degree, Chang Mai University, Thailand 2010

Keynote Speaker, UC Berkeley Conference on Mobile Telecommunications, 2010

Keynote Speaker, Xiamen University (China) conference on 30 Years of Specification Tests, 2010

Tinbergen Lectures, Tinbergen Institute, Netherlands, 2011

EMPLOYMENT:

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
 1992- John and Jennie S. MacDonald Professor
 1979- Professor, Department of Economics
 1976-79 Associate Professor, Department of Economics
 1973-76 Assistant Professor, Department of Economics
 1972-73 Visiting Scholar, Department of Economics

VISITING APPOINTMENTS:

1986-87 Visiting Professor, Harvard Business School
 1982-83 Visiting Professor, Harvard University Department of Economics
 Visiting Positions: University of Washington, Australian National University, Ecole Normale Supérieure, Oxford University, University of Sydney, Wuhan University, Beijing University, University of Western Australia, University College London, Uppsala University, Xiamen University, Sorbonne

U.S. ARMY, ANCHORAGE, ALASKA

1968-70 Corps of Engineers

PROFESSIONAL ACTIVITIES:

Associate Editor, Bell Journal of Economics, 1974-1983
 Associate Editor, Rand Journal of Economics, 1984-1988
 Associate Editor, Econometrica, 1978-1987
 Reviewer, Mathematical Reviews, 1978-1980
 American Editor, Review of Economic Studies, 1979-82
 Associate Editor, Journal of Public Economics, 1982-1998
 Associate Editor, Journal of Applied Econometrics, 1985-1993, 2009-
 Advisory Editor, Economics Research Network and Social Science Research , 1998-
 Advisory Editor, Journal of Sports Economics, 1999-
 Advisory Editor, Journal of Competition Law & Economics, 2004-
 Advisory Editor, Journal of Applied Economics, 2005-
 Member of MIT Center for Energy and Environmental Policy Research, 1973-1995
 Research Associate, National Bureau of Economic Research, 1979-
 Member, American Statistical Association Committee on Energy Statistics, 1981-1984
 Special Witness (Master) for the Honorable John R. Bartels, U.S. District Court for the Eastern District of New York in Carter vs. Newsday, Inc., 1981-82
 Member of Governor's Advisory Council (Massachusetts) for Revenue and Taxation, 1984-1992
 Member, Committee on National Statistics, 1985-1990
 Member, National Academy of Social Insurance, 1990-
 Member, Committee to Revise U.S. Trade Statistics 1990-1992
 Director, MIT Telecommunications Economics Research Program, 1988-
 Board of Directors, Theseus Institute, France Telecom University, 1988-1995
 Member, Conference on Income and Wealth, National Bureau of Economic Research, 1992-
 Member, Committee on the Future of Boston, 1998
 Member, GAO Expert Panel to advise USDA on Econometric Models of Cattle Prices, 2001-2
 Advisor, China Ministry of Information on Telecommunications Regulation, 2002-2006
 Member, FTC Panel on Merger Evaluation, 2005

PUBLICATIONS:**I. Econometrics**

- "Minimum Mean Square Estimators and Robust Regression," *Oxford Bulletin of Statistics*, April 1974.
- "Minimum Distance and Maximum Likelihood Estimation of Structural Models in Econometrics," delivered at the *European Econometric Congress, Grenoble: August 1974*.
- "Full-Information Instrumental Variable Estimation of Simultaneous Equation Models," *Annals of Economic and Social Measurement*, vol. 3, 641-652, October 1974.
- "Estimation and Inference in Nonlinear Structural Models," *Annals of Economic and Social Measurement*, 653-665, October 1975. (with E. Berndt, R.E. Hall, and B.H. Hall)
- "An Instrumental Variable Approach to Full-Information Estimators in Linear and Certain Nonlinear Econometric Models," *Econometrica*, Vol. 43(4), 727-738, 1975.
- "Simultaneous Equations with Errors in Variables," *Journal of Econometrics* 5, 1977.
- "Social Experimentation, Truncated Distributions, and Efficient Estimation," *Econometrica*, Vol. 45(4), 919-938, 1977. (with D. Wise)
- "A Conditional Probit Model for Qualitative Choice," with D. Wise, *Econometrica*, Vol. 46(2), 403-426, 1978.
- "Specification Tests in Econometrics," *Econometrica*, vol. 46(6), 1273-1291, 1978.
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- "Attrition Bias in Experimental and Panel Data: The Gary Income Maintenance Experiment," with D. Wise, *Econometrica*, vol. 47(2), 455-473, 1979.
- "Missing Data and Self Selection in Large Panels," *Annales de l'INSEE*, April 1978. (with Z. Griliches and B.H. Hall)
- "Stratification on Endogenous Variables and Estimation," in *The Analysis of Discrete Economic Data*, ed. C. Manski and D. McFadden, MIT Press, 1981. (with D. Wise)
- "Les modèles probit de choix qualitatifs," ("Alternative Conditional Probit Specifications for qualitative Choice.") (English Version), September 1977; EPRI report on discrete choice models, *Cahiers du Seminar d'Econometrie*, 1980.
- "The Econometrics of Labor Supply on Convex Budget Sets," *Economics Letters*, vol. 3(2), 171-174, 1979.
- "Panel Data and Unobservable Individual Effects," *Econometrica*, vol. 49(6), 1377-1398, 1981. (with W. Taylor)
- "Comparing Specification Tests and Classical Tests," *Economics Letters*, 1981.
- "The Effect of Time on Economic Experiments," invited paper at Fifth World Econometrics Conference, August 1980; in *Advances in Econometrics*, ed. W. Hildebrand, Cambridge University Press, 1982.
- "Sample Design Considerations for the Vermont TOD Use Survey," with John Trimble, *Journal of Public Use Data*, 9, 1981.
- "Identification in Simultaneous Equations Systems with Covariance Restrictions: An Instrumental Variables

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- "Stochastic Problems in the Simulation of Labor Supply," in *Tax Simulation Models*, ed. M. Feldstein, University of Chicago Press, 1983.
- "The Design and Analysis of Social and Economic Experiments," invited paper for 43rd International Statistical Institute Meeting, 1981; *Review of the ISI*.
- "Specification and Estimation of Simultaneous Equation Models," in *Handbook of Econometrics*, ed. Z. Griliches and M. Intriligator, vol. 1, 1983.
- "Full-Information Estimators," in Kotz-Johnson, *Encyclopedia of Statistical Science*, vol. 3, 1983
- "Instrumental Variable Estimation," in Kotz-Johnson, *Encyclopedia of Statistical Science*, vol. 4, 1984
- "Specification Tests for the Multinomial Logit Model," with D. McFadden, *Econometrica*, vol. 52(5), 1219-1240. 1984.
- "Econometric Models for Count Data with an Application to the Patents R&D Relationship," *Econometrica*, vol. 52(4), 909-938. 1984.(with Z. Griliches and B. Hall)
- "The Econometrics of Nonlinear Budget Sets," Fisher-Shultz lecture for the Econometric Society, Dublin: 1982; *Econometrica*, vol. 53(6) 1255-1282, 1985.
- "The J-Test as a Hausman Specification Test," with H. Pesaran, *Economic Letters*, 1983.
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- "Testing with Heteroskedasticity and Many Instruments", with W. Newey T. Woutersen, J. Chao, and N. Swanson, January 2011
- "A Bayesian Semi-Parametric Duration Model with Unobserved Heterogeneity", with M. Burda & M. Harding,, May 2011

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III. Applied Micro Models

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Attachment 5

Legal Authority White Paper

**THE COMMISSION HAS LEGAL AUTHORITY TO IMPLEMENT
THE JOINT PROPOSED REFORM FRAMEWORK**

The Commission has ample legal authority to adopt each of the proposals in the Joint Proposed Reform Framework (“Framework”).¹

I. With respect to intercarrier compensation, the Framework proposes a multi-year transition that will conclude with a uniform default terminating rate of \$0.0007 per minute for all traffic routed to or from the PSTN, regardless of provider or technology.² The Framework also calls for a cap on originating access and other intercarrier compensation rates. The Commission has multiple, mutually reinforcing sources of legal authority on which it can rely to adopt these proposed reforms, and the Commission may find that it can put its reform efforts on the most solid footing by articulating *each* of these sources of authority.

A. The Commission can rely on its rulemaking authority to implement section 251(b)(5) to adopt a uniform default rate for all traffic routed to or from the PSTN. The Commission has previously stated that the compensation regime in section 251(b)(5) includes the transport and termination of *all* “telecommunications” involving at least one LEC and makes no distinctions based on jurisdiction or type of service. All traffic currently subject to either tariffed access charges or reciprocal compensation charges falls within section 251(b)(5), because it necessarily involves a LEC on at least one end. With respect to that traffic, the Supreme Court has made clear that the Commission “has jurisdiction to design a pricing methodology” to

¹ This white paper is a joint filing by the parties to the Framework. The signatories may have differing views on certain issues related to intercarrier compensation and universal service reform, and do not intend for this filing to alter their prior advocacy or constrain their future advocacy on these issues. Moreover, individual parties have proposed additional, in some cases complementary, theories in their separate filings that may also provide support for the Framework. This white paper should not be interpreted as a shift in the parties’ individual views regarding the scope of and constraints on the Commission’s statutory authority.

² Carriers would remain free to depart from the default rate through voluntary agreements with other carriers.

implement section 251(b)(5) and the related pricing standards in section 252(d). *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 385 (1999). Using that authority, the Commission may establish a pricing methodology that includes a uniform default rate for all traffic subject to section 251(b)(5). The Commission can also rely on that authority, along with its authority under section 251(g), to cap originating access and other intercarrier compensation rates. At the same time, the Commission can offer carriers a meaningful opportunity to recover additional compensation for the work they perform from their customers and a temporary access revenue replacement mechanism.

B. In addition to section 251(b)(5), the Commission can rely on sections 201 and 332 to assert authority over all traffic on the PSTN, including traffic currently subject to state-law intercarrier compensation regimes. Specifically, the Commission may rely on the “impossibility,” or “inseverability,” doctrine to extend its authority under sections 201 and 332 to all traffic routed to or from the PSTN — including Voice-over-Internet Protocol (“VoIP”) traffic, which the Commission can conclude is all interstate for jurisdictional purposes — by adopting rules that preempt, prospectively, state intercarrier compensation rules that differ from the uniform federal regime, whether with respect to originating or terminating traffic.

Indeed, the Commission can rely on dramatic marketplace and technological changes in recent years to find that *all* traffic routed to or from the PSTN — whether TDM, wireless, or VoIP — is now inseverable. As consumers migrate in ever greater numbers to flat-rated, any-distance plans that include location-independent features — such as number assignment, multi-phone call-answering options, and mobility — the Commission may determine that carriers will find it more and more difficult to identify different types of traffic reliably, let alone to jurisdictionalize the traffic for billing purposes. The Commission may further find that some

any-distance, any-phone services are *intended* to transcend legacy geographic and service distinctions, and their providers have no business incentive to invest in the capabilities to align these new services with legacy jurisdictional distinctions. The Commission has applied the inseverability doctrine in numerous cases where, as it may find here, it was not practical, in light of economic and operational considerations, to separate a service into “interstate” and “intrastate” components, even though it might have been *technically* possible to do so.

Moreover, the Commission can find that the continued application of state intercarrier compensation rules that differ from the uniform federal regime would pose a direct obstacle to the accomplishment of federal policy. For more than a decade, the Commission has expressed a goal of adopting a *uniform* intercarrier compensation regime, and it can find that any state regulations that depart from the uniform federal regime would necessarily stand as an obstacle to the Commission’s policy goals. Genuine intercarrier compensation reform cannot succeed for *any* class of traffic — including traffic over which the Commission has undisputed jurisdiction — unless the reforms encompass *every* class of traffic. Otherwise, artificial rate disparities for functionally substitutable services will continue to destabilize the industry as a whole. In addition, the Commission has authority to cap originating access and other intercarrier compensation rates to ensure that those other rates are not used to evade the uniform default rate for terminating traffic. The Commission can find that preemption of state intercarrier compensation regimes that vary from the uniform federal regime is therefore necessary to prevent methodological inconsistencies from thwarting the Commission’s lawful exercise of its authority over interstate communications.

C. The Commission can select \$0.0007 per minute as the ultimate, uniform default rate for all traffic, regardless of provider or technology. As a result of prior Commission orders,

that is *already* the default rate for a substantial portion of the traffic that carriers exchange today, such as wireless and ISP-bound traffic. A rate of \$0.0007 per minute is also consistent with the rates contained in some recently negotiated agreements between ILECs and CLECs. Courts and the Commission have repeatedly recognized that rates negotiated through voluntary, arms-length negotiations are just and reasonable rates.

D. The Commission also has authority to adopt reasonable interim rules to ease the transition to a unified intercarrier compensation regime. Under the Framework, intrastate access, interstate access, and reciprocal compensation rates will be reduced gradually over a period of years to the end-state default rate of \$0.0007 per minute. A similar transition will apply to VoIP traffic routed to or from the PSTN, although such traffic initially will be subject either to interstate access or reciprocal compensation rates only. The rates applicable to VoIP traffic, as with all other traffic on the PSTN, will decline and converge over time to \$0.0007 per minute.

In a variety of different contexts — including intercarrier compensation — the Commission has found it appropriate to adopt transitional mechanisms that advance its policy goals, while avoiding a “flash cut” to the end state of the new policy regime. Courts have afforded the Commission substantial leeway in crafting transitional mechanisms, especially where — as here — the Commission adopts bright-line transitional rules that strike a careful balance between the efficiency gains of the new policy and the costs of upsetting settled expectations.

E. The Framework proposes two key access recovery opportunities for carriers that may face reduced access revenues as a result of decreases in intercarrier compensation. First, carriers will be permitted — but not required — to increase their subscriber line charges (“SLC”) by up to \$0.75 per year. The Commission clearly has authority to take this step. Indeed, the

Commission raised the SLC cap in connection with its prior reforms of the interexchange marketplace, and the courts affirmed that decision. The same would be true here, where the increased SLC cap would also be designed to allow carriers to *replace* lost intercarrier compensation revenue. Courts would grant substantial deference to the Commission's determination that the benefits of this policy would far outweigh its costs.

Second, the Framework proposes creation of a temporary "access replacement mechanism" that will provide universal service funding for carriers that face a net loss of intercarrier compensation revenue as a result of the Framework and are unable to recoup that revenue through SLC increases. This mechanism, too, is well within the Commission's discretion. The Commission has taken similar steps in the past, and this access replacement mechanism is consistent with the statutory mandate that universal service support be "explicit." 47 U.S.C. § 254(e). The access replacement mechanism is also well within the Commission's authority, discussed above, to adopt reasonable transitional measures to avoid undue disruption resulting from new policies.

II. The Commission has ample statutory authority to support broadband service with universal service funding. Section 254(b) — which lists the principles upon which the Commission "shall" base its universal service policies — provides that "[a]ccess to *advanced* telecommunications and *information services* should be provided in all regions of the Nation," and that "[c]onsumers in all regions of the Nation, . . . should have access to telecommunications and *information services*, including interexchange services and *advanced* telecommunications and *information services*, that are reasonably comparable to those services provided in urban areas[.]" 47 U.S.C. § 254(b)(2)-(3) (emphases added). Section 706 of the Telecommunications Act of 1996 ("1996 Act") further provides that the Commission "shall encourage the deployment

on a reasonable and timely basis of advanced telecommunications capability to all Americans” in areas where broadband is not currently being deployed. *Id.* § 1302(a). The American Recovery and Reinvestment Act of 2009 also mandates that the Commission “shall seek to ensure that all people of the United States have access to broadband capability.” *Id.* § 1305(k)(2).

Although certain provisions of section 254 refer to “telecommunications carriers” or “telecommunications services,” those provisions are not sensibly read to restrict the Commission’s authority to provide universal service support for broadband. Multiple other provisions of section 254 reject a static focus on legacy technologies, defining “universal service” as an “*evolving* level of telecommunications services that the Commission shall establish periodically under this section, *taking into account advances* in telecommunications *and information technologies and services.*” *Id.* § 254(c)(1) (emphases added). That interpretation is further reinforced by section 706(b), which provides that if the Commission finds that advanced telecommunications capability is not being deployed to all Americans, it “shall take immediate action to accelerate deployment of such capability” in the areas that lack access to broadband. *Id.* § 1302(b). At a minimum, there is sufficient ambiguity about the scope of section 254 that the Commission’s reasonable interpretation of that provision as encompassing broadband service would be entitled to deference from a reviewing court.

