March 28, 2014

By Electronic Filing

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Connect America Fund, High Cost Universal Service Support
WC Docket Nos. 10-90, 05-337

Dear Ms. Dortch:

Alaska Communications Systems ("ACS")[1] respectfully submits these supplemental comments in the above-captioned docket in response to the Bureau's recent release of version 4.1 of the Connect America Model ("CAM 4.1").[2]

Introduction

ACS is evaluating its ability to deploy supported voice and broadband services to the census blocks identified as eligible for Connect America Fund ("CAF") Phase II support in the latest illustrative results released by the Wireline Competition Bureau ("Bureau") using CAM 4.1 and a $52.50 support threshold. Because the Bureau has not yet released the precise list of census blocks where CAM 4.1 would provide CAF Phase II support, portions of ACS's analysis are based on the list of census blocks that would be supported under version 4.0 of the CAM using the $52.00 support threshold ("CAM 4.0").[3]

Based on its analysis, ACS believes that, unless the Bureau makes substantial changes to CAM 4.1, ACS will be categorically unable to accept support under the CAF Phase II

[1] In this letter, ACS signifies the incumbent local exchange carrier subsidiaries of Alaska Communications Systems Group, Inc.

[2] *Wireline Competition Bureau Announces Availability of Version 4.1 of the Connect America Fund Phase II Cost Model*, WC Docket No. 10-90, Public Notice, DA 14-394 (rel. March 21, 2014).

[3] *See id.* at 3. Because CAM 4.0 and CAM 4.1 produce extremely similar results and use support thresholds that differ by only $0.50, ACS believes that the list of census blocks supported under the CAM 4.0 illustrative results, which the Bureau has made available, is a reasonable proxy for those that are likely to receive support under CAM 4.1.

mechanism because, even with CAF Phase II support at the levels it would provide, ACS would be unable to make the investment necessary to serve the locations the model identifies.

CAM 4.0 projects that census blocks in 30 villages in the Alaskan Bush ("Bush" communities or villages) would be eligible for CAF Phase II support. Today, terrestrial wireline telecommunications facilities generally do not connect these villages with the national and global network infrastructure; they are served primarily by satellite or microwave transport facilities[4]. These communities generally lack direct connection to the Alaskan road system and can be reached only by plane, boat, barge, or snow machine. They are, in most cases, hundreds of air miles from Anchorage over impassable terrain. Their remote, isolated locations and small populations mean that there is rarely private investment justification for building terrestrial fiber middle mile facilities to reach them, and the level of support CAM 4.1 would provide for doing so under CAF Phase II is grossly insufficient.

Contrary to reason, CAM 4.1 assumes fiber optic middle mile transport facilities can be constructed to remote Bush villages disconnected from Alaska's highways, power grid and other primary infrastructure at the same cost as building to on-road system communities in the lower 48 states. As a result, CAM 4.1 grossly understates the cost of constructing middle mile transport facilities in the Alaskan Bush. CAM 4.1 erroneously estimates the total cost of deploying middle mile fiber optic transport facilities to these 30 Bush villages, in the aggregate, at roughly $11.2 million.[5]

ACS estimates that the cost to deploy just the middle mile facilities necessary to deliver the supported services to these covered census blocks would be between *one and two orders of magnitude* higher than what CAM 4.1 projects. Validating this estimate, in connection with the Arctic Fibre project that will link northern Alaska with Asia and Europe via a polar undersea fiber route, Quintillion Networks has estimated that it will spend approximately $140 million to deploy terrestrial fiber spurs in the Alaska Bush to reach six communities that are not connected to fiber today. Further, the Alaska

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[4] A few of the Bush communities included in CAF II are served by GCI's TERRA-Southwest network, constructed with some $88 million in federal Broadband Initiatives Program grant award funds and loan guarantees, but GCI has declined to make affordable wholesale capacity available to unaffiliated providers on these facilities.

[5] *See* CAM 4.0 Cost Investment Detail report, Column Z "Total Node 0 Investment Facilities" for the wire centers associated with the communities discussed in this letter. The $11.2 million figure is the total middle mile fiber investment, with the "Percent of Middle Mile Routes Associated with Broadband Input" values set to 100 percent, such that no costs are allocated to other, ineligible services. The default value for this set of inputs is 50 percent, which reduces by half (to $5.6 million) the amount of middle mile fiber investment allocated to supported voice and broadband services. ACS believes that the investment level in CAM 4.1 will reflect similar results.

Statewide Broadband Task Force estimates the cost of bring broadband to all Alaskans, most of which is for middle mile facilities, to be well in excess of one billion dollars.[6] Such figures confirm ACS's projection that it would incur costs well into the hundreds of millions of dollars to deploy fiber optic middle mile transport facilities to reach the 30 Bush communities currently included in CAF Phase II.

