

Rural Opportunity Zone Broadband Availability Assessment

•ROZ Counties with Greatest Household Broadband Availability Deficiency

•Improvements to some of these figures will emerge in our next survey due to ongoing service provider build out and upgrades.

	Un-served Households	% Availability
Graham	498	60.6%
Chautauqua	600	66.6%
Greenwood	858	73.5%
Norton	560	75.3%
Phillips	615	75.4%
Rawlins	309	75.6%
Rooks	527	77.7%
Sheridan	241	78.6%
Decatur	308	79.4%
Wallace	127	81.2%

Data source: Connected Nation, 2010 survey

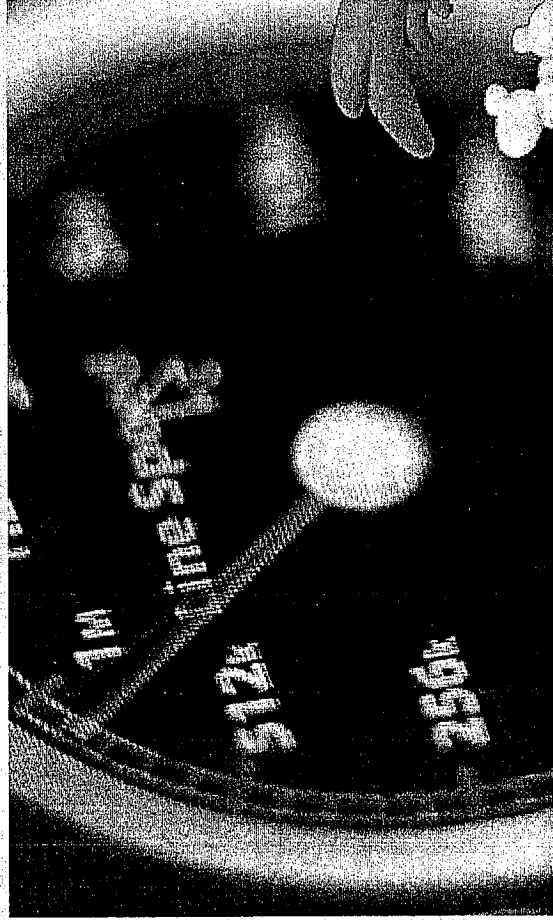
HOUSE ENERGY AND UTILITIES

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ATTACHMENT 4

Differences in...

...**Broadband**



Broadband = speeds of 768kbps or greater
Typical speeds of 3-4mbps and increasing

Broadband Speed Illustration

Up/Downstream Speed

Applications

500 kbps – 1 Mbps

Voice over IP
SMS
Basic Email

Web Browsing (simple sites)
Streaming Music (caching)
Low Quality Video (highly compressed)

1 Mbps – 5 Mbps

Web Browsing (complex sites)
Email (larger size attachments)
Remote Surveillance
IPTV-SD (1-3 channels)

File Sharing (small/medium)
Telecommuting (ordinary)
Digital broadcast video (1 channel)
Streaming Music

5 Mbps – 10 Mbps

Telecommuting (converged services)
File Sharing (large)
IPTV-SD multiple channels)
Switched Digital Video
Video on Demand SD
Broadcast SD Video
Video Streaming (2-3 channels)

HD Video Downloading
Low Definition Telepresence Gaming
Medical File Sharing (basic)
Remote Diagnosis (basic)
Remote Education
Building Control & Management

Broadband Speed Illustration

Up/Downstream Speed

Applications

10 Mbps – 100 Mbps

Telemedicine
Educational Services
Broadcast Video SD, some HD IPTV-HD
Gaming (complex)

High Quality Telepresence
HD Surveillance
Smart/Intelligent Building Control
Telecommuting (high qual. video)

100 Mbps – 1 Gbps

HD Telemedicine
Multiple Educational Services
Broadcast Video full HD
Remote Server Services for Telecommuting

Video on Demand HD
Gaming (immersion)
Full IPTV Channel Support

1 Gbps – 10 Gbps

Research Applications
Live event digital cinema streaming
Telemed remote control of scientific / medical instruments
Telepresence using uncompressed high definition video streams
Interactive remote visualization/virtual reality

Remote supercomputing
Movement of terabyte datasets

Broadband Speed Illustration

<u>Downstream speed</u>	<u>Relevance</u>	<u>Approximate time to download 3 megabyte pop song</u>
56 Kbps	Top speed of dial-up modem service	7 minutes
200 Kbps	Minimum speed to qualify as "high-speed" under historical FCC definition	2 minutes
768 Kbps	Minimum speed for an area not to be "un-served" according to ARRA	30 seconds
1.5 Mbps	Lower speed tier advertised for many broadband (DSL or cable) services	15 seconds
3 Mbps	Minimum speed for an area not to be "underserved" according to ARRA	8 seconds
6 Mbps	Upper speed tier advertised for many broadband (DSL or cable) services	4 seconds
10 Mbps	Speed of advanced services available in some areas	2 seconds
100 Mbps	Speed of advanced services available in very limited areas	1/4 second

