Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Connect America Fund—Alaska Plan	)	WC Docket No. 16-271
	)	
	)	

ORDER

Adopted: September 16, 2020 **Released: September 16, 2020**

By the Chief, Wireless Telecommunications Bureau:

I. INTRODUCTION

1. In this Order, the Wireless Telecommunications Bureau (Bureau) adopts a methodology for estimating the number of Alaskans who receive mobile service within census blocks in remote areas of Alaska. The Bureau will use this methodology to determine whether mobile providers that participate in the Commission's plan for providing support for the deployment of fixed and mobile service in high cost areas of Alaska (the Alaska Plan) have met their performance commitments. The Bureau will also use the methodology to identify census blocks in remote areas of Alaska where these minimum service commitments apply.

II. BACKGROUND

2. Alaska faces unique circumstances, including its massive size, varying terrain, harsh climates, isolated populations, shortened construction season, and lack of access to infrastructure, which have made deploying communications infrastructure particularly challenging for Alaskan providers.[1] To address Alaska's unique challenges, the Commission adopted the *Alaska Plan Order* in 2016, which set forth a ten-year universal service plan specific to Alaska.[2] The *Alaska Plan Order* froze mobile provider participants' support at December 2014 levels (frozen support), but required them to commit to expanding their Fourth-Generation, Long-Term Evolution (4G LTE) service at speeds of at least 10/1 Mbps in eligible areas, subject to exceptions such as limited middle mile capability.[3]

3. *Mobile Provider Commitments*. Under the *Alaska Plan Order*'s requirements,

[1] *See Connect America Fund; Universal Service Reform–Mobility Fund; Connect America Fund–Alaska Plan*, WC Docket Nos. 10-90, 16-271, WT Docket No. 10-208, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 10139, 10141-42, para. 5 (2016) (*Alaska Plan Order*); *Connect America Fund et al*., WC Docket No. 10-90 et al., Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 17829, paras. 507-08 (2011) (*USF Transformation Order*). Based on the 2010 census data, the average census block in Alaska is 50 times (14.7 square miles) the size of the average census block in the other 49 states and the District of Columbia (.28 square miles). *USF Transformation Order*, 26 FCC Rcd at 17788, para. 347, n.587.

[2] *Alaska Plan Order*, 31 FCC Rcd 10139.

[3] *Alaska Plan Order*, 31 FCC Rcd at 10167, 10172, paras. 86, 102 (creating additional obligations for those mobile providers not committing to provide 10/1 Mbps 4G LTE and that are dependent on satellite backhaul). The frozen support can be used only to provide mobile voice and broadband service in those census blocks in remote Alaska where, as of December 31, 2014, less than 85% of the population was covered by 4G LTE service of providers that were either unsubsidized or not eligible for frozen support in Alaska. *Alaska Plan Order*, 31 FCC Rcd at 10167, para. 87.

participating mobile providers must serve a specific number of people in remote parts of Alaska by the end of year 5 (ending December 31, 2021) and year 10 (ending December 31, 2026) of the support term.[4] As part of their commitments, providers must identify the mobile technology that they will use to serve those populations (e.g., 3G, LTE) and the type of middle-mile connectivity (e.g., fiber, satellite) on which they will rely to provide mobile services.[5] The Alaska Plan required participating mobile service providers to submit performance plans with their commitments for Bureau review.[6] In December 2016, the Bureau approved the service commitments made by eight Alaskan mobile service providers, and it subsequently accepted updated commitments from ASTAC and GCI.[7] The *Alaska Plan Order* stated that the Commission would rely on participating providers' Form 477 coverage data to evaluate whether providers have met their 5 and 10 year commitments.[8] The Commission delegated authority to the Bureau to require additional information necessary to establish clear standards for determining whether providers have met their 5 and 10-year commitments.[9]

4. *Proposed Alaska Population-Distribution Model*. To establish a consistent methodology for determining the number of people served in Alaskan census blocks, the Bureau sought comment on a model, which the Bureau named the Alaska Population-Distribution Model, to estimate the number of Alaskans who receive mobile service in census blocks in remote areas.[10] The *Alaska Population Model Public Notice* sought comment on using this methodology for the purpose of evaluating whether participating providers have met their performance obligations associated with receiving frozen support under the Alaska Plan.[11] The Alaska Population-Distribution Model identifies areas within a census block where people are likely to live and then evenly distributes the population throughout the livable area of the census block.

