

Enhanced A-CAM Support Calculations Methodology and Data Sources

This document describes the methodology and data sources that Commission staff employed to calculate Enhanced Alternative Connect America Model (Enhanced A-CAM) illustrative offers for eligible carriers.¹ The illustrative results were announced in a Public Notice on August 7, 2023 in WC Docket No. 10-90 and can be found at <https://docs.fcc.gov/public/attachments/DOC-395738A1.xlsx>.

The purpose of these illustrative results is to make interested parties aware of the potential impact on support for various Enhanced A-CAM support parameters, consistent with the Commission's instructions in the *Enhanced A-CAM Order*, and to permit carriers to understand the relationship between current location and coverage data and the support calculations. These results present three examples of offers for Enhanced A-CAM support using different assumptions in the support ranges adopted by the Commission. The three combinations are:

- A funding cap to \$300 per unserved location or 80% of the uncapped support amount, when that would provide more support; 50% of prior support for incumbent local exchange carrier (ILEC)-only served locations; and 33% of prior support for ILEC and competitor-served locations;
- A funding cap to \$350 per unserved location or 80% of the uncapped support amount, when that would provide more support; 50% of prior support for ILEC-only served locations; and 33% of prior support for ILEC and competitor-served locations; and
- A funding cap to \$300 per unserved location or 80% of the uncapped support amount, when that would provide more support; 65% of prior support for ILEC-only served locations; and 33% of prior support for ILEC and competitor-served locations.

Due to data limitations, each of these combinations is calculated in two ways: the first assumes there are no enforceable commitments to deploy broadband that would eliminate an otherwise eligible location from Enhanced A-CAM eligibility and the second assumes zero funding for any location that is reported in the Broadband Funding Map as receiving funding that could potentially have an enforceable commitment to deploy at speeds at or above 100/20 Mbps. The inclusion of Broadband Funding Map commitments is both overinclusive because we have considered some commitments, such as federal loans to ILECs, that will not ultimately be included and underinclusive because not all existing federal and state funding are currently included in the Broadband Funding Map. Thus, we have both included and excluded these commitments in different examples to provide a broader picture of what Enhanced A-CAM offers will look like. These calculations are preliminary and do not necessarily reflect either what Enhanced A-CAM offers will be made or what support will be with post-offer adjustments. The information below provides additional detail on how the illustrative results were calculated.

Data Sources

The following describes the data sources used in the calculations and where they may be obtained.

- A-CAM Version 2.6.0 Cost Model: Version 2.6.0 of the A-CAM model now relies on fabric location data to calculate the network topology rather than Census housing unit and GeoResults business data. The new model also employs the latest study area boundary data filed by Enhanced A-CAM eligible carriers and corrects these boundaries so that each fabric location is in

¹ *Connect America Fund, et al.*, WC Docket No. 10-90 et al., Report and Order, Notice of Proposed Rulemaking, and Notice of Inquiry, FCC 23-60 (rel. July 24, 2023) (*Enhanced A-CAM Order*).

only one study area. No changes to the underlying assumptions in the A-CAM model have been made. Interested parties may download the new A-CAM data at cacm.usac.org.²