With the actual costs of building middle mile fiber optic transport capacity – one of the greatest obstacles to expanding broadband availability in Alaska – so far in excess of the level estimated by CAM 4.1, it is clear that the model currently fails to "adequately account for the costs faced by carriers serving" Alaska.[7]

Therefore, by so dramatically underestimating the cost of building middle mile fiber optic transport facilities to Alaskan Bush communities, and including these as covered locations under CAF Phase II, CAM 4.1 does not provide sufficient support to meet the goals of CAF Phase II in Alaska.[8] In this letter, ACS describes some of the reasons why it believes CAM 4.1 falls so far short of reality, particularly in failing accurately to project accurate middle mile costs to reach these Bush locations. ACS also requests that the Bureau take steps to bridge the gulf this creates between proposed support and build-out expectations for Alaska. Specifically, we propose to the Bureau three specific options to fulfill the Commission's broadband universal service goals in Alaska, as follows:

(i) Option 1: Modify the model, as previously proposed by ACS, to incorporate Alaska-specific costs, allocation algorithms, and take rate assumptions, and assign greater middle mile transport and local distribution costs to non-road system Bush locations to reflect the extraordinarily expense of deploying facilities to reach Bush locations, so that the model produces a realistic estimate of costs and a correspondingly reasonable amount of support in Alaska price cap areas; or

(ii) Option 2: Incorporating modifications to the model to incorporate Alaska-specific costs, allocation algorithms, and take rate assumptions, transfer all locations that are off the road system (and hence unserved by middle mile terrestrial wireline facilities) from the CAF to the RAF support mechanism; or

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[6] Alaska Statewide Broadband Task Force, *A Blueprint for Alaska's Broadband Future* (rel. Aug. 7, 2013), at 32 (available at: http://www.alaska.edu/files/oit/bbtaskforce/2013-08-AK-Broadband-Task-Force-Report%7CA-Blueprint-for-Alaska%27s-Broadband-Future.pdf).

[7] *Connect America Fund*, WC Docket No 10-90, Report and Order, FCC 11-161, 26 FCC Rcd 17663, ¶¶184, 188 (2011) ("*USF-ICC Transformation Order*").

[8] *Id.*

(iii) Option 3: If neither of the above two options are implemented, permit ACS to continue receiving frozen CAF Phase I support at current levels in lieu of CAF Phase II support, and to continue investing in the construction and operation of voice and broadband-capable networks in areas that are currently eligible for CAF Phase I support, as currently required under the CAF Phase I frozen support mechanism, for the duration of CAF Phase II.

I. CAM 4.1 Grossly Understates the Cost of Deploying Broadband In the Alaska Bush and Should Be Modified For Alaska

The illustrative CAM 4.0 results released by the Bureau include the following Alaskan Bush communities among the locations eligible for CAF Phase II support:

Bush Community	Total Locations	Supported Locations ($52 Benchmark)
Gustavus	553	517
Hoonah	329	251
Angoon	293	215
Tenakee Springs	196	193
Port Graham	112	112
English Bay	24	24
Nanwalek	49	49
Seldovia	608	246
Old Harbor	122	11
Port Alsworth	72	72
Nondalton	108	15
Kokhonak	64	55
Pedro Bay	127	25
Pilot Point	91	46
Egegik	97	91
Port Heiden	71	20
Perryville	74	29
Chignik	126	110
Chignik Lake	50	29
Chignik Lagoon	65	48
Kake	329	300
Coffman Cove	186	150
Port Protection	55	13
Thorne Bay	427	279
Kasaan	51	29
Klawock	481	452
Northway	127	58
Yakutat	459	373
Huslia	116	72
Pelican	133	90
Total	**5,595**	**3,974**

As shown on the attached map, these Bush communities are located on the Aleutian Peninsula and other inaccessible areas of Alaska's coast and interior. It is 500 air miles from Anchorage to Perryville, located near the far end of the Aleutian Peninsula. It is 375 miles by air from Anchorage to Huslia. Only one community, Northway, is accessible by road from other parts of the state, and Northway is nevertheless 163 miles from the nearest existing fiber route. The cost and level of effort required to bring broadband meeting CAF Phase II standards to these communities would be prodigious.

CAM 4.0 would only provide about $2.6 million in support to ACS to deploy voice and broadband service meeting the CAF Phase II standards in these communities.[9] As discussed in more detail below, that support level falls woefully short. ACS engineers have estimated forward-looking construction costs to connect these communities to fiber networks to be well into the hundreds of millions of dollars, between one and two orders of magnitude higher than the costs that CAM 4.1 projects.

At the funding level projected in CAM 4.1, ACS would not be able to accept CAF Phase II support, foreclosing the prospect of CAF Phase II standards of access to new or upgraded broadband not only to the approximately 4,000 off-road supported locations, but also to the remaining 66,000 supported locations in and around Fairbanks, Juneau, and dozens of other communities in Alaska that CAF Phase II is intended to serve.

A. Inaccuracy of the CAM 4.1 in Estimating Alaska Middle Mile Transport Costs

In Alaska, one of the most significant barriers to broadband deployment in many areas of the state is the lack of adequate and reasonably priced middle mile transport capacity. CAM 4.1 assumes fiber optic middle mile transport facilities – as opposed to satellite or microwave – are necessary to deliver broadband traffic to the undersea cables that transport such traffic to the nearest Internet access points ("IAPs") in the Lower 48 states. ACS agrees with this assumption, but observes that while, microwave facilities would be less expensive in most of these locations, the costs to deploy microwave would exceed the amounts estimated by the CAM for fiber.

