**DA 13-2304**

**Released: December 2, 2013**

**WIRELINE COMPETITION BUREAU ANNOUNCES AVAILABILITY OF VERSION 4.0 OF THE CONNECT AMERICA FUND PHASE II COST MODEL AND SEEKS COMMENT ON ADOPTING CURRENT DEFAULT INPUTS IN FINAL VERSION OF MODEL**

**WC Docket No. 10-90**

**Comment Date: January 7, 2014**

Today, the Wireline Competition Bureau (Bureau) announces that version four of the Connect America Cost Model (CAM v4.0), which incorporates a number of modifications, including additional adjustments to address the unique circumstances and operating conditions in the non-contiguous areas of the United States, will be available shortly.[[1]](#footnote-2) We seek comment on whether the Bureau should adopt this version of CAM and the default inputs for purposes of calculating costs in price cap areas for implementing Connect America Phase II.

*Overview of Changes in CAM v4.0*. As described in more detail below, CAM v4.0 includes a number of modifications to address the unique circumstances and operating conditions in the non-contiguous areas of the United States. In particular, CAM v4.0 calculates the cost of submarine cables used for middle mile connections between intra-state points in non-contiguous areas. It also updates the plant mix values for the non-contiguous carriers, and assumes that buried plant is placed in conduit in non-contiguous areas to provide additional protection from harsh weather. This version modifies the prior methodology used for determining input values for terrain in non-contiguous areas, and it treats Alaska Communications Systems (ACS) as a small carrier for purposes of calculating its operating expenses. It also uses state-specific values for certain capital expense inputs for Virgin Islands Telephone Corporation d/b/a Innovative Telephone (Vitelco). CAM v4.0 incorporates several modifications to CostQuestLandLine (CQLL) and CostQuestMiddleMile (CQMM), the proprietary applications that CAM relies on to develop the network topology for the CAM.[[2]](#footnote-3) In CQLL, the national demand location data and the terrain data were updated, and the clustering code was modified. CQMM was modified to route middle-mile connections along roads, consistent with the treatment of last mile plant in prior versions. CAM v4.0 includes inputs for submarine cable and other costs specific to non-contiguous areas, and it also adjusts the default input for the cost of money to 8.5 percent. CAM v4.0 also incorporates updated broadband coverage data.

*Middle Mile Submarine Routes in Non-Contiguous Areas*. CAM v4.0 includes the capability to model the cost of submarine cable used for middle mile connections in non-contiguous areas. Previous versions of the model did not distinguish between terrestrial routes and the submarine portions of middle mile routes in determining middle mile investment in the non-contiguous areas of the United States. The model was modified to identify middle mile routes requiring an undersea connection, including those connecting the islands in Hawaii, Puerto Rico, the U.S. Virgin Islands, and the Northern Mariana Islands, and to connect Anchorage to Juneau and the Kenai Peninsula.[[3]](#footnote-4) The Capital Expenditures (Capex) workbook was modified to include submarine cable costs and the cost for two beach manholes on each intrastate middle mile submarine route.[[4]](#footnote-5) This submarine cable is part of the middle-mile network in each area; it connects central offices just like wholly land-based middle-mile cable does. Each beach manhole is connected to a nearby central office that provides multiplexing, routing and co-location. We assume that there is no need for duplicative facilities to provide multiplexing, routing or co-location between central offices and therefore do not assume a full landing station at each submarine landing site.[[5]](#footnote-6) To the extent that parties disagree with that assumption, they should provide a detailed analysis in support of their position.

The table below shows middle mile route distances for terrestrial and submarine routes in non-contiguous areas.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Cabling Distance | Beach Manholes | Total MM Distance | Land MM Distance | Submarine MM Distance | % Submarine |
|  AK  |  63,620,956  |  74  |  63,620,956  |  54,717,162  |  8,903,794  | 14.0% |
|  HI  |  4,657,509  |  10  |  4,657,509  |  3,622,974  |  1,034,536  | 22.2% |
|  MP  |  591,597  |  4  |  591,597  |  186,097  |  405,500  | 68.5% |
|  PR  |  3,299,014  |  4  |  3,299,014  |  3,134,003  |  165,010  | 5.0% |
|  VI  |  442,389  |  4  |  442,389  |  172,750  |  269,639  | 61.0% |

