

Universal Service Reform – Mobility Fund
(WT Docket No. 10-208)

Connect America Fund
(WC Docket No. 10-90)

Ex Parte Presentation of United
States Cellular Corporation

February 23, 2016

U.S. Cellular

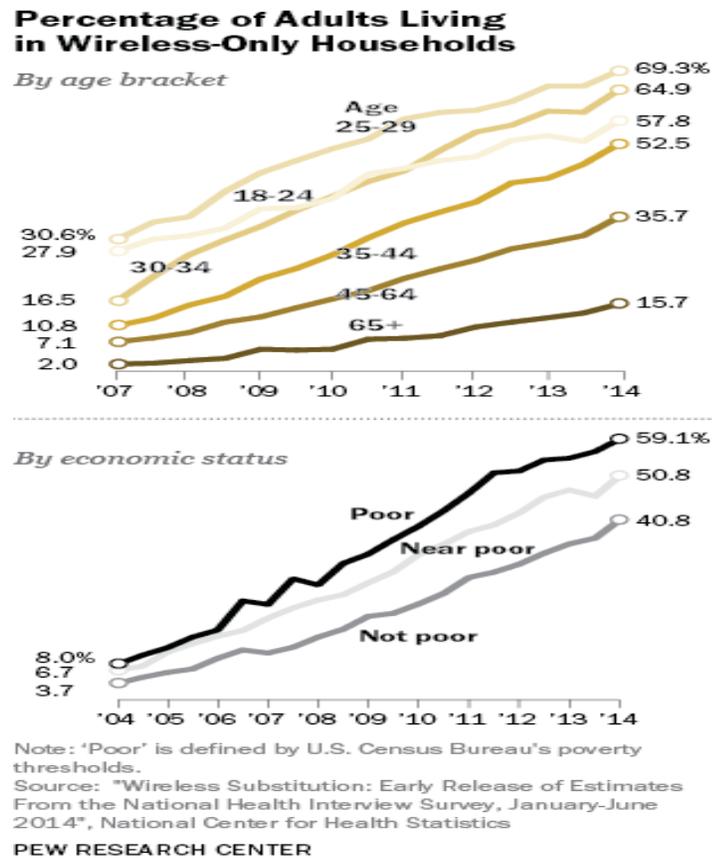
- Wireless service in nearly 200 markets across 24 states
- Majority of geography served is rural – large regional clusters
- An ETC in 14 states.
- Success in serving many rural/remote areas largely attributable to the federal USF program.

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Benefits of Wireless

- Health and Safety, E-911, FirstNet.
- Economic Development, IoT, Agriculture, Rural Employment.
- Multiplier Effects – one wireless job supports six more; each dollar invested results in \$2.32 of economic activity.
- Attracts and keeps talented people in rural areas.
- Benefits flowing from 4G/5G available only in areas having access to high-quality mobile broadband coverage.

Wireless-only households are now the norm, especially among low-income populations and the young



Smartphone, But No Broadband At Home, Has Nearly Doubled In Just Two Years

Several groups are shifting their home internet connectivity away from broadband and toward smartphones