The fiber optic transport facilities that do exist generally follow the Alaska road system. There are, however, hundreds of small Alaskan Bush villages that dot isolated stretches of Alaska's rugged coastline or vast interior. These communities are connected to the state's communications networks primarily via microwave or satellite transport facilities linked to aggregation points on fiber rings located elsewhere in the state (principally Anchorage and Juneau). These middle mile links are very expensive to maintain and lack the capacity to support broadband meeting the requirements of CAF Phase II.

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[9] *See* CAM 4.0, Support Model Detail Report (Illustrative results, $52 support threshold).

CAM 4.1, however, does not model middle mile transport costs in a manner that properly reflects the costs to serve these areas, and does not allocate such costs directly to the Bush locations that they serve in a cost-causative manner. The CQMM module of CAM 4.1 essentially models a statewide, multi-purpose middle mile transport network. As described in detail in Appendix 2 of the CACM Methodology, the model assumes middle mile connects each central office to an Internet peering location.[10] The model places each central office on a fiber ring using an algorithm that determines the minimum road distance, such that all offices in the state are connected to a regional tandem that houses the peering location. For central offices in Alaska, where the peering location is not in the state, the middle mile connects the central offices to the landing stations of the undersea cables that transport traffic to the peering locations in the continental United States.

Each central office is allocated a portion of the total middle mile distance within the state based on the ratio of central office locations to total LATA locations.[11] Using the allocated central office middle mile distances, middle mile cost is developed by applying the model inputs to the estimated distances. Middle mile cost is then allocated to each census block served by the central office based on the ratio census block customer locations to the central office customer locations.

This approach fails when applied in Alaska for at least three reasons, as follows:

First, the CQMM does not place middle mile facilities in the Alaskan Bush using routes or distances that reflect the state's topographic constraints, causing CAM 4.1 substantially to understate the quantity of middle mile plant that would be required to serve the Alaskan Bush. Where there are no roads, the model assumes that fiber middle mile facilities can be built using a distance of 1.2 x the airline miles between two communities. In Alaska, this means assuming that a fiber route may be built along a fairly straight line connecting villages regardless of whether there are impassable mountains, glaciers, volcanoes, or other natural obstacles that make such construction hugely expensive or outright impossible. In many cases, the most efficient route may not be terrestrial at all; where the state's topography dictates, submarine routing may be necessary.[12] CAM 4.1 not only assumes fiber can be built in places where it can't, it also

[10] See CACM Methodology 8. Appendix 2 CACM Middle Mile Network Topology Methods, pages 52-56.

[11] Because Alaska is a single LATA, middle mile distances are allocated to each central office based on the ratio of the central office customer locations to total state locations.

[12] Although the Bureau has incorporated some of the costs of intrastate submarine cable connections required to reach these non-road system Bush villages into the overall middle mile transport network modeled by CAM 4.1, ACS's engineering review of options for reaching just the 30 communities discussed in this letter reveals that a substantially greater quantity of intrastate submarine deployment than what is included in CAM 4.1 would be required.

implausibly assumes that it can be built at material and labor costs based on averages from the lower 48 states.

Second, while the CQMM ring-based methodology may be reasonable in other parts of the country where all central offices are connected by the road system, the model's assumption of a fiber ring connecting non-road system wire centers to other locations in Alaska is not reasonable. Alaskan Bush villages cannot generally be served using fiber ring architecture. Rather, in order to reflect the most efficient way to actually construct middle mile transport facilities to these locations, the CQMM in Alaska should use a series of "spokes" to reach individual Bush villages from a central "hub" or aggregation point such as Bethel, Nome and Kotzebue and connect those locations with Anchorage, Fairbanks or Juneau. The cost of these "spokes" should then be allocated to the individual Bush locations they serve, not apportioned equally across the state

Third, CAM 4.1's allocation of only 50 percent of middle mile transport costs to services supported under CAF Phase II is wildly unrealistic in the Alaskan Bush. In fact, ACS would have virtually no opportunity to recover any portion of the costs of this middle mile fiber that is excluded from CAF Phase II support. These small Bush villages generate very little traffic other than residential voice and broadband. There are virtually no business or enterprise customers and, with few people, there is correspondingly little wireless backhaul traffic. While there may be a school or a health clinic in the community, the allocation of 50 percent of the already-understated cost of the middle mile transport network to unsupported services is unjustifiable in these locations.

Because the model does not properly attribute the full cost of middle mile fiber optic transport facilities to the Bush locations they serve, CAM 4.1 therefore fails to properly reflect the cost of delivering voice and broadband to those locations. In so understating the actual costs of serving these Bush villages, it improperly sweeps a number of them into the CAF Phase II support mechanism. Thus, in fulfilling the Commission's directive to "consider whether the model ultimately adopted adequately accounts for the costs faced by carriers serving these areas,"[13] the Bureau should conclude that, in Alaska, it does not.

B. ACS's Deployment Cost Estimate

Contrary to the CAM 4.1 estimate of $11.2 million for middle mile transport facilities necessary to serve these communities, ACS has determined that the forward-looking cost of the necessary middle mile fiber optic transport facilities would be substantially higher, running well into the hundreds of millions of dollars. As none of the required facilities exist today, this would be a true greenfield build.

