

# FCC's RDOF Auction Dissected

More than 5 million premises are likely to get broadband connectivity, but for some, it may not be as good as promised.

By Steven S. Ross / *Broadband Communities*

Since announcement of the winners in the FCC's Rural Digital Opportunity Fund (RDOF) reverse auction in December, many people have claimed that winning bidders relied too much on wireless technologies and were far too optimistic about being able to deploy their networks at an overall cost they can afford.

My analysis of the winners in the aggregate, and of public data from many individually, suggests that criticism is warranted, especially for the many cases in which deployers claimed their point-to-point wireless networks would deliver reliable gigabit service. Many of the builds, however, seem to make sense. The top four bidders, awarded \$4.5 billion for 2.8 million households (more than half of all the auctioned premises), look especially well positioned to deliver what they promised.

In a reverse auction, the lowest asked-for subsidy wins. In the RDOF auction, almost 99 percent of all totally unserved census blocks in the country attracted bidders. The FCC's reserve prices for serving the 5.2 million premises in those blocks totaled \$26 billion. The FCC budgeted \$16 billion. Competition was stiff enough to drive the subsidies for those premises down to \$9.2 billion, payable out of the FCC's Universal Service Fund (USF) over the next 10 years. Bidders could use any technology they wanted but got extra bidding points for gigabit service and latency below 100 milliseconds. Hence the rather optimistic claims for low-latency gigabit service over wireless, especially point-to-point millimeter wave wireless.

## WINNERS

There were 180 winning bidders – actually more, as some bidders joined in consortia to bid together under one banner. Bidders that join together generally will go on to build separate projects. The winning bids covered 49 states (all except Alaska) and the Northern Marianas Islands, a U.S. territory.

The top 10 bidders received 72.6 percent of the \$9.2 billion in funds awarded (\$6.7 billion) and committed to connecting 72.4 percent of the premises (see Table 1). The average subsidy was almost identical, within a few dollars of \$1,770 per premises served, over 10 years. Different projects will build out at different rates, with all premises committed to be served in six years. As a rough comparison,

it amounts to a little less than \$15 a month for 10 years, if all the premises were served on day one. The actual subsidy per subscriber household collected by deployers will probably be closer to \$25 a month.

Charter Communications (bidding as CCO Holdings) was the big winner in premises served – 1,057,695 in 24 states, about 20 percent of all newly served premises. Its average subsidy was the lowest among the top 10, at \$1,156, or about \$10 a month. It says it intends to use fiber and cable. The total over 10 years will be more than \$1.2 billion.

LTD Broadband, the fourth-largest fixed wireless provider in the United States, with 2,100 tower sites covering more than 50,000 square miles in Iowa, Minnesota, Nebraska, South Dakota and Wisconsin, was the big money winner, securing more than \$1.3 billion over 10 years to connect 528,088 premises at \$2,501 each on average. This will expand the LTD Broadband footprint considerably, to 15 states from the current five. The build includes some fiber but mainly fixed wireless; the per-premises subsidy amounts to \$21 a month on average. Many winning bidders planning to deploy the same technology won smaller subsidies. Looking at premises densities, climate and terrain, that seems counterintuitive and perhaps too optimistic.

Conexon's Rural Electric Cooperative Consortium won more than \$1.1 billion to deploy fiber to 618,476 premises in 22 states, for an average subsidy of \$1,786, or about \$15 a month per premises. That's almost exactly the auction's overall average subsidy but for the best technology. Electric co-ops, of course, start with some key advantages – they already own the poles and the customers. But until a few years ago, they were slow to realize it.

Fourth in subsidies to be received (almost \$886 million) and second (by a hair) in premises to be served (642,925) was by far and away the only one judged worthy of mention by mainstream media: SpaceX. It won territories in 35 states, for an average subsidy of \$1,377, or about \$11 a month. Its performance was right in line with my predictions for low-Earth-orbit satellites in the last issue. This should be a huge boon to residents in many of the nation's most rural areas, even though they won't save much on fees.