- **Potentially Eligible Locations File:** The locations based on Version 2 of the Broadband Serviceable Locations Fabric that are potentially eligible for Enhanced A-CAM support are available to authorized users at cacm.usac.org.³ This file is restricted to broadband serviceable locations (BSLs) within each eligible carrier’s footprint and includes the following variables: (1) fabric location identifier; (2) 2020 Census block of the location; (3) study area code for the location; (4) the number of units associated with the BSL; (5) an indicator for whether the location is in a Tribal area; and (6) an indicator for whether the location has an enforceable commitment to deploy broadband at speeds of 100/20 or greater in the National Broadband Funding Map.⁴
- **Broadband Data Collection (BDC) Version 2:** Staff use Version 2 of the BDC to determine Enhanced A-CAM eligibility for each potentially eligible location. This data is publicly available and can be downloaded from the following link: <https://broadbandmap.fcc.gov/data-download/>.
- **Voice Service by Provider and State:** Only locations that receive broadband service with download speeds of at least 100 Mbps and upload speeds of at least 20 Mbps from a provider that is also offering facilities-based voice service are considered “served” under the Enhanced A-CAM program. Similar to past offers, whether a provider offers facilities-based voice service will be determined using FCC Form 477 voice subscription data. If the provider reports at least one voice subscriber in the state that is not subscribing to an “over-the-top” voice service then that provider is coded as offering voice service within the state.⁵ This data is publicly available at: <https://docs.fcc.gov/public/attachments/DOC-395787A1.xlsx>.
- **Broadband Funding Map:** The Broadband Funding Map data is used to determine whether the location is under another enforceable commitment to deploy broadband at speeds at or above 100/20 Mbps. As explained below, such an enforceable commitment changes the funding levels for such locations. This data is publicly available at: <https://fundingmap.fcc.gov/>.
- **Study Area Boundaries:** The study area boundary shapefiles for each incumbent local exchange carrier (ILEC) are used to determine which study area code is associated with each fabric location. These study area boundaries are adjusted to eliminate overlaps between providers, but

² Access to the A-CAM data is subject to the Third Supplemental Protective Order, a licensing agreement and a non-disclosure agreement (respectively Appendices B and C) available at <https://docs.fcc.gov/public/attachments/DA-12-1995A1.pdf>. Parties who have already signed the licensing and non-disclosure agreements, but have forgotten or not used their password recently can email CACMsupport@costquest.com. Block level costs have been rounded to the nearest \$5 increment in this dataset and therefore support amounts calculated using this data will not exactly match the illustrative results because these rely on unrounded cost data.

³ Access to these data will require the same licensing and non-disclosure agreement as the new A-CAM data. See n.2.

⁴ We use “unit” or “location” throughout to refer to the number of units associated with a BSL in the broadband fabric.

⁵ Over-the-top interconnected VoIP is defined as service delivered to the end-user customer over a high-capacity connection that the customer obtains from an entity not affiliated with the interconnected VoIP service provider. See FCC Form 477 Filing Instructions, Fixed Voice Subscription – Interconnect VoIP available at https://transition.fcc.gov/form477/FVS/allocating_voip_subscriptions.pdf.

the original shapefiles are publicly available for download at: <https://www.fcc.gov/reports-research/maps/study-area-boundaries/>.

- **Eligible Carriers:** Current recipients of A-CAM I or A-CAM II support, or Connect America Fund Broadband Loop Support (CAF-BLS) are eligible for Enhanced A-CAM support. The list of study areas and the type of support currently provided is available in the following file: <https://docs.fcc.gov/public/attachments/DOC-392121A1.xlsx>.
- **ILEC Holding Company Information:** Staff used the ILEC holding company name and ILEC holding company number associated with each study area code (SAC) to determine which locations in the BDC were served by the ILEC. Generally, all commonly owned SACs in a state are aggregated into a single state-level offer for each company, called a “State Administrative SAC.” In some cases, such as for companies that currently receive CAF-BLS or for companies that have merged with other companies since their A-CAM I or A-CAM II elections, the State Administrative Study Area Code in a state may not reflect all affiliations that will be included in the Enhanced A-CAM offer. These data are the same as those used for FCC Form 477 and FCC Form 499. The Universal Service Monitoring Report, Supplemental Table 3.4, available at: <https://www.fcc.gov/file/24828/download>, shows all SACs and their associated holding companies and State Administrative SACs.

Illustrative Funding Calculations

This section explains how staff calculated the support levels in the illustrative results for each carrier at the state level.