[13] *USF-ICC Transformation Order*, ¶ 193.

The costs of building the necessary facilities include deployment of thousands of miles of intrastate submarine fiber, and associated landing stations, repeaters, and branching units. On many of these routes, CAM 4.1 assumes the construction of terrestrial facilities, despite the physical impossibility or economic improbability of doing so. Particularly given the forbidding, mountainous, and often volcanic terrain surrounding these communities, the most cost-effective way – and often the only way – to reach them with fiber optic middle mile transport, as assumed by CAM 4.1, is via submarine cable links running along the Alaskan coast and landing at each village.

The unit costs of the necessary coastal submarine cable would, on average, be greater than those for the deep water undersea cable because so much of this coastal submarine cable would be located in very shallow water (15 meters or less), where deployment and maintenance costs are greatest. In some areas, the sea does not reach 15 meters of depth for more than 20 kilometers offshore. Cable placement ships cannot reach locations in such very shallow water, meaning that barges would need to be used to deploy a relatively large portion of the cable. In addition, to protect against damage from environmental factors, such as from ice scouring, and from marine traffic, cable in very shallow water must be armored more heavily and buried more deeply under the sea floor than what is required in deeper water. To minimize the amount of submarine cable required, ACS has also determined that a significant number of branching units would be required.

Two of the Bush communities receiving CAF Phase II support under CAM 4.0 are located in Alaska's remote northern interior. Huslia (population 285), for example, is located over 200 miles west of Fairbanks. Northway (population 71) is located several miles off the Alaska Highway near the Canadian border, but 163 miles from the nearest fiber optic transport cable. In addition, some terrestrial segments would be required to connect the submarine cable facilities discussed above to nearby villages included in CAF Phase II.

To lay fiber optic cable to these Bush locations would require a substantial and costly mobilization effort. There is no heavy equipment routinely available in these remote areas; it would need to be transported to the sites. Neither are there qualified personnel in these areas available to do the work. ACS would need to arrange for crews to travel to the sites, and provide food and lodging for the duration of the job. In addition, new lines of poles on which to place the cable will be required in some places, while in others, ACS would need to make extensive use of horizontal directional drilling to minimize the environmental impact, particularly in wetland areas. Given the time constraints imposed under CAF Phase II, ACS assumes that a portion of the construction would need to take place during the winter months, when environmental conditions drive

costs still higher. The costs of deployment would far exceed the $23.80/foot average ACS previously calculated for projects it has actually undertaken.[14]

In order to deploy and maintain fiber optic cable middle mile facilities to Huslia, ACS would first need to construct a road through 200 miles of virgin Alaskan wilderness, much of it protected wetlands located within the Koyukuk National Wildlife Refuge, which was "established to conserve waterfowl, other migratory birds, moose, caribou, furbearers, and salmon; to fulfill treaty obligations; to provide for continued subsistence uses, and to ensure necessary water quality and quantity."[15] Even if ACS were able to secure the necessary approvals to build such a road, it would be extremely costly to do so.

The costs described above are only for construction of the necessary middle mile facilities. Additional investment would be required to complete a fiber-to-the-premises build-out to the 3,974 locations supported under CAM 4.1, and the operation, maintenance, and repair of these facilities would represent a further substantial financial commitment that would be unlikely to be met by customer revenues and support payments at the level that CAM 4.1 appears to contemplate.

C. Other Alaska Costs Continue To Be Understated In the Model

ACS has done as much work as any entity to document forward-looking costs in its state. The proposals ACS has made to ensure the model reflects Alaska-specific costs are not opposed by other price cap carriers – indeed, ACS has garnered broad industry support for its suggested adjustments to the model and its inputs. CAM 4.1, however, still fails to capture Alaska-specific conditions in several major respects.[16] As demonstrated above, if the model uses inputs that fail to reflect local costs, and fails to distribute those costs properly to the customer locations on the facilities they represent will serve, the model's results will be unreasonable.

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[14] *See Connect America Fund*, WC Docket No. 10-90, Letter from Richard R. Cameron, ACS, to Marlene H. Dortch, FCC (filed Jul. 30, 2013), at 12. Unlike fiber deployment projects that ACS has undertaken in the past, ACS has never considered deployment to these locations to be economically viable, in large part due to the high costs of doing so. In addition, the remoteness of these locations, and the dearth of available local resources, personnel, and equipment to support the project, raise the costs of deployment dramatically.

[15] U.S. Fish and Wildlife Service, "Koyukuk National Wildlife Refuge," available at: http://www.fws.gov/alaska/nwr/koyukuk/index.htm (visited Mar. 25, 2014).

[16] Letter from Karen Brinkmann, Counsel to ACS, to Marlene H. Dortch, Secretary, WC Docket Nos. 10-90 & 05-337 (filed Feb. 24, 2014); Comments of Alaska Communications Systems, WC Docket No. 10-90 (filed Jan. 7, 2014).

