



Universal Service
Administrative Co.

High Cost Universal Broadband (HUBB) Data Formatting Instructions for Middle Mile

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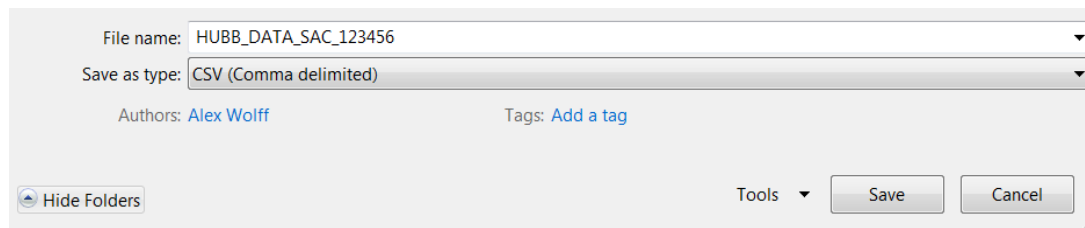
Preparing Your Data Upload

Use the USAC Template

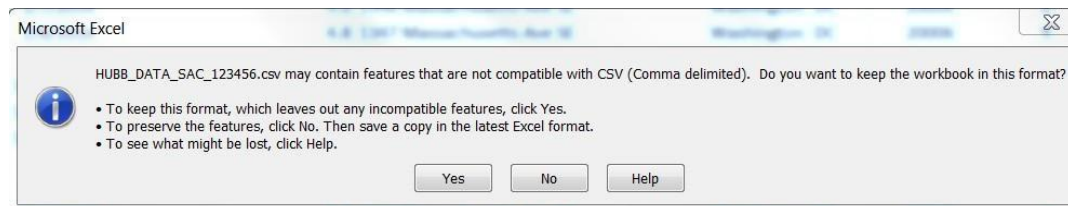
The USAC template shows all the fields that you must include and how you need to format them according to the Data Specification guide below. You can download the template from the HUBB. Please limit the filename to <50 characters or it will not be accepted.

Use the Correct File Format

You must upload your location data to the HUBB as a plain-text, comma-separated (CSV) file. To convert a Microsoft Excel (.xlsx) into a CSV file, within Excel, select **File>SaveAs**, choose **CSV (Comma delimited)** and select **Save**.



Microsoft Excel may prompt you to confirm the file type. If you see the following pop-up box, select **Yes**.



Include the Template Header Row

You must include the column headers used in the CSV template in the first row of each file you upload. If your file's header row does not match our CSV template exactly, the file will not upload. If this happens, correct the header and then try uploading it again.

Use Quotes for Fields with Commas

If the Address and/or City fields, as shown in the Data Specification guide below, contain commas, you must wrap the content in double quotes e.g., "123 Main St, Building 1." Most software applications will do this automatically. Commas are only allowed in the Address and City fields.



Data Specification

Below is a guide to the fields you need to include in your data upload and how you should format the location data. To determine which records “qualify” and must be reported in a particular reporting period, please review Commission guidance and relevant orders.

Submission of data in subsequent years need only be made if changes (i.e., additions, subtractions, and alterations to the data on file) occur to the network or the carrier is updating any estimated data with data at the required accuracy level. Comprehensive maps—with information for the complete reportable network—should be resubmitted by March 1 of the year following any network changes. If there are no changes to the network for the prior year, the company must so certify by the March 1 deadline. All estimated data submitted in 2018 must be provided at the required accuracy level by the March 1, 2019 filing deadline

CSV Instructions:

Alaska Plan participants must provide the location (latitude and longitude coordinates) of the nodes covering eligible areas and update such maps if the participant deploys middle-mile facilities in the prior calendar year that are or will be used to support service in eligible areas.

These nodes can be (1) a “major node”—for the purposes of this collection: a central office, cable headend, mobile switching center, earth station, point of presence, landing station, peering point, or Internet gateway within Alaska—(2) an outdoor cell site; (3) a reportable community anchor institution, such as a school, library, health center, or hospital; or (4) a terminating location of a link. If multiple types of nodes are at the same location (e.g., the same facility houses a central office, mobile switching center, and peering point), the carrier must report *all* of the reportable nodes at that location, separating them with a semi-colon (e.g., central office; mobile switching center; peering point).