5. Specifically, the model uses a multi-step process to identify areas within a census block

[4] *Alaska Plan Order*, 31 FCC at 10162-63, para. 72. The Commission also provided for separate funding to expand service in unserved areas of remote Alaska that did not have commercial mobile radio service as of December 31, 2014; this funding will be distributed through a reverse-auction process. For purposes of this latter source of funding, "unserved" areas are defined as those census blocks where less than 15% of the population within the census block was within any mobile provider's coverage area. *Id.* at 10173-74, para. 106.

[5] *Alaska Plan Order*, 31 FCC Rcd. at 10166, para. 85.

[6] *Alaska Plan Order*, 31 FCC Rcd at 10160, 10167, paras. 67, 85.

[7] *Wireless Telecommunications Bureau Approves Performance Plans of the Eight Wireless Providers That Elected to Participate in the Alaska Plan*, WC Docket No. 16-271, Public Notice, 31 FCC Rcd 13317, Appx. (WTB 2016) (*Wireless Commitments Notice*); *Wireless Telecommunications Bureau Approves ASTAC's and GCI's Revised Performance Plans Pursuant to the Alaska Plan Order*, WC Docket No. 16-271, Public Notice, 34 FCC Rcd 12183, Appx. (WTB 2019); *see also Alaska Plan Order*, 31 FCC Rcd at 10160, 10167, paras. 67, 85-86. The *Alaska Plan Order* also required participating providers to update their end-of-term commitments by December 31, 2020, and it delegated to the Bureau authority to review these updates and to require revised commitments if it serves the public interest. *Alaska Plan Order*, 31 FCC Rcd at 10166-67, para. 85.

[8] *Alaska Plan Order*, 31 FCC Rcd. at 10173, para. 103.

[9] *Alaska Plan Order*, 31 FCC Rcd at 10166, para. 85.

[10] *Wireless Telecommunications Bureau Seeks Comment on Population Distribution Model and Eligible Census Block List to be Applied in the Alaska Plan*, WC Docket No. 16-271, Public Notice, 35 FCC Rcd 1520 (WTB 2020) (*Alaska Population Model Public Notice*). Comments and reply comments to the *Alaska Population Model Public Notice* were initially due March 26, 2020 and April 10, 2020, respectively. The Bureau extended the deadlines to April 7, 2020 and April 17, 2020, respectively, in response to Alaska Telecom Association's (ATA's) motion for extension of time due to COVID-19. *Wireless Telecommunications Bureau Extends Comment Deadlines for Alaska Plan Population Distribution Methodology*, WC Docket No. 16-271, Public Notice, DA 20-341 (WTB rel. Mar. 26, 2020).

[11] *Alaska Population Model Public Notice*, 35 FCC Rcd at 1523, para. 9.

most likely to be populated and combines those results with service coverage maps to estimate the number of people with mobile wireless service in a partially-served census block.[12] The model uses TIGER[13] road data overlaid onto populated census blocks, under the premise that local roads (not highways or expressways) are a reliable predictor of population locations.[14] Next, the model draws polygons extending 100 meters on either side of those roads, with areas further out assumed to be uninhabited. The model also overlays General Land Status data maintained by the State of Alaska and removes areas where people are unlikely to reside, such as National Forest Service land.[15] Finally, the model evenly distributes the population of each census block within the remaining polygons to reflect the geographic areas where people are likely to live. For those census blocks where no populated areas are identified, the methodology evenly distributes the Census-reported population of each block across land within that block owned by municipalities, private entities, or Alaska Natives. If there is no land owned by those groups, then the population is distributed across the entire census block.

6. The *Alaska Population Model Public Notice* sought comment on exceptions to the methodology in four areas of Alaska in which the proposed methodology might not accurately reflect population coverage.[16] Specifically, the Bureau proposed to adopt the following deviations from the general methodology:[17]

- In and around Unalaska, in an area covering 31 census blocks, address and other population location information from the local government could be used to create polygons around addresses (with a 50-meter buffer) in residential areas to represent the location of the population.
- Near Nome and Unalakleet, in an area covering 187 census blocks, aerial imagery data from Google Earth can be used to identify building structures, and polygons could be drawn around them as a proxy for the location of population.
- In the Prudhoe Bay area, in an area covering 16 census blocks where 2010 census data likely primarily reflects oil field workers rather than year-round population, Google Earth and internal ASTAC location data can be used to identify populated areas (primarily developed worksites, mobile camps, and staging areas).
- In the Copper Valley, in an area covering 61 census blocks, Google Earth and internal Copper

[12] *Alaska Population Model Public Notice*, 35 FCC Rcd at 1521-22, para. 5.