As ACS has documented in considerable detail, the model's capital cost inputs for materials and labor are far from reasonable estimates for broadband deployment in Alaska.[17] In modeling network construction costs for Alaska, both for materials and labor, the Bureau should use ACS's state-specific capital costs rather than the capital cost inputs employed in the model, which have no relevance for Alaska, plus an even higher level of costs for facilities in Bush Alaska, to the extent such locations are included in the CAM.[18] Based on a review of the CAM 4.1 estimates of capital investment necessary to deploy voice and broadband meeting the requirements of CAF Phase II, and ACS's engineering cost estimates to reach the Bush villages currently included in CAF Phase II, ACS believes that CAM 4.1 should multiply its middle mile cost estimates by a factor of at least three for Bush locations. This change, together with the middle mile adjustments discussed above, will help ensure that the model reasonably estimates forward-looking broadband deployment costs and allocates sufficient support to Alaska.

II. To Achieve the Commission's Voice and Broadband Goals in Alaska, the Bureau Must Alter its Approach

Despite years of concerted advocacy and engagement by ACS, the cost model continues to understate in dramatic fashion the amount of CAF Phase II support that would be needed to offer voice and broadband services meeting the Commission's performance requirements in the places it identifies as eligible for support. ACS understands that the Bureau is close to finalizing its policy choices regarding the CAM. The Bureau, however, cannot achieve the Commission's broadband goals in Alaska, and will undermine the viability of voice service in many areas of the state, unless it adopts a very different approach than the one foreshadowed by CAM 4.1.

ACS now details, as below, the three options previously identified:

A. Option 1: To Produce Valid Results in Alaska, the CAM Must Incorporate Alaska-Specific Changes, Including Much Higher Costs For Bush Alaska

For over two years, ACS has repeatedly explained that the CAM and its predecessors fail to account for a host of Alaska-specific cost factors. The Bureau has made minor changes to the CAM to address some of these shortcomings, and those

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[17] Comments of Alaska Communications Systems, WC Docket No. 10-90, pp. 6-12 & Attachment A-2 (filed Jan. 7, 2014). These cost inputs represent forward-looking costs derived from economically viable projects ACS has recently undertaken, predominantly in its service areas located in road-system areas of Alaska. Costs for deployment of facilities in Bush locations would be significantly greater.

[18] As ACS previously has noted, no underlying cost documentation for the CapEx inputs used in the model have ever been made available by either the Bureau or CostQuest. *See id.* at 2 & n.5.

changes have had only a modest effect on the CAM's results for Alaska. The Bureau has not addressed the more serious shortcomings of the CAM, including, as discussed herein, ACS's proposals for the CAM to incorporate well-documented Alaska-specific cost inputs, a greater allocation of submarine cable costs to services supported by CAF Phase II, and a lower and more realistic take rate for Alaska. The industry supports these changes,[19] which would not cause the overall amount of support under CAF Phase II to exceed the budget set by the Commission.

In addition, since the very early days of this proceeding, ACS has advocated for a model that would allocate middle mile transport costs to individual locations according to the type and quantity of facilities needed to serve that location. So, for example, ACS's standalone undersea cable model allocated the costs of the Juneau spur to locations in Juneau.[20] ACS's standalone Alaska broadband cost model differentiated between locations served by fiber, microwave, and satellite service, and priced the transport facilities needed to serve each accordingly.[21]

CAM 4.1, unfortunately, takes a different tack, with disastrous results for the state. CAM 4.1's gross miscalculation of costs – and thus of support – for Alaska stems in part from the design of the CQMM module. The CQMM constructs middle mile network facilities using a ring architecture that is an improbable reflection of reality in the Alaska Bush, and allocates the resulting middle mile transport distances to individual locations within the state based on the ratio of central office locations to total LATA locations in the state. Paradoxically, this methodology would appear to allocate the greatest middle mile distances to the largest central offices, which in turn are the most likely to be located in urban or suburban locations where middle mile transport costs are lowest.

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[19] Letter from David Cohen, USTelecom, to Marlene H. Dortch, Secretary, WC Docket No. 10-90 (filed Oct. 17, 2013).

[20] *See* Letter from Leonard A. Steinberg, Alaska Communications Systems, to Marlene H. Dortch, Secretary, WC Docket Nos. 10-90 & 05-337, pp. 11-12 (filed July 9, 2013) (noting the range of costs to deploy fiber to different Alaska locations due in part to the per-location allocation of submarine cable costs), *citing* Letter from Karen Brinkmann, Counsel for Alaska Communications Systems, to Marlene H. Dortch, Secretary, WC Docket Nos. 10-90 & 05-337 (filed Feb. 13, 2012) (submitting the results, methodology and assumptions of ACS's submarine cable cost model).

[21] Comments of Alaska Communications Systems, WC Docket Nos. 10-90 & 05-337, at 4-6 (filed Feb. 1, 2012) (describing ACS modeling of Alaska middle mile costs); Letter from Karen Brinkmann, Counsel for Alaska Communications Systems, to Marlene H. Dortch, Secretary, WC Docket Nos. 10-90 & 05-337 (filed Feb. 13, 2012) (submitting ACS model of Alaska middle mile costs).