Determining Served Status

In the *Enhanced A-CAM Order*, the Commission determined that the appropriate funding amount for a given location will be based on the estimated cost of the location, whether the location is located on Tribal lands, and whether the location is currently served by the ILEC, another broadband provider, or both.⁶

The first step is to determine whether each potentially eligible location is served, and whether the ILEC and/or a competing provider serves each location. Staff used the BDC deployment and FCC voice data cited above for this purpose. A BDC record is coded as being served by the ILEC if: (1) the download speed was at least 100 Mbps; (2) the upload speed was at least 20 Mbps; (3) the provider offers facilities-based voice service in the state; (4) the technology code does not equal sixty (geostationary satellite), sixty-one (non-geostationary satellite), or zero (other fixed service); and (5) a holding company number provided in a BDC data filing for that location matched the holding company number that is associated with the ILEC in that study area.⁷ If there is a BDC filing for that location that does not match the ILEC holding company number for the study area, and conditions (1) through (4) were met, then this BDC record is coded as competitively served. For each location identifier, the maximum value for the ILEC-served and competitive-served variable was then taken. With this information, each location is classified into one of the following four mutually exclusive and exhaustive categories: (1) served only by the ILEC; (2) served by the ILEC and another provider; (3) unserved; (4) served only by a competitor. Only the first

⁶ *Enhanced A-CAM Order*, paras. 60-87.

⁷ A very small number of records in the BDC had a technology code of 0, indicating deployment using “fixed service using any other technology not otherwise detailed for another code.” These locations were not considered served even if reported at speeds of at least 100/20 Mbps.

three categories are eligible for funding and, as described below, the support calculation is different for each of these three categories.

The illustrative results do not fully reflect the final evaluation of enforceable commitments to deploy broadband based on the Broadband Funding Map. Instead, staff provides, for each illustrative funding scenario, two sets of estimates for each carrier under the currently available data. The first estimate assumes there are no enforceable commitments to deploy broadband that would eliminate an otherwise eligible location from Enhanced A-CAM eligibility. The second estimate assumes zero funding for any location that is reported in the Broadband Funding Map as receiving funding that could potentially have an enforceable commitment to deploy at speeds at or above 100/20 Mbps.⁸ For this estimate, we use the Broadband Funding Map to determine which potentially eligible locations are subject to an enforceable commitment under another federal program to deploy qualifying broadband by overlaying the Broadband Funding Map layers on top of the potentially eligible locations. This analysis produces a list of locations subject to enforceable commitments and removes these from the location counts described in the preceding paragraph. The location identifiers for the locations that have been adjusted in the second set of estimates can be found in the potentially eligible locations file posted at cacm.usac.org. Staff emphasizes that this second estimate may overestimate the number of locations that will be excluded in the initial offers, and may therefore underestimate the amount of support to be offered under the Enhanced A-CAM program.

To summarize, staff assigned each potentially eligible location to one of four deployment categories, separately for Tribal and non-Tribal, for a total of eight potential categories for each location. These assignments were then also performed a second time but dropping the locations with enforceable commitments. These data were then collapsed to a Census block-study area level and the number of locations summed within each of the eight categories of the two sets of location assignment variables. This process resulted in the sixteen block-level location count variables that are produced in the A-CAM Version 2.6.0 cost model file posted on the A-CAM website.

Support Calculations

Support amounts vary depending on whether a location is in a Tribal area and whether the location is served by the ILEC, a competitor, or both. We now detail the funding calculations for each category of eligible location. Locations served only by a competitive provider are not eligible for funding under the Enhanced A-CAM program.

Locations served only by the ILEC

For all locations within a Census block-study area combination that are served only by the ILEC, the Enhanced A-CAM Order states that these locations will receive at least 50% of their previous support level (based on the prior A-CAM model) but not more than 75% of previous support.⁹ For non-Tribal areas, staff use the A-CAM funding threshold of \$52.50 per month and a monthly support cap of \$200 to determine previous support levels. This implies that locations with model costs at or below \$52.50 per month receive no funding while locations with costs at or above \$252.50 per month receive \$200 per

⁸ Pursuant to the *Enhanced A-CAM Order*, para. 75, a location subject to an enforceable commitment to deploy by a competitor, but to which the ILEC has deployed at least 100/20 Mbps service, will be treated the same as a location served with 100/20 Mbps by both the ILEC and unsubsidized competitor (see discussion below). See *Enhanced A-CAM Order*, para. 75. The illustrative results with potential adjustments exclude support for such locations, however.