[13] TIGER stands for Topologically Integrated Geographic Encoding and Referencing. These are geospatial data that the U.S. Census Bureau uses to describe land attributes, such as roads, railroads, landmarks, lakes, and rivers, and boundaries, such as counties, census tracts, and census blocks. *See* U.S. Census Bureau, TIGER/Line Shapefiles 2010, at 1-1 (2012), https://www2.census.gov/geo/pdfs/maps-data/data/tiger/tgrshp2010/TGRSHP10SF1.pdf.

[14] The proposed methodology excludes certain minor routes less likely to predict the location of a residence (e.g., unnamed roads, roads marked as "trails" and passable only by 4WD vehicles, and pedestrian trails). Specifically, it excludes roads coded as S1500, S17010, S1750, S1820, and S1830 in the 2019 TIGER/Line Shapefiles. *Alaska Population Model Public Notice*, 35 FCC Rcd at 1521-22, para. 5. Large areas of Alaska are uninhabited but have highways running through them, and many villages are unconnected to each other by highways or major roads. *See* GCI Nov. 29, 2016 *Ex Parte* at 2.

[15] The complete list of excluded land areas (i.e., areas where people are unlikely to reside) are areas designated as Bureau of Land Management, Major Military, National Forest Service, National Park Service, National Wildlife Refuge, State, and Wild and Scenic Rivers. If an area is modeled to have a population due to its proximity to a road, but is categorized as being within one of these designated areas, that specific area would be removed from the rest of the modeled populated area.

[16] *Alaska Population Model Public Notice*, 35 FCC Rcd at 1522, para. 7.

[17] *Id*. at 1522-23, paras. 7, 9

Valley Telephone Company structural location data can be used to identify structures.

7. The Bureau also sought comment on alternatives to the Alaska Population-Distribution Model that may better identify populated areas. The Bureau specifically sought comment on using a database of broadband-serviceable locations to identify the specific locations within a census block where fixed broadband is unavailable.[18]

8. Finally, the Bureau proposed to use the Alaska Population-Distribution Model to identify the census blocks in remote areas of Alaska that are eligible for use of frozen support under the Alaska Plan (frozen-support eligible blocks), and it noted that the Bureau's list of blocks developed using the methodology was the same as the list submitted by GCI.[19] No commenter offered any alternatives to this proposal.

III. DISCUSSION

9. We adopt the Alaska Population-Distribution Model to estimate the number of people in remote parts of Alaska who have access to mobile service in census blocks partially served by providers participating in the Alaska Plan. To assess a participating provider's satisfaction of its service commitments at the 5 and 10-year performance benchmarks, we will use 2010 block-level population census data and the provider's Form 477 data, in conjunction with the Alaska Population-Distribution Model, to estimate the number of Alaskans in remote parts of the state who are covered by the provider's network (using the technology identified in the commitment).[20] No commenter proposed an alternative approach, and the sole commenter, ATA, supports use of the model.[21] We agree with ATA that the Alaska Population-Distribution Model is the best currently available method for determining whether mobile providers meet their service commitments.[22] In addition, we believe that the model is the best available methodology that likely will be available by the 5-year mark and that the same methodology should be applied to both the 5 and 10-year benchmark.[23] Using two different methodologies for the 5

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[18] *Alaska Population Model Public Notice*, 35 FCC Rcd at 1523-24, para. 11, citing *Establishing the Digital Opportunity Data Collection; Modernizing the FCC Form 477 Data Program*, WC Docket Nos. 19-195, 11-10, Report and Order and Second Further Notice of Proposed Rulemaking, 34 FCC Rcd 7505, 7545-49, paras. 99-111 (2019) (*Digital Opportunity Data Collection Order*). The Commission had proposed in the *Digital Opportunity Data Collection Order* to create and integrate a tool into the Digital Opportunity Data Collection that maps broadband-serviceable locations (e.g., houses, businesses, structures), and sought comment on what kinds of locations should be included as broadband-serviceable. *Digital Opportunity Data Collection Order*, 34 FCC Rcd at 7545-49, paras. 99-111; *see also Establishing the Digital Opportunity Data Collection; Modernizing the FCC Form 477 Data Program*, WC Docket Nos. 19-195, 11-10, Second Report and Order and Third Further Notice of Proposed Rulemaking, FCC 20-94 (rel. Jul. 17, 2020).