As discussed above, even if portions of Alaska on the road system can be served though a fiber ring, the most efficient way to serve isolated non-road system Bush villages is through individual spokes radiating from regional hubs or other aggregation points. The CAM should accordingly incorporate changes to the way in which it designs and estimates the costs of middle mile fiber optic transport, consistent with the manner in which those facilities would actually be deployed in Alaska. By doing so, the model would produce a far more realistic estimate of forward-looking network deployment costs in Alaska, and would facilitate the design of a support model that could produce a level of support closer to what is actually needed to construct broadband facilities in Alaska price cap areas.

ACS also continues to believe that the Bureau should incorporate into CAM 4.1 the additional Alaska-specific changes it has previously described, specifically by employing the Alaska-specific forward-looking cost inputs, undersea cable allocation algorithm, and lower and more realistic Alaska-specific take rate ACS has previously advocated. While ACS takes no position on the Bureau's decision to use national average costs for other parts of the nation, ACS has amply demonstrated that Alaska is sufficiently different from the rest of the nation that the model *must* employ Alaska-specific data or it will fail to accomplish the purpose the Commission established for it – namely, estimating the true costs of deploying modern voice and broadband-capable networks at a granular level in all areas of the country.[22] In fact, to generate accurate results, the model needs to distinguish its costs in Alaska between those areas accessible by road from Bush areas not accessible by road as costs vary considerably, reducing or eliminating the portion of middle mile allocated to services not supported by CAF Phase II, and adjusting the costs of middle mile facilities in the Alaskan Bush upwards by a factor of at least three.

Indeed, even to build a hybrid fiber-microwave middle mile transport facility to one small area of southwest Alaska, GCI required some $88 million in federal grant funding and loan guarantees, as well as ongoing support from inflating the rates it charges for services subsidized by the federal E-Rate and rural health care support mechanisms above even the rate for satellite services. Even with these subsidies, GCI claims that its costs of terrestrial transport exceed that of satellite services.[23]

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[22] *USF-ICC Transformation Order*, 26 FCC Rcd 17663, ¶¶184, 188 (2011).

[23] *See, e.g., In the Matter of the Petition Filed by Alascom, Inc. d/b/a AT&T Alaska to be Relieved of Its Carrier of Last Resort Responsibilities in Certain Locations in Southwest Alaska,* Regulatory Comm'n of Alaska Docket U-12-127, Brief of GCI Communication Corp. at 10 (filed Dec. 10. 2012) ("It should come as absolutely no surprise that the cost of terrestrial service on TERRA-Southwest exceeds the cost of satellite service in the area.").

With these changes the model would produce a more realistic set of locations adequately supported by CAF Phase II where the support would much more likely be sufficient for ACS to deploy the required voice and broadband services. The industry agrees that this could be achieved without exceeding the $1.8 billion budget set by the Commission in the *USF-ICC Transformation Order*. Indeed, the proponents of the Bureau's model support the changes ACS has advocated.[24]

ACS believes that the remoteness and inaccessibility of many of our Bush communities has to be seen to be appreciated. We invite members of the Bureau, including your modeling experts and any construction experts, to visit us in Anchorage and we will host visits to two to three of the Bush communities in your list. We believe that this is the only way for the Bureau to really understand and appreciate the scale and complexity of Alaska.

B. Option 2: If the Bureau Does Not Incorporate Alaska-Specific and Alaska Bush-Specific Costs In CAM 4.1 As Advocated By ACS, Then the Commission Should Include Off-Road Locations In the RAF Program

ACS recognizes that it may be impractical at this late date to modify the CQMM as described above so that it accurately models middle mile network costs in Alaska. Because the CQMM is proprietary to CostQuest, ACS lacks the ability to propose specific changes to the code necessary to accomplish this goal. Even once the changes were made, additional time would be needed for testing the operation and evaluating the results produced by the new module. An expedient solution would be to support broadband for Alaskan Bush villages through the Remote Areas Fund ("RAF") by excluding them from CAF Phase II, regardless of the cost results generated by CAM 4.1. Where business experience and common sense indicates that the model is producing incorrect results, such a bright line rule represents a sound, easy, and quick implementation that could achieve a reasonable outcome.

The Bureau must implement CAF Phase II in a manner consistent with the $1.8 billion annual budget adopted by the Commission.[25] This budget forces the Bureau to define the unserved areas that should be eligible for CAF Phase II support in a manner that excludes both areas where costs are low enough that affordable voice and broadband service can be sustained by end-user rates alone, and areas the Bureau estimates will be too costly to serve via terrestrial fiber-to-the-premises technology, with the understanding that such areas will qualify for support under the RAF mechanism rather than CAF Phase II.[26] In adopting these parameters for CAF Phase II eligible areas, the Commission stated, "we will allocate our budget of no more than $1.8 billion for price cap areas to

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[24] *See* USTelecom Letter, *supra*, note 19.

[25] *USF-ICC Transformation Order* ¶ 167.