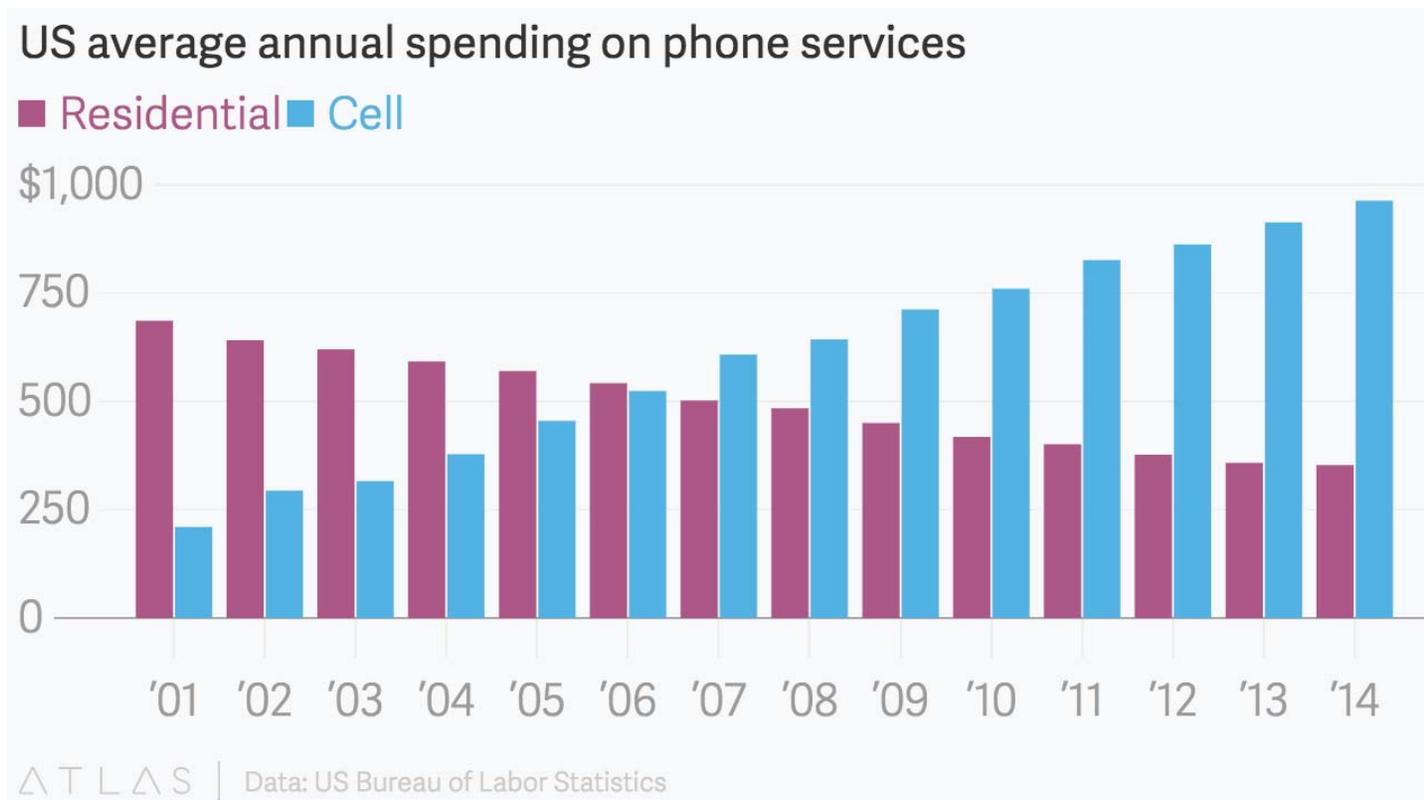
% of each group who have ...

	Broadband at home			Smartphone, but no broadband at home		
	2013	2015	CHANGE	2013	2015	CHANGE
All adults	70%	67%	-3%	8%	13%	+5%
African Americans	62	54	-8	10	19	+9
Rural residents	60	55	-5	9	15	+6
Household income < \$20K	46	41	-5	13	21	+8
\$20K-\$50K	67	63	-4	10	16	+6
\$50K-\$75K	85	80	-5	5	10	+5
Parents	77	73	-4	10	17	+7
High school degree or less	50	47	-3	11	18	+7

Source: Pew Research Center surveys

PEW RESEARCH CENTER

Wireless is the Future



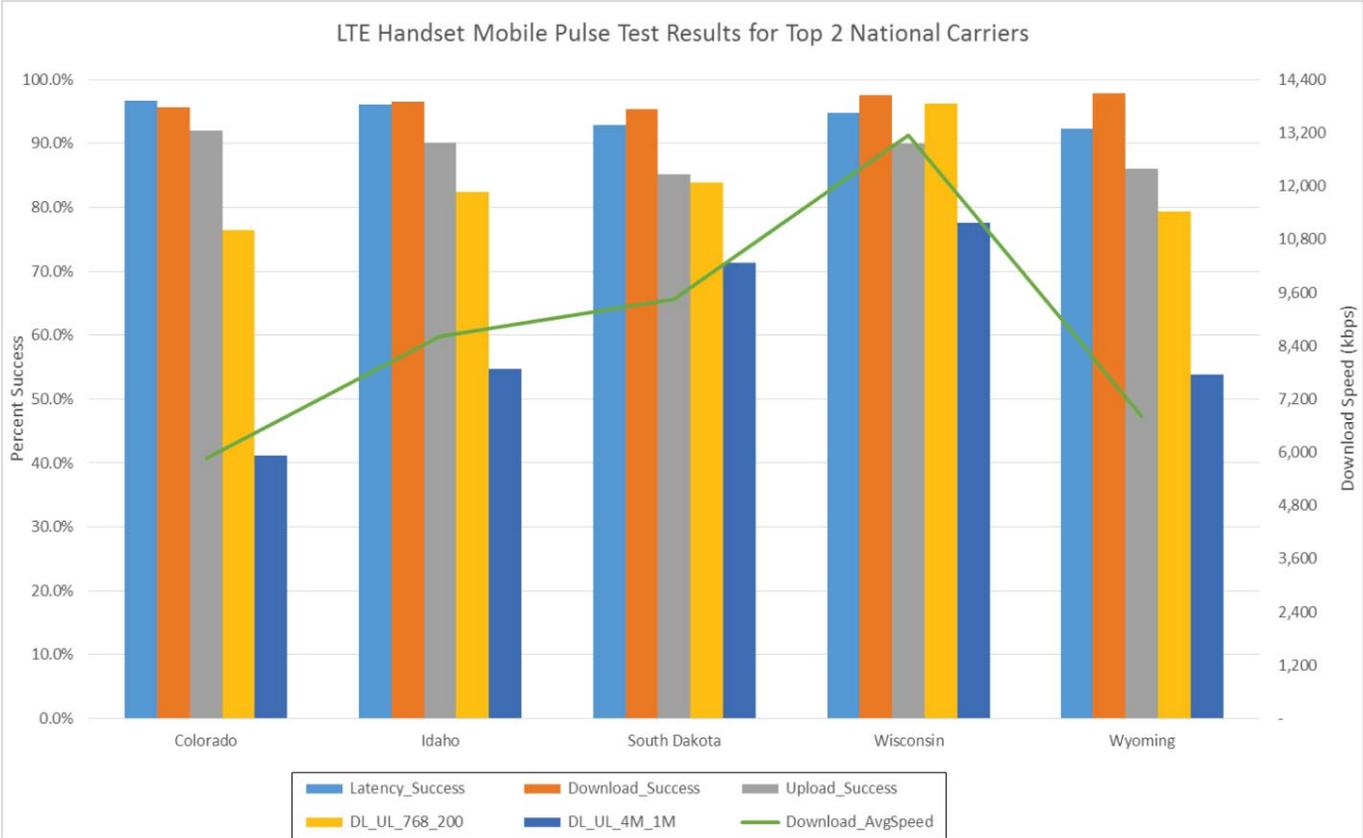
Data and Methodologies that Systematically Overstate Mobile Broadband Deployment Have Led Some to Conclude That the Job is Largely Done