[19] *Alaska Population Model Public Notice*, 35 FCC Rcd at 1524, para. 12. The Bureau did not seek comment on GCI's assertion that a subset of its list of frozen-support eligible blocks also is eligible for funding from the unserved-areas reverse auction. *Alaska Population Model Public Notice*, 35 FCC Rcd at 1524, para. 12. *See also* Letter from Julie A. Veach, Counsel, GCI, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 16-271, at 1 (filed Nov. 29, 2016) (GCI Nov. 29, 2016 *Ex Parte*).

[20] We use the same 2010 population census data throughout the life of the Alaska Plan to control for the number of people that a mobile provider committed to be covered over the life of the Alaska Plan. Otherwise, mobile providers would be subject to population changes that they cannot control for in their population-covered commitments.

[21] ATA Comments at 1.

[22] ATA Comments at 3.

[23] We recognize that the Broadband DATA Act mandates that the Commission "shall create a common dataset of all locations in the United States where fixed broadband internet access service can be installed, as determined by the Commission." Broadband DATA Act, Pub. L. No. 116-130, 134 Stat. 228, 230, § 802(b)(1)(A)(i). Mobile coverage could be superimposed on such a fixed location map to determine, for example, how many locations are covered within a census block. *See, e.g.*, *Alaska Population Model Public Notice*, 35 FCC Rcd at 1523, para. 11 (seeking comment on whether a database of broadband-serviceable locations could be used to estimate distribution of

(continued….)

and 10-year evaluations would result in inconsistent evaluation of the commitments and could jeopardize the Commission's ability to enforce those commitments.

10. *Determining Whether Providers Have Met Their Commitments*. Although the *Alaska Plan Order* required mobile participants to specify the number of people that they would commit to serve, it did not address how providers would calculate this number, other than to note that the Commission would use mobile providers' nationwide coverage polygons from Form 477 for the analysis.[24] Form 477 data, however, which reflect mobile providers' coverage area, do not necessarily reflect the number of people served in Alaska.[25] A map that reflects 75% coverage of the geographic area of a census block, for example, does not mean necessarily that 75% of the population of that census block is covered by that provider, given that population generally is not evenly distributed through a census block in remote areas of Alaska and that census blocks may be very large and sparsely populated.[26]

11. To determine whether mobile providers have met their service commitments using their Form 477 nationwide coverage polygons,[27] the Commission will superimpose these coverage polygons onto the Alaska Population-Distribution Model to distribute 2010 census population throughout the census block.[28] Commission staff then will analyze how many people in that census block are located within the mobile provider's coverage area to determine the number of people served by that provider.

12. *Exceptions.* We also adopt the four exceptions to the model that we proposed in the *Alaska Population Model Public Notice* (in and around Unalaska, near Nome and Unalakleet, in the Prudhoe Bay area, and in the Copper Valley area). Because of the unique nature of these four areas, the alternate data sources better reflect the location of population than the Alaska Population-Distribution Model; in addition, no commenters object to these exceptions. Allowing these limited exceptions to the model will provide more granular data of where people are located in remote areas, and it will ensure that participating mobile providers are deploying service that will benefit Alaskans.

13. We reject ATA's request for mobile providers to "submit available evidence regarding the true location of population no later than six months before the next approaching benchmark,"[29] which we interpret to be a request to submit additional exceptions to the Alaska Population-Distribution Model by June 30, 2021 (six months before the 5-year mark of December 31, 2021). First, we note that mobile providers already have had an opportunity to submit additional exceptions in response to the *Alaska*

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population to determine whether mobile providers have met their performance commitments). However, given that the Broadband DATA Act requires that the Commission competitively bid any contract to create that common dataset (Broadband Serviceable Location Fabric) and the Commission has not had any funding appropriated, we cannot be confident that dataset will be available by the end of 2021.

[24] *Alaska Plan Order*, 31 FCC Rcd at 10173, para. 103 ("[The Commission will] rely on participating carriers' Form 477 [nationwide coverage] submissions in determining whether each carrier's 5-year and 10-year milestones have been met.").

[25] In addition, we note that the Alaska Plan is a census-block based plan (i.e., eligible areas are allowed or excluded at the census block level) and that Form 477 coverage data are not census-block based. Accordingly, use of Form 477 coverage data would require additional analysis—such as superimposing Form 477 coverage polygons onto census block maps—to determine whether mobile providers have met their performance obligations for a census block. *See Alaska Plan Order*, 31 FCC Rcd at 10167, para. 87; FCC, Form 477 Instructions, For Filings As Of December 31, 2019, and Beyond 25 (2019), https://us-fcc.app.box.com/v/Form477Instructions.