*Plant Mix*. CAM v4.0 includes state-specific plant mix values for the price cap carriers serving the non-contiguous United States: ACS, Puerto Rico Telephone Company (PRTC), Hawaiian Telcom, Inc. (HTI), Vitelco, and the Micronesian Telecommunications Corporation d/b/a IT&E (MTC). The plant mix values for price cap carriers serving the contiguous United States were largely based on values that reflect an inventory of existing plant mix.[[6]](#footnote-7) Several of the non-contiguous carriers have suggested that the model should use “forward-looking” plant mix values for their areas that are significantly different than their current plant mix values and the national average plant mix values in CAM v3.2.[[7]](#footnote-8)

Rather than use current values or the proposed forward-looking values submitted by these carriers, CAM v4.0 incorporates a hybrid approach that recognizes that there may be good reasons in non-contiguous areas to reduce the amount of aerial plant in the future, but that an efficient carrier would likely replace aerial plant with a mixture of buried and underground plant. CAM v4.0 recognizes that buried and underground plant both provide the benefits of below-ground plant, and that an efficient carrier would choose to bury plant rather than build underground plant where technically and legally permitted, as underground plant is typically three to five times more costly than buried plant.[[8]](#footnote-9) CAM v4.0 therefore assumes the amount of underground plant would not exceed a carrier’s current amount of underground plant; to the extent the carrier-submitted proposed values for underground plant are higher than current values, the excess is moved into buried plant.[[9]](#footnote-10) The table below illustrates a hypothetical example of this approach.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Aerial | Buried | Underground |
| Current values | 60% | 10% | 30% |
| Forward-looking values | 10% | 30% | 60% |
| **Hybrid** | **10%** | **60%** | **30%** |

By utilizing a greater amount of buried plant than current buried plant, the hybrid approach reflects the fact that there may be some locations where it is more efficient to decrease the amount of aerial plant in favor of buried plant. We do recognize, however, that there may be some instances when deploying underground plant may be technically or legally required. To the extent any party contends that the approach to plant mix taken in CAM v4.0 does not adequately reflect a forward-looking network, they should supply data that demonstrates what percentage of plant in the state must specifically be placed underground, as opposed to buried, due to local ordinances or for technical reasons.

*Buried Plant in Conduit*. In response to comments submitted by some carriers serving non-contiguous areas, CAM v4.0 also was modified to allow buried plant to be placed in conduit systems. Traditionally, underground plant is placed within conduit for added support and protection and with access points via manholes, while buried plant is placed directly into the ground, without any conduit. Some non-contiguous carriers have suggested that the model should include an additional approach to plant deployment that would combine aspects of both traditional underground and buried plant.[[10]](#footnote-11) Such an approach combines buried plant techniques with conduit for added protection. The logic modification contained in CAM 4.0 allows for these “buried in conduit” systems and is used for buried plant in the non-contiguous United States.

*Terrain*. The methodology for determining whether a census block group is identified as having hard rock was modified for the non-contiguous areas of the United States. Several carriers serving the non-contiguous areas, ACS, PRTC, and HTI, requested that the model treat 100 percent of their terrain as “hard rock,” the most expensive terrain in which to place plant.[[11]](#footnote-12) This approach would significantly over-estimate the actual amount of hard rock in these areas.

CAM v4.0 modifies the approach for determining whether a census block group is considered to consist of hard rock in non-contiguous areas. Terrain factors for the entire country were developed for each census block group using data from the Natural Resources Conservations Service (NRCS) STATSGO data, where available.[[12]](#footnote-13) The rock hardness used in the contiguous United States for a given census block group is whichever type of rock is listed most frequently for the list of STATSGO map units in the census block group, regardless of the geographic area of those map units.[[13]](#footnote-14) The revised methodology now considers the entire census block group in non-contiguous areas, where terrain data are available, to be hard rock if at least fifty percent of the area is identified as hard rock.[[14]](#footnote-15)

*ACS Treated as Small Carrier*. CAM v4.0 shifts ACS from the “medium” carrier category, which encompasses carriers that serve between 100,000 and 1 million access lines, to the “small” carrier category, for carriers that serve fewer than 100,000 access lines. Given the other changes made in CAM v4.0, we tentatively believe that it would be reasonable to treat ACS as a “small” carrier rather than a “medium” carrier category for the purposes of calculating its operating expense (opex) in the CAM v4.0.[[15]](#footnote-16)

*Vitelco Capex Inputs*. CAM v4.0 also includes state-specific values for certain inputs in the Capex workbook for the Virgin Islands. Vitelco submitted several proposed modifications to the Capex workbook. CAM v4.0 includes the modifications to the material costs, but not to the labor costs. We tentatively believe it would be reasonable to assume that certain materials would be more expensive in the Virgin Islands, but we are not convinced that labor costs should be adjusted upward as proposed by Vitelco.