In frozen-eligible areas, these nodes need to be reported if they are connected with fiber or fixed wireless links; in ineligible areas within Alaska, these nodes need to be reported if they are connected with fiber or fixed wireless links and they are or will be used to support service in eligible areas.

Alaska Plan participants should include those nodes where they own (i.e., any ownership interest regardless of how *de minimis*) or lease a facility or equipment, as well as those nodes that are the terminating location for a link where the filer does not own or lease node equipment or facilities at the termination point.

Filing Guidance for *Nodes*:

- Submit the file as a CSV. The file should be named with the (1) Admin SAC number in filing, (2) underscore, and (3) year that the information is filed (e.g., 613000_2018).
- The horizontal (latitude and longitude) accuracy of nodes must meet National Standard for Spatial Data Accuracy: accurate to within 7.6m CE95 (FGDC-STD-007, 3-1998), or labeled as an “estimate,” as indicated below.

Field <small>* = Cannot leave blank</small>	Description	Entry Type	Max Length	Example
SAC*	Admin Study Area Code that amounts to a unique identifier for each Alaska Plan filer	Integer	6	579999
Carrier Name*	Carrier name (s). Spaces are not allowed. Carrier names entered should have the format “CarrierName” or “Carrier_Name”.	Text	255	ABC; ABC_Mobile

ID*	Sequential record number	Integer	64	1
Latitude*	Latitude	Double	N/A	43.907111
Longitude*	Longitude	Double	N/A	103.760250
Node*	Type of Facilities at the node: fiber (F), microwave (M), or both (B)	Text	1	F
Node Year *	Year Node went “live” or leased	Integer	4	2014
Ownership*	Owned (O), Leased (L), Neither (N)	Text	1	O

Describe*	Except as otherwise directed, Describe Node using all of the applicable terms: central office, cable headend, mobile switching center, cell site, earth station, point of presence, landing station, peering point, school, library, health center, hospital, community anchor institution, microwave repeater, Internet gateway, or other. Separate multiple terms with a semi colon (;).	Text	512	school; cell site
Cell Site*	Is this node the first aggregation point for mobile traffic? Yes (Y) or No (N)	Text	1	Y
Transit	If interconnection to a transit provider occurs at this node, what is the arranged data rate in Mbps	Integer	N/A	10
Homing	How many different transit providers does the filer have agreements with at this node	Integer	3	2

- **SAC:** The Study Area Code used by USAC that amounts to a unique identifier for each Alaska Plan participant. For entities with multiple SAC numbers, an “Admin SAC” number that represents the multiple SAC numbers will be provided by USAC. Filers that do not wish all of their SAC numbers combined should contact USAC to request multiple “Admin SAC” numbers.

- Carrier Name: The D/B/A name of the carrier receiving support under the Alaska Plan. If filing the node-file on behalf of multiple carriers, provide all carriers' names in the "Carrier" field and separate each carrier with a semicolon. A filer may—but is not required to—submit one filing per carrier, even if the separate carriers share the same holding company, so long as each filing has a distinct Admin SAC. Carrier names should be provided in alphabetical order. Spaces are not allowed. Carrier names entered should have the format "CarrierName" or "Carrier_Name"
- ID: A sequential integer ranging from 1 to the total number of node features. No two nodes should be given the same ID.
- Latitude and Longitude: Provide the full value of the latitude and longitude in decimal degrees—all digits after the decimal with at least six digits after the decimal provided (i.e., no "trailing zeros" or rounding before the 7th decimal place). Coordinates will be in the WGS84 geographic coordinate system.
- Node Year: If the node went live in 2014 or any year prior to 2014, the Node Year will be 2014. Otherwise filers will enter the actual year the node went live. For lessees, put the year the filer began the lease. For termination location nodes where no facilities or equipment are owned or leased, put 9999.
- Ownership: If any equipment or any part of the facility is owned at the node, put (O). If no part of the node is owned, but some equipment or part of the facility is leased, put (L). "Leased" nodes include any facilities or equipment at a node that is provided due to a contractual arrangement. If no part of the node is leased or owned, but the node is being provided because it is, for example, a terminating location for a link, put (N).
- Describe: Except for "community anchor institution," as specified below, describe the types of nodes at this location using all of the applicable following descriptors: central office, cable headend, mobile switching center, cell site, earth station, point of presence, landing station, peering point, school, library, health center, hospital, community anchor institution, microwave repeater, or Internet gateway. Put "other" if the node does not match any of the preceding descriptors but is a terminating location for a link. An "Internet gateway" for the purpose of this collection is an interconnection point consisting of peering points and/or transit services between the broadband provider and public Internet for a given consumer connection. If the node is a school, library, health center, and/or hospital, use those terms, and if such terms are used, do not also use the term "community anchor institution." If the type of community anchor institution does not match one or more specific terms, then the filer can use the general term "community anchor institution" instead. If there is more than one value, separate the values using a semicolon. Make sure all descriptors are spelled correctly; otherwise, the descriptor will be rejected by the HUBB Portal. For filings in subsequent years for community anchor institution nodes, carriers need only report any additional community anchor institutions and associated links served by fiber or wireless connections if the community anchor institution is used to