[26] *See* ATA Feb. 8, 2019 *Ex Parte* at 2 ("Alaska is a vast state with some populated census blocks as large as New Jersey.").

[27] *See Alaska Plan Order*, 31 FCC Rcd at 10173, para. 103.

[28] The Bureau locked the population on 2010 census data levels, to control for population changes that could occur over the ten years of the Alaska Plan. *See Alaska Population Model Public Notice*, 35 FCC Rcd at 1524, n.23.

[29] ATA Comments at 4.

Population Model Public Notice, issued in February, and no commenter has identified any exceptions other than the four exceptions that we adopt here.[30] Second, permitting the submission of additional exceptions after providers' four-year performance plan resubmissions, due December 31, 2020, would unnecessarily complicate the Bureau's review of those resubmissions, which must include population coverage commitments based on the model we adopt herein.[31] We therefore decline to allow mobile providers to submit additional exceptions to the model and find the amount of time already allowed for such requests to have been sufficient.

14. *Frozen-Support Eligible Census Blocks.* Finally, we adopt our proposal to use the Alaska Population-Distribution Model to identify those census blocks in remote areas of Alaska that are eligible for frozen support under the Alaska Plan and that can be counted by participating carriers towards their performance commitments. Specifically, we use the model to identify those census blocks in remote Alaska where, as of December 31, 2014, less than 85% of the population was covered by 4G LTE service of providers that are either unsubsidized or not eligible for frozen support in Alaska.[32] We apply the Alaska Population-Distribution Model—in combination with 2010 block-level population census data[33] and Form 477 4G LTE coverage data for those unsubsidized or ineligible providers as of December 31, 2014—to generate the list of frozen-support eligible blocks.

15. As we explained in the *Alaska Population Model Public Notice*, the list of census blocks generated using our proposed Alaska Population Distribution Model aligns with the list of census blocks eligible for frozen support that GCI submitted on November 29, 2016.[34] Commenters do not object to this list of census blocks, and we find that it is the most accurate list of census blocks eligible for frozen support. Accordingly, we will use this list of frozen-support eligible census blocks to determine if mobile providers have met their service commitments at the 5 and 10-year benchmarks of the Alaska Plan. Consistent with the *Alaska Plan Order*, participating providers "may only satisfy their performance commitments through service coverage" in those census blocks included on the list.[35]

IV. ORDERING CLAUSES

16. Accordingly, IT IS ORDERED, pursuant to the authority contained in sections 1-4 and 254 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151-154 and 254, and sections 0.91, 0.131, 0.291, 0.311, and 1.106 of the Commission's rules, 47 CFR §§ 0.91, 0.131, 0.291, 0.311, and 1.106, and the delegated authority contained in the *Alaska Plan Order*, 31 FCC Rcd 10139, 10166, para.

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[30] *See* ATA Feb. 8, 2019 *Ex Parte* at 1.

[31] *See* 47 CFR § 54.317(f) ("Alaska Plan participants shall, no later than the end of the fourth year of the ten-year term, review and modify their end-of-term commitments in light of any new developments, including newly available infrastructure.").

[32] Frozen support can be used only to provide mobile voice and broadband service in those census blocks in remote Alaska where, as of December 31, 2014, less than 85% of the population was covered by the 4G LTE service of providers that are either unsubsidized or not eligible for frozen support in Alaska . *Alaska Plan Order*, 31 FCC Rcd at 10167, para. 87.

[33] We use 2010 U.S. Census Bureau data because such data was the most recent data available as of December 31, 2014.

[34] GCI Nov. 29, 2016 *Ex Parte*, Attach.; *Alaska Population Model Public Notice*, 35 FCC Rcd at 1524, para. 12. As we explained in the *Alaska Population Model Public Notice*, in the four geographic areas where ATA proposed using certain local data sources to estimate population distribution instead of GCI's methodology, there was no 4G LTE service from an ineligible or unsubsidized provider as of December 31, 2014 (i.e., census blocks in these areas would be eligible for frozen support, regardless of the methodology used to estimate the location of Alaskans). Accordingly, GCI's list of frozen-eligible blocks, submitted before ATA's recommendation, was the same as the list the Bureau generated using the Alaska Population Distribution Model.

[35] *Alaska Plan Order*, 31 FCC Rcd at 10167, para. 87.

85, this Order IS ADOPTED.

FEDERAL COMMUNICATIONS COMMISSION

Donald Stockdale
Chief
Wireless Telecommunications Bureau