- Government claims that 98% of Americans have access to 4G LTE service.
- Further Notice relied on claims from largest carriers focused on urban areas to justify 99.5% mobile broadband coverage figure.
- Advertising data provided in National Broadband Map overstates coverage.

Data and Methodologies that Systematically Overstate Mobile Broadband Deployment Have Led Some to Conclude That the Job is Largely Done

- Coverage at a centroid point incorrectly assumes both coverage and speed threshold are met throughout the Census Block.
- Coverage data appears to depict homogenous speeds that do not accurately capture wide variances in throughput speed between cell tower and cell edge.
- “As the Commission has found in the past, the methodology and data used to report this coverage has the potential to overstate that coverage. Additionally, the data do not expressly account for factors such as signal strength, bit rate, or in-building coverage, and may convey a false sense of consistency of speeds across geographic areas and service providers.” *See, 2016 Broadband Progress Report, at Para 112.*

CostQuest Analysis



Sources: 2014 Mobile Pulse & CostQuest Associates Analysis

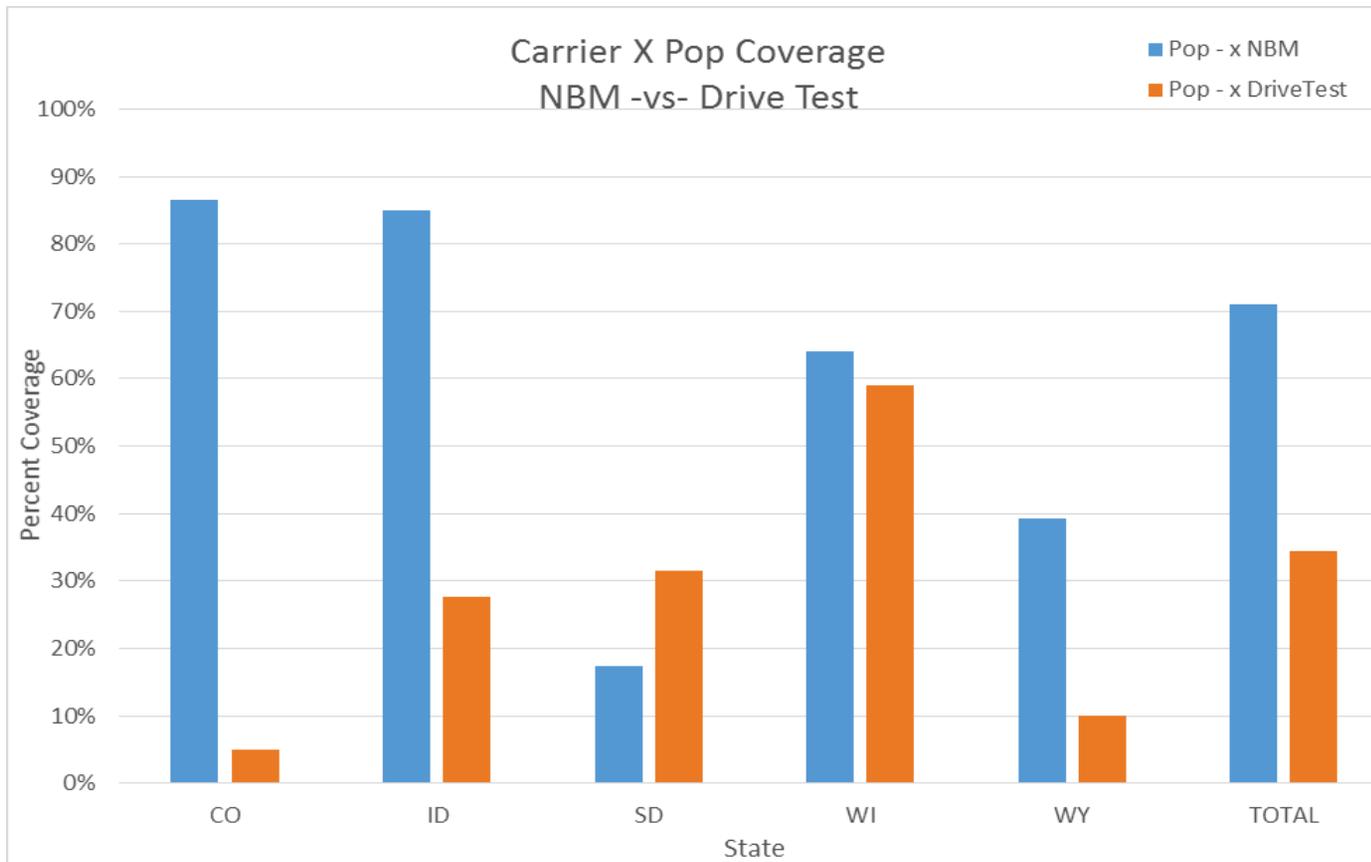
Percentage Of Field Tests Meeting Advertised 10/1 Throughput Speed:

State	Measurement Unit	Carrier X Mobile Pulse	Carrier Z Mobile Pulse
SD	Roads	23.2%	57.1%
SD	Population	31.5%	58.9%
SD	Business Firms	28.8%	63.0%
CO	Roads	6.8%	18.1%
CO	Population	4.9%	18.6%
CO	Business Firms	5.8%	17.5%
ID	Roads	27.6%	31.7%
ID	Population	27.7%	24.5%
ID	Business Firms	24.6%	25.4%
WI	Roads	55.3%	60.6%
WI	Population	59.1%	55.4%
WI	Business Firms	62.5%	56.1%
WY	Roads	11.6%	35.4%
WY	Population	10.1%	25.6%
WY	Business Firms	8.9%	23.7%
TOTAL	Roads	33.0%	44.5%
TOTAL	Population	34.3%	32.3%
TOTAL	Business Firms	31.9%	32.3%

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Sources: 2014 Mobile Pulse & CostQuest Associates Analysis

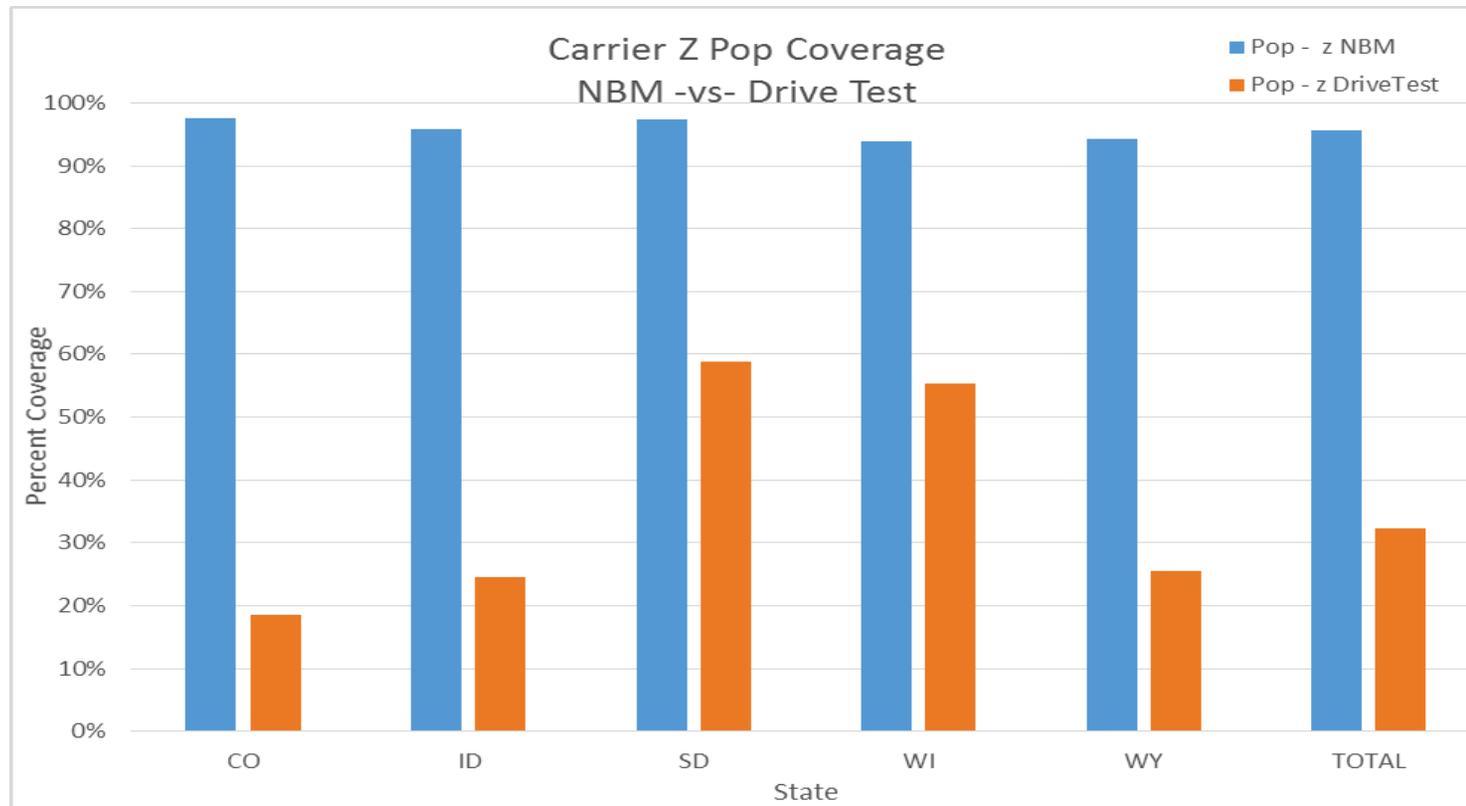
Comparing the National Broadband Map to a Drive Test Yields Very Different Results