[26] *USF-ICC Transformation Order* ¶¶ 167-68.

maximize the number of expensive-to-serve residences, businesses, and community anchor institutions that will have access to modern networks providing voice and robust, scalable broadband."[27]

The Commission thus expected that CAF Phase II support would distributed so as to fund broadband deployment at the greatest number of high-cost unserved locations, leaving only "a small number of extremely high-cost census blocks" in the RAF.[28] Locations in Alaska that are not connected to national and global communications networks by any terrestrial transmission technology will likely fall within the "extremely high-cost" category under any reasonable model that accurately estimates the forward-looking costs of actually deploying broadband to such locations. These types of communities represent what the Commission referred to as "the most remote areas of the nation" – if not, then it is difficult to imagine what else the Commission may have had in mind. These areas, which today are served by a combination of satellite and microwave technologies, are not likely to be the ones targeted if the Commission's goal is to "maximize the number of expensive-to-serve" locations supported under CAF Phase II.[29] As the Commission acknowledged, "the very small percentage of households that are most expensive to serve via terrestrial technology represent a disproportionate share of the cost of serving currently unserved areas."[30]

Absent adequate CAF II funding, therefore, the Bureau should include Bush locations that are not accessible by road from other parts of Alaska in the RAF mechanism. Further, without the necessary corrections to the model, or the transfer of these non-road system Bush locations to the RAF program, the Commission will deny the much larger number of on-road system Alaska locations – 66,000 or more customer locations proposed for Alaska in the most current version of the model – the benefits associated with CAF Phase II, because ACS would be unable to accept any CAF Phase II support if it were required to deploy terrestrial transport facilities to non-road system locations without adequate funding.[31]

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[27] *USF-ICC Transformation Order* ¶ 167.

[28] *USF-ICC Transformation Order* ¶ 167.

[29] *USF-ICC Transformation Order* ¶ 168

[30] *USF-ICC Transformation Order* ¶ 533.

[31] While it is theoretically possible that an alternative provider would "win" the right to serve some of these locations in a competitive process conducted after the ILEC refuses the support, the Commission expressed a clear preference for the ILEC to conduct the CAF Phase II build-out in light of its history of service as provider-of-last-resort and widespread presence in the state. *USF-ICC Transformation Order* ¶¶177-78. Moreover, the Bureau has yet to adopt rules for such a competitive process and there is no assurance that Alaska would receive any CAF Phase II support or see any new broadband deployment in such a scenario.

C. Option 3: If CAF II Fails Alaska, ACS Should Be Permitted To Continue Under CAF Phase I Support and Obligations For the Duration of CAF Phase II

ACS has expended considerable time and resources to assist with the development of the Bureau's cost model. ACS still believes that the model can be adjusted to produce reasonable results for Alaska. However, if the Bureau proceeds to implement CAF Phase II without incorporating these necessary modifications, the only reasonable alternative is for the Bureau to maintain ACS's existing support levels for the duration of the CAF Phase II period.

In the *USF-ICC Transformation Order*, the Commission ordered that the Bureau consider whether the model it adopts adequately accounts for the costs faced by carriers serving Alaska and other non-contiguous areas.[32] If the Bureau determines that the model does not provide "sufficient support" to any of these areas, the Bureau may maintain "existing support levels" to the affected price cap carrier under CAF Phase I.[33] ACS urges the Bureau to maintain frozen CAF Phase I support at existing levels in Alaska if it declines to make the changes to CAM 4.1 necessary to provide sufficient support in ACS's service areas.

Under CAF Phase I, ACS receives approximately $19.6 million per year in "frozen" support, and has accepted additional CAF Phase I "incremental" support. ACS must use the frozen support to build and operate broadband-capable networks used to operate ACS's own retail broadband service in areas substantially unserved by an unsubsidized competitor.[34] Accordingly, ACS believes the Bureau reasonably may read the *USF-ICC Transformation Order* as permitting the maintenance of frozen CAF Phase I support at existing levels for the duration of CAF Phase II.

The details are critical to ACS, and ACS seeks as much predictability as possible to permit network planning and the most efficient use of the available support. Therefore, ACS urges that, should the Bureau decide to maintain frozen CAF Phase I support for Alaska, the areas deemed "substantially unserved by an unsubsidized competitor" be fixed as of the date CAF Phase I frozen support mechanism went into effect. Such a result would be consistent with the rules for CAF Phase II, under which eligible carriers will know as of the start of the program what areas are eligible for the use of the support.[35]

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[32] *USF-ICC Transformation Order* ¶ 193.

[33] *USF-ICC Transformation Order* ¶ 193.

[34] 47 C.F.R. § 54.313(c).

[35] *Connect America Fund*, WC Docket No. 10-90, Report and Order, DA 13-1113, 28 FCC Rcd 7211 (Wir. Comp. Bur. 2013), at ¶ 24.

In sum: If the Bureau does not modify CAM 4.1 to reflect the Alaska-specific changes discussed herein, with an attendant increase in CAF Phase II support for Alaska and/or the reassignment on non-road system Bush areas to the RAF, then the Bureau should permit ACS to continue receiving frozen CAF Phase I support at current levels, and continue investing in the construction and operation of voice and broadband-capable networks in areas that currently qualify for frozen CAF Phase I as unserved by an unsubsidized competitor, for the duration of CAF Phase II.