III.A. Lastly, the Commission has authority to eliminate outdated service obligations such as those imposed under the Commission’s eligible-telecommunications-carrier (“ETC”) regulations or other carrier-of-last-resort (“COLR”) rules. Going forward, state or federal service obligations must apply only to funded carriers in those areas where they receive explicit support — regardless of those carriers’ legacy regulatory status. Current federal ETC obligations, however, require designated carriers to provide supported services throughout their

service areas, *regardless* of whether they are receiving high-cost support for those services. Similarly, some states have COLR obligations that require incumbent LECs to provide service in a given area, sometimes at reduced rates. In today's dynamic marketplace, these regulations are not only unnecessary but actually *undermine* Congress's and the Commission's universal service goals by locking consumers into legacy technologies and deterring carriers from deploying broadband and IP-enabled services. Existing ETC and COLR regulations, where they apply, inefficiently skew the market and make it difficult (or even impossible) for carriers to upgrade from legacy architecture, thus diverting capital that could be used for broadband deployment. Those rules — which generally apply only to incumbent LECs — also effectively impose unfunded mandates and are inconsistent with a technologically neutral, procurement-model approach to universal service, in which the Commission would make explicit agreements with providers to serve a specific area that otherwise would not be served for a specific period of time in return for a specific amount of universal service funding.

B. The Commission plainly has authority to reform legacy ETC obligations. When it eliminates the existing high-cost universal service programs, the Commission can simultaneously eliminate any ETC obligations that require carriers to provide legacy services. On a going-forward basis, the Commission also has authority under section 214 to ensure that any mandatory service obligations apply *only* when an ETC actually receives high-cost support for a given geographic area. It is already the case today that carriers receive no federal high-cost funding in some areas, and legacy ETC obligations for those carriers in those areas should be eliminated immediately upon adoption of the Framework.

C. While many states that had COLR obligations have either eliminated or scaled them back, other states have not. The Commission can encourage states to transform their

legacy service obligations so that they promote, rather than frustrate, the Commission’s universal service goals. For the states that refuse to undertake such reforms or that fail to provide explicit universal service support that fully compensates carriers that have elected to continue satisfying the state’s service obligations, the Commission can preempt legacy service obligations as inconsistent with federal policy. The Commission can rely on two, mutually reinforcing sources of authority for such preemption.

First, the Commission can conclude that state legacy service obligations negate the Commission’s policy of ensuring that broadband is deployed throughout the nation. The Commission has preempted state law in numerous cases where it was not practical, in light of economic and operational considerations, to separate the “interstate” and “intrastate” components of a service, even though it might have been *technically* possible to do so. Here, it would be impossible to limit the detrimental effect of state service obligations to the intrastate jurisdiction alone, as such regulations also make it infeasible for carriers to deploy jurisdictionally *interstate* broadband facilities in many high-cost areas. Legacy service obligations that compel incumbents to provide service may be unfunded mandates and are flatly inconsistent with a technologically neutral, procurement-model approach to universal service.

Second, the Commission has authority under section 254(f) to preempt state legacy service obligations that are “inconsistent” with the Commission’s rules, that “burden” federal universal service mechanisms, or that are not “equitable and nondiscriminatory.” 47 U.S.C. § 254(f). State legacy service obligations satisfy each of these criteria for preemption.

I. THE COMMISSION HAS LEGAL AUTHORITY TO ADOPT A MULTI-YEAR TRANSITION THAT CONCLUDES WITH A UNIFIED DEFAULT RATE OF \$0.0007 PER MINUTE FOR ALL TRAFFIC ROUTED TO OR FROM THE PSTN

A. The Commission Has Authority Under Section 251(b)(5) To Achieve Comprehensive Intercarrier Compensation Reform

1. Section 201(b) of the Communications Act grants the Commission authority to “prescribe such rules and regulations as may be necessary in the public interest to carry out the provisions of this chapter.” 47 U.S.C. § 201(b). The Supreme Court has made clear that the Commission’s rulemaking authority under section 201(b) is *not* limited to jurisdictionally “interstate” matters, but instead extends to all “‘provisions of th[e] [1996] Act,’ which include §§ 251 and 252, added by the Telecommunications Act of 1996.” *Iowa Utils. Bd.*, 525 U.S. at 378. Under that authority, the Commission may promulgate rules adopting a uniform default rate for all traffic routed to or from the PSTN — regardless of provider or technology — that falls within the scope of section 251(b)(5).³

Section 251(b)(5) imposes on “local exchange carrier[s]” the “duty to establish reciprocal compensation arrangements for the transport and termination of telecommunications.” 47 U.S.C. § 251(b)(5). The Commission has previously concluded that this provision extends to the transport and termination of *all* “telecommunications” involving at least one LEC, and it makes no distinctions based on jurisdiction (“local,” “toll,” “interstate,” or “intrastate”) or type of service (“exchange access,” “information access,” or “exchange service”). Congress also made clear in section 251(g) that the Commission has authority to “explicitly supersede[]” existing rules governing exchange access and other intercarrier arrangements, including those governing “receipt of compensation.” *Id.* § 251(g).

³ Under the Framework, the uniform default rate would apply *only* to traffic that is routed to or from an end user on the PSTN. IP-to-IP traffic would be unregulated.

In the *ISP Remand Order*, the Commission stated that section 251(b)(5) is not limited to “local” traffic, but instead extends to “the transport and termination of *all* telecommunications exchanged with LECs.” *ISP Remand Order*⁴ ¶¶ 15-16, 34, 45 (emphasis added). The Commission has reiterated that holding several times, and its most recent order relying on this theory was upheld by the D.C. Circuit. *See Core Communications, Inc. v. FCC*, 592 F.3d 139, 143-46 (D.C. Cir.), *cert. denied*, 131 S. Ct. 597, 626 (2010).⁵ Moreover, the Commission has elected to treat intraMTA wireless traffic as part of the section 251(b)(5) regime. *See Local Competition Order*⁶ ¶¶ 1036, 1041 (bringing LEC-wireless intraMTA traffic within the section 251 framework).⁷

Furthermore, as the Commission has interpreted it, section 251(b)(5) applies not only to the exchange of traffic between two LECs (or between a LEC and a CMRS carrier), but also to the terms on which LECs receive terminating traffic from non-LECs, such as IXC. The Commission has concluded that section 251(b)(5) extends to the exchange of *any* traffic involving a LEC at one end. *See 2011 NPRM* ¶ 513; *2008 NPRM* ¶ 10; *ISP Remand Order* ¶¶ 26, 31-32. Though the *obligation* to establish reciprocal compensation arrangements for the

⁴ Order on Remand and Report and Order and Further Notice of Proposed Rulemaking, *Intercarrier Compensation for ISP-Bound Traffic*, 16 FCC Rcd 9151 (2001).

⁵ *See also, e.g.*, Order on Remand and Further Notice of Proposed Rulemaking, *Intercarrier Compensation for ISP-Bound Traffic*, 24 FCC Rcd 6475, ¶ 15 (2008) (“*2008 NPRM*”) (noting that section 251(b)(5) is broad enough to cover “the transport and termination of all telecommunications exchanged with LECs”); Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, *Developing an Unified Intercarrier Compensation Regime*, 26 FCC Rcd 4554, ¶¶ 512-515 (2011) (“*2011 NPRM*”).

⁶ First Report and Order, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 11 FCC Rcd 15499 (1996) (“*Local Competition Order*”).

⁷ As discussed further below in Section I.A.3, the Commission has authority under sections 201 and 332 over all intercarrier compensation charges imposed by wireless providers.

transport and termination of telecommunications falls on LECs, the Commission has concluded that Congress did not limit the class of potential *beneficiaries* of that obligation to other LECs.

The Commission can further conclude that the statutory structure as a whole belies the argument that Congress meant to deprive the Commission of authority to address intercarrier compensation issues for traffic that is deemed to be neither “local” (and undisputedly covered by section 251(b)(5)) nor “interstate” (and undisputedly covered by section 201(a)). Efforts to carve up the Commission’s rulemaking authority on the basis of such legacy jurisdictional categories are strikingly similar to the unavailing attacks in the 1990s on the Commission’s jurisdiction to implement sections 251 and 252 more generally. Here, as in that context, the attempt to “produce[] a most chopped-up statute” along jurisdictional lines is flawed both because it violates the statutory text and because it is “most unlikely that Congress created such a strange hodgepodge.” *Iowa Utils. Bd.*, 525 U.S. at 381 n.8. Indeed, it would have made no sense for Congress to have authorized the Commission to reform intercarrier compensation rules relating to “local” and “interstate” traffic but not the rules applicable to the one class of traffic — intrastate toll traffic — that is subject to the *highest* charges.

In sum, section 251(b)(5), as interpreted by the Commission, is broad enough to capture *all* traffic currently subject to the existing, disparate intercarrier compensation regimes, including the reciprocal compensation regime and the interstate and intrastate access regimes.

2. The Commission can find that section 251(g) provides additional support for this interpretation of section 251(b)(5). That provision *temporarily* grandfathers the pre-1996 Act rules — including rules regarding “receipt of compensation” — governing “exchange access, information access, and exchange services,” until the Commission chooses to “explicitly supersede[]” those rules “by regulation[.]” 47 U.S.C. § 251(g); *see 2008 NPRM* ¶ 16. The

Commission can conclude that there would have been no need for Congress to have preserved those legacy rules against the effects of section 251 if section 251(b)(5) did not in fact address the “receipt of compensation” for the traffic covered by that section.

Nothing in the Commission’s precedent precludes this interpretation of section 251(b)(5). Granted, in the *ISP Remand Order*, the Commission noted that services falling within the scope of section 251(g) “remain subject to Commission jurisdiction under section 201 (or, to the extent they are *intrastate* services, they remain subject to the jurisdiction of state commissions).” *ISP Remand Order* ¶ 39. But this does not foreclose the Commission from exercising jurisdiction over intrastate access charges. There is no question that section 251(g) temporarily preserves the regulatory status quo for all traffic within that provision’s scope until explicitly superseded by the Commission, “includ[ing] intrastate access services.”⁸ Indeed, “although section 251(g) does not directly refer to intrastate access charge mechanisms, it would be incongruous to conclude that Congress was concerned about the effects of potential disruption to the interstate access charge system, but had no such concerns about the effects on analogous intrastate mechanisms.” *Local Competition Order* ¶ 732. The only dispute is whether, as the Commission has proposed, it can “supersede that carve-out” by “replac[ing] intrastate access regulation with some alternative mechanism” of the Commission’s design as part of a comprehensive approach to intercarrier compensation. *2005 FNPRM* ¶ 79.

The only logical answer is yes. The sole reason that the “section 251(g) carve-out includes intrastate access services,” *id.*, is that, if it did *not* include them, section 251(b)(5) could have operated to eliminate those access charges immediately. Once the Commission removes

⁸ Further Notice of Proposed Rulemaking, *Developing a Unified Intercarrier Compensation Regime*, 20 FCC Rcd 4685, ¶ 79 (2005) (“*2005 FNPRM*”); *see also* *2011 NPRM* ¶ 514; *ISP Remand Order* ¶ 39.

this or any class of traffic from the scope of section 251(g) by superseding previous rules, that traffic becomes subject to section 251(b)(5) — as it would have been from the beginning if Congress had not temporarily grandfathered such traffic from the effects of section 251 when it enacted the 1996 Act. And because the Commission has plenary authority under *Iowa Utilities Board* to implement section 251(b)(5), it has authority to address compensation issues involving intrastate access traffic.

Section 251(g), moreover, allows the Commission to cap originating access and other intercarrier compensation rates in connection with the Framework. As the Commission has explained, although section 251(b)(5) refers only to the “transport and termination” of telecommunications, the statute does not “preclude[] [the Commission] from moving originating access charges to a new methodology.” *2011 NPRM* ¶ 517. And section 251(g) expressly authorizes “‘regulations prescribed by the Commission’ to replace the current access charge system,” which may address “originating access charges,” as well as terminating charges. *Id.*

3. Nothing in section 252 of the 1996 Act limits the Commission’s section 201(b) authority to promulgate intercarrier compensation rules that establish a uniform default rate for all traffic covered by section 251(b)(5).

Section 252 gives state commissions authority over the negotiation and arbitration of interconnection agreements. And section 252(c)(2) authorizes states to set rates in the course of interconnection agreement arbitrations “according to subsection (d) of this section.” 47 U.S.C. § 252(c)(2). But a significant amount of traffic that is covered by section 251(b)(5) is entirely outside the authority that section 252 confers on state commissions. That is so because section 252(d)(2) authorizes state commissions to review only the reciprocal compensation rates that *incumbent* LECs charge. *See id.* § 252(d)(2)(A) (“For the purposes of compliance *by an*

incumbent local exchange carrier with section 251(b)(5)”) (emphasis added). As a result, that provision does not by its terms encompass either any traffic exchanged without involvement of an incumbent LEC or any rates that non-incumbent LECs charge, even if an incumbent LEC is involved.⁹ The Commission can set a uniform default rate for all of this traffic simply by exercising its section 201(b) rulemaking authority to establish rules implementing section 251(b)(5).

For traffic that is exchanged with incumbent LECs, the Commission has *independent* authority under section 201(b) over jurisdictionally interstate traffic. Congress has explicitly given the Commission authority to ensure that rates for “interstate” communications services are “just and reasonable.” *Id.* § 201. The D.C. Circuit recently upheld the Commission’s authority under section 201 to enact compensation rules regarding interstate traffic, regardless of whether that traffic is also encompassed within section 251(b)(5). *See Core*, 592 F.3d at 143-46.¹⁰ This authority will include authority over all VoIP traffic, upon a Commission finding that all such traffic is inseverable and, therefore, interstate for jurisdictional purposes. Although the parties to the Framework have differing views about whether all VoIP traffic is currently interstate for jurisdictional purposes, all agree that the Commission can make that finding on a prospective basis.

⁹ Where no incumbent LEC is involved, the section 252 regime for the creation of interconnection agreements — and state authority as part of that regime — does not apply at all. *See* 47 U.S.C. § 252(a)(1) (providing that “an incumbent local exchange carrier may negotiate and enter into a binding agreement” with a requesting carrier “without regard to the standards set forth in” section 251(b) and (c)); *id.* § 252(b)(1) (state commissions may “arbitrate any open issues” during the period from 135 to 160 days after “an incumbent local exchange carrier receives a request for negotiation under this section”).

¹⁰ *See also* Order, *Access Charge Reform*, 12 FCC Rcd 10175, ¶ 7 (1997) (noting that “no one has questioned (or plausibly could question)” that section 201(b) provides the Commission with “authority over interstate access charges”); *2011 NPRM* ¶ 510 (noting that “reducing interstate access charges falls well within our general authority to regulate interstate access under sections 201 and 251(g)”).

The Commission also has independent authority over intercarrier compensation charges imposed by wireless carriers. *See* 47 U.S.C. § 332(c).¹¹ Indeed, because Congress has expressly preempted state “regulat[ion] [of] . . . the rates charged by any commercial mobile service,” the Commission can assert *exclusive* authority to regulate all intercarrier compensation charges imposed by wireless providers. *Iowa Utils. Bd. v. FCC*, 120 F.3d 753, 800 n.21 (8th Cir. 1997) (subsequent history omitted).

As to the remaining traffic exchanged with incumbent LECs, nothing in section 252(d)(2)(A) limits the Commission’s authority to promulgate rules establishing a uniform default rate for this traffic. Section 252(d)(2) provides that, in determining whether an incumbent LEC has complied with section 251(b)(5), “a State commission shall not consider the terms and conditions for reciprocal compensation to be just and reasonable” unless those terms “provide for the mutual and reciprocal recovery by each carrier of costs associated with the transport and termination” of telecommunications traffic and are a “reasonable approximation of the additional costs of terminating such calls.” 47 U.S.C. § 252(d)(2)(A). As the Supreme Court has explained, “[n]one of the statutory provisions” in section 252 regarding state commission review of interconnection agreements “displaces the Commission’s general rulemaking authority” or “preclude[s] the Commission’s issuance of rules to guide the state-commission judgments.” *Iowa Utils. Bd.*, 525 U.S. at 385. Indeed, the Court expressly held that “the

¹¹ *See also* Declaratory Ruling, *Petitions of Sprint PCS and AT&T Corp. for Declaratory Ruling Regarding CMRS Access Charges*, 17 FCC Rcd 13192, ¶¶ 8-12 (2002); Second Report and Order, *Implementation of Sections 3(n) and 332 of the Communications Act*, 9 FCC Rcd 1411, ¶ 179 (1994).