Source: 2014 CostQuest Analysis of National Broadband Map and Mobile Pulse Data

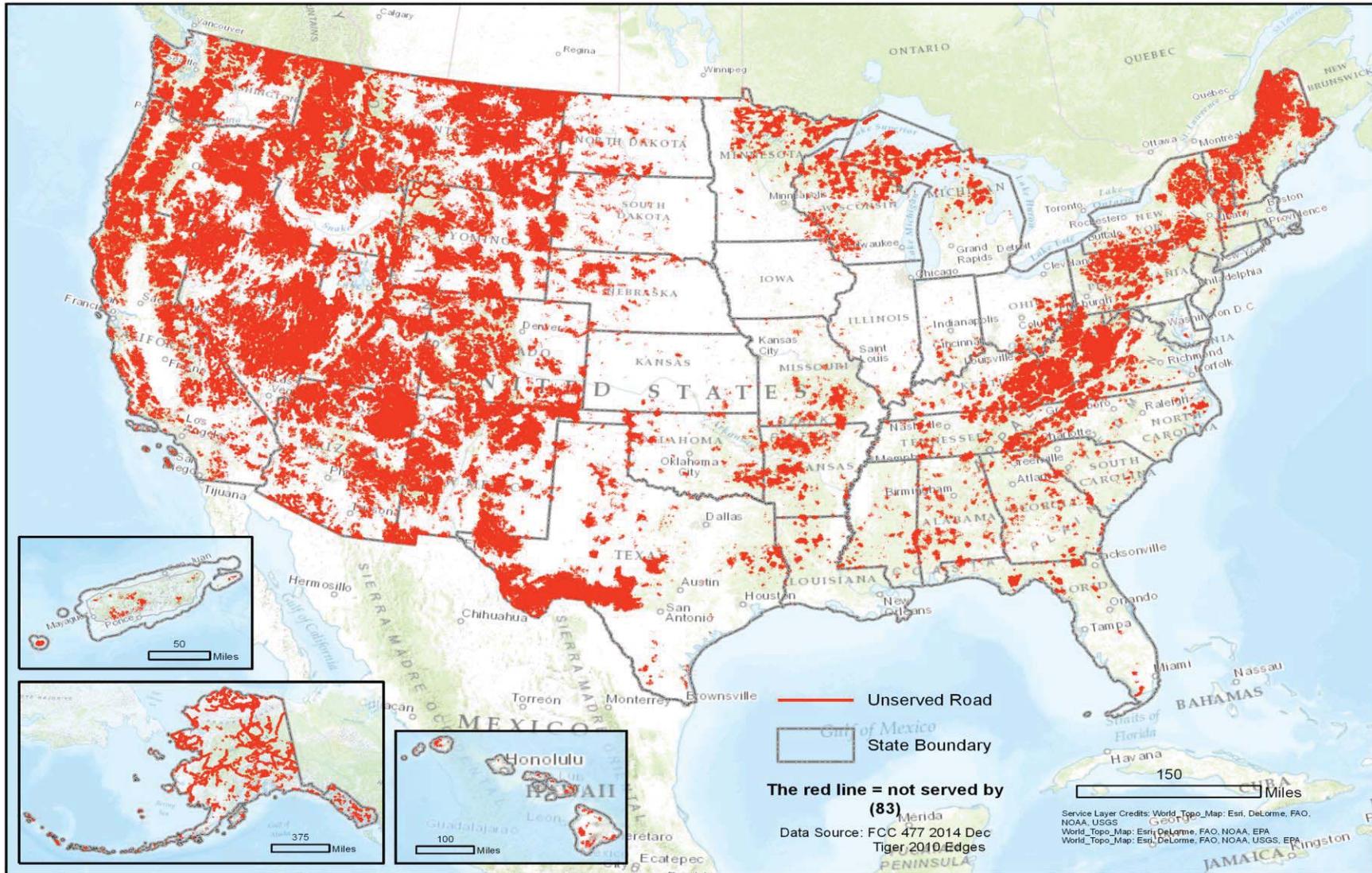
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These Findings Should Give the Commission Pause – Using Some of the Drive Test Resources Deployed for Auction 901 Verification to Audit the NBM Would Be a Useful Exercise.