*Other Changes Proposed by Non-Contiguous Carriers*. CAM v4.0 does not include all the changes submitted into the record by carriers serving the non-contiguous United States. In analyzing the impact of the requested changes and assessing the reasonableness of the modelled costs, we compared the costs calculated in CAM v4.0 with the embedded costs reported by the carriers.[[16]](#footnote-17) To the extent parties believe that additional modifications should be made to CAM v4.0 prior to adopting the cost model, they should provide a detailed analysis in support of their position and specify which inputs should be adjusted upwards or downwards.

*CQLL Demand Locations*. CAM v4.0 also incorporates modifications designed to ensure that the growth in demand locations for a given county are appropriately placed in areas with other residential locations. This modification does not alter the demand data sources, but modifies the methodology for random placement of housing units to prevent anomalous and potentially misleading results. Specifically, beginning with CAM v3.0, the overall increase or decrease of residential housing units in a specific county in 2011, as compared to the 2010 census counts, was randomly dispersed to census blocks based on the amount of livable roads in each census block of the county. This process may have resulted in residential housing units being assigned to census blocks for which 2010 census records showed no residential locations. CAM v4.0 uses both 2010 census block information and 2011 GeoResults geocoded residential data to identify census blocks that have no residential locations and removes housing units that previously had been placed in these census blocks to reflect 2011 county growth. Instead, CAM v4.0 randomly places those housing units into census blocks that already contain residential locations. This random placement follows the same methods used beginning in v3.0, but improves on these methods by removing roads in census blocks without residential locations to prevent their use as possible targets for random placement. This modification impacts only about 0.1 percent of all residential demand locations, but results in a net increase in demand of approximately 3,500 Node4 locations, which had been previously excluded due to their assignment to census blocks that had no roads or fell outside of defined service areas.

*CQLL Terrain Data*. The CQLL terrain database was modified to correct an inversion in some rows impacting the rock hardness and soil texture values.

*CQLL Clustering Code and Node3 Creator*. The CQLL clustering code was modified to improve feeder path branching in areas with multiple roads. The code for the feeder allocation formulas was updated consistent with changes described in CAM v3.2 release notes that previously were addressed via an update to CQLL output. The calculations for accumulating feeder fibers of Gigabit passive optical network (GPON) splitters and special access services were modified. The fiber service terminal (i.e., pedestal) cost values used to determine the placement of Node3s (i.e., pedestals) was modified to use the installed value of a fiber service terminal; the previous value understated the cost.

*CQMM Updates*. CQMM was modified to use road distance in calculating terrestrial middle mile route distances, in most instances, and includes the capability to model the cost of submarine cable used for middle mile connections in non-contiguous areas. CQMM calculates connections between nodes using a minimum spanning tree approach. For CAM v3.2, and earlier versions of the model, distance was calculated using airline distance multiplied by 1.2 (i.e., an estimated conversion factor of airline to road distance). For CAM v4.0, distance is calculated using either airline distance or road distance. In the non-contiguous areas of the United States, middle mile distances that include submarine routes are calculated using airline distance (x1.2). In the contiguous United States and for middle mile distances in non-contiguous areas of the United States that do not contain submarine routes, most distances are calculated using road distance.[[17]](#footnote-18) Where the ratio of road distance to airline distance is greater than 3.04, which represents the 99th percentile of the road distance to airline distance ratios for all routes used in CQMM, the distance is the airline distance multiplied by 3.04.[[18]](#footnote-19) Each route with any submarine cable is assigned two beach manholes. Submarine investment is not shared with other utilities, and is not impacted by the regional cost adjustment.