Commission has jurisdiction to design a pricing methodology” to implement the pricing standards in section 252(d). *Id.*¹²

The Eighth Circuit has endorsed a relatively narrow interpretation of the Supreme Court’s decision in *Iowa Utilities Board*, concluding that the Commission’s role is limited to resolving “‘general methodological issues’” and that “[s]etting specific prices goes beyond the [Commission’s] authority to design a pricing methodology.” *Iowa Utils. Bd. v. FCC*, 219 F.3d 744, 757 (8th Cir. 2000) (citation omitted), *aff’d in part, rev’d, in part*, 535 U.S. 467 (2002). But nothing in the Supreme Court’s decision suggests that “design[ing] a pricing methodology” is at the *outer limit* of the Commission’s authority; that decision is equally open to the interpretation that adopting a pricing methodology, such as the TELRIC rules, is comfortably within the Commission’s authority under section 201(b) to adopt rules to implement section 252(d)(2), rather than at the outer limits of that authority. *See* 525 U.S. at 385 (finding that “the Commission has jurisdiction to design a pricing methodology”).

In any event, even if the Commission were limited to adopting a “pricing methodology” — and nothing in the Supreme Court’s *Iowa Utilities Board* decision suggests that this is the case — it could adopt a “methodology” that caps reciprocal compensation rates at the uniform

¹² The Commission has previously exercised this authority to design a pricing methodology to implement the standards in section 252(d). In the *Local Competition Order*, the Commission held that “states that elect to set rates through a cost study *must* use the forward-looking economic cost-based methodology” known as “TELRIC.” *Local Competition Order* ¶¶ 1054-1058. In adopting the Framework, the Commission would need to revisit (and reverse) that determination. Nothing in the statute compelled the Commission to adopt the TELRIC methodology for § 252(d)(2). And the Commission could justify its departure from its initial interpretation of this section with the following explanation: Not only is the TELRIC methodology incompatible with the clearly demonstrated need for a uniform intercarrier compensation regime, but also the Commission has moved away from TELRIC pricing for most traffic subject to § 251(b)(5), through its adoption of the mirroring rule. *See FCC v. Fox Television Stations, Inc.*, 129 S. Ct. 1800, 1811 (2009) (holding that an agency may change its interpretation of a statute if it “display[s] awareness that it *is* changing position,” and “show[s] that there are good reasons for the new policy”).

federal default rate in the absence of a voluntary agreement, and instructs carriers to recover, through a temporary access recovery mechanism and from their customers, any additional compensation for the work they perform. Indeed, the statute expressly provides that “arrangements that afford the mutual recovery of costs” for purposes of section 252(d)(2) include “bill-and-keep arrangements,” 47 U.S.C. § 252(d)(2)(B)(i), under which “each carrier recovers its costs from its own end-users” rather than from the other carrier, *WorldCom, Inc. v. FCC*, 288 F.3d 429, 431 (D.C. Cir. 2002). Because an arrangement in which a carrier recovers *all* of its costs from its customers and *none* from other carriers could satisfy section 252(d)(2), it follows that section 252(d)(2) can be satisfied through an arrangement where a carrier recovers *some* costs from the originating carriers and some from its customers and other methods.

Lastly, even for the traffic to which it applies, section 252(d)(2)(A) establishes limits only on “[s]tate commission” review of the reciprocal compensation provisions of interconnection agreements, *id.* § 252(d)(2)(A), without purporting to limit the *Commission’s* authority over reciprocal compensation rates. In contrast, the following subsection prohibits certain types of rate-regulation proceedings and applies to both “the Commission [and] any State commission,” *id.* § 252(d)(2)(B)(ii). Therefore, as the Commission argued to the D.C. Circuit, the Commission could conclude that section 252(d)(2)(A) does not constrain *its* rulemaking authority even with respect to rates incumbent LECs charge for jurisdictionally intrastate traffic.¹³

¹³ Br. of FCC at 33-34, *Core Communications, Inc. v. FCC*, Nos. 08-1365, 09-1046, 08-1393, 09-1044 (D.C. Cir. filed June 19, 2009).

B. The Commission Has Authority To Find That All Traffic Is Now “Inseverable” and To Preempt State Intercarrier Compensation Regimes That Differ from the Uniform Federal Regime Because They Undermine Important Federal Policies

As explained above, the Commission can establish a uniform default rate for all traffic by promulgating rules implementing the reciprocal compensation obligation in section 251(b)(5) and the related pricing standards in section 252(d)(2). The Commission also has authority to establish a uniform default rate for all traffic, regardless of provider or technology, pursuant to its authority under sections 201 and 332 and the “inseverability” doctrine. As explained above, even without that doctrine, the Commission has authority under those provisions to establish a uniform default rate for jurisdictionally interstate traffic — which includes all VoIP traffic upon a Commission finding that all such traffic is inseverable and, therefore, interstate for jurisdictional purposes — and intercarrier compensation charges imposed by wireless carriers. *See supra* Section I.A.3. The Commission can use that authority to extend the uniform default rate to jurisdictionally intrastate traffic by relying on dramatic marketplace and technological changes in recent years to find that *all* traffic routed to or from the PSTN is now inseverable as a practical matter. The Commission may also use that authority to cap originating access and other intercarrier compensation rates. Any state intercarrier compensation rules that differ from the uniform federal regime would necessarily conflict with federal policy and pose a direct obstacle to the Commission’s longstanding goals of eliminating inefficient arbitrage opportunities and promoting broadband deployment. The Commission’s authority under sections 201 and 332 reinforces its authority under section 251(b)(5) to establish a pricing regime that includes a uniform, default rate for all traffic routed to or from the PSTN.

1. *The Commission Has Authority under the Communications Act To Regulate Intrastate Services When They Are Inseverable from Interstate Services and the Application of State Law Would Interfere with the Commission's Policy Objectives*

Although section 2(b) of the Communications Act, 47 U.S.C. § 152(b), generally prohibits the Commission from exercising “jurisdiction with respect to . . . charges, classifications, practices, services, facilities, or regulations for or in connection with intrastate communications,” it is well established that the “inseverability” or “impossibility” doctrine authorizes the Commission to regulate nominally “intrastate” traffic or services when it is “impossible or impractical to separate the service’s intrastate from interstate components and the state regulation of the intrastate component interferes with valid federal rules or policies.” *Vonage Order*¹⁴ ¶ 17 (citing *Louisiana Pub. Serv. Comm’n v. FCC*, 476 U.S. 355, 376 n.4 (1986)); see also *Public Serv. Comm’n of Md. v. FCC*, 909 F.2d 1510, 1514-15 (D.C. Cir. 1990).¹⁵

The standard for applying the inseverability doctrine is not whether it is *technically* impossible to single out intrastate communications. See *Vonage Order* ¶¶ 23, 29, 37. The dispositive question, instead, is whether, in light of “practical and economic considerations,” interstate traffic can be separated from intrastate traffic and afforded differential treatment. *California v. FCC*, 39 F.3d 919, 932-33 (9th Cir. 1994). That focus on economic and practical considerations reflects the longstanding rule that carriers are not required to expend resources or modify their services “merely to provide state commissions with an intrastate communication

¹⁴ Memorandum Opinion and Order, *Vonage Holdings Corp. Petition for Declaratory Ruling Concerning an Order of the Minn. Pub. Utils. Comm’n*, 19 FCC Rcd 22404 (2004).

¹⁵ In *Louisiana PSC*, the Court held that it was feasible, as an accounting matter, for the federal government and the states to prescribe different depreciation rates for the same equipment. See 476 U.S. at 358-59, 375-76. As explained below, however, the criteria for application of the inseverability doctrine are plainly met here.

they can then regulate.” *Minnesota Pub. Utils. Comm’n v. FCC*, 483 F.3d 570, 578 (8th Cir. 2007).¹⁶

The Commission has applied the inseverability doctrine in numerous cases where it was not practical, in light of economic and operational considerations, to separate the interstate and intrastate services, even though it might have been *technically* possible to do so. For example, the Ninth Circuit upheld the Commission’s finding in the *Computer Inquiry* orders that jurisdictionally mixed information services were inseverably interstate, based on the Commission’s determination “that it would not be economically feasible for the BOCs to offer the interstate portion of such services on an integrated basis while maintaining separate facilities and personnel for the intrastate portion.” *California*, 39 F.3d at 932. Even if it were technically “possible to comply with both the states’ and the [Commission]’s regulations,” the court deferred to the Commission’s finding that it was “highly unlikely, due to practical and economic considerations,” that such a jurisdictional division would succeed. *Id.* at 933. The Fourth Circuit similarly upheld the Commission’s decision applying the inseverability doctrine to consumer premises equipment on the ground that it was “not feasible, *as a matter of economics and practicality of operation*,” to have separate state and federal regulation of the CPE, despite the fact that the CPE in question was used 97 to 98 percent of the time for “intrastate” calls.¹⁷

¹⁶ See also *Vonage Order* ¶ 25 (holding that “to require Vonage to attempt to incorporate geographic ‘end-point’ identification capabilities into its service solely to facilitate the use of an end-to-end approach would serve no legitimate policy purpose” and would unreasonably “mold[] this new service into the same old familiar shape”).

¹⁷ *North Carolina Utils. Comm’n v. FCC*, 537 F.2d 787, 791 (4th Cir. 1976) (“*NCUC I*”) (emphasis added); see *id.* at 796 (Widener, J., dissenting); *North Carolina Utils. Comm’n v. FCC*, 552 F.2d 1036, 1044, 1046 (4th Cir. 1977) (“*NCUC II*”).

2. *The Commission Has Authority To Find That Dramatic Technological and Marketplace Changes Have Rendered All Traffic Inseverable as a Practical Matter*

As explained above, the Commission has authority over jurisdictionally interstate traffic and the intercarrier compensation charges imposed by wireless carriers. *See* 47 U.S.C. §§ 201, 332(c); *2011 NPRM* ¶¶ 510-511. Parties to the Framework have taken different positions on whether all VoIP traffic is currently interstate for jurisdictional purposes — and, therefore, within the Commission’s authority under section 201 — and no party intends to change its position by joining this filing. Regardless of what the Commission has done in the past, however, it clearly has authority to hold that, going forward, all VoIP traffic is inseverable and, therefore, interstate for jurisdictional purposes. Indeed, the Commission has authority to hold — in light of dramatic technological and marketplace changes in recent years — that *all* traffic routed to or from the PSTN is now inseverable as a practical matter.

a. The Commission can hold that the communications landscape has changed dramatically in the past decade and now bears little resemblance to the world Congress faced when it enacted the 1996 Act.

The Commission can find that today, an ever greater proportion of calls are in IP format, as millions of consumers and businesses opt for IP-based offerings. As of December 2010, there were nearly 24 million cable voice subscribers — who generally receive VoIP service — a 22 percent increase since 2008, and a more-than-fourfold increase since 2005.¹⁸ Over-the-top VoIP providers are also an increasingly attractive option for consumers; Vonage has approximately 2.5 million subscribers, and consumers can use services such as Skype and Google to make VoIP-

¹⁸ *See* NCTA, *Industry Data: Operating Metrics (as of Dec. 2010)*, available at <http://www.ncta.com/Statistics.aspx> (citing SNL Kagan); NCTA, *Cable Phone Customers 1998-2010*, available at <http://www.ncta.com/Stats/CablePhoneSubscribers.aspx> (citing SNL Kagan).

originated calls to any wireless or wireline phone.¹⁹ Incumbent LECs, too, are rapidly deploying innovative new VoIP services.

The Commission can find that VoIP services increasingly upend the traditional idea of location-based and device-based phone numbers, including by enabling customers to have a single number — one of their choice and that may have no connection to their residence or billing address — that reaches them, no matter where they are and what phone (or computer or other device) they are using. These services also offer integrated packages of features and capabilities, allowing customers to perform multiple communications simultaneously while also accessing information on the Internet.²⁰

In addition, consumers continue to flock to wireless services. As of December 2010, 96 percent of U.S. consumers had a wireless phone, and more than 29 percent of households had completely “cut the cord.”²¹ Consumers now spend 2.2 trillion minutes per year on their wireless phones, which far exceeds the number of wireline minutes.²² The Commission can find that, like VoIP services, wireless services break the connection between telephone numbers and geography, through the mobility inherent in such services. Wireless providers are also deploying

¹⁹ See Comments of Verizon and Verizon Wireless, *Connect America Fund*, WC Dkt. Nos. 10-90 *et al.*, at 7-8 (FCC Apr. 1, 2011) (citing statistics about the tremendous growth of both interconnected and over-the-top VoIP services); see also Comments of AT&T on NBP PN #25, *A National Broadband Plan for Our Future*, GN Dkt. Nos. 09-51 *et al.*, at 9 (FCC Dec. 22, 2009) (“AT&T PN #25 Comments”).

²⁰ See *Vonage Order* ¶ 25 n.93 (noting that “integrated capabilities and features” are “inherent features of most, if not all, IP-based services”); *id.* ¶ 32.

²¹ See Stephen Blumberg & Julian Luke, National Center for Health Statistics, *Wireless Substitution: Early Release of Estimates from the National Health Interview Survey* (June 8, 2011), at 6, available at <http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201106.pdf>; CTIA, *Wireless Quick Facts*, available at <http://www.ctia.org/advocacy/research/index.cfm/aid/10323>.

²² See *id.*; see also Robert Roche and Lesley O’Neill, *CTIA’s Wireless Industry Indices, Semi-Annual Data Survey Results*, Chart 58 and Chart 59 (May 2009).

third- and fourth-generation wireless networks, which give consumers the ability — much like IP-based wireline services — to engage in simultaneous voice and data communications.

The flip side of this massive growth in intermodal services is a comparably large decline in traditional wireline services.²³ Between 2000 and 2008, the number of ILEC end-user switched access lines fell by 34 percent, and total ILEC interstate switched access minutes declined by a staggering 44 percent.²⁴ Traditional wireline carriers are also responding to competition from wireless and VoIP providers by offering their own geography-independent services, including any-distance, unlimited calling plans. Wireline carriers are also introducing facilities-based VoIP services, which will offer customers an integrated, any-distance communications service.²⁵

b. The Commission can hold that, as consumers increasingly adopt any-distance, geography-independent services, it will become even more difficult for carriers to separate traffic into legacy intrastate and interstate categories for intercarrier compensation purposes.

Carriers historically relied on telephone numbers to determine the jurisdiction of wireline calls, not because telephone numbers determine jurisdiction, but because they were an easily ascertained and reliable proxy for the end points of a call. Customers had little, if any, choice

²³ See generally AT&T PN #25 Comments at 8-13 (explaining that “[i]n view of the range of alternatives for voice service — many of which offer distinct advantages over traditional landline service — it is not surprising that the POTS business model is in a precipitous decline”); see also 2011 NPRM ¶ 503 (noting the decline in ILEC switched access minutes as a result of “competition and technological advances and the proliferation of alternate means of communicating”).

²⁴ See FCC Industry Analysis and Technology Division, *Trends in Telephone Service* Table 10.1 (Sept. 2010) (showing 315.7 billion ILEC interstate switched access minutes in 2008 and 566.9 billion minutes in 2000); *id.* Table 8.1 (showing 179.6 million ILEC end-user switched access lines in June 2000 and 118.5 million lines in December 2008).

²⁵ See FiOS Digital Voice, available at <http://www22.verizon.com/residential/homephone/fiosdigitalvoice> (offering VoIP service that has “brilliant clarity” and is “completely integrated” with Verizon’s FiOS service).

over the area code and first three digits of their telephone numbers (the “NPA-NXX”), and carriers routinely assigned customers telephone numbers with NPA-NXXs associated with the particular switch that provided dial-tone service to those customers. Telephone numbers were never a perfect proxy for geography,²⁶ but only minor tweaks to federal and state access charge regimes were required to account for discrepancies.