Source: 2014 CostQuest Analysis of National Broadband Map and Mobile Pulse Data

Unserviced Roads of all 4G/LTE Mobile Broadband



CostQuest O&M Paper

- At a typical cell site, achieving positive cash flow by year five requires approximately 900 subscribers at \$56.00 of ARPU.
- If ARPU is reduced by just \$4.00, positive cash flow is delayed until year ten.
- A cell site needs at least 250 subscribers to cover opex.
- Roaming is no longer a stable revenue source.

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CostQuest O&M Paper



Other Data Reveal Substantial Portions of Rural America Lack Access.

- 18th Mobile Competition Report:
 - 25% of road miles and 50% of square miles in the US do not have coverage by two or more carriers.
 - As of July 2015, while more than 90 percent of the U.S. population lived in census blocks with coverage by at least four providers, these census blocks accounted for only approximately 31 percent of the total land area of the United States, and approximately 55 percent of U.S. road miles.

- 2016 Broadband Progress Report: 87% of rural Americans lack access to mobile broadband at 10 Mbps/1 Mbps.

Table 4
Americans Without Access to Mobile Broadband Services (Millions)

	LTE Technology		10 Mbps/1 Mbps	
	Population	Percentage of Population	Population	Percentage of Population
United States	1.682	1%	171.486	53%
Rural Areas	1.519	3%	52.231	87%
Urban Areas	0.163	0%	119.255	45%

CDMA/GSM Incompatibility is a Public Safety Issue

- 25% of road miles and 50% of square miles lack coverage by both GSM and CDMA networks (Eighteenth Mobile Competition Report).
- A person with a CDMA-only phone cannot complete a call when they are in an area served only by GSM, and vice-versa. As a result, the current reality in rural areas is a patchwork quilt of coverage by incompatible technologies, frustrating the goal of seamless access.
- For public safety, it is critical that rural Americans have access to wireless networks capable of connecting both kinds of devices, just as those who live in cities do.

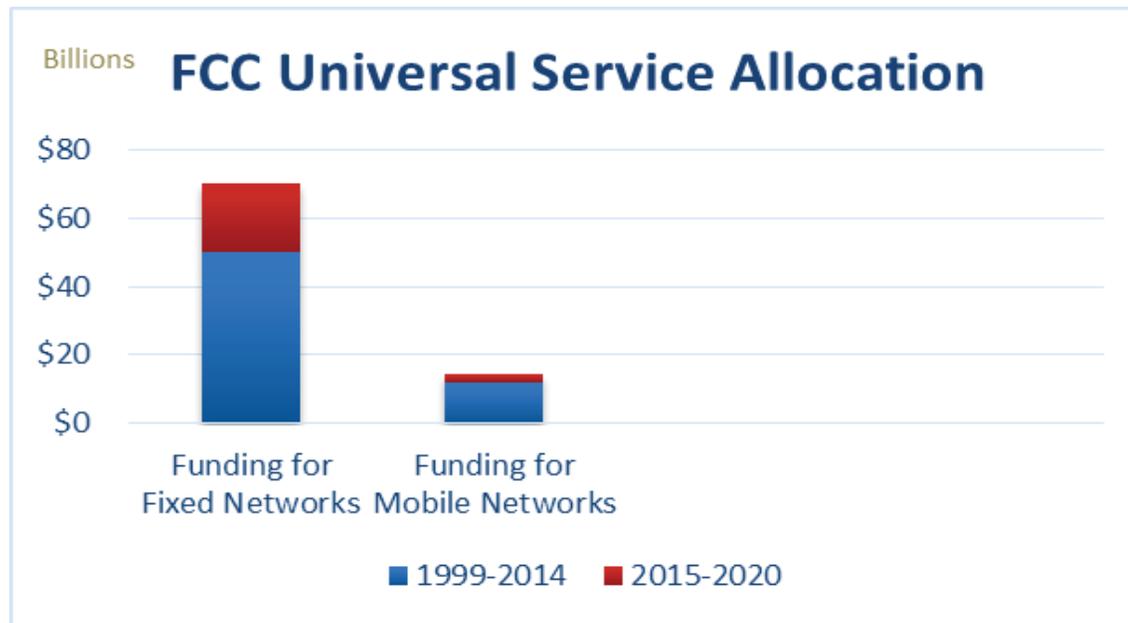
Statutory Directive: To Provide Rural Citizens With Access To Services That Are Reasonably Comparable In Price And Quality To Those Provided In Urban Areas.