support delivery of service in eligible areas.

- **Cell Site:** Cell sites—while also providing last-mile services—serve as an initial aggregation point for traffic to be backhauled and are nodes that are to be included in the reportable map. Denote whether this node is a cell site placing a “Y” or “N” in the column.
- **Transit:** At nodes where the filing network interconnects with a transit provider to obtain Internet access, what is the transmission data rate that has been arranged for delivery to the transit provider. In other words, how much capacity is being purchased for transit at this node for the filer. For arranged capacity that is less than 0.5 Mbps, put a 0. For multiple interconnections at the node, put the aggregated capacity that is provisioned for transit. If this is not a node where interconnection for transit occurs, leave blank.
- **Homing:** If the filer has agreements with one or more transit providers at this node, put the number of transit providers that the filer has agreements with to interconnect at this node. If this is not a node where interconnection for transit occurs, leave blank.

Shapefile Instructions:

Reportable links are fiber and microwave links within Alaska, including undersea cables located within territorial waters, covering, are supporting, or will be used to support service in eligible areas, connecting (1) “major nodes”; (2) outdoor cell sites; (3) reportable community anchor institutions; and (4) terminating locations of links. Filers must report all such links connected to reportable nodes in frozen-support eligible areas and in ineligible areas within Alaska where the link is or will be used to support service in eligible areas.

Fiber links and microwave links in this context are those lengths of fiber or microwave with terminating equipment on both ends within their middle-mile network. Microwave links include all terrestrial fixed-wireless links used for backhaul. Installed fiber links that are inactive (dark fiber) should also be provided. The way we define *link* here does not affect the meaning of *link* in other contexts.

Alaska Plan participants should include those fiber/microwave links that they (i) own or (ii) lease.

Filing Guidance for *Links*:

- Filers must submit information as a compressed separate ESRI Shapefile using a line-feature class containing the data for each feature as noted below. Filers should only submit one shapefile per filing year. The shapefile can be edited until a representative of the carrier certifies that the filing is complete and accurate.
- Shapefiles should be submitted as an unprojected (geographic) WGS84 geographic coordinate system with latitude/longitude coordinates in double precision.
- The horizontal (latitude and longitude) accuracy of lines must meet National Standard for Spatial Data Accuracy: accurate to within 7.6m CE95 (FGDC-STD-007, 3-1998), or labeled as an “estimate,” as indicated below. Lessees that do not know the location of the link have the option of providing conceptual depictions of the link.
- Maps must be accompanied by metadata, or a plain text “readme” file, that contains a comprehensive explanation of the methodology employed to generate the map layer including any necessary assumptions and an assessment of the accuracy of the finished product.
- The file should be compressed to a .zip. Be sure that your .zip file contains one and only one shapefile. The folder and all files within should be named with the (1) Admin SAC number in filing, (2) underscore, and (3) year that the information is filed (e.g., 613000_2018).