CQMM also was modified so that a regional tandem will no longer be able to serve a central office of a different state when states are in the same Local Access and Transport Area (LATA). For example, Minnesota and North Dakota share a LATA. With the modification, North Dakota central offices are served only by regional tandems in North Dakota. In addition, CQMM was modified to remove duplicate key values that could lead to an infinite processing loop, to remove three duplicative regional tandem locations, and to trigger repeater investment based on route distance between nodes rather than total route distance.

*Cost of Money.* In prior versions of the model, the default input values reflected a 9 percent cost of money. The previously released model outputs for CAM v3.2 used the model’s default input values, but allowed Commission staff and interested parties to see how support amounts varied using both an 8 percent and 9 percent cost of money. CAM v4.0 reflects an 8.5 percent cost of money.

*CAM Broadband Coverage*. CAMv4.0 incorporates updated broadband coverage to reflect State Broadband Initiative (SBI) Round 7 data.[[19]](#footnote-20) Consistent with the process for updating broadband coverage in prior versions of the CAM, the new coverage table removes from the SBI data Cable and Fixed Wireless providers receiving subsidies, as well as those not providing voice services as reported on FCC Form 477.

*CAM Capex*. CAM v4.0 includes in the undersea tab of the Capex workbook inputs for submarine cable and beach manholes on intrastate middle mile submarine cable routes in non-contiguous areas of the United States, described above.[[20]](#footnote-21) The cable investment is based on the same input used for undersea cabling; each beach manhole investment is estimated at $1 million; and submarine costs are calculated using the underground fiber Annual Charge Factor.

CAM v4.0 also includes logic to support a “buried in conduit” method of plant placement, which allows buried plant to be placed in conduit systems.[[21]](#footnote-22) The Plant Mix Buried Conduit workbook was added, and the percentage of buried in conduit placements is an input in that workbook. Buried excavation costs are used. A toggle allows the user to exclude manholes (the current default) or to specify access points via size one manholes.[[22]](#footnote-23) Another toggle selects the type of conduit used for the buried trench; duct without inner-duct is the default.

 In addition, CAM v4.0 includes modifications to the buried and underground formulas’ use of the Structure Sharing table (in the Plant Sharing Tables tab) and to the Engineering Rules to allow control over sizing for manholes in rural, suburban, and rural areas.

*State Specific Capex*. A State Specific Capex table and toggle were added to provide an input source for situations in which a state-specific capex input is required. When the State Specific Capex toggle is set to yes, the state-specific capex information will be taken from the State Specific Capex workbook. That is, the state specified in the State Specific Capex workbook will become the active capex values, for the specified state only, in the input collection.

*CAM Processing Logic.* When running a single state solution set, CAM previously identified the service areas to process based on the fifth and sixth characters of the service area code, but excluded those census blocks served in neighboring states. CAM v4.0 was modified to retain all census blocks, including neighboring states, associated with service areas in which the fifth and sixth characters of the service area code match the state that is processed. This change aligns the state definition between single and multi-state solution sets, where states are defined as collections of service areas; there is no impact on investment calculations.

*Access to CAM v4.0*. Parties should follow the same procedures to access CAM v4.0 as announced for previous versions. In particular, parties may access CAM v4.0 at http://www.fcc.gov/encyclopedia/caf-phase-ii-models or https://cacm.usac.org.[[23]](#footnote-24) Additionally, authorized users who have signed the relevant attachments to the protective order will have access to a system evaluator package that provides a test environment populated with a sample database, allowing users to view database structures, observe the processing steps of CAM for a subset of the country, and see changes in the database. In addition, authorized uses will receive a digital rights management protected PDC format file (a form of secure PDF) containing the processing source code for CQLL and CQMM.

*Updated Documentation*. In conjunction with the release of CAM v4.0, the Bureau will shortly be posting updated methodology documentation for CAM v4.0, which provides more detail on the current model architecture, processing steps, and data sources.[[24]](#footnote-25) Additionally, the Bureau will be making available the input tables used in the CAM. The methodology documentation and the input tables will be available at http://www.fcc.gov/encyclopedia/price-cap-resources.