The advent of location-independent services — such as wireless services and nomadic VoIP — has challenged carriers’ ability to use telephone numbers as a “proxy for . . . subscribers’ geographic locations when making or receiving calls” — that is, for the end points of a voice communication. *Vonage Order* ¶ 26. Those services allow customers to make or receive calls from the same telephone number from anywhere, worldwide. The availability of “pick-your-own-area-code” services — which may also provide mobility — further divorces a customer’s assigned telephone number from her physical location. Moreover, “find-me/follow-me” and “simultaneous ring” services offered by VoIP providers enable a call to a single number to ring on multiple phones (or other devices, such as computers and tablets) in multiple locations. And the intermodal porting of telephone numbers that were previously associated with a traditional wireline service adds an additional layer of complexity, as some of the numbers in a block of 1,000 or 10,000 numbers can now make or receive calls from anywhere, not just from the wire center where those numbers are traditionally homed. These services may stretch or, in

²⁶ See Memorandum Opinion and Order, *Access Billing Requirements for Joint Service Provision*, 4 FCC Rcd 7183, ¶¶ 21-26 (1989); Memorandum Opinion and Order, *Amendment of Part 69 of the Commission’s Rules*, 102 F.C.C.2d 1243, ¶ 28 (1985); Memorandum Opinion and Order, *MTS and WATS Market Structure*, 97 F.C.C.2d 834, ¶ 108 (1984).

some cases, break the connection between the assigned telephone number and the geographic end points of a call, as they were designed to do.²⁷

Even when telephone numbers still provide a meaningful proxy for geography, they may not provide a complete picture of the geography of an IP-based communication for jurisdictional purposes. Consumers are now using innovative, “multifaceted” IP-based services — including wireless services — that offer a “suite of integrated capabilities and features” that allows them “to perform different types of communications simultaneously.” *Id.* ¶¶ 7, 23, 25, 32. Such services have challenged the traditional notion that a communication only has two end points. Indeed, certain VoIP services are designed “to *overcome* geography, not track it.” *Id.* ¶ 25 (emphasis added).

In light of marketplace developments, the Commission can find that certain providers of any-distance, location-independent services have no *service-driven* incentive to develop the capabilities to enable innovative new services to be shoehorned into legacy regulatory classifications. It can also follow this finding with an affirmation of the Eighth Circuit’s conclusion that service providers are not required to “develop a mechanism for distinguishing between interstate and intrastate communications merely to provide state commissions with an intrastate communication they can then regulate.” *Minnesota PUC*, 483 F.3d at 578; *see also Vonage Order* ¶¶ 25, 29 (noting that it would “serve no legitimate policy purpose” to “impose substantial costs” on a nomadic VoIP provider to make specified changes simply “for certain

²⁷ *See, e.g., Vonage Order* ¶¶ 18, 23 (noting that there is no “practical means” or “plausible approach to separating” Vonage calls “into interstate and intrastate components for purposes of enabling dual federal and state regulations to coexist”); *Local Competition Order* ¶ 1044 (noting that, in light of the inherent mobility of wireless services, it is often “difficult for CMRS providers to determine, in real time . . . the customer’s specific geographic location” for ratemaking purposes).

regulatory purposes,” where they have “no service-driven reason to incorporate such capabilit[ies] into [their] operations”).

c. In sum, the Commission can hold that, for *all* types of traffic, the practical and economic impediments to ensuring that a carrier applies its intrastate charges only to intrastate traffic provide the Commission with ample grounds for finding that *all* traffic routed to or from the PSTN is now inseverable as a practical matter.²⁸

3. *Continued State Regulation of Intercarrier Compensation Would Pose a Direct Obstacle to the Accomplishment of the Commission’s Longstanding Policy Goals*

It is equally clear that state intercarrier compensation regimes that vary from the uniform, federal regime would pose a direct obstacle to the strong federal policy in favor of *uniform* intercarrier compensation rates. Genuine intercarrier compensation reform cannot succeed for *any* class of traffic — including traffic over which the Commission has undisputed jurisdiction — unless the reforms encompass *every* class of traffic. Otherwise, artificial rate disparities for functionally substitutable services will continue to destabilize the industry as a whole. Preemption of state intercarrier compensation regimes that vary from the uniform federal regime is therefore necessary to prevent methodological inconsistencies from “thwart[ing] the lawful exercise of federal authority over interstate communications.” *Vonage Order* ¶ 15; *see also National Ass’n of Regulatory Util. Comm’rs v. FCC*, 880 F.2d 422, 429 (D.C. Cir. 1989) (“*NARUC III*”).

a. As shown above, the Commission has jurisdiction under sections 201 and 332(c) over a significant portion of traffic routed to or from the PSTN. *See* 47 U.S.C. §§ 201, 332(c). In the exercise of that federal-law authority, the Commission has long had a “goal” of

²⁸ That finding would apply with equal force to originating access, terminating access, and other intercarrier compensation rates.

“develop[ing] a uniform regime for all forms of intercarrier compensation.”²⁹ That uniformity is “competitively and technologically neutral” and “is consistent with the pro-competitive deregulatory environment envisioned by the 1996 Act,” which requires “minimal regulatory intervention and enforcement.” *2005 FNPRM* ¶ 33. The D.C. Circuit, moreover, has upheld a Commission decision that was based on these “‘policies favoring a unified compensation regime,’” explaining that it is “not for th[e] court[s] to second-guess the conclusion reached by the agency that Congress has entrusted with balancing those policies.” *In re Core Communications, Inc.*, 455 F.3d 267, 283 (D.C. Cir. 2006) (citation omitted).

The Commission has also recognized the importance of ensuring that “carriers have [the] incentive to compete . . . on [the] basis of quality and efficiency,” rather than “on the basis of their ability to shift costs to other carriers,” which creates “troubling distortion[s] that prevent[] market forces from distributing limited investment resources to their most efficient uses.” *ISP Remand Order* ¶ 4. These distortions “create[] incentives for inefficient entry” by carriers intent on taking advantage of “opportunit[ies] for regulatory arbitrage,” rather than engaging in the kind of “telephone competition[] [that] Congress had intended to facilitate with the 1996 Act.” *Id.* ¶ 21. And the Commission, applying section 706 of the 1996 Act, has recognized the importance of “promot[ing] the timely and comprehensive deployment of broadband facilities” in areas where broadband is not currently being deployed.³⁰

²⁹ Notice of Proposed Rulemaking, *Developing a Unified Intercarrier Compensation Regime*, 16 FCC Rcd 9610, ¶ 97 (2001) (“*2001 NPRM*”); *see also 2005 FNPRM* ¶ 33 (expressing the Commission’s goal of “a regime that would apply [intercarrier compensation] rates in a uniform manner for all traffic”); *2011 NPRM* ¶ 495 (noting that a “fundamental problem[]” with the current ICC regime is that “rates vary based on the type of provider and where the call originated, even though the function of originating or terminating the call does not change”).

³⁰ Memorandum Opinion and Order, *Petition for Forbearance of the Verizon Telephone Companies*, 19 FCC Rcd 21496, ¶¶ 6, 34 (2004); *see also FCC, Connecting America: The*

Any situation with non-uniform intercarrier compensation rates — such as myriad rates for intrastate traffic and an otherwise-uniform federal default rate for all other traffic — would pose a significant obstacle to those federal policies. The Commission has emphasized that the current “patchwork of rates and regulations is inefficient” and “wasteful,” because, where “opportunities for regulatory arbitrage” exist, “parties will revise or rearrange their transactions to exploit a more advantageous regulatory treatment, even though such actions, in the absence of regulation, would be viewed as costly or inefficient.”³¹ In other words, “regulatory uncertainty . . . as well as a lack of uniform rates, may be hindering investment and the introduction of new IP-based services and products.” *National Broadband Plan* at 142.³²

If existing state regimes for intrastate traffic were to remain alongside a new federal compensation regime, carriers would have the same incentives as today to engage in traffic pumping schemes to charge higher intrastate rates, rather than the new, lower federal default rate. *See 2011 NPRM* ¶ 40 (noting that “wasteful attempts to game the system will likely persist as long as ICC rates remain disparate and well above carriers’ incremental costs of terminating a call”). And carriers would continue to have the incentive both to disguise traffic that remains subject to charges for intrastate traffic in an effort to pay only the lower federal default rate, and to claim an entitlement to payment at higher intrastate rates for traffic that is legitimately subject

National Broadband Plan at 142 (“*National Broadband Plan*”) (noting that “[t]he current per-minute ICC system was never designed to promote deployment of broadband networks”).

³¹ *2011 NPRM* ¶¶ 502, 504; *2001 NPRM* ¶¶ 11-12; *see also National Broadband Plan* at 142 (noting that, as a result of ICC-related “arbitrage opportunit[ies],” “investment is directed to free conference calling and similar schemes for adult entertainment that ultimately cost consumers money, rather than to other, more productive endeavors” such as broadband deployment) (footnote omitted); *2005 FNPRM* ¶ 3 (noting that the availability of different rates for different types of traffic “create[s] both opportunities for regulatory arbitrage and incentives for inefficient investment and deployment decisions”).

³² To be sure, some carriers are deploying broadband in high-cost areas despite the uncertainty and lack of uniformity that characterize the current intercarrier compensation regime.

to the new federal default rate. Arbitrage efforts and outright fraud, designed to exploit the distinctions in the federal and state regimes, would necessarily undermine the uniform federal intercarrier compensation regime and the federal policies favoring efficiency, economic competition, and broadband deployment that a uniform intercarrier compensation regime furthers.

In addition, if state regimes were to permit carriers to increase originating access and other intercarrier compensation rates above their current levels, carriers could use those rates to evade the Commission's uniform default rule for terminating traffic. That is, carriers could seek to use those other rates to recoup revenues lost through the Commission's reduction of terminating rates to a uniform, default level, thereby undermining key benefits of the reduction of those rates. When the Commission capped rates for certain dial-up ISP traffic, it similarly adopted additional rules — the growth cap and the new markets rule — to ensure that its “efforts to limit intercarrier compensation” were “not undermine[d].” *ISP Remand Order* ¶ 86.

b. In light of these clear and longstanding federal policies, the Commission plainly has authority to preempt state intercarrier compensation rules that differ from the uniform federal default rate.

Under the Supremacy Clause of the Constitution, state law is preempted where, as here, it “stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress” or a federal agency exercising delegated authority. *Hines v. Davidowitz*, 312 U.S. 52, 67 (1941); *United States v. Locke*, 529 U.S. 89, 109-10 (2000) (“In this context, [federal agency] regulations are to be given pre-emptive effect over conflicting state laws.”). The Supreme Court has expressly found, in the context of this Commission's regulations, that “[t]he statutorily

authorized regulations of an agency will pre-empt any state or local law that conflicts with such regulations or frustrates the purposes thereof.” *City of New York v. FCC*, 486 U.S. 57, 64 (1988).

The Commission’s determination that disparate state regimes pose an obstacle to federal intercarrier compensation policies and the new federal default rate is entitled, at a minimum, to “some weight.” *Geier v. American Honda Motor Co.*, 529 U.S. 861, 883 (2000). Where Congress has delegated to an agency the “authority to implement the statute; the subject matter is technical; and the relevant history and background are complex and extensive” — all factors present in the context of intercarrier compensation — the agency’s view that state law would “‘stan[d] as an obstacle to the accomplishment and execution’” of the agency’s “own regulation and its objectives” “make[s] a difference,” as the agency is “‘uniquely qualified’ to comprehend the likely impact of state requirements.” *Id.* (citations omitted).

In an analogous situation, the D.C. Circuit recognized the Commission’s authority to preempt state laws that pose an obstacle to federal policies or, in the court’s words, “negate[] the exercise by the [Commission] of its own lawful authority over interstate communication.” *NARUC III*, 880 F.2d at 429. In that case, the Commission had adopted the policy of “encourag[ing] competition in the provision, installation, and maintenance of inside wiring,” which the court found to be “consistent with the goals of the Act.” *Id.* The court recognized further that “certain otherwise legitimate state actions regulating intrastate telephone service could interfere with the Commission’s achievement of its valid goal of providing interstate telephone users with the benefits of a free market and free choice in the installation and maintenance of inside wiring.” *Id.* at 430. The Commission therefore had authority to “take appropriate measures in pursuit of that goal,” including issuance of a “valid . . . preemption

order” with respect to state regulation that “would necessarily thwart or impede the operation of a free market.” *Id.*³³

c. Nothing in section 2(b) prevents the Commission from preempting state regimes where the Commission finds that the “state’s exercise of [such] authority” would “negate[] the exercise by the [Commission] of its own lawful authority” over intercarrier compensation for “interstate communication[s],” and would frustrate important federal policy objectives with respect to competition and efficient investment in new technologies and services.³⁴ More generally, because conflict preemption “turns on the identification of [an] ‘actual conflict,’” it operates even in the face of a savings provision, such as section 2(b), because courts “can assume that Congress or an agency ordinarily would not intend to permit a significant conflict.” *Geier*, 529 U.S. at 884-85 (citation omitted); *see also Crosby v. National Foreign Trade Council*, 530 U.S. 363, 387-88 (2000) (“[T]he existence of conflict cognizable under the Supremacy Clause does not depend on express congressional recognition that federal and state law may conflict.”).

In any event, the scope of section 2(b) has shrunk significantly, and it will continue to shrink as dramatic technological and marketplace changes increasingly blur the distinction between “interstate” and “intrastate” traffic. As explained above, a large and rapidly increasing percentage of voice calls are now made using all-distance services that challenge legacy jurisdictional distinctions.

³³ Although the D.C. Circuit found that the Commission had not fully explained the basis for its preemption decision, *see NARUC III*, 880 F.2d at 431, the Commission did so soon thereafter, and no party sought review of the Commission’s more detailed explanation of its decision to preempt state regulation regarding inside wiring, *see Third Report and Order, Detariffing the Installation and Maintenance of Inside Wiring*, 7 FCC Rcd 1334 (1992).

³⁴ *NARUC III*, 880 F.2d at 429; *see PSC of Md.*, 909 F.2d at 1514-15 (rejecting similar argument based on section 2(b)).

d. Recent Supreme Court and court of appeals decisions buttress the Commission's authority to preempt state regulations that pose an obstacle to the strong federal policy in favor of uniform intercarrier compensation rates, and they confirm that a Commission decision preempting state authority over intercarrier compensation rates would be upheld on review.

In *AT&T Mobility LLC v. Concepcion*, 131 S. Ct. 1740, 1753 (2011), the Supreme Court held that the “‘liberal federal policy’” in favor of arbitration could preempt even general provisions of state law that “‘stand[] as an obstacle to the accomplishment and execution’” of a federal policy. *Id.* at 1749, 1753 (citations omitted). Like the Communications Act, the Federal Arbitration Act reserved some role for the states, by preserving state-law contract defenses “as exist at law or in equity for the revocation of any contract.” 9 U.S.C. § 2. The Court nonetheless found the state law at issue to be preempted because it “interfere[d] with fundamental attributes” of the federal policy and “create[d] a scheme inconsistent” with that policy. *Concepcion*, 131 S.Ct. at 1748. Preserving state regulation of intercarrier compensation rates for “intrastate” traffic would similarly create a regime “inconsistent” with the “fundamental attributes” of a *uniform* intercarrier compensation system, thus hindering the Commission's longstanding goals of eliminating arbitrage opportunities and promoting broadband deployment.

In *PLIVA, Inc. v. Mensing*, 131 S. Ct. 2567, 2577 (2011), the Supreme Court found state common-law claims against generic drug manufacturers to be preempted because it was “‘impossible . . . to comply with both state and federal requirements.’” (Citation omitted.) The Court noted that “[i]t was not lawful under federal law for the Manufacturers to do what state law required of them,” because the tort claims sought to require stronger warnings that would have been *prohibited* by federal law. *Id.* The same would be true if state commissions set rates higher than the uniform federal default rate. In such circumstances, federal law would *forbid*

conduct that state law *required* — namely, charging more than the uniform federal rate — and the higher state rates would accordingly be preempted.