Field	Description	Entry Type	Max Length	Example
SAC	Admin Study Area Code that amounts to a unique identifier for each Alaska Plan filer	Text	6	613000
CarrierNam	D/B/A Carrier Name(s)	Text	255	ABC Wired; ABC Cellular
ID	Sequential record number	Long	N/A	1
TypeofLink	Provide whether the link is microwave (M), lit fiber (F), or dark fiber (D)	Text	1	F

LinkYear	Year when the link went “live” or was leased	Short	4	2014
Ownership	Is this Link Owned (O) or Leased (L)	Text	1	L
ConceptLin	For lessees: Is the depiction of the link conceptual between nodes? (Y)/(N)	Text	1	Y
Capacity	The data throughput the link is currently configured to transmit in Mbps	Integer	N/A	10000

- **SAC:** The Study Area Code used by USAC that amounts to a unique identifier for each Alaska Plan participant. For entities with multiple SAC numbers, an “Admin SAC” number that represents the multiple SAC numbers will be provided by USAC. Filers that do not wish all of their SAC numbers combined should contact USAC to request multiple “Admin SAC” numbers.
- **CarrierNam:** The D/B/A name of the carrier receiving support under the Alaska Plan. If filing the map on behalf of multiple carriers, provide all carriers’ names in the “Carrier” field and separate each carrier with a semi-colon. A filer may—but is not required to—submit one filing per carrier, even if the separate carriers share the same holding company, so long as each filing has a distinct Admin SAC. Carrier names should be provided in alphabetical order.
- **ID:** This is a sequential integer ranging from 1 to the total number of link features. No two link features should be given the same ID.
- **TypeofLink:** Provide the link type, consistent with the description. If two different types of links share the same geographic path (e.g., lit fiber and dark fiber), a separate record is required of each.
- **LinkYear:** For dark fiber, put a 9999. If the link was first used by the carrier in 2014 or any year prior to 2014, the LinkYear will be 2014. Otherwise filers will enter the actual year the path went live or was leased.
- **Ownership:** Is the link owned (i.e., any ownership interest regardless of how de minimis) by the company that is filing? If so, put “O.” If leased—even if the lease is for just a portion of the capacity on the link—put “L.” For leased tail circuits where the Alaska Plan participant does not know the technology of the circuit, the filer should assume all tail circuits being leased for 10 Mbps or more are fiber circuits and should report them accordingly.

- ConceptLin: Lessees may not know where the link actually is located. For lessees that do not know where the link actually is located, conceptual depictions of the link may be made and should be made as a straight line between two known and provided nodes. Filers that own the line or lessees that provide the actual location information of the link should mark it with a “N.”
- Capacity: This reflects the maximum data transmission capability the link is currently configured to transmit. For data throughput capability that is less than 0.5 Mbps or dark fiber, put a 0. Round to the nearest integer. For leased lines, if the amount of capacity is restricted, put the amount of capacity that is leased; otherwise, provide the maximum data throughput rate that your company has been able to transmit over the link.

Explanation of Tool Tips and Issue Codes

Field	Tool Tip	Issue Category	Issue Code	Error displayed in application	Explanation of tool tip
All	System Error	System Error Issues	SYSTEM_ERROR		
All			TOO_FEW_HEADERS	Uploaded file has too few columns in the header. Please reference the USAC-provided template.	
All			TOO_MANY_HEADERS	Uploaded file has too many columns in the header. Please reference the USAC-provided template.	
All			FILE_NAME_LENGTH_EXCEED_LIMIT	File name cannot exceed 50 characters. Please reference the USAC-provided Data Standards for file naming convention instructions.	
All			FILE_NO_RECORDS	Uploaded file has no records. Please add records and try again.	
All			FILE_NOT_CSV	File is not in CSV	

