

Central Coast Broadband Consortium Broadband Infrastructure Grading Methodology

Broadband infrastructure grades compare the primary, wireline infrastructure in a region, county, town or census block to the Californian average:

- A Superior infrastructure.** At least two competing primary wireline providers. At least one advertising fiber-to-the-premise service at a minimum of 1 Gbps download/500 Mbps upload speeds, and another offering service at a minimum of 400 Mbps download/20 Mbps upload speeds using any technology.
- B Above average infrastructure.** At least two competing primary wireline providers. At least one advertising service at a minimum of 900 Mbps download/35 Mbps upload speeds, and another offering service at a minimum of 100 Mbps download/20 Mbps upload speeds.
- C Average infrastructure.** At least two competing primary wireline providers. At least one advertising service at a minimum of 400 Mbps download/20 Mbps upload speeds, and another offering service at a minimum of 30 Mbps download/5 Mbps upload speeds.
- D Barely passing.** At least one wireline provider that meets the Central Coast Broadband Consortium/Monterey Bay Economic Partnership minimum standard of 100 Mbps download and 20 Mbps upload speeds.
- F Fail.** At least one wireline provider offers service, but no service is available that meets the Central Coast Broadband Consortium/Monterey Bay Economic Partnership minimum standard of 100 Mbps download and 20 Mbps upload speeds.
- F- Unserved.** No broadband service available

In a study conducted for the East Bay Broadband Consortium (EBBC) in 2013¹, in cooperation with the Central Coast Broadband Consortium, core broadband infrastructure was evaluated in Alameda, Contra Costa and Solano Counties using data submitted to the California Public Utilities Commission by Internet service providers. A comparative report card was developed, with the average grade – “C” – set at the most prevalent infrastructure, and corresponding service levels, available to residents of California: a combination of relatively high speed cable modem and mid-range telephone company DSL facilities.

This methodology was subsequently used by the Central Coast Broadband Consortium to evaluate Californian broadband infrastructure and service on a statewide basis, on behalf of the California Emerging Technology Fund and the California Center for Rural Policy, and to do in-depth analysis of broadband service and infrastructure in Monterey, Santa Cruz and San Benito counties.

The primary data for assessing the quantity and quality of broadband infrastructure comes from the California Public Utilities Commission, which collects service level reports submitted by providers to the Federal Communications Commission annually, and then runs that data through a validation process. The most recent data available was submitted by carriers as of 31 December 2017. This data can be broken down to the census block level, and shows what level of service Internet companies claim to provide, but not necessarily what they deliver. The accuracy of this data and the definition of

¹ *East Bay Broadband Report Card*, Tellus Venture Associates, 28 January 2014.

service levels varies from company to company, although it is generally consistent within any given company. In other words, if Company Z exaggerates the speeds and availability of home Internet service, it tends to do so to more or less the same extent everywhere. By using a comparative system for ranking, rather than using the absolute values provided, the variation in the accuracy of the data can be smoothed out and an apples-to-apples comparison can be achieved.

Consumer-grade service throughout California was assessed, and the averages of available service (median, mode and mean) used as one of the two primary grading benchmarks. The other benchmark was the minimum level of service of 100 Mbps download and 20 Mbps upload speeds, which was determined by a 2018 study conducted by the Central Coast Broadband Consortium and the Monterey Bay Economic Partnership² to be the minimum necessary to conduct business, do homework, enjoy online entertainment and otherwise fully participate in today’s digital economy.

Upload speed was given equal weight to download speed because upload speed provides a reliable indication of the capacity of the underlying infrastructure. It is increasingly important to consumers and businesses alike. When a service provider skimps on upload speeds, as frequently happens, it is usually because its cables and other core equipment have a limited capacity.

The data was examined, and irrelevant data points that skewed results were removed. Grades were then assigned according to the criteria in the table above.

A "C" grade indicates that consumer grade broadband service, and consequently the underlying core infrastructure, in a given area meets the statewide average. A "D" grade means it meets the minimum service standard determined by the CCBC/MBEP study. "F" grades indicate full or partial failure. "A" and "B" grades show that service in an area is superior to the California average.

The first step in grading was to give a letter grade to each census block in California. Then, the grade points were tallied, weighted by population and averaged for the census blocks within cities, counties and unincorporated areas, to produce a numerical grade on a four point scale, which was rounded to the nearest tenth.

The numerical grade point average for an area was then converted to a letter grade on the following scale:

Infrastructure Grade Point Scale					
A	4.0	C+	2.3-2.6	D-	0.7-0.9
A-	3.7-3.9	C	2.0-2.2	F+	0.3-0.6
B+	3.3-3.6	C-	1.7-1.9	F	0.0-0.2
B	3.0-3.2	D+	1.3-1.6	F-	No service available
B-	2.7-2.9	D	1.0-1.2		

² *Achieving Ubiquitous Broadband Coverage in the Monterey Bay Region*, Monterey Bay Economic Partnership, November 2018.