*Illustrative Results.* The Bureau also will shortly be releasing a new set of illustrative model outputs for CAM v4.0. The Bureau emphasizes, however, that it has not yet finalized the funding thresholds, and therefore these illustrative results do not represent final support amounts.[[25]](#footnote-26)

# Procedural matters

**A. Initial Regulatory Flexibility Act Analysis**

The *Non-Contiguous Areas PN* included an Initial Regulatory Flexibility Analysis (IRFA) pursuant to 5 U.S.C. § 603, exploring the possible significant economic impact on small entities of the policies and rules proposed therein.[[26]](#footnote-27) We invite parties to file comments on the IRFA in light of this additional Public Notice.

**B. Paperwork Reduction Act**

This document does not contain proposed information collections subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. In addition, therefore, it does not contain any new or modified information collection burden for small business concerns with fewer than 25 employees, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198.[[27]](#footnote-28)

**C. Filing Requirements**

Pursuant to sections 1.415 and 1.419 of the Commission’s rules,[[28]](#footnote-29) interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments are to reference **WC Docket No. 10-90 and DA 13-2304,** and may be filed by paper or by using the Commission’s Electronic Comment Filing System (ECFS).[[29]](#footnote-30)

* Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: http://fjallfoss.fcc.gov/ecfs2/.
* Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing. Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission’s Secretary, Office of the Secretary, Federal Communications Commission.
* All hand-delivered or messenger-delivered paper filings for the Commission’s Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
* Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
* U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

 **In addition, we request that one copy of each pleading be sent to each of the following:**

**(1) Katie King, Telecommunications Access Policy Division,** Wireline Competition Bureau, 445 12th Street, SW, Room 6-A322, Washington, DC 20554; e-mail: Katie.King@fcc.gov**;**

(2) Charles Tyler, Telecommunications Access Policy Division, Wireline Competition Bureau, 445 12th Street, SW, Room 5-A452, Washington, DC 20554; e-mail: Charles.Tyler@fcc.gov.

People with Disabilities: To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

The proceeding this Notice initiates shall be treated as a “permit-but-disclose” proceeding in accordance with the Commission’s *ex parte* rules.[[30]](#footnote-31) Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter’s written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (*e.g.*, .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission’s *ex parte* rules.

For additional information on this proceeding, contact Katie King (Katie.King@fcc.gov) of the Wireline Competition Bureau, Telecommunications Access Policy Division, (202) 418-7400.