- The FCC must first learn how much area must be served, how much speeds need to be improved in such areas, and what it will cost.
- Only then can the program be properly sized and an annual budget determined.
- The NBM and subsequent 477 data do not provide the FCC with accurate data that allows reasonable conclusions as to what needs to be done and what it will cost to make services in rural areas reasonably comparable.
- Sizing the program first (e.g., \$400 M), without even estimating the annual cost of providing reasonably comparable access, contravenes Congressional directive to take meaningful action to close the divide.

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Statutory Directive: To Provide Rural Citizens With Access To Services That Are Reasonably Comparable In Price And In Quality To Those Provided In Urban Areas.

- The FCC has already invested more than \$50 Billion in wireline broadband, with plans for, \$20 Billion more over the next five years, compared to approximately \$12/\$2.5 Billion for wireless.



CAF Phase II Must be Distributed in a Competitively Neutral Manner

- Applicants capable of meeting the CAF Phase I requirements must be able to access CAF II support on a level playing field.
- Proposals for tiered bidding that prefer fiber over more efficient technologies disserve many without access, reduce marketplace competitors, and must be rejected.
- Section 214 authorizes participation of only qualified common carrier ETCs.

Alternatives for Mobility Fund Phase II

- MFII support should focus more on roads and agricultural areas, to deliver the benefits of mobility, rather than focusing on coverage at residences.
- This is consistent with the FCC's finding that fixed and mobile broadband are complimentary services.
- Rather than conduct a reverse auction, which proved to be an inefficient means of distributing support in Auction 901, the Commission should consider alternatives that increase targeted investment and leverage program funds, and seek comment on further alternative methods of distributing support.
- Accountability measures, including demonstrations of how support is used consistent with the statute, must be a part of any MF program.

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Roadmap for Mobility Fund Phase II

- Seek further comment on, (a) the current state of mobile broadband deployment in rural America, and (b) additional methods of obtaining better data on the coverage, quality and performance characteristics of mobile broadband.
- Declare now, and in the next 706 proceeding, that any area lacking actual access to 10/1 speed is unserved by mobile broadband. This will harmonize MFII and 706 program goals.
- Seek comment on how to configure MFII to drive deployment of ubiquitous 10/1 speeds across rural America, subject to the funding constraints currently placed upon the program.

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Alternative Proposal: Federal-State Broadband Grant Program

- Set up a grant program for carriers to apply for infrastructure funds, anywhere in rural areas that require investment.
- Provide a “carrot” to incentivize states to invest and create program leverage.¹
- Let carriers identify areas of poor coverage to state regulators, using a single streamlined federal rule for making awards.
- FCC allocates funds among states and ensures program accountability to Congress.
- We have attached an explanatory summary and a proposed rule for discussion.

¹ “Nevertheless, the FCC may not simply assume that the states will act on their own to preserve and advance universal service. It remains obligated to create some inducement—a “carrot” or a “stick,” for example, or simply a binding cooperative agreement with the states—for the states to assist in implementing the goals of universal service. For example, the FCC might condition a state's receipt of federal funds upon the development of an adequate state program, an approach the FCC at oral argument conceded was possible.” *Qwest Corp. v. FCC*, 258 F.3d 1191, 1204 (10th Cir., 2001).

Proposal for a State Block Grant Program for Mobility Fund Phase II

Summary

- The FCC will:
 - Invite states to accept a block grant of Mobility Fund Phase II support, using a formula to target support to areas requiring additional investment.
 - Incentivize states to add funding from state universal service mechanisms.
 - Provide a Mobility Phase II rule, to be implemented by states.
- Because state public utility commissions are closer to consumers, they are more likely to target support to areas that need investment, and more responsive to the needs of rural citizens.

Allocation Among the States

There will be three separate allocations:

- Lower 48, excluding Tribal Areas
- Alaska, Hawaii, and other Insular Areas
- Tribal Areas in the Lower 48

Allocation method:

Allocate to census blocks unserved by 10/1 service (from the 2015 Broadband Progress Report). Areas should not be disqualified due to claimed coverage by any carrier unless supported by drive test data similar to that required of Auction 901/902 participants.

Incentive for States to Participate

- The FCC will provide matching funds of up to 50% to states willing to contribute to a mobility fund. For example, if the FCC allocates \$1.00 and a state contributes \$0.50, the FCC will increase the federal funding amount to \$1.50, making \$2.00 available for the state mobility fund.
- The FCC will provide a mandatory mobile broadband rule for states to implement. No new rulemaking needed, only program administration and oversight.