In *Farina v. Nokia Inc.*, 625 F.3d 97 (3d Cir. 2010), *cert. pending*, the Third Circuit held that state common-law claims alleging harm from radio frequency emissions posed an obstacle to the Commission’s regulation of wireless services and were therefore preempted. When an agency is charged with “balancing competing objectives,” it has authority “to use its reasoned judgment to weigh the relevant considerations and determine how best to prioritize between these objectives.” *Id.* at 123. Legal standards that “vary from state to state” would allow each state to “re-balanc[e]” those considerations, and would “eradicate[e] the uniformity necessary to regulating the wireless network.” *Id.* at 123-26. The Commission’s rules regarding intercarrier compensation similarly require a balancing of multiple policy goals — including promoting broadband deployment, reducing implicit support systems, and eliminating arbitrage opportunities — and any state attempt to impose a different regime would necessarily involve “re-balancing” those factors in a different way, in conflict with the Commission’s reasoned policy judgments.

In *Whistler Investments, Inc. v. Depository Trust and Clearing Corp.*, 539 F.3d 1159 (9th Cir. 2008), the Ninth Circuit noted that Section 17A of the Exchange Act was enacted to “replac[e] an inefficient and outmoded system of clearing agencies,” and the Securities and Exchange Commission was given authority “to regulate and control a *national system* for clearing and settling securities transactions.” *Id.* at 1166-67 (emphasis added).³⁵ Because the SEC had specifically approved certain procedures for settling securities transactions, any state-

³⁵ See also *Chae v. SLM Corp.*, 593 F.3d 936, 945 (9th Cir. 2010) (holding that state-law claims challenging the terms of federal student loans posed an obstacle to federal policy because “the possibility of similar claims being asserted under varying state laws in each of the fifty states . . . would impair and threaten the efficacy of the federal lending effort for students”).

law claims challenging those procedures conflicted with federal law and were thus preempted. *See id.* at 1166-68. The Framework’s intercarrier compensation reforms also involve “replacing an inefficient and outmoded” system with a “more modern and efficient” regulatory scheme, and any continued state regulation of intercarrier compensation rates would only undermine the uniformity that is essential to the achievement of the Commission’s longstanding policy goals.

* * *

In sum, both criteria for application of the inseverability doctrine are easily satisfied here. The Commission can find that dramatic marketplace and technological changes have both blurred the lines between “interstate” and “intrastate” traffic, and it is no longer practical to distinguish between such traffic and afford it different treatment for pricing and billing purposes. Any state attempts to regulate the “intrastate” component of such traffic would inevitably interfere with the accomplishment of the Commission’s longstanding policy objectives with respect to intercarrier compensation. The Commission may thus adopt a uniform default rate for *all* traffic routed on the PSTN and, in turn, preempt any state regimes that vary from the uniform federal scheme.

C. The Commission Has Authority To Select \$0.0007 Per Minute as the Uniform Default Rate

1. Selecting \$0.0007 per minute as the uniform default rate for all traffic routed to or from the PSTN would clearly be reasonable. As a result of the Commission’s “mirroring” rule, that is *already* the default rate for a substantial portion of the traffic that carriers exchange today (such as wireless and ISP-bound traffic). *See ISP Remand Order* ¶ 89. When the Commission adopted that rate in the *ISP Remand Order*, it drew upon some then-recently negotiated interconnection agreements, which showed a “downward trend in intercarrier compensation rates.” *Id.* ¶ 85. The \$0.0007 per minute rate is also consistent with the rates contained in

certain recently negotiated agreements between ILECs and CLECs. For example, Verizon recently entered into a commercial agreement with Bandwidth.com for the exchange of VoIP traffic at \$0.0007 per minute. *See also* Comments of Verizon and Verizon Wireless, *Developing a Unified Intercarrier Compensation Regime*, WC Dkt. Nos. 05-337 *et al.*, at 49-50 (FCC Nov. 26, 2008) (noting that Verizon and Verizon Wireless have entered into agreements with a number of carriers — including pre-merger AT&T, Level 3, Comcast, and at least 25 CLECs — to exchange traffic at or below the \$0.0007 per minute rate).

As the Commission has recognized, evidence that “carriers have agreed to rates” for intercarrier compensation through voluntary, arms-length negotiations is substantial evidence that those rates are just and reasonable, *ISP Remand Order* ¶ 85, and would thus satisfy both section 201(b) and, consistent with the discussion in section I.A.3 above, the pricing standards in section 252(d)(2). The Commission has also emphasized more generally that rates set through market-based negotiations are just and reasonable rates. *See, e.g., ACS Anchorage Forbearance Order*³⁶ ¶¶ 39-40 & n.136 (finding that “commercially negotiated rates” provide “just and reasonable prices”).³⁷ Similarly, the Commission has resolved “historically vexing issues” involving “interstate access reform” by adopting a negotiated agreement reached by a coalition of different providers that “negotiated with each other in good faith and fashioned a reasonable compromise that . . . addresses their competing interests.”³⁸

³⁶ Memorandum Opinion and Order, *Petition of ACS of Anchorage, Inc., for Forbearance from Sections 251(c)(3) and 252(d)(1)*, 22 FCC Rcd 1958 (2007) (“*ACS Anchorage Forbearance Order*”).

³⁷ *See also* Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, 18 FCC Rcd 16978, ¶ 664 (2003) (finding that “arms-length agreements” demonstrate that the rate is “just and reasonable”).

³⁸ Sixth Report and Order, *Access Charge Reform*, 15 FCC Rcd 12962, ¶¶ 1-2, 48 (2000) (“*CALLS Order*”).

Courts have similarly held that, in competitive markets, the Commission may “conclude that market forces generally will keep prices at a reasonable level.” *Illinois Pub. Telecomms. Ass’n v. FCC*, 117 F.3d 555, 562 (D.C. Cir. 1997).³⁹ The Supreme Court recently reaffirmed that the *Mobile-Sierra* doctrine — which applies to the Communications Act⁴⁰ — requires an agency to “presume that the rate set out in a freely negotiated . . . contract meets the ‘just and reasonable’ requirement imposed by law.” *Morgan Stanley Capital Group Inc. v. Public Util. Dist. No. 1 of Snohomish Cnty.*, 554 U.S. 527, 530 (2008).

2. Adopting a uniform default rate of \$0.0007 per minute for all traffic, regardless of provider or technology, would be well supported by the Commission’s prior treatment of wireless providers. In 1996, wireless was still emerging as a relatively new technology with great promise. In implementing the 1996 Act, the Commission chose *not* to saddle wireless carriers with the costs of the existing intercarrier compensation system. Instead, the Commission decided that all calls between wireless carriers and LECs that originate and terminate in the same MTA — broad areas that cover large swaths of one or more states⁴¹ — would be subject to the new, lower reciprocal compensation rates rather than the higher tariffed access charge rates that applied to wireline calls that cross traditional exchange and state boundaries. *See Local Competition Order* ¶ 1036; 47 C.F.R. § 51.701(b)(2). Because the majority of wireless traffic involves intraMTA calls, this decision significantly insulated wireless carriers from the inefficiencies and implicit support systems that plague the legacy intercarrier compensation regime.

³⁹ *See also Elizabethtown Gas Co. v. FERC*, 10 F.3d 866, 870 (D.C. Cir. 1993) (holding that an agency “may rely upon market-based prices . . . to assure a ‘just and reasonable’ result”).

⁴⁰ *See, e.g., Western Union Tel. Co. v. FCC*, 815 F.2d 1495, 1501 (D.C. Cir. 1987).

⁴¹ FCC, The Major Trading Areas (MTAs), *available at* <http://wireless.fcc.gov/auctions/data/maps/mta.pdf>.

In 2001, the Commission’s “‘mirroring’ rule” further reduced the rates paid by wireless carriers for intraMTA calls. Under the mirroring rule, incumbent LECs that took advantage of the Commission’s rate caps on dial-up ISP traffic — as many of them did shortly after the release of the *ISP Remand Order* — were required to offer to apply those same rates to intraMTA traffic exchanged with wireless carriers. *See ISP Remand Order* ¶ 89. The wireless carriers uniformly accepted that offer, and the majority of intraMTA traffic has now been exchanged for years at rates at or below \$0.0007 per minute.

D. The Commission Has Authority To Adopt Reasonable Interim Rules To Ease the Transition to a Unified Intercarrier Compensation Regime

A critical aspect of the Framework is the transitional mechanism from the current, badly broken intercarrier compensation regime to a uniform default rate of \$0.0007 per minute for all traffic, regardless of provider or technology. In the first stage of reform, intrastate rates will be reduced by 50 percent of the difference between intrastate and interstate rates. One year after that, all access rates will be unified at the interstate rate. In the second stage of reform, both access and reciprocal compensation rates will be phased down in a series of steps to the end-state default rate of \$0.0007 per minute.⁴²

The D.C. Circuit has recognized that the Commission must be accorded substantial leeway in crafting transitional mechanisms, as the line-drawing required in making those judgments “amount[s] to a policy decision” that the agency is uniquely equipped to make.

⁴² The Framework also proposes an interim rule under which VoIP traffic exchanged with LECs would initially be rated at either reciprocal compensation or interstate access rates, and would not be subject to intrastate access rates. The rates applicable to VoIP traffic, as with all other traffic on the PSTN, would decline and converge over time to \$0.0007 per minute. This aspect of the Framework falls within the Commission’s traditional authority, discussed in the text, to adopt interim or transitional rules; it is also supported by the potential for the Commission to find, going forward, that VoIP traffic is inseverable and, therefore, interstate for jurisdictional purposes.

PSWF Corp. v. FCC, 108 F.3d 354, 358 (D.C. Cir. 1997).⁴³ There is “no legal basis for concluding that some [other line] would clearly have been preferable,” so long as the one the agency chooses is a reasonable attempt to accommodate opposing concerns. *Id.* Indeed, the D.C. Circuit has rejected the claim that a bright-line transitional rule was arbitrary where, as here, the Commission “balanced the need to implement the new regulatory regime against the effect of upsetting . . . expectations” and “reasonably feared” that adopting a different balance “would diminish the efficiency gains expected from” its new regime. *Bachow Communications, Inc. v. FCC*, 237 F.3d 683, 686 (D.C. Cir. 2001) (affirming transitional rules for allocation of fixed wireless communications licenses).

In a variety of different contexts — including intercarrier compensation — the Commission has found it appropriate to adopt transitional mechanisms that advance its policy goals, while avoiding “a market-disruptive ‘flash cut’” to the end state of the new policy regime. *ISP Remand Order* ¶¶ 77-78 (adopting transitional mechanism that gradually lowered the intercarrier compensation rate for ISP-bound traffic over a 36-month period). Courts have repeatedly upheld the Commission’s authority in this regard. As the D.C. Circuit has explained, “[a]voidance of market disruption pending broader reforms is, of course, a standard and accepted justification for a temporary rule.” *Competitive Telecomms. Ass’n v. FCC*, 309 F.3d 8, 14 (D.C. Cir. 2002); *see also Texas Office of Pub. Util. Counsel v. FCC*, 183 F.3d 393, 437 (5th Cir. 1999) (“*TOPUC I*”) (deferring to the Commission’s “reasonable judgment about what will constitute ‘sufficient’ support during the transition period from one universal service system to another”);

⁴³ *See also Competitive Telecomms. Ass’n v. FCC*, 117 F.3d 1068, 1073-74 (8th Cir. 1997) (“Although temporary agency rules are subject to judicial review notwithstanding their transitory nature, ‘substantial deference by courts is accorded to an agency when the issue concerns interim relief.’”) (quoting *MCI Telecomms. Corp. v. FCC*, 750 F.2d 135, 140 (D.C. Cir. 1984)).

Community Television, Inc. v. FCC, 216 F.3d 1133, 1142 (D.C. Cir. 2000) (affirming transitional mechanism for migration from analog to digital television where the Commission “reasonably balanced competing demands for spectrum” and “adequately addressed the equitable concerns” of companies that would be affected by the transition).

Under this precedent, the Commission plainly has authority to set interim rates — including the interim rates that carriers could charge to terminate VoIP traffic — to establish a rational glide path from today’s fragmented intercarrier compensation regimes to a uniform default rate of \$0.0007 per minute. A transitional mechanism that gradually reduces and unifies intercarrier compensation rates over a five-year period strikes a reasonable balance between the need to eliminate wasteful arbitrage opportunities and the need to avoid making an immediate “flash cut” to the new regime.

E. The Commission Has Authority To Increase the Cap on Subscriber Line Charges and Create a Temporary Access Replacement Mechanism as Part of Its Broader Reform Efforts

The Framework proposes two key opportunities for access revenue recovery for carriers that may face reduced intercarrier compensation revenues as a result of the Framework: (1) a modest increase in the subscriber line charges (“SLCs”) that carriers may impose; and (2) a temporary access replacement mechanism for carriers that face a net loss of intercarrier compensation revenue as a result of the Framework and are unable to recoup that revenue through SLC increases. The Commission has ample legal authority to adopt each of those measures.

1. The Framework would permit — but not require — carriers to increase their SLCs by up to \$0.75 per year (or up to \$0.50 per year if they choose to avail themselves of the access replacement mechanism described below). The Commission clearly has authority to take

this step. In connection with prior reforms of the intercarrier compensation regime, the Commission has permitted carriers to increase SLCs to compensate for other lost revenue, and the courts affirmed that decision.

In the *CALLS Order*, the Commission adopted an industry-wide proposal for reform of the marketplace for interexchange services. One component of that plan was elimination of Presubscribed Interexchange Carrier Charges (“PICC”), which were fixed fees that LECs imposed on an end user’s interexchange carrier. *See CALLS Order* ¶ 19. Those charges “created market inefficiencies,” both because, in recovering such fees from end users, IXCs charged residential customers “more than the costs IXCs have incurred for providing them service,” and because the charges were “not assessed directly on consumers,” but rather were subject to averaging and mark-ups by IXCs, which prevented consumers from comparing different carriers’ prices. *Id.* To offset lost revenue from the elimination of the PICC, the Commission raised the SLC cap, relying on its authority under sections 4(i) and 201 to 205 of the Act. *Id.* ¶ 76 n.120. The Commission found that this rate restructuring “simplifies the current rate structure, moves towards cost-based rates,” “eliminat[es] some of the complexities involved in the administration of current Commission rules and provid[es] greater opportunities for pricing flexibility.” *Id.* ¶ 81.

The Fifth Circuit affirmed the *CALLS Order* in relevant part, holding that “the increase in the SLC cap represents [the Commission]’s reasoned attempt to maintain the difficult balance between the principles of ensuring affordability and encouraging competition.” *Texas Office of Pub. Util. Counsel v. FCC*, 265 F.3d 313, 322 (5th Cir. 2001) (“*TOPUC II*”). In particular, the court deferred to the Commission’s determination that the “pro-competitive benefits from the abolition of the PICC would offset any increase in the SLC.” *Id.* at 323. Indeed, because the

SLC is “imposed directly against [] consumers” — and because no carrier was *required* to charge an SLC — “competitive pressure could force ILECs to reduce the SLC through efficiency gains.” *Id.*; *see also National Ass’n of State Util. Consumer Advocates v. FCC*, 372 F.3d 454, 459-61 (D.C. Cir. 2004) (rejecting various statutory and APA challenges to the Commission’s decision to increase the SLC cap).

The same is true of an increase in the SLC cap in connection with the Framework. Like the SLC increase in the *CALLS Order*, this would not be a freestanding policy change, but would be one component of a broader intercarrier compensation reform effort. Also like the *CALLS Order*, the SLC increase would not (as some may claim) provide a windfall to carriers, but would be designed to offset other revenue that was lost as a result of the Commission’s reform efforts. Moreover, the proposal in the Framework merely involves *raising the cap* on the SLC. No carrier would be *required* to raise its rates — and in light of vigorous competition from VoIP, wireless, and cable providers, carriers may choose not to do so to the degree permitted. In sum, as the Fifth Circuit and D.C. Circuit have recognized, a modest increase in the SLC cap in connection with a broader reform effort falls comfortably within the Commission’s discretion.