**- FCC -**

1. Including Version 4.0, the Bureau has released nine versions of the model. *See Wireline Competition Bureau Announces Availability of Version One of the Connect America Fund Phase II Cost Model*, WC Docket Nos. 10-90, 05-337, Public Notice, 27 FCC Rcd 15356 (Wireline Comp. Bur. 2012); *Wireline Competition Bureau Announces Availability of Version Two of the Connect America Fund Phase II Cost Model*, WC Docket No. 10-90, Public Notice, 28 FCC Rcd 280 (Wireline Comp. Bur. 2013); *Wireline Competition Bureau Announces Availability of Version Three of the Connect America Fund Phase II Cost Model*, WC Docket No. 10-90, Public Notice, 28 FCC Rcd 2316 (Wireline Comp. Bur. 2013); *Wireline Competition Bureau Announces Availability of Version 3.1 of the Connect America Fund Phase II Cost Model*, WC Docket No. 10-90, Public Notice, 28 FCC Rcd 5707 (Wireline Comp. Bur. 2013); *Wireline Competition Bureau Announces Availability of Version 3.1.2 of the Connect America Fund Phase II Cost Model and Adds Additional Discussion Topics to Connect America Cost Model Virtual Workshop*, WC Docket No. 10-90, Public Notice, 28 FCC Rcd 7293 (Wireline Comp. Bur. 2013); *Wireline Competition Bureau Announces Availability of Version 3.1.3 of the Connect America Fund Phase II Cost Model,* WC Docket No. 10-90, Public Notice, 28 FCC Rcd 8339 (Wireline Comp. Bur. 2013); *Wireline Competition Bureau Announces Availability of Version 3.1.4 of the Connect America Fund Phase II Cost Model, Illustrative Results, and Updated Methodology Documentation*, WC Docket No. 10-90, Public Notice, 28 FCC Rcd 9049 (Wireline Comp. Bur. 2013); *Wireline Competition Bureau Announces Availability of Version 3.2 of the Connect America Fund Phase II Cost Model, and Illustrative Results; Seeks Comment on Several Modifications for Non-Contiguous Areas*, WC Docket No. 10-90, Public Notice, 28 FCC Rcd 12833 (Wireline Comp. Bur. 2013) (*Version 3.2 Public Notice*). [↑](#footnote-ref-2)
2. The CQLL develops a wireline network topology from the demand point back to the central office, while the CQMM develops the network middle mile topologies between each central office in a state. CQLL and CQMM-derived databases are loaded into the CAM, along with other data, to create a solution set. [↑](#footnote-ref-3)
3. *See, e.g*., Letter from Greg J. Vogt, Counsel for Hawaiian Telcom, Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket Nos. 10-90, 05-337, Enc. at 3-5 (dated Sept. 11, 2013) (enclosing letter from Steven P. Golden, Hawaiian Telcom, Inc.) (HTI Sept. 11, 2013 Letter); Letter from Karen Brinkmann, Counsel for ACS, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, at 7-9 (filed Sept. 12, 2013) (ACS Sept. 12, 2013 Letter). [↑](#footnote-ref-4)
4. A beach manhole provides a means to connect undersea cable with a land-based cable. It includes a vault at the beach landing point to accommodate this splice point as well as the facilities to ensure the submarine cable comes ashore without being subject to surf and tides (typically by boring underneath the sea floor out to a point where surf and tides are no longer likely to be problematic). [↑](#footnote-ref-5)
5. ACS argues that it requires two additional landing stations in Juneau and two additional landing stations on the Kenai Peninsula. *See* ACS Sept. 12, 2013 Letter at 7-8. [↑](#footnote-ref-6)
6. *See, e.g.*, Letter from Henry Hultquist, AT&T, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 (filed May 23, 2013); Letter from Craig J. Brown, CenturyLink, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 (filed May 24, 2013). [↑](#footnote-ref-7)
7. *See* Letter from Richard Cameron, ACS, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, at 6-9 (filed July 30, 2013) (ACS July 30, 2013 Letter). CAM v3.2 included plant mix values submitted by ACS. *See Version 3.2 Public Notice*, 28 FCC Rcd at 12839-40. *See also* Letter from Russell M. Blau, Counsel to Vitelco, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, Exh. A (filed Sept. 17, 2013) (Vitelco Sept. 17, 2013 Letter); Comments of PRTC, WC Docket No. 10-90 (filed Sept. 12, 2013) (PRTC Sept. 12, 2013 Comments); HTI Sept. 11, 2013 Letter, Enc. at 10. We note that these non-contiguous carriers also have suggested that they are unable to differentiate between underground and buried plant, and therefore assume a high percentage of underground plant. *See* ACS July 30, 2013 Letter at 7; Vitelco Sept. 17, 2013 Letter at Exh. A, 1-2; PRTC Sept. 12, 2013 Comments at 17; HTI Sept. 11, 2013 Letter, Enc. at 8-10. As discussed below, CAM was modified to allow buried plant to be placed in conduit systems. [↑](#footnote-ref-8)
8. *See Connect America Cost Model Overview* at 20 (Sept. 12, 2013), *available at* http://transition.fcc.gov/Daily\_Releases/Daily\_Business/2013/db0917/DOC-323344A1.pdf. Even if the Bureau were to adjust the CAM to account for size 1 manholes and add duct to buried plant, as discussed below, the cost per foot for underground plant would still be roughly twice the cost of buried plant, based on current sharing assumptions.  [↑](#footnote-ref-9)
9. 100 – (Current underground plant + Forward-looking aerial plant) = Hybrid buried plant. [↑](#footnote-ref-10)