- States declining to participate in Mobility Fund II receive federal funding through a reverse auction using Auction 901 procedures, but would not receive matching funds.
- Unused or forfeited funds will be carried forward and used to increase the following year's budget.

Program Structure

- Recipients must be designated as ETCs pursuant to Section 214 of the Act.
- The application for funding must be self-scoring to simplify review.
- States will review applications, verify compliance, certify (and decertify) ETCs.
- Funds must be used for capital expenditures to build or upgrade facilities, or to fund ongoing operations.
- Facilities must be used to provide mobile broadband service consistent with then-existing FCC requirements.
- Program size: \$500 Million in annual support, plus up to \$500 million set aside for operating expenses for legacy ETCs demonstrating need-based support for operating expenses of existing facilities, plus up to \$250 million of matching support for states opting in.
 - Possible state matching funds: \$250 Million.
 - Total possible program leverage: \$750 Million.
 - Likely federal program size: Less than \$1 Billion.
- To ensure certainty of funding, legacy high-cost support must continue without phase-down until first date that funding awards are made to new program awardees.

**MOBILE BROADBAND PROGRAM
PROPOSED FEDERAL RULE**

A. Designated ETCs may apply to the state commission for grants to fund the construction of facilities capable of mobile broadband service, to areas unserved or underserved by broadband in the state.

B. A project must meet the following requirements to be eligible for a grant award:

(1) Support mobile broadband service at speeds and service levels consistent with FCC's federal universal service requirements to households and businesses in the proposed project area.

(2) Support access to emergency 911 services.

C. Contents of grant applications. An application for support shall include:

(1) A proposal to build or upgrade facilities to serve an area where the applicant is designated as an ETC;

(2) A detailed build plan setting forth a description of the facilities to be deployed, including all costs of constructing facilities;

(3) A map showing where service and/or coverage will be provided; this requirement can be met by providing a coverage map generated using a radio frequency propagation tool generally used in the wireless industry;

(4) An estimate of the number of road miles and square miles to be covered;

(5) The amount of support requested;

(6) A description of the technology to be deployed, including data throughput speeds to be delivered to customers;

(7) A demonstration that the area to be served is an area unserved by broadband or an area underserved by broadband; and

(8) An exhibit providing the proposed application score, including supporting documentation.

D. Applicants shall self-score their applications. Points will be awarded as follows:

- (1) Serving roads unserved by any other commercial mobile wireless carrier - ___ points per mile.
- (2) Serving roads unserved by another commercial mobile wireless carrier using compatible technology - ___ points per mile.
- (3) Serving areas unserved by any other commercial mobile wireless carrier - ___ points per square mile.
- (4) Serving areas unserved by another commercial mobile wireless carrier using compatible technology - ___ points per square mile.
- (5) Serving roads at a cost of less than \$ ___ per mile - ___ points.
- (6) Serving proposed grant area at cost of less than \$ ___ per square mile - ___ points.

E. The applicant must make the following commitments:

- (1) To offer service at reasonably comparable rates for comparable services in urban areas.
- (2) To provide service for at least five years following project completion.
- (3) To complete funded projects within two years from the date of commission approval;
- (4) To provide an annual progress report to ensure that all grant funds are being used for the purpose intended.
- (5) To respond to commission inquiries regarding service-related complaints and commit to resolve service-related complaints in a reasonable manner.
- (6) To allow collocation on reasonable terms by other providers of commercial mobile wireless service or any public safety network, and to abide by the FCC's collocation requirements for awardees under the federal universal service program.

F. Procedure for awarding support from the broadband fund:

- (1) On or before March 1 of each year, the commission shall open a thirty (30) day window for filing applications for broadband program support for the following calendar year.

(2) The commission shall review and score all qualified applications.

(3) On or before July 1, the commission shall make initial awards consistent with funds available.

(4) On or before September 1, the commission shall make final awards and submit them to the FCC for funding.

(5) On or before December 31, the FCC shall confirm awards and announce its intention to disburse funds, or notify states of any awards that it will not fund and the reasons therefor.

(6) The FCC and state commissions shall, within sixty (60) days, resolve any disagreements concerning funding commitments.

G. Conditions for disbursement of awarded funds:

(1) Within thirty (30) days after project completion, the awardee shall submit a report demonstrating that the project as completed meets the coverage requirements set forth in the application, including a certification from an officer or director that all program requirements have been met.

(2) The administrator shall disburse 50% of the award when made, and 50% of the award forty-five (45) days after submission of an acceptable project completion report under subparagraph (1) above. The commission may, within thirty (30) days after submission, suspend payment by the administrator and order additional information to be provided.

(3) Any applicant found to have willfully misrepresented information in an application is found to have used support unlawfully or fails to meet the commitments set forth in the application, shall refund all award funds immediately and shall be subject to having its ETC designation revoked.