

## Fred Goldstein on the FCC's "Standard Definition for Broadband"

Some parties, including MBI, seem to think that the FCC requires "broadband" providers to now offer 25/3 speeds (that is, a capability of downloading at up to 25 Mbps uploading at 3 Mbps). This was added to the MBI contracts. This is all based on a big misunderstanding that began with erroneous press reports. Here's the lede of one typical article, from a well-read tech site, The Verge:

“As part of its 2015 Broadband Progress Report, the Federal Communications Commission has voted to change the definition of broadband by raising the minimum download speeds needed from 4Mbps to 25Mbps, and the minimum upload speed from 1Mbps to 3Mbps, which effectively triples the number of US households without broadband access. Currently, 6.3 percent of US households don't have access to broadband under the previous 4Mbps/1Mbps threshold, while another 13.1 percent don't have access to broadband under the new 25Mbps downstream threshold.”<sup>1</sup>

Now look at the mistakes! The first one is that the FCC's action did not impact “broadband”, an ill-defined term that generally refers to anything faster than dial-up. What the FCC nicknames the “Broadband Progress Report” is more formally its Section 706 Advance Services Inquiry. That was mandated in Section 706 of the Telecom Act of 1996:

(b) INQUIRY- The Commission shall, within 30 months after the date of enactment of this Act, and regularly thereafter, initiate a notice of inquiry concerning the availability of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms) and shall complete the inquiry within 180 days after its initiation....

The key term of art here is "advanced telecommunications capability". It had been originally defined, in 1996, as 200 kbps (anything faster than dial-up), and was raised in 2010 to 4/1 Mbps. It is basically a value that is used for generating a statistical report. By moving the line to 25/3, the FCC chose a value that happens to exclude pretty much all DSL-based services, including AT&T's U-Verse (TV over up to 4000 feet of old copper) but included all fiber and essentially all cable modems. (I don't think that was coincidence, though they can't admit it.)

The report, then, is not a mandate. The “speeds needed” in the article doesn't refer to speeds that ISPs need to provide; it refers to the speed that is needed to statistically trigger a finding that “advanced telecommunications capability” had been provided.

Two more important FCC speed requirements are “4/1” and “10/1”. The 4/1 speed was applied earlier in the decade to determine what locations were still “unserved”. If any provider made that rate available, the location was “served”. The unserved locations were then made eligible for subsidies from the Connect America Fund. For a service provider to receive funds, it must commit to offering at least 10/1 service, as well as voice telephony, to customer locations built

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<sup>1</sup> <http://www.theverge.com/2015/1/29/7932653/fcc-changed-definition-broadband-25mbps>.

out with CAF subsidies. Lower-speed services may still be offered; the requirement is that at least 10/1 be offered as an option.

The actual Report justifies the higher speeds by comparing combinations of simultaneous activities and whether they are likely to work unimpeded at 10 Mbps (the CAF-funded new construction requirement) or 25 Mbps:

**Table 1: Simultaneous Household Uses 25 Mbps Vs 10 Mbps Download**

	25 Mbps	10 Mbps
Download emails and participate in an online class	Yes	Yes
Stream 1 HD video	Yes	Yes
Participate in an online class, download files, and stream a movie	Yes	No
View 2 HD videos	Yes	No
Stream 1 4K TV service	Yes	No

So 25 Mbps is basically needed for simultaneous HD streaming, which could be a movie or a supposed HD-grade online class (I've never actually heard of this being done), or to watch 4K TV. I needn't point out how the backhaul cost of 4K TV, at 20+ Mbps, will cost rural ISPs that have to purchase Axia upstream bandwidth. The FCC's model makes more sense for urban cable companies.

Hence the value of 25/3 is far from being a mandate for today; it's simply an aspirational goal. Since it cannot be done over non-line-of-sight (e.g., TVWS) radio frequencies, requiring fiber or nothing to the highest-cost wooded areas will result in leaving them off entirely, as fiber is too expensive.