10. Letter from Thomas J. Navin, Counsel for PRTC, to Marlene H. Dortch, Secretary, FCC, Attach. at A-8, WC Docket No. 10-90 (filed Oct. 30, 2013) (PRTC Oct. 30, 2013 Letter); ACS July 30, 2013 Letter at 7. [↑](#footnote-ref-11)
11. *See, e.g.*, Letter from Richard Cameron, ACS, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, at 5-6 (filed July 9, 2013) (ACS July 9, 2013 Letter); HTI Sept. 11, 2013 Letter, Enc. at 7-8; PRTC Oct. 30, 2013 Letter, Attach. at A-9 to A-11. [↑](#footnote-ref-12)
12. STATSGO data do not include terrain data for the Virgin Islands or the Northern Mariana Islands. [↑](#footnote-ref-13)
13. Thus, prior versions of the model would treat a census block group as soft if three values in the STASTGO database for a particular census block group were listed as soft and one value was listed as hard, even if actual physical territory of the area listed as hard represented 80 percent of the geographic area of the census block group. [↑](#footnote-ref-14)
14. Taking this approach for non-contiguous areas addresses the fact that the size of some of the block groups and the STATSGO map units in these areas, particularly in Alaska, are much larger than in the contiguous United States. For example, in Alaska you could have a substantial fraction of an area described as hard rock in the STATSGO database, but because of multiple map units within the census block group, the block group may not have hard rock as the most commonly occurring value. Therefore, we use an area-based measure outside the contiguous United States. [↑](#footnote-ref-15)
15. Opex is calculated as a weight on the amount of investment, so any increase in capex leads to an increase in opex. Therefore, any change in assumptions from those used in CAM v4.0 may lead to opex levels that are unreasonably high. In such an instance, the Bureau would have to reconsider the treatment of ACS as a small carrier for these purposes. [↑](#footnote-ref-16)
16. In comparing embedded cost to modeled cost, Bureau staff looked at NECA data reflecting embedded loop cost for each non-contiguous carrier over thirteen years. We looked at reported costs over such a lengthy time period because embedded costs can vary over time, unlike the levelized costs estimated by the model. Because NECA data includes only loop costs, we excluded middle mile and undersea cable costs from the model results, and used an assumed 11.25 percent cost of money, in order to make a like-to-like comparison. [↑](#footnote-ref-17)
17. Where there is no route distance, the airline distance is multiplied by 1.2. [↑](#footnote-ref-18)
18. This limitation applies to all-terrestrial routes in non-contiguous areas, as well as in the contiguous United States. [↑](#footnote-ref-19)
19. SBI Round 7 reflects data as of December 2012. *See* CAM v4.0 Methodology at Sec. 6. [↑](#footnote-ref-20)
20. *See supra* at 3. [↑](#footnote-ref-21)
21. As discussed above, this capability is used for buried plant in the non-contiguous United States. [↑](#footnote-ref-22)
22. A size 1 manhole (handhole) will typically accommodate one or two 4” openings, each capable of accommodating three inner ducts.  In total, each manhole can accommodate three to six fiber cables (more than 1000 total strands) in each direction (e.g., N-S or E-W). Though there is no additional labor or excavation cost associated with “buried in conduit” plant, the material cost of the conduit and manhole results in a slightly increased cost when compared to traditional buried plant. [↑](#footnote-ref-23)
23. In order to access any version of the model, parties must execute the relevant acknowledgement of confidentiality, licensing, and nondisclosure documents released as attachments to a Third Supplemental Protective Order. *See Connect America Fund*, WC Docket No. 10-90, Third Supplemental Protective Order, 27 FCC Rcd 15277 (Wireline Comp. Bur. 2012). [↑](#footnote-ref-24)
24. The methodology documentation has been, and will continue to be, revised to reflect any changes made in the CAM. This documentation will replace the version 3.2 methodology documentationthat was posted in August 2013. [↑](#footnote-ref-25)
25. The Bureau released an order adopting key engineering assumptions for the Connect America Cost Model earlier this year. *See Connect America Fund; High-Cost Universal Service Support*, WC Docket Nos. 10-90, 05-337, Report and Order, 28 FCC Rcd 5301 (Wireline Comp. Bur. 2013). The Bureau has not yet selected final input values, nor has it adopted the funding and extremely high-cost thresholds that will determine support amounts to be offered to price cap carriers. [↑](#footnote-ref-26)
26. *See Wireline Competition Bureau Seeks Comment on Connect America Phase II Support for Price Cap Areas Outside of the Contiguous United States*,WC Docket No. 10-90, Public Notice, 28 FCC Rcd 1030, 1038-46, App. (Wireline Comp. Bur. 2013) (*Non-Contiguous Areas PN*). [↑](#footnote-ref-27)
27. *See* 44 U.S.C. § 3506(c)(4). [↑](#footnote-ref-28)
28. 47 C.F.R. §§ 1.415, 1.419. [↑](#footnote-ref-29)
29. *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998). [↑](#footnote-ref-30)
30. 47 C.F.R. §§ 1.1200 *et seq.* [↑](#footnote-ref-31)