				format, please reference the USAC-provided template.	
Study Area Code	Required field	Study Area Code Issues	SAC_REQUIRED		Study Area Code should be populated in the uploaded file
Study Area Code	Invalid Study Area Code	Study Area Code Issues	INVALID_SAC		Study Area Code entered is not a valid 6-digit number assigned by USF fund
Study Area Code	Invalid Study Area Code Fund	Study Area Code Issues	INVALID_SAC_AKP		Study Area code entered is not an Alaska Plan fund participant
Study Area Code	Invalid Study Area Code Program	Study Area Code Issues	INVALID_SAC_MIDDLE_MILE		Study Area code entered is not a Middle Mile fund participant
Study Area Code	Invalid Study Area Code format	Study Area Code Issues	INVALID_SAC_FORMAT		Study Area Code entered is not a 6-digit number
Study Area Code	Not authorized for this SAC	Study Area Code Issues	USER_NOT_AUTHORIZED_FOR_SAC		Carrier is not authorized for this SAC
ID	Required Field	ID Issues	NODE_ID_REQUIRED		ID should be populated in the uploaded file
ID	Invalid Node ID Format	ID Issues	NODE_ID_FORMAT		ID entered should be an integer
Latitude	Invalid Latitude range	Latitude Issues	INVALID_LAT_DEGREE_RANGE		Latitude range to the left of the decimal needs to be between -90 & 90, inclusive
Latitude	Invalid Latitude format	Latitude Issues	INVALID_LAT_FORMAT		Latitude entered should be a number

Latitude	Min of 6 digits to the right of the decimal	Latitude Issues	LAT_DECIMAL_EQL_5_DIGITS		Latitude should contain a minimum of 5 numbers to the right of the decimal
Latitude	Min of 6 digits to the right of the decimal	Latitude Issues	LAT_DECIMAL_MIN_6_DIGITS		Latitude should contain a minimum of 5 numbers to the right of the decimal
Latitude	Max of 13 digits to the right of the decimal	Latitude Issues	LAT_DECIMAL_MAX_13_DIGITS		Latitude can contain only a maximum of 13 numbers to the right of the decimal
Latitude	Required field	Latitude Issues	LAT_REQUIRED		Latitude should be populated in the uploaded file
Longitude	Invalid Longitude range	Longitude Issues	INVALID_LON_DEGREE_RANGE		Longitude range to the left of the decimal needs to be between -180 & 180, inclusive
Longitude	Invalid Longitude format	Longitude Issues	INVALID_LON_FORMAT		Longitude entered should be a number
Longitude	Min of 6 digits to the right of the decimal	Longitude Issues	LON_DECIMAL_EQL_5_DIGITS		Longitude should contain a minimum of 5 numbers to the right of the decimal
Longitude	Min of 6 digits to the right of the decimal	Longitude Issues	LON_DECIMAL_MIN_6_DIGITS		Longitude should contain a minimum of 5 numbers to the right of the decimal
Longitude	Max of 13 digits to the right of the decimal	Longitude Issues	LON_DECIMAL_MAX_13_DIGITS		Longitude can contain only a maximum of 13 numbers to the right of the decimal
Longitude	Required field	Longitude Issues	LON_REQUIRED		Longitude should be populated in the uploaded file

Latitude/Longitude	Lat/long not within eligible census block for Alaska Plan SAC	Latitude/Longitude Issues	LOC_UNFUNDED_CB_AKP		Latitude/longitude entered is not within an eligible census block for an Alaska Plan Study Area Code
Latitude/Longitude	Lat/long not within the United States or territories	Latitude/Longitude Issues	LAT_LON_NON_US		Latitude/longitude entered is not within the United States or territories
Node	Required field	Node Issues	NODE_REQUIRED		Node should be populated in the uploaded file
Node	Invalid Node Value	Node Issues	INVALID_NODE_VALUE		Node value entered can only have one of the following values: F, M, or B (F=fiber, m=microwave, b=both)
Node Year	Required field	Node Year Issues	NODE_YEAR_REQUIRED		Node Year should be populated in the uploaded file
Node Year	Node Year Format	Node Year Issues	NODE_YEAR_FORMAT		Node Year entered should be a 4-digit integer
Node Year	Node Year Range	Node Year Issues	NODE_YEAR_INVALID		Node year should be after 2011 and no later than the submission year
Cell Site	Required field	Cell Site Issues	CELL_SITE_REQUIRED		Cell Site should be populated in the uploaded file
Cell Site	Cell Site Range	Cell Site Issues	INVALID_CELL_SITE_VALUE		Cell Site entered can only have one of the following values: 'Y' or 'N'
SAC+ID	Unique ID	Duplicate Issues	DUPLICATE_LOCATION_IN_FILE		A node has already been reported for the entered SAC and ID and is