Others in the top 10, and many smaller bidders, offer mainly fixed wireless with a dollop of fiber and some DSL. Several have just emerged from bankruptcy. Most

## TOP 10 SUBSIDY WINNERS IN THE 2020 RDOF REVERSE AUCTION

COMPANY	BIDDING AS	AMOUNT	LOCATIONS	COST PER LOCATION	PRO FORMA MONTHLY SUBSIDY	NUMBER OF STATES	TECHNOLOGY
LTD Broadband	LTD Broadband LLC	\$1,320,920,719	528,088	\$2,501	\$21	15	fiber and fixed wireless
Charter Communications	CCO Holdings, LLC	\$1,222,613,870	1,057,695	\$1,156	\$10	24	fiber and cable
Multiple electric co-ops	Rural Electric Cooperative Consortium	\$1,104,395,953	618,476	\$1,786	\$15	22	fiber
SpaceX	Space Exploration Technologies Corp.	\$885,509,638	642,925	\$1,377	\$11	35	LEO satellites
Windstream	Windstream Services LLC, Debtor-in-Possession	\$522,888,780	192,567	\$2,715	\$23	18	asymmetric xDSL, fiber and fixed wireless
Nextlink Internet	AMG Technology Investment Group LLC	\$429,228,073	206,136	\$2,082	\$17	12	fixed wireless
Frontier	Frontier Communications Corporation, Debtor-in-Possession	\$370,900,833	127,188	\$2,916	\$24	8	fiber and fixed wireless
Resound Networks	Resound Networks, LLC	\$310,681,609	219,239	\$1,417	\$12	7	fiber and fixed wireless
Starry	Connect Everyone LLC	\$268,851,316	108,506	\$2,478	\$21	9	fiber and fixed wireless
CenturyLink/Lumen	CenturyLink, Inc.	\$262,367,614	77,257	\$3,396	\$28	20	asymmetric xDSL and fiber
Total for top 10 bid winners		\$6,698,358,405	3,778,077	\$1,773	\$14.77		
<b>Total, all winners</b>		<b>\$9,225,708,696</b>	<b>5,216,625</b>	<b>\$1,769</b>	<b>\$14.74</b>	<b>49</b>	

Table 1: Note that a new technology, low-Earth-orbit satellites, did well but only where it was most suitable.

have a mixed track record. That's where the angst of rural broadband activists is concentrated.

By state, subsidies vary considerably (see Table 2). Rhode Island had the lowest average subsidy, \$346 for 3,678 premises, totaling \$1,273,784 in all. That adds up to \$2.89 per month over 10 years.

North Dakota beat out the Marianas for the most money per premises, \$7,491 for 2,780 premises, totaling \$20,824,521 or \$62.42 a month.

In total, 2,793 counties – almost all rural – will have census blocks newly served (see Table 3, a digital bonus extra). There are 3,144 counties in the United States. The two newly served premises in Jones County, South Dakota, will cost \$36,540 to serve, or \$18,270 each. That's the biggest per-premises subsidy. But the biggest in any

### RDOF WINNERS BY STATE

STATE	PREMISES	WINNING BID	PER PREMISES	SUBSIDY PER PREMISES PER MONTH IF ALL BUILT IN YEAR ONE
Rhode Island	3,678	\$1,273,784	\$346	\$2.89
Ohio	191,093	\$170,038,205	\$890	\$7.42
Tennessee	155,220	\$148,625,826	\$958	\$7.98
North Carolina	155,137	\$166,580,442	\$1,074	\$8.95
Indiana	152,983	\$169,379,965	\$1,107	\$9.23
South Carolina	108,833	\$121,245,987	\$1,114	\$9.28
Texas	310,962	\$362,662,934	\$1,166	\$9.72
Oklahoma	126,153	\$154,556,451	\$1,225	\$10.21
New Jersey	8,686	\$10,739,474	\$1,236	\$10.30
Maryland	37,761	\$48,023,869	\$1,272	\$10.60
Virginia	186,475	\$238,644,934	\$1,280	\$10.66
Massachusetts	25,480	\$32,631,916	\$1,281	\$10.67
Kansas	46,827	\$62,107,483	\$1,326	\$11.05
Florida	141,625	\$191,753,610	\$1,354	\$11.28

*(Table continued on page 8)*

# BANDWIDTH HAWK

(Table continued from page 7)