⁹ See *Enhanced A-CAM Order*, para. 74.

month in support. Previous support levels for locations with costs that lie between \$52.50 and \$252.50 were determined to be the difference between their costs and \$52.50. For Tribal areas, staff used the A-CAM funding threshold of \$39.38 per month and a monthly support cap of \$213.12, and a parallel calculation was made.¹⁰

Locations served by the ILEC and a Competitor

For locations that are now served by the ILEC and another provider, or that are served by the ILEC and will be served by another provider that is subject to an enforceable commitment, the Commission determined that it is appropriate to complete the A-CAM funding term but not provide additional funding to these locations.¹¹ Given that most providers have five years left on their existing A-CAM I or A-CAM II terms and that the Enhanced A-CAM term is 15 years, the Commission determined that these locations will be provided 33% of their previous support amount.¹² The previous support amounts for these locations are calculated using the same funding thresholds and support caps that we use above for locations served only by the ILEC. One-third of this calculated support amount is then provided for each of the locations in this category at the block level.

Unserved locations

For locations that do not have 100/20 Mbps or better service from any provider, and that are not subject to an enforceable commitment to deploy broadband at or above these thresholds by any provider, the Commission determined that it was appropriate to provide full Enhanced A-CAM support using higher funding thresholds and support caps than applied under the A-CAM I and A-CAM II programs. The calculations for the various funding scenarios are performed similarly, so as an illustrative example, the non-Tribal and Tribal calculations for scenario 1 that has a monthly support cap of \$300 per month or 80% of total estimated uncapped support for all of a carrier's territory within a state, whichever is higher, is provided here. For unserved locations in non-Tribal areas, to calculate support for these locations within a block, the funding threshold is \$63.69, and the monthly support cap is \$300 per month. This implies that unserved locations within blocks with average model costs at or below \$63.69 receive no support while unserved locations in blocks with costs that exceed \$63.69 have their support capped at \$300 per month. For unserved locations in Tribal areas, the funding threshold is \$47.76, and the monthly support cap is \$315.93, assuming a support cap of \$300 in non-Tribal areas.¹³

As a result of funding varying by three categories of served status and two categories of Tribal status, the funding formula is different for six categories of eligible locations. A description of the funding formula for each of the categories using our illustrative example of a \$300 monthly support cap for unserved locations is provided below.

1. Non-tribal ILEC-only served: 60% of support capped at \$200 with a funding threshold of \$52.50
2. Tribal ILEC-only served: 60% of support capped at \$213.12 with a funding threshold of \$39.38
3. Non-tribal ILEC and competitive served: 33% of support capped at \$200 with a funding threshold of \$52.50

¹⁰ *Id.*

¹¹ See *Enhanced A-CAM Order*, para. 75.

¹² See *id.*

¹³ The *Enhanced A-CAM Order* set the Tribal support cap at \$15.93 above the non-Tribal cap and set the funding threshold at 25% less than the non-Tribal threshold. See *Enhanced A-CAM Order*, para. 76. In all scenarios modeled, we set the Tribal support cap for unserved locations \$15.93 higher than the assumed non-Tribal support cap. For example, at a \$350 non-Tribal support cap, the Tribal support cap would be \$365.93.

4. Tribal ILEC and competitive served: 33% of support capped at \$213.12 with a funding threshold of \$39.38
5. Non-Tribal Unserved: Support capped at \$300 with a funding threshold of \$63.69
6. Tribal Unserved: Support capped at \$315.93 with a funding threshold of \$47.76

After calculating the funding for each of the six categories of eligible locations in the block, this funding is summed to produce a block-level support amount. These data are then collapsed to a state administrative study area level and the individual block level support amounts are summed to arrive at a total support amount for each carrier in the state. The total uncapped support amount is also calculated for each carrier within a state using the funding thresholds for each category of eligible area, but assuming no cap on monthly support. This state-level uncapped support amount for each carrier is then multiplied by 80% and compared to the state-level capped support amount. If 80% of uncapped support exceeds the capped support amount, then the carrier is assigned the 80% of uncapped support amount in that state, otherwise it receives the previously calculated capped amount.