					therefore considered a duplicate.
SAC+ID	Duplicate data	Duplicate Issues	DUPLICATE_RECORD_SAVED		A node has already been reported for the entered SAC and ID and is therefore considered a duplicate.
SAC+ID	Duplicate data	Duplicate Issues	DUPLICATE_RECORD_NOT_SAVED		A node has already been reported for the entered SAC and ID and is therefore considered a duplicate.
Ownership	Required field	Ownership Issues	OWN_REQUIRED		Ownership should be populated in the uploaded file
Ownership	Ownership value	Ownership Issues	INVALID_OWN_VALUE		'Ownership' entered can only have one of the following values: O, L or N
Describe	Required field	Description Issues	DESC_REQUIRED		Describe should be populated in the uploaded file
Describe	Description value	Description Issues	INVALID_DESC_VALUE		'Describe' entered can only have one of the following values: 1. 'Central Office' 2. 'Cable Headend' 3. 'Mobile Switching Center' 4. 'Cell Site' 5. 'Earth Station' 6. 'Point of Presence' 7. 'Landing Station' 8. 'Peering Point' 9. 'Community Anchor Institution' 10. 'School' 11. 'Library' 12. 'Health Center'

					13. 'Hospital' 14. 'Microwave Repeater' 15. 'Internet Gateway' 16. 'Other'
Transit	Transit value	Transit Issues	INVALID_TRANS_FORMAT		Transit, if entered, should be of type integer
Homing	Homing value	Homing Issues	INVALID_HOM_FORMAT		Homing, if entered, should be of type integer
SAC		Study Area Code Issues	SAC_NO_NODE_TO_BE_UPLOADED		Carrier has certified that there are no nodes to upload
Submission Date		Late Submission	LATE_SUBMISSION_NODE		Date of submission is after submission deadline date for Middle Mile and is therefore considered a late location
Carrier Name	Required field	Carrier Name Issues	CARRIER_NAME_REQUIRED		Carrier Name should be populated in the uploaded file
Describe	Length of Describe	Description Issues	INVALID_DESCRIBE_LENGTH		'Describe' length should be less than or equal to 512 characters
Node	Length of Node	Node Issues	INVALID_NODE_LENGTH		'Node' length should be 1 character
Node Year	Length of Node Year	Node Year Issues	INVALID_NODEYEAR_LENGTH		'Node Year' length should be 4 characters
Ownership	Length of Ownership	Ownership Issues	INVALID_OWN_LENGTH		'Ownership' length should be 1 character
Cell Site	Length of Cell Site	Cell Site Issues	INVALID_CELL_SITE_LENGTH		'Cell Site' length should be 1 character
Carrier Name	Length of Carrier	Carrier Name	INVALID_CARRIER		'Carrier Name' length should be

	Name	Issues	R_NAME_LENG		less than or equal to 256 characters
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Additional Resources

- *Connect America Fund et al.*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 10139 (2016) (*Alaska Plan Order*), https://docs.fcc.gov/public/attachments/FCC-16-115A1_Rcd.pdf.
- *Connect America Fund et al.*, Order on Reconsideration, 33 FCC Rcd 2068, App. (WCB/WTB 2018) (*Alaska Plan Middle-Mile Order on Recon*), <https://docs.fcc.gov/public/attachments/DA-18-197A1.pdf>.
- *Extension of Deadline for Alaska Plan Carriers Filing Middle-Mile Fiber and Microwave Network Maps Pursuant to Section 54.316(a)(6)*, Public Notice, DA 18-666 (WCB/WTB rel. Jun. 26, 2018), <https://docs.fcc.gov/public/attachments/DA-18-666A1.pdf>.
- Alaska Plan Webinar: Submitting Middle Mile Node Data in the HUBB Portal, May 21, 2018, <https://www.usac.org/hc/about/outreach/videos/Submitting-Middle-Mile-Node-Data-in-HUBB.aspx>.