2. The Commission also has authority to create a temporary access replacement mechanism (“ARM”). The ARM would provide support to carriers that face a net loss of intercarrier compensation revenue as a result of the Framework and are unable to recoup that revenue through SLC increases. The ARM is purely a transitional mechanism, and would be phased out over three years after the \$0.0007 rate is in place for all traffic.

The Commission can rely on several different sources of authority to create the ARM. At the outset, section 254(e) provides that any universal service support should be “explicit.” 47 U.S.C. § 254(e); *see also CALLS Order* ¶ 193 (noting the Commission’s “determinat[ion] that

implicit support for universal service should be identified and removed from interstate access charges, and should be provided instead through explicit support mechanisms”). A key component of the Framework is the shift from the current intercarrier compensation regime — which contains significant implicit support — to a uniform regime, combined with *explicit* universal service support for broadband deployment in areas that are not currently being served. The Fund will advance the goals of section 254 by providing temporary, explicit support for certain carriers as intercarrier compensation rates — and the accompanying implicit support — are gradually reduced.

The *CALLS Order* also offers support for the Commission’s authority to create a mechanism that offers carriers the ability to recover revenues that cannot be attained from SLC increases. In that order, the Commission — relying on section 254 of the 1996 Act — established “an explicit interstate universal service support mechanism that will provide support to replace \$650 million of annual implicit support currently collected through interstate access charges, which is being phased out as part of the *CALLS Proposal*’s common line restructuring.” *CALLS Order* ¶ 195; *id.* ¶¶ 190-192 (discussing universal service principles). The mechanism adopted in the *CALLS Order* provided additional funding to carriers only “in areas where they are unable to recover their permitted revenues from the newly revised SLCs.” *Id.* ¶ 195. Although the Fifth Circuit remanded the *CALLS Order* with respect to the *size* of the new explicit support mechanism, *see TOPUC II*, 265 F.3d at 327-28 — a size that subsequently was further justified and maintained by the Commission — no party challenged the Commission’s authority to create the mechanism in the first instance, and the Fifth Circuit did not question the

Commission’s ability to do so.⁴⁴ The ARM proposed in the Framework is actually far *narrower* than the explicit support mechanism at issue in the *CALLS Order*, both because the ARM in the Framework would be much smaller, and because it would have an automatic end date.

Finally, creation of the ARM is supported by the Commission’s well-established authority, discussed above, to create reasonable transitional mechanisms in order to avoid “flash cuts” to new policies. *See supra* Section I.D. For certain carriers, the ARM is critical to the transition from the current regime to a uniform default rate, as it will prevent sharp, immediate decreases in intercarrier compensation revenue. At the same time, however, the ARM is only a *temporary* measure that will be phased out over three years after the \$0.0007 rate is in place for all traffic. Both the size of the Fund and its duration necessarily involve line-drawing exercises — and a balancing of competing interests — that are well within the Commission’s discretion, as long as the Commission reasonably explains why it chose to draw the lines in that manner.⁴⁵ *See Bachow Communications*, 237 F.3d at 686-87 (affirming bright-line transitional rules that “balanced the need to implement the new regulatory regime against the effect of upsetting . . . expectations” where the Commission “reasonably feared” that adopting a different balance “would diminish the efficiency gains expected from” its new regime).

⁴⁴ The court remanded the *CALLS Order* for “further analysis and explanation” of why the Commission specifically chose \$650 million as the size of the Universal Service Fund. *TOPUC II*, 265 F.3d at 327-28. The court simply noted that the Commission must “provide some explanation as to why it found one study [regarding the proposed size of the fund] to be more persuasive than the other.” *Id.* On remand, the Commission again selected \$650 million as the support amount, and provided additional reasons for its decision. *See Order on Remand, Access Charge Reform*, 18 FCC Rcd 14976, ¶¶ 13-33 (2003). No party challenged that decision.

⁴⁵ In light of the *TOPUC II* decision, the Commission must exercise “independent judgment” about the size of the Fund. 265 F.3d at 328. That is, it must independently verify that the size of the transition Fund is reasonable, and may not simply “defer[] to private parties’ estimates.” *Id.*

II. THE COMMISSION HAS AMPLE AUTHORITY TO SUPPORT BROADBAND SERVICES WITH UNIVERSAL SERVICE FUNDING

The Framework calls for the creation of new universal service funding mechanisms that will support the deployment and operation of broadband infrastructure in high-cost areas. The Commission has clear authority to adopt such mechanisms. Section 254 of the 1996 Act (47 U.S.C. § 254) — interpreted in light of section 706 of the 1996 Act (*id.* § 1302) and section 6001 of the American Recovery and Reinvestment Act (*id.* § 1305) — gives the Commission direct authority to support broadband with universal service funding.

Section 254(b) directs the Commission to use federal universal service programs to promote access to information services. It mandates that “the Commission *shall* base policies for the preservation and advancement of universal service on” six principles, two of which concern access to information services. *Id.* § 254(b) (emphasis added). Specifically, section 254(b)(2) states that “[a]ccess to *advanced* telecommunications and *information services* should be provided in all regions of the Nation.” *Id.* § 254(b)(2) (emphases added). And section 254(b)(3) provides that “[c]onsumers in all regions of the Nation, . . . should have access to telecommunications and *information services*, including interexchange services and *advanced* telecommunications and *information services*, that are reasonably comparable to those services provided in urban areas[.]” *Id.* § 254(b)(3) (emphases added). These principles clearly empower the Commission to use universal service funding to support broadband. Indeed, in today’s world, “advanced telecommunications and information services” *is* broadband Internet access.

There is some tension between these principles and section 254(e), which states that “only an eligible telecommunications carrier designated under section 214(e) of this title shall be eligible to receive specific Federal universal service support.” *Id.* § 254(e). Similarly, section 254(c)(1) provides that “[u]niversal service is an evolving level of *telecommunications*

services[.]” *Id.* § 254(c)(1) (emphasis added). But these provisions are not sensibly read to bar the Commission from using universal service funding to support broadband.

To the contrary, section 254(c)(1) itself rejects a static focus on legacy technologies, defining “universal service” as an “*evolving* level of telecommunications services that the Commission shall establish periodically under this section, *taking into account advances in telecommunications and information technologies and services.*” *Id.* (emphases added). The remainder of section 254(c) further confirms that universal service can encompass broadband. Section 254(c)(2) authorizes the Commission to “modif[y] . . . the definition of the *services* that are supported by Federal universal service support mechanisms.” *Id.* § 254(c)(2) (emphasis added). This direction to “modif[y] . . . the definition” of universal service refers not to the “telecommunications services” that are to be supported, but more broadly to the “services” that are to be supported.

As the Commission explained in connection with section 254(h), which sets out the universal service framework for schools and libraries, “the varying use of the terms ‘telecommunications services’ and ‘services’ . . . suggests that the terms were used consciously to signify different meanings.”⁴⁶ There, even though section 254(h) is entitled “*Telecommunications services for certain providers,*” 47 U.S.C. § 254(h) (emphasis added), the Commission nonetheless concluded that the use of the broader term “services” in sections 254(h)(1)(B)⁴⁷ and 254(c)(3)⁴⁸ authorizes the Commission to support *non-telecommunications*

⁴⁶ Report and Order, *Federal-State Joint Board on Universal Service*, 12 FCC Rcd 8776 ¶ 439 (1997) (“*First Universal Service Order*”).

⁴⁷ 47 U.S.C. § 254(h)(1)(B) provides, in relevant part: “All *telecommunications carriers* serving a geographic area shall, upon a bona fide request for any of *its services* that are within the definition of universal service under subsection (c)(3) of this section, provide *such services* to elementary schools, secondary schools, and libraries for educational purposes at rates less than the amounts charged for *similar services* to other parties.” (Emphases added.)

services for schools and libraries. *First Universal Service Order* ¶¶ 436-439. Similarly, here, Congress’s use of the same broad term “services” in section 254(c)(2) authorizes the Commission to “modif[y] . . . the definition” of universal service to include non-telecommunications services, even though section 254(c)(1) refers to “telecommunications services.” 47 U.S.C. § 254(c)(1), (2).

At the very least, this language creates ambiguity about the reach of section 254.⁴⁹ The Fifth Circuit has applied *Chevron* deference in virtually identical circumstances. *See TOPUC I*, 183 F.3d 393. There, the court deferred to the Commission’s determination that section 254 authorizes the Commission to direct universal service funding to Internet access and other non-telecommunications services for purposes of the schools and libraries program. *Id.* at 440, 442-43. The court recognized that the statutory language points both ways, *see id.* at 440-42, but found that section 254(c)(1) “invites the FCC periodically to re-define ‘universal service’ to ‘tak[e] into account advances in telecommunications and information technologies and services.’” *Id.* at 442 (quoting 47 U.S.C. § 254(c)(1)). Other language in section 254(h) also “instructs the FCC to establish competitively neutral rules to ‘enhance . . . access to advanced telecommunications and information services.’” *Id.* (quoting 47 U.S.C. § 254(h)(2)(A)). The court held that this language made the statute “ambiguous enough to require deference under *Chevron* step-two,” and it affirmed the Commission’s decision to extend universal service support to information services in the schools and libraries program. *Id.* at 440, 442-43. Here,

⁴⁸ 47 U.S.C. § 254(c)(3) provides: “In addition to *the services* included in the definition of universal service under paragraph (1), the Commission may designate *additional services* for such support mechanisms for schools, libraries, and health care providers for the purposes of subsection (h) of this section.” (Emphases added.)

⁴⁹ Several courts have held that the Commission’s interpretation of section 254 is reviewable under *Chevron* step two. *See, e.g., Rural Cellular Ass’n v. FCC*, 588 F.3d 1095, 1101-02 (D.C. Cir. 2009); *Qwest Corp. v. FCC*, 258 F.3d 1191, 1200-02 (10th Cir. 2001).

too, sections 254(b) and 254(c)(1)-(2) create more than enough ambiguity to permit the Commission to direct universal service funding to broadband, regardless of any contrary suggestion in sections 254(c)(1) or 254(e).

Like many parts of the 1996 Act, section 254, with its apparently competing directives, is not “a model of clarity,” but instead is “a model of ambiguity or indeed even self-contradiction.” *Iowa Utils. Bd.*, 525 U.S. at 397. But that fact gives the Commission discretion to give section 254 its most rational meaning, consistent with the intentions and policy choices expressed by Congress. *See Akhtar v. Gonzales*, 450 F.3d 587, 595 (5th Cir. 2006) (deferring to agency’s interpretation of a statute that contained conflicting indications of congressional intent); *National Ass’n of Cas. & Surety Agents v. Board of Governors of the Fed. Reserve*, 856 F.2d 282, 289-90 (D.C. Cir. 1988) (deferring to agency’s “permissible reconciliation of the inherent tension of the statute”). A cramped reading of section 254 that fixates on the “telecommunications” language and ignores the “information services” language would improperly elevate the former over the latter in violation of congressional intent. It would also contradict provisions elsewhere in the 1996 Act that instruct the Commission to promote broadband and other advanced services. As the D.C. Circuit has explained, “statements of congressional policy can help delineate the contours of statutory authority,”⁵⁰ and here, at least two such statements make clear that the Commission has authority under section 254 to support information services with universal service funding.

First, section 706(a) of the 1996 Act provides that the Commission “shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all

⁵⁰ *Comcast Corp. v. FCC*, 600 F.3d 642, 654 (D.C. Cir. 2010).

Americans.” 47 U.S.C. § 1302(a).⁵¹ Section 706(b) further states that if the Commission finds that advanced telecommunications capability is not being deployed to all Americans, it “shall take immediate action to accelerate deployment of such capability” in those areas that lack access to broadband. *Id.* § 1302(b). Given the Commission’s findings regarding the obstacles to deployment of broadband in high-cost areas, section 706 supports the Commission’s authority under section 254 to fund broadband in those areas where broadband is not deployed and where it could not be economically provided without support. It would be nonsensical for Congress to direct the Commission to “take immediate action” to accelerate broadband deployment in section 706(b) while simultaneously prohibiting the Commission from funding broadband under section 254.

Second, the American Recovery and Reinvestment Act makes ubiquitous broadband deployment a key Commission goal and mandates that the Commission “shall seek to ensure that all people of the United States have access to broadband capability.” *Id.* § 1305(k)(2). It also directs the Commission to develop “a detailed strategy for achieving affordability of such service.” *Id.* § 1305(k)(2)(B). These statutory directives — which, like section 706, use mandatory “shall” language — make clear that Congress intended for the Commission to ensure that broadband service is deployed to all Americans.

In short, the Commission has ample authority under section 254 to support broadband in areas that are not currently being served. Nonetheless, to buttress its authority under that section, the Commission could forbear from sections 254(c)(1) and 254(e) or from other statutory provisions that limit universal service to “telecommunications” carriers or services. Indeed,

⁵¹ Section 706(a) does not constitute an independent grant of statutory authority. Rather, it is a “statement[] of congressional policy” that counsels in favor of a broader reading of the Commission’s authority under section 254. *Comcast*, 600 F.3d at 654.

section 706(a) of the 1996 Act expressly identifies “regulatory forbearance” as a key means of fulfilling the Commission’s obligation to ensure ubiquitous access to broadband services.⁵²

Further, the D.C. Circuit already has upheld the Commission’s use of forbearance to promote its national broadband goals. *See, e.g., Ad Hoc Telecomms. Users Comm. v. FCC*, 572 F.3d 903, 907 (D.C. Cir. 2009) (“As contemplated by § 706, the FCC has utilized forbearance from certain Title II regulations as one tool in its broadband strategy.”).

III. THE COMMISSION HAS AUTHORITY TO ELIMINATE OUTDATED SERVICE OBLIGATIONS THAT HINDER THE TRANSITION TO AN ALL-IP COMMUNICATIONS INFRASTRUCTURE

The Framework is designed to facilitate the transition from the legacy PSTN and plain-old telephone service (“POTS”) to broadband infrastructure and IP-enabled communications. But the Commission cannot effect that transition if regulators continue to impose legacy service obligations — such as ETC and COLR mandates — that effectively require incumbent carriers (and only those carriers) to continue providing service, with or without support, throughout their territories, in some cases using outdated, circuit-switched TDM technology. Service obligations such as COLR requirements, which originally were imposed on telecommunications carriers as a means of ensuring universal service in a monopoly environment, are poorly suited to today’s competitive communications ecosystem. Those obligations now *undermine* universal service by deterring carriers from deploying broadband and IP-enabled services. To achieve its broadband goals and effectively implement the Framework, the Commission can ensure that these anachronistic ETC and COLR obligations are fundamentally transformed or eliminated

⁵² 47 U.S.C. § 1302(a) (“The Commission . . . shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans . . . by utilizing, in a manner consistent with the public interest, convenience, and necessity, price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment.”).

altogether. And it can take steps to ensure that any new broadband service obligations further, rather than hinder, the Commission’s universal service goals.

A. Federal and State Legacy Service Obligations Undermine the Commission’s Broadband Universal Service Goals

Section 214(e)(1) provides that ETCs “shall, throughout the service area for which the designation is received . . . offer the services that are supported by Federal universal service support mechanisms under section 254(c)[.]” 47 U.S.C. § 214(e)(1). The Commission has interpreted section 214(e)(1) as requiring an ETC to provide supported services throughout its service area *regardless of whether the ETC is receiving any high-cost support for providing such service*.⁵³ Under this interpretation, an ETC’s obligation to “offer and advertise supported services ‘throughout the service area for which the designation is received’ . . . appl[ies] regardless of whether support is actually provided to ETCs operating within the designated area.”⁵⁴

Similarly, state public utility commissions in some cases still impose COLR obligations on incumbent LECs. These obligations generally require those carriers to provide telecommunications services to *all customers* in a given geographic area, with some exceptions, often at regulated rates.

In addition, a variety of other legacy service obligations at both the state and federal levels specify the *types* of services that carriers must offer throughout their service areas. In the

⁵³ See, e.g., *First Universal Service Order* ¶ 192 (noting that an ETC’s “service area” is the “overall area for which the carrier *may* receive support from federal universal service support mechanisms”) (emphasis added).

