

Maryland Broadband Mapping Initiative Broadband Availability Map Data Submission Summary for Spring 2012

March 30, 2012

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Submission Summary

The staff of the Eastern Shore Regional GIS Cooperative (ESRGC) at Salisbury University in Salisbury, Maryland, in its role as primary technical lead for the Maryland Broadband Mapping Initiative, originally contacted 120 potential facilities-based broadband service providers (BSPs), receiving data from 41 providers which representing 39 different companies (See Appendix A). In this fifth submission, 50 different companies responded to our data request, an increase of 25.6% since the initiation of this project. An overall summary of the Spring 2012 data submission can be described as:

- 53 potential facilities-based broadband service providers were contacted
- 3 BSPs did not respond
- 6 BSPs responded but did not provide updated data
- 43 BSPs responded and either provided data or affirmed no change to data
- 0 BSPs responded and agreed to provide data but have not as of March 30, 2012

Of those that provided broadband availability data,

- 20 provided addresses
- 4 provided census block information only
- 9 provided census blocks and road segments
- 22 provided wireless coverage areas

In addition, 10 of the 50 responsive BSPs provided middle mile infrastructure points

Since our last submission, we gained two participants namely US Cellular and nTelos, Inc. MegaPath, DSL.net, Inc, and DSLnet Communications LLC have all merged with Covad Communications Company. Unfortunately for this submission, Covad did not include the service areas of these other providers. Therefore, we are using data from last submission for MegaPath, DSL.net, Inc., and DSLnet Communications, LLC. Finally, we received word from One Communications that they will no longer be participating in the Maryland Broadband Mapping Initiative.

Data Processing

For a specific discussion of the data processing steps for any particular BSP, please see the individual dataset report for each BSP below. In general, the data processing used to create the Spring 2012 data submission depended on the type of data provided by the BSP.

Census Blocks

To process the served census blocks, the steps are as follows. First, geocode the provider-submitted address table (if applicable) to the ArcGIS 10 US Streets Geocode Service. Second, spatially join the address points to the Year 2010 census blocks. Third, divide the address points into the different technologies of transmission. Fourth, select those address points that are within the census blocks that are greater than 2 mi², exporting them as a separate feature class. Fifth, switch the selected set (thus creating all the address points in blocks that are less than 2 mi²), and select those blocks. Sixth, import the provider-submitted table of served census blocks and merge with the address-created blocks (if applicable). Finally, export the results. In previous submissions, it was necessary to translate between legacy 2000 census blocks and the current 2010 census block standard. That was no longer necessary for the Spring 2012 submission as no providers submitted 2000 census blocks.

Road Segments

To process the served road segments that are within census blocks that are greater than 2 mi², we import the table of road segment address ranges provided by the BSP, unless a Tiger Line ID (TLID) is provided. We then take the TO address values and the FROM address values on both the left and the right side of the segment and concatenate those address numbers with the street name, type, and direction, thus creating a maximum of 4 point addresses per road segment. Those point addresses are then address matched against both the TIGER line file and the Maryland iMap geocoding service. We can then find the street segments in TIGER that are adjacent to the located points. Finally, we select those TIGER lines that intersect the census blocks that are greater than 2 mi². If a TLID is provided we join the delivered table to the appropriate year Tiger Lines by the TLID and the joined results are exported. The result can be loaded into the SBDD Transfer data model.

Service Addresses

The process for creating the service addresses is the same as the census blocks (above), except that the addresses that fall within the census blocks that are greater than 2 mi² are kept as the key feature class.

Middle Mile Infrastructure

Processing the middle mile infrastructure is relatively trivial, in that the providers submit geographic coordinates with the middle mile attributes. Most of the providers, however, do not submit new middle mile data every six months. Therefore, any middle mile infrastructure collected during previous submission periods have been include in the current submission.

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Community Anchor Institutions

The creation and verification of the Community Anchor Institution (CAI) Database is the responsibility of the Center for GIS at Towson University (CGIS). For the April 2012 data submission, the Center for GIS (CGIS) improved the quality of Maryland's Community Anchor Institution (CAI) broadband dataset by focusing on the following action items: 1) for each category, determine primary