STATE	PREMISES	WINNING BID	PER PREMISES	SUBSIDY PER PREMISES PER MONTH IF ALL BUILT IN YEAR ONE
Nebraska	43,435	\$60,377,537	\$1,390	\$11.58
New Hampshire	17,740	\$25,257,661	\$1,424	\$11.86
Connecticut	2,899	\$4,210,411	\$1,452	\$12.10
Michigan	249,263	\$362,985,056	\$1,456	\$12.14
Kentucky	98,909	\$148,978,767	\$1,506	\$12.55
Arizona	129,445	\$195,847,668	\$1,513	\$12.61
Wisconsin	240,546	\$373,715,051	\$1,554	\$12.95
Vermont	19,330	\$32,533,635	\$1,683	\$14.03
Alabama	196,460	\$330,804,828	\$1,684	\$14.03
Delaware	7,757	\$13,302,048	\$1,715	\$14.29
Missouri	199,211	\$346,297,660	\$1,738	\$14.49
Georgia	179,455	\$326,454,112	\$1,819	\$15.16
California	364,878	\$695,158,129	\$1,905	\$15.88
Louisiana	175,692	\$342,207,315	\$1,948	\$16.23
Pennsylvania	184,505	\$368,743,200	\$1,999	\$16.65
Nevada	30,584	\$63,536,611	\$2,077	\$17.31
Arkansas	200,612	\$424,243,218	\$2,115	\$17.62
New York	46,647	\$99,891,716	\$2,141	\$17.85
Washington	100,422	\$222,768,533	\$2,218	\$18.49
Mississippi	218,990	\$495,725,800	\$2,264	\$18.86
Illinois	159,967	\$378,310,111	\$2,365	\$19.71
Maine	27,755	\$71,175,908	\$2,564	\$21.37
New Mexico	64,170	\$165,209,719	\$2,575	\$21.45
Oregon	81,634	\$212,027,091	\$2,597	\$21.64
Iowa	53,819	\$143,892,544	\$2,674	\$22.28
Montana	45,984	\$125,815,440	\$2,736	\$22.80
Idaho	40,706	\$112,489,828	\$2,763	\$23.03
Minnesota	142,841	\$408,150,746	\$2,857	\$23.81
Utah	10,373	\$31,384,526	\$3,026	\$25.21
Wyoming	18,966	\$57,471,543	\$3,030	\$25.25
West Virginia	119,267	\$362,066,660	\$3,036	\$25.30
Hawaii	8,081	\$24,740,782	\$3,062	\$25.51
Colorado	76,216	\$249,833,710	\$3,278	\$27.32
South Dakota	10,051	\$52,285,517	\$5,202	\$43.35
Northern Mariana Islands	530	\$3,706,235	\$6,993	\$58.27
North Dakota	2,780	\$20,824,521	\$7,491	\$62.42
<b>TOTAL</b>	<b>5,220,833</b>	<b>\$9,230,688,715</b>	<b>\$1,768</b>	<b>\$14.73</b>

Table 2: Winners are ordered by imputed monthly subsidies. They ranged from Rhode Island (\$2.83 per premises) to North Dakota (more than 20 times higher).

county with more than 100 premises newly served is South Dakota's Dewey County (112 premises, \$1,486,836 or \$13,275 each over 10 years).

At the other end of the scale, North Dakota's Burleigh County, is the cheapest. Its 88 premises cost a total of \$1,569, equaling less than \$18 per premises.

Because only \$9.2 billion was spent in the first round, out of the \$16 billion originally set aside for the RDOF Phase I auction, there is an extra \$6.8 billion to add to the second phase. That means \$11.2 billion for census blocks already partially served, along with about 50,000 premises in the unserved areas that did not get aid in Phase I. That will have to be spread across about 10 million unserved premises in those areas.

All areas in the current RDOF auctions attracted little or no interest in the Connect America Fund (CAF) auctions the FCC held before RDOF. But given urgency brought on by COVID-19 and new, more flexible and more powerful technologies – satellites and fixed wireless especially – there is hope. Unfortunately, there has been an attitude of underachievement at the FCC, while the USDA has pushed future-proof, reliable fiber. I do not want to see fiber in inappropriate places. Nor do I want good to be the mortal enemy of great. ❖

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Table 3 is available as a PDF for download at [www.bbcmag.com/pub/doc/Hawk\\_Jan21\\_Chart3.pdf](http://www.bbcmag.com/pub/doc/Hawk_Jan21_Chart3.pdf) and as an Excel table for download at [www.bbcmag.com/pub/doc/JanFeb21-Hawk-RDOF-Table3.xlsx](http://www.bbcmag.com/pub/doc/JanFeb21-Hawk-RDOF-Table3.xlsx).