⁵⁴ *2011 NPRM* ¶ 88 (quoting 47 U.S.C. § 214(e)(1)); see also *Order, High-Cost Universal Service Support*, 23 FCC Rcd 8834, ¶ 29 (2008) (“The Act does not . . . require that all ETCs must receive support, but rather only that carriers meeting certain requirements be *eligible* for support,” and “designation as an ETC does not automatically entitle a carrier to receive universal service support.”).

past, certain parties have argued that some of those services could be provided only through circuit-switched, TDM technologies. For example, various states require providers to offer local dial tone service, rotary pulse dialing operability, dual-tone multi-frequency signaling, single-party service, SS7 signaling, and single-party revertive calling.⁵⁵ Similarly, the federal ETC rules require providers to offer several POTS-like features, such as access to interexchange service and access to operator and directory services, *see* 47 C.F.R. § 54.101(a), as well as functionalities that seem to assume service is provided over TDM, such as dual-tone multi-frequency signaling and single-party service, *see id.* Together, therefore, COLR and other legacy service obligations could, conceivably, preclude carriers in some areas from retiring their legacy POTS technologies. To be sure, it may be possible to satisfy regulatory service obligations with equivalent IP technology in some cases, but these archaic rules were clearly designed for different markets in a different era. The ambiguity regarding the scope of these rules itself can serve as an impediment to investing in IP infrastructure.

These service obligations made sense (if they ever did) only in the era of local exchange monopolies, when the Commission’s goal was ensuring that every consumer had access to POTS service. Today, however, these legacy obligations no longer serve their intended purpose, but instead *undermine* federal universal service policy with respect to broadband and IP-enabled services.

⁵⁵ *See, e.g.*, Ohio Rev. Code Ann. § 4927.01(A)(1) (defining “[b]asic local exchange service” to include local dial tone service); Wis. Admin. Code PSC § 160.03(2)(a)(3) (requiring rotary pulse dialing); Kan. Stat. Ann. § 66-1187(p), (q) (requiring tone dialing and SS7 signaling); Mo. Code Regs. Ann. tit. 4, § 240-32.100(2)(B) (requiring dual tone multi-frequency signaling); Mo. Code Regs. Ann. tit. 4, § 240-32.100(2)(E) (requiring “SS7 . . . or an enhanced version thereof, down to the tandem level of the switching hierarchy”); Wis. Admin. Code PSC § 160.03(2)(a)(7) (requiring “[s]ingle party revertive calling, if 2 or more pieces of customer premises equipment can be simultaneously active on the line or channel being used by the customer”).

First, in some cases these obligations may make it difficult (or even impossible) for carriers to retire the PSTN, thereby requiring certain providers to maintain legacy TDM and IP facilities when both are not required — a costly and inefficient outcome that diverts capital from broadband deployment. As discussed, some service obligations are defined by reference to a particular network architecture or presume a carrier uses TDM technology. Maintaining both circuit-switched *and* packet-switched facilities is expensive — and each dollar that a carrier is forced to invest in the former may be one fewer dollar that can be invested in deployment of next-generation broadband facilities and services. By one estimate, ILECs spent approximately \$25 billion on capital expenditures in 2008, and over fifty percent of that amount (52.2 percent) was spent on their legacy facilities.⁵⁶ In other words, much of the capital resources of some of the largest communications providers in the country is directed not towards deployment of next-generation IP infrastructure, but rather towards maintaining legacy facilities.

Second, service obligations that compel just one carrier — the ILEC — to offer service to substantially all customers in a designated service territory, frequently without any federal or state high-cost universal service support, effectively impose an unfunded mandate and are inconsistent with a procurement-model approach to universal service. If the Commission concludes, as it should, that the time has come to abolish command-and-control, public-utility-style regulation and adopt a new regulatory compact that relies on consent rather than compulsion, it will need to replace legacy service obligations with a new regulatory paradigm. Regulators should promote universal service in high-cost areas not by unilaterally imposing a duty to serve, but instead through explicit agreements with providers that agree to serve a

⁵⁶ See Robert C. Atkinson & Ivy E. Schultz, *Broadband in America: Where It Is and Where It Is Going* at 29-30 (Columbia Inst. for Tele-Info. Nov. 11, 2009), available at http://www.broadband.gov/docs/Broadband_in_America.pdf.

specific area for a specific period of time in return for a specific amount of universal service funding. Federal ETC obligations and state COLR obligations are fundamentally at odds with this efficient, technologically neutral approach to ensuring universal service.

In sum, legacy service obligations, where they apply, are inconsistent with federal universal service policy and frustrate the Commission's goal of ensuring that *all* Americans have access to broadband and IP-enabled services. Many state policymakers are likely to recognize this and conclude that they, too, have a compelling interest in eliminating outdated service obligations that impede broadband deployment in their states. However, if the states do not take steps to fundamentally reform these obligations consistent with the new federal regime, the Commission should intervene and replace them with an approach to universal service that better advances the Commission's broadband goals. For the reasons discussed in the remainder of this section, the Commission has authority to take such steps to advance federal universal service policy.

B. The Commission Has Authority To Reform Legacy ETC Obligations and Adopt Uniform Service Obligations for Recipients of Broadband Funding

The Framework calls for elimination of legacy ETC obligations at the same time the Commission eliminates its legacy, POTS-focused universal service programs. In the meantime, the Framework calls for immediately scaling back those legacy service obligations. In some areas today, the federal service obligation applies regardless of whether carriers actually receive any federal high cost support. As a first step, when adopting the Framework the Commission should make clear going forward that legacy ETC obligations only apply to carriers in areas where they actually receive federal high cost support. Moreover, though functionally equivalent IP services may suffice, it is the case today that legacy ETC obligations are based on traditional circuit-switched telecommunications technology. *See, e.g.*, 47 C.F.R. § 54.101(a) (discussing

“voice grade access to the public switched network,” “local usage,” “dual tone multi-frequency signaling,” and “single-party service.”). Those requirements, too, should be eliminated immediately.

Finally, the Framework calls for a more flexible approach to eligibility determinations for broadband funding, under which the Commission would have exclusive jurisdiction to designate eligible broadband providers and establish their service obligations. Adopting these reforms is well within the Commission’s power.

1. *The Commission Can Eliminate Legacy ETC Service Obligations When It Ceases To Provide Universal Service Support for Circuit-Switched Telecommunications Services*

The Commission has clear authority to free telecommunications carriers of their legacy ETC obligations when it eliminates its existing high-cost universal service programs. The statutory provision that imposes those obligations is section 214(e)(1), which provides that ETCs “shall, throughout the service area for which the [ETC] designation is received . . . offer *the services that are supported by Federal universal service support mechanisms* under section 254(c)[.]” 47 U.S.C. § 214(e)(1) (emphasis added). Today, ETC obligations require carriers to offer circuit-switched or equivalent telecommunications services throughout their designated service areas. But once those services are no longer “supported by Federal universal service support mechanisms,” then, under the plain language of section 214(e), service providers will have no continuing obligation under that provision to offer them.

2. *The Commission Has Authority To Eliminate Legacy ETC Obligations Immediately in Those Areas Where a Carrier Is Not Receiving Universal Service Support*

The Commission also has authority to immediately scale back legacy ETC obligations to prevent them from impeding broadband deployment. As it transitions high-cost universal service

funding from the existing mechanisms to the new broadband mechanism, the Commission can immediately modify these outdated legacy ETC obligations in two ways.

First, the Commission can reinterpret section 214(e)(1) so that an ETC has an obligation to serve a given geographic area *only* when the ETC actually receives high-cost support for that area.⁵⁷ The Commission has previously interpreted this provision as requiring an ETC to provide supported services *throughout its service area*, regardless of whether the ETC is receiving any high-cost support in that area.⁵⁸ But this is not the only permissible interpretation of the statutory language. The Commission can reinterpret it to mean that a carrier’s obligation to offer service applies only in those geographic areas where the carrier is receiving support — *i.e.*, where the services “are supported.”⁵⁹ Under this interpretation, even if an ILEC technically is an ETC for a large “service area,” its actual service obligations would be far less expansive.

Second, the Commission can direct the states to redefine the “service areas” of existing ETCs so that they include only those locations where the ETCs are receiving legacy support. Section 214(e)(5) states that an ETC’s “‘service area’ means a geographic area established by a State commission . . . for the purpose of determining universal service obligations and support mechanisms.” 47 U.S.C. § 214(e)(5). While this subsection establishes a presumption that the

⁵⁷ Again, that provision states that ETCs “shall, throughout the service area for which the designation is received . . . offer the services *that are supported by* Federal universal service support mechanisms under section 254(c)” 47 U.S.C. § 214(e)(1) (emphasis added).

⁵⁸ See Section III.A, *supra*.

⁵⁹ By contrast, where the ETC *is* receiving high-cost support, it would be required to provide the services and functionalities set forth in 47 C.F.R. § 54.101(a). Similarly, where a carrier is receiving E-rate or Rural Health Care funding, it would be required to provide the services supported by those programs to eligible customers in a manner consistent with the Commission’s rules.

“service area” for a so-called “rural” carrier is its “study area,”⁶⁰ Congress established no such presumption for a “non-rural” carrier’s service area — and thus plainly envisioned that it would be *smaller* than its study area. *See id.* Consistent with this notion, the Commission in its *First Universal Service Order* encouraged states to define small service areas when designating non-rural carriers as ETCs. *See First Universal Service Order* ¶ 116. But, despite the urging of the Commission (and the Joint Board),⁶¹ many states have designated non-rural carriers as ETCs for their entire study areas.

At the time, the Commission warned that this action might be unlawful because it would interfere with federal universal service goals.⁶² Specifically, the Commission noted that, “if a state commission adopts as a service area for its state the existing study area of a large ILEC, this action would erect significant barriers to entry” for competitive providers, undermining universal service and potentially violating section 254(f).⁶³ Here, too, excessively large service-area designations hinder federal policy — in this case, the deployment of broadband services. Accordingly, the Commission can deem those designations “inconsistent with the Commission’s rules to preserve and advance universal service,”⁶⁴ and direct the states to redefine ETC service

⁶⁰ 47 U.S.C. § 214(e)(5) (“In the case of an area served by a rural telephone company, ‘service area’ means such company’s ‘study area’ unless and until the Commission and the States, after taking into account recommendations of a Federal-State Joint Board . . . establish a different definition of service area for such company.”). Importantly, the Communications Act defines “rural” telephone companies largely in terms of their size, not their customers; larger “non-rural” companies actually serve the bulk of the nation’s rural and other high-cost lines. *See* 47 U.S.C. § 153(37) (defining “rural telephone company”).

⁶¹ *See* Recommended Decision, *Federal-State Joint Board on Universal Service*, 12 FCC Rcd 87, ¶¶ 176-177 (1996) (“*Joint Board Recommended Decision*”).

⁶² *See First Universal Service Order* ¶¶ 184-185.

⁶³ *Id.* *See also Joint Board Recommended Decision* ¶¶ 176-177 (noting that excessively large ETC service areas “could potentially violate section 254(f)” by undermining the Commission’s efforts to preserve and advance universal service).

⁶⁴ 47 U.S.C. § 254(f).

areas to encompass only those places where ETCs receive legacy high-cost universal service support.

Section 214 does give the states discretion over various aspects of the ETC designation process. But the Commission has authority to interpret the text of section 214, and to the extent that the statutory language is ambiguous, the courts must defer.⁶⁵ That deference should be especially generous in this context, because section 254 of the 1996 Act grants the Commission broad authority to implement the entire federal universal service program, of which ETC designations form only a small part. The Commission recognized as much in the *Western Wireless Order*, noting that state commissions do not “have unlimited discretion” under 214(e) to adopt policies that thwart federal universal service goals, and that to conclude otherwise would “effectively undermine[] congressional intent in adopting the universal service provisions of section 254.”⁶⁶

In any event, the Commission has authority to preempt the states’ ETC-designation decisions under the theories discussed below in Section III.C.2 insofar as they negate federal policy goals. ETC obligations can have the same effect on broadband deployment as state legacy service obligations, and when imposed in the absence of explicit universal service funding, they

⁶⁵ With respect to section 214 in particular, the Tenth Circuit has noted that “[t]he FCC’s interpretation of the Telecommunications Act’s provisions addressing state ETC designations is, of course, subject to deference.” *WWC Holding Co. v. Sopkin*, 488 F.3d 1262, 1273 (10th Cir. 2007).

⁶⁶ Declaratory Ruling, *Western Wireless Corporation Petition for Preemption*, 15 FCC Rcd 15168, ¶ 29 (2000) (“*Western Wireless Order*”) (“While Congress has given the state commissions the primary responsibility under section 214(e) to designate carriers as ETCs for universal service support, we do not believe that Congress intended for the state commissions to have unlimited discretion in formulating eligibility requirements [W]e do not believe that Congress intended to grant to the states the authority to adopt eligibility requirements that have the effect of prohibiting the provision of service in high-cost areas by non-incumbent carriers. To do so effectively undermines congressional intent in adopting the universal service provisions of section 254.”) (footnote omitted).

can constitute an unfunded mandate and are inconsistent with the procurement-model approach to universal service. Thus, the justifications discussed below for preempting legacy state service requirements also apply to states' ETC designation decisions.

3. *The Commission Has Exclusive Jurisdiction To Designate Providers Eligible for Broadband Funding*

The Commission also has authority to exercise exclusive jurisdiction in designating which providers should be eligible for support from the new broadband funding mechanisms. Nothing in the statute requires that broadband eligibility determinations be performed under the cumbersome process outlined in section 214(e), which provides for a state role. Rather, section 214(e)(2) grants state commissions authority only to “designate a *common carrier* . . . as an eligible *telecommunications carrier*.” 47 U.S.C. § 214(e)(2) (emphases added). Because broadband Internet access is an information service subject to exclusive FCC jurisdiction,⁶⁷ the Commission has authority to create a separate process for evaluating which providers of that service should be eligible for broadband funding.⁶⁸

State commissions nonetheless might assert a right to attach conditions to a provider's receipt of federal broadband support. The Commission can make clear that it will preempt such conditions. Importantly, section 2(b) does not constrain the Commission's power to preempt

⁶⁷ See, e.g., Declaratory Ruling, *Inquiry Concerning High-Speed Access to the Internet over Cable and Other Facilities*, 17 FCC Rcd 4798, ¶¶ 38-40 (2002), *aff'd in part, vacated in part*, *Brand X Internet Servs. v. FCC*, 345 F.3d 1120 (9th Cir. 2003), *rev'd*, *NCTA v. Brand X Internet Servs.*, 545 U.S. 967 (2005); Report and Order, *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, 20 FCC Rcd 14853, ¶¶ 1-3 (2005); Declaratory Ruling, *Appropriate Regulatory Treatment for Broadband Access to the Internet over Wireless Networks*, 22 FCC Rcd 5901, ¶ 2 (2007); see also Report to Congress, *Federal-State Joint Board on Universal Service*, 13 FCC Rcd 11830, ¶¶ 76-80 (1998).

⁶⁸ As the Commission has recognized, many rural LECs offer broadband transmission as a telecommunications service. 2011 NPRM ¶ 60 n.68. Thus, if the Commission relies solely on section 254 in establishing its broadband universal service funding mechanisms, states may have a role in designating these “broadband ETCs” under section 214.

state rules concerning eligibility for broadband funding. That provision limits the Commission’s jurisdiction only with respect to “*intrastate* communication service[s],”⁶⁹ and broadband Internet access is a jurisdictionally interstate service. Thus, under a traditional preemption analysis, the Commission may preempt state conditions on broadband funding to the extent that they “‘stand[] as an obstacle to the accomplishment and execution of the full purposes and objectives’” of federal universal service policy concerning broadband deployment. *Concepcion*, 131 S. Ct. at 1753 (citation omitted). Moreover, as an independent ground for preemption, the Commission may rely on section 254(f), which bars states from adopting any regulations that are “inconsistent with the Commission’s rules to preserve and advance universal service” or that “burden” federal universal service mechanisms. 47 U.S.C. § 254(f). Here, not only would additional state eligibility requirements be “inconsistent” with a federal policy not to impose such requirements, they also would “burden” federal mechanisms by deterring providers from participating in the broadband funding program and increasing the bids of the few providers willing to be subjected to those state requirements.