* * * * *

ACS respectfully requests action in the CAF Phase II proceeding to ensure that Alaska is not left out of the broadband stimulus that CAF Phase II represents. The Commission should ensure that CAF Phase II is implemented in a manner that achieves the universal service objectives outlined by the Commission in the *USF-ICC Transformation Order*. Failing to correct the model for Alaska-specific costs will render the model unreasonable and arbitrary as it pertains to unserved locations in Alaska. Remote locations in the Alaska Bush cannot adequately be served under CAF Phase II at existing proposed levels of funding and could be included in the RAF program. As an alternative, the existing support should continue to be made available, allowing existing services to be maintained.

Very truly yours,

Digitally signed by
Richard R. Cameron
Date: 2014.03.29 00:14:17
Z

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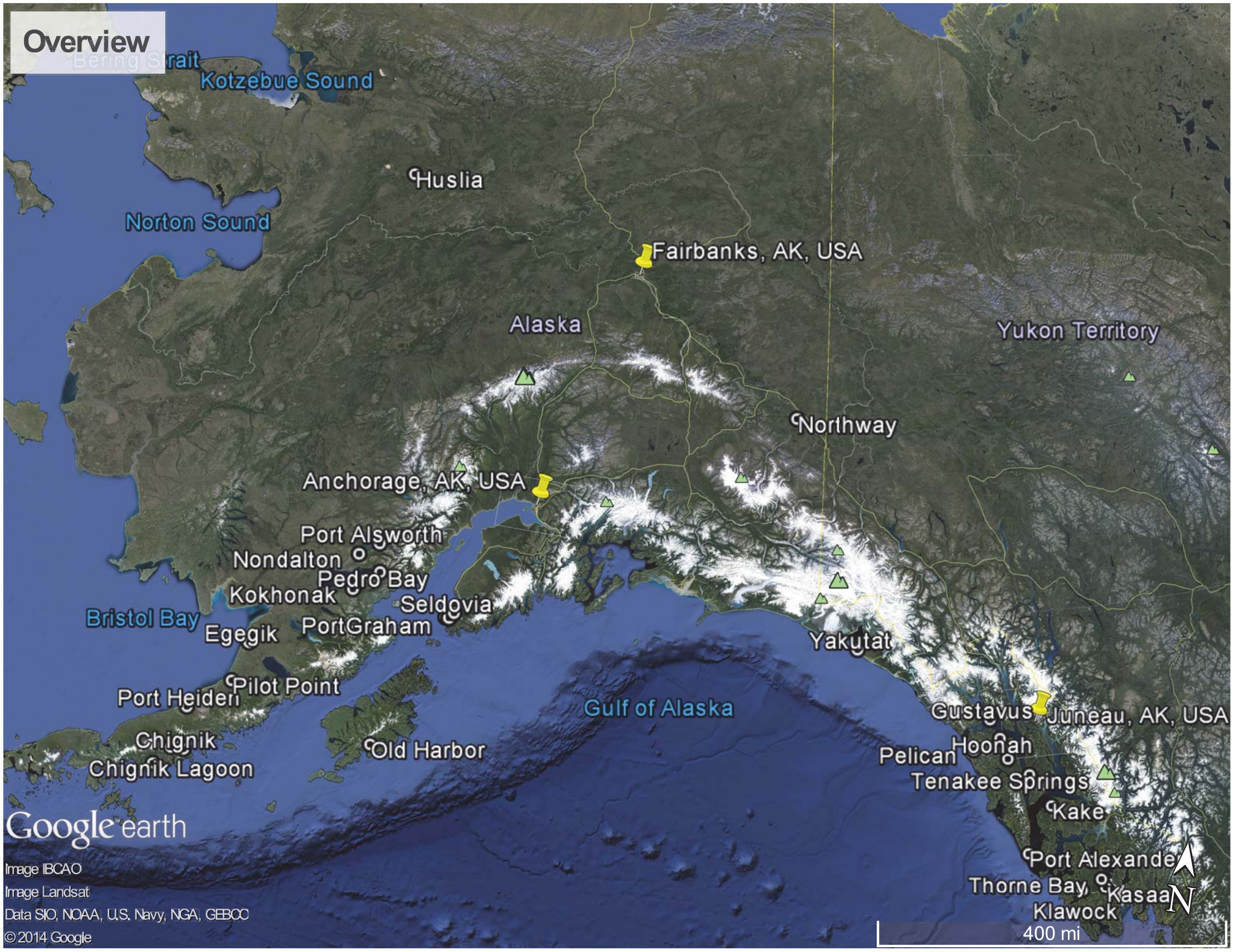
Attachment

Map Showing the Location of 30 Alaskan Bush Communities Included in CAM 4.0


Overview
Bering Strait
Kotzebue Sound
Huslia
Norton Sound
Fairbanks, AK, USA
Alaska
Yukon Territory
Northway
Anchorage, AK, USA
Port Alsworth
Nondalton
Pedro Bay
Kokhonak
Seldovia
Bristol Bay
Egegik
PortGraham
Yakutat
Pilot Point
Port Heiden
Gulf of Alaska
Gustavus
Juneau, AK, USA
Chignik
Chignik Lagoon
Old Harbor
Hoonah
Pelican
Tenakee Springs
Kake
Port Alexande
Thorne Bay
Kasaan
Klawock
400 mi
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