C. The Commission Has Authority To Ensure That State Commissions Fundamentally Transform or Eliminate Obsolete COLR and Legacy Service Obligations

As discussed above, state COLR obligations thwart the Commission’s broadband goals in essentially the same ways as federal ETC mandates. Recognizing this, many states have acknowledged that their obsolete service requirements must change in order to facilitate the transition to next-generation communications networks. Some states have eliminated their COLR and other legacy service obligations altogether,⁷⁰ and others have dramatically scaled

⁶⁹ 47 U.S.C. § 152(b)(1) (emphasis added).

⁷⁰ Florida, for example, eliminated all COLR requirements effective January 1, 2009. Likewise, for companies electing to provide retail services on a deregulated basis, South

them back.⁷¹ Many more are actively considering eliminating their existing obligations. The Commission should encourage states to transform their legacy obligations so that they promote, rather than impede, broadband deployment. However, if states fail to achieve such reforms by the time the Commission eliminates legacy ETC obligations, the Commission can preempt any remaining COLR and legacy service obligations as inconsistent with federal universal service policy.⁷²

1. State Adoption of a Procurement-Model Approach to Universal Service

The Framework proposes the following approach in order for states to retain COLR and other service obligations consistent with the Commission's universal service goals (including not

Carolina has eliminated COLR obligations except with respect to a small number of grandfathered, stand-alone residential basic POTS customers.

⁷¹ Louisiana has eliminated COLR obligations for certain telephone exchanges based on the existence of competition, and has established a procedure by which carriers may obtain relief from COLR obligations in additional exchanges based on a showing of competition. Missouri recently enacted legislation that, among other things, allows telecommunications companies to elect not to be a COLR in certain counties, thereby relieving such companies of requirements to provide or offer basic local or basic interexchange service. *See* H.R. 339, 96th Leg., 1st Sess. (Mo. 2011) (amending RSMo § 392.460(3)), *available at* <http://www.house.mo.gov/billtracking/bills111/billpdf/truly/HB0339T.PDF> (enacted June 22, 2011). North Carolina recently enacted legislation that relieved of their COLR obligations those LECs that are subject to alternative regulation. *See* S.R. 343, 2001-52 Sess. (N.C. 2011), *available at* <http://www.ncleg.net/Sessions/2011/Bills/Senate/PDF/S343v4.pdf>. Texas has enacted legislation specifying that deregulated companies and transitioning companies are not required to fulfill the obligations of a provider of last resort ("POLR"). S.R. 980, 82d Leg., Reg. Sess. (Tex. 2011), *available at* <http://www.capitol.state.tx.us/tlodocs/82R/billtext/pdf/SB00980F.pdf#navpanes=0>. And Wisconsin enacted legislation that allows ILECs to obtain waivers of their POLR obligation to make basic voice service available to all residential customers and that sunsets altogether the statute imposing POLR obligations after April 30, 2013. *See* S.R. 13, Spec. Sess., 2011 Wis. Act 22, § 117 (Wisc. 2011), *available at* <http://legis.wisconsin.gov/2011/data/acts/11Act22.pdf> (adding Wis. Stats. § 196.503).

⁷² The Commission proposed to do just that in the draft order attached as Appendix C to its November 5, 2008 Further Notice of Proposed Rulemaking. *See 2008 NPRM*, Appx. C. Specifically, the Commission's order would have required winning bidders in the auction for broadband funding to assume "all of the [COLR] obligations of the incumbent LEC for [the ILEC's] study area, whether such obligations are imposed on the LEC pursuant to state or federal law." *Id.* ¶ 39.

burdening the federal universal service support mechanisms). First, states would need to provide explicit universal service support that fully compensates carriers for the costs of complying with state-imposed service obligations. This could be accomplished only through an explicit funding mechanism and not through implicit support, such as that embedded in retail rates or intercarrier compensation. Second, states could no longer impose COLR or other service obligations on any carrier without its consent. Instead, states should enter into an express agreement with a COLR, under which that carrier would agree to serve a specific geographic area for a specific period of time in exchange for a specific amount of state universal service support. States could not unilaterally abrogate the terms of the agreement or force a carrier to bear additional obligations without its consent.

If the states were to make these reforms, their service obligations likely would not conflict with federal universal service policy. Indeed, were states to provide explicit support to offset the costs of maintaining legacy services, such funding could support dual-use facilities that also support broadband offerings. Similarly, if states were to adopt a new approach to universal service that relies on consent rather than compulsion, such a regime would avoid unfunded mandates and be consistent with the Commission's procurement-model approach to universal service.

2. *Preemption of State Legacy Service Obligations*

Although some states will reform their legacy service obligations, others will not. Where states do not modify those obligations, consistent with the approach described above, the Commission can preempt those obligations as inconsistent with federal universal service policy. The Commission can base such preemption authority on a number of independent, mutually reinforcing, grounds.

Traditional preemption analysis. The Commission has authority to preempt state legacy service obligations on the ground that they impermissibly regulate jurisdictionally mixed facilities in a manner that negates federal universal service policy.

The Commission has recognized that “requiring an incumbent to maintain two networks — one copper and one fiber — would be costly [and] possibly inefficient, and reduce the incentive for incumbents to deploy fiber facilities.” *National Broadband Plan* at 49. The Commission can now adopt a clear federal policy that encourages upgrading networks with next-generation, IP equipment and facilities. If the Commission does so, it would have a strong basis for preempting state service obligations. As numerous courts have held, the legacy POTS architecture is jurisdictionally mixed because it carries both interstate and intrastate communications.⁷³ Further, to the extent they preclude carriers from retiring their existing facilities, state service obligations are fundamentally inconsistent with a federal policy that IP networks can replace legacy facilities when the latter are no longer capable of providing the advanced services that consumers want and need. It is hornbook law that where it is *physically impossible* to implement both federal policy (retirement of legacy facilities) and state policy (continued provision of legacy facilities) with respect to facilities used indivisibly for interstate and intrastate services, federal policy must prevail despite section 2(b) of the Communications Act.⁷⁴

⁷³ See, e.g., *PSC of Md.*, 909 F.2d at 1515 (“[W]e have frequently held that services provided locally by the LECs which support access to the interstate communications network have interstate as well as intrastate aspects.”).

⁷⁴ See *Louisiana PSC*, 476 U.S. at 375-76 n.4; see also *NARUC III*, 880 F.2d at 429 (where state regulation would “negate[] the exercise by the FCC of its own lawful authority over interstate communication[s]” “state authority must yield to national imperatives”); *California*, 39 F.3d at 933 (concluding that preemption was clearly appropriate where “compliance with conflicting state and federal . . . rules would in effect be impossible”).

Along similar lines, the Commission can conclude that state legacy service obligations negate the Commission’s policy of ensuring that broadband is deployed throughout the nation. Granted, unlike with retirement of POTS facilities, it may not be *physically* impossible to achieve the goal of universal broadband deployment in the face of state COLR and other legacy service obligations. But, as discussed above, such obligations do make it *economically infeasible* for some carriers to roll out broadband service in high-cost areas. That is sufficient to justify federal preemption, despite section 2(b).⁷⁵

For example, in *California v. FCC*, the Ninth Circuit upheld the Commission’s preemption of state regulations requiring structural separation of the facilities and personnel used by BOCs to provide jurisdictionally mixed enhanced services. *See* 39 F.3d at 931-33. The FCC acknowledged that compliance with both state and federal requirements was technically possible. *See id.* at 933. But because “it would not be *economically feasible* for the BOCs to offer the interstate portion of such services on an integrated basis while maintaining separate facilities and personnel for the intrastate portion,” the state regulation would necessarily result in structural separation of *both* interstate and intrastate services, thus impeding the Commission’s policy of abolishing such restrictions. *Id.* at 932-33 (emphasis added).⁷⁶ Accordingly, preemption was appropriate.

⁷⁵ *See, e.g., PSC of Md.*, 909 F.2d at 1515 (preemption is appropriate where “(1) the matter to be regulated has both interstate and intrastate aspects[;] . . . (2) FCC preemption is necessary to protect a valid federal regulatory objective[;] . . . and (3) state regulation would ‘negate the exercise by the FCC of its own lawful authority’ because regulation of the interstate aspects of the matter cannot be ‘unbundled’ from regulation of intrastate aspects.”) (citations omitted).

⁷⁶ *See also California*, 39 F.3d at 922 (“[B]ecause of economic and operational factors, enhanced service providers would separate their facilities for services that are offered both interstate and intrastate, thereby *essentially negating the FCC’s goal* of allowing integrated provision of enhanced and basic services.”) (emphases added).

Similarly, in the *NCUC* cases, the Fourth Circuit upheld the Commission’s preemption of state regulations prohibiting subscribers from connecting their own equipment to the telephone network unless that equipment was used *exclusively* for interstate service.⁷⁷ Even though it was physically possible for the state and federal regulations to coexist — because subscribers could use provider-supplied equipment for intrastate calls and their own equipment for interstate calls⁷⁸ — the court concluded that preemption was permissible. It noted that “[u]sually it is not feasible, as a matter of economics and practicality of operation, to limit the use of such equipment to either interstate or intrastate transmissions,” and thus the “practical effect” of the state regulation would be to prohibit attachment of customer-provided equipment for *all* calls.⁷⁹ And because this would negate the federal policy permitting attachment of customer-provided equipment to the interstate network, the Commission had authority to preempt the contrary state regulation. *See NCUC I*, 527 F.2d at 793; *NCUC II*, 552 F.2d at 1043.

Here, too, it is impossible to limit the detrimental effect of state service obligations to the intrastate jurisdiction alone; rather, such regulations have the “practical effect” of making it infeasible to deploy jurisdictionally interstate broadband facilities in many high-cost areas. Thus, the Commission can preempt them as inconsistent with federal universal service goals. Indeed, this was the very conclusion reached by the Commission in the *Western Wireless Order*.

⁷⁷ *See NCUC I*, 537 F.2d 787; *NCUC II*, 552 F.2d 1036. The Supreme Court cited both of these cases with approval in *Louisiana PSC*. *See* 476 U.S. at 375-76 n.4.

⁷⁸ *See NCUC I*, 537 F.2d at 791; *NCUC II*, 552 F.2d at 1043; *see also California*, 39 F.3d at 933 (“The Fourth Circuit acknowledged that it was possible to comply with both the states’ and the FCC’s regulations: customers could have one telephone for interstate use and one for intrastate use.”).

⁷⁹ *NCUC I*, 537 F.2d at 791, 793; *see also NCUC II*, 552 F.2d at 1043 (noting the “practical and economic impossibility” of providing separate equipment for the interstate and intrastate jurisdictions); *California*, 39 F.3d at 933 (“[I]t was highly unlikely, due to practical and economic considerations, that customers would maintain two separate phones.”).

There, the Commission preempted state regulations that amounted to an unfunded COLR obligation for competitive ETCs,⁸⁰ noting that, “[t]o the extent that a state’s [ETC requirements] . . . also involve[] matters properly within the state’s intrastate jurisdiction under section 2(b) of the Act, such matters that are inseparable from the federal interest in promoting universal service in section 254 remain subject to federal preemption.” *Western Wireless Order* ¶ 27 (footnote omitted).

Finally, if the Commission were to adopt a procurement-model approach to universal service, it could preempt any remaining state COLR and other service obligations on the basis that they directly negate that federal policy, including by imposing unfunded mandates. As discussed above, legacy service obligations that *compel* incumbent providers to offer service are inconsistent with a new regulatory paradigm under which providers incur service obligations only to the extent that they consent to them in explicit agreements with regulators.⁸¹ Given this, the Ninth Circuit’s decision in *California* is directly on point. As with elimination of structural separation requirements, the Commission cannot achieve its deregulatory goals by eliminating legacy service obligations on the federal level alone. *See* 39 F.3d at 931-33. Rather, state command-and-control policies *must* be eliminated for the Commission to transition from the existing public-utility-style regime to a new procurement-model approach. Accordingly, the Commission could readily demonstrate that “its regulatory goals . . . would be negated” if it does not preempt state service obligations. *Id.* at 933.

⁸⁰ The state regulation in question required competitive telecommunications carriers to provide service throughout an ILEC’s service area before being designated as an ETC in that service area. *See Western Wireless Order* ¶¶ 30-31.

⁸¹ For this reason, the Commission can preempt service obligations even in those states that allow providers to satisfy their obligations using IP technology. Absent the consent of the provider in exchange for explicit funding, these obligations are unfunded mandates and inconsistent with the procurement-model approach to universal service.

Section 254(f). The Commission also has authority to preempt any remaining state service obligations because they contravene section 254(f) of the 1996 Act. Section 254(f) provides that state universal service rules are permissible only if: (i) they are “not inconsistent with the Commission’s rules to preserve and advance universal service,” (ii) they “do not rely on or burden Federal universal service support mechanisms,” *and* (iii) they require “[e]very telecommunications carrier that provides intrastate telecommunications services [to] contribute, on an equitable and nondiscriminatory basis . . . to the preservation and advancement of universal service in that State.” 47 U.S.C. § 254(f).

State service obligations satisfy none of these requirements. *First*, as discussed above, those legacy burdens are “inconsistent with” the Commission’s efforts to achieve ubiquitous deployment of broadband services. *Id.* They constitute unfunded mandates and are inconsistent with the procurement-model approach to universal service. *Second*, those obligations “burden Federal universal service support mechanisms.” In some cases, they may require carriers to offer POTS service in areas where it is uneconomic to do so, thereby increasing those carriers’ need for legacy universal service support. They also are likely to increase the demand for support from the broadband universal service fund, because POTS-oriented service obligations force providers to spend capital on legacy services instead of investing that capital in broadband deployment. *See id.*⁸² *Third*, because most states impose service obligations only on ILECs, those obligations are not an “equitable and nondiscriminatory” form of promoting universal service. *Id.* Given this, the Commission would be well within its authority under section 254(f) to preempt state service obligations in the event that states do not eliminate those obligations

⁸² *See also WWC Holding*, 488 F.3d at 1277 (“Section 254(f) authorizes a state to create its own universal service standards *only to the extent that a state is providing state funding to meet those standards*. To hold otherwise would ignore the last and longest sentence of Section 254(f).”) (emphasis added).

themselves.⁸³ And because the statute itself supplies the source of the Commission’s preemption power, section 2(b) of the Communications Act poses no obstacle to the Commission’s assertion of jurisdiction.⁸⁴

As the Tenth Circuit has explained, “[f]or regulation aimed at promoting universal service, Section 254(f) provides a hierarchy in which states cannot conflict with the federal universal services program[.]” *WWC Holding*, 488 F.3d at 1272. And the Commission has repeatedly interpreted the statute as foreclosing state requirements that undermine federal universal service goals, explaining earlier this year that “section 254(f) . . . bars states from adopting regulations that are inconsistent with the rules established by the Commission to preserve and advance universal service.”⁸⁵ In the *Western Wireless Order*, the Commission relied on section 254(f) in preempting a state requirement that a competitive carrier “provide service throughout [an ILEC’s] service area prior to designation as an ETC” there. *Western Wireless Order* ¶ 31. The Commission noted that such a requirement — which is essentially an unfunded COLR obligation for competitive carriers — “discourages ‘emerging technologies’ from entering high-cost areas” and, accordingly, would be “inconsistent with the Commission’s universal service policies and rules” in violation of section 254(f). *Id.*; *see also id.* ¶ 27. As discussed above, state legacy service obligations have the same effect on ILECs, often forcing

⁸³ Even if the statute were ambiguous, a reviewing court would be required to defer to the Commission’s interpretation of section 254(f). *See, e.g., Qwest Communications Int’l, Inc. v. FCC*, 398 F.3d 1222, 1229-30, 1233 (10th Cir. 2005).

⁸⁴ The Supreme Court held in *Iowa Utilities Board* that, after the 1996 Act, the states retain jurisdiction over intrastate matters only “[i]nsofar as Congress has remained silent.” 525 U.S. at 381 n.8. Here, because section 254(f) expressly precludes states from adopting universal service rules that are “inconsistent with” federal regulation, the Commission has authority to preempt even regulations that apply only to intrastate communications.

⁸⁵ Notice of Proposed Rulemaking, *Lifeline and Link Up Reform and Modernization*, 26 FCC Rcd 2770, ¶ 258 & n.458 (2011).

them to incur unfunded obligations and deterring them from deploying broadband capability in high-cost areas.

CONCLUSION

The Commission has ample legal authority to adopt the joint proposals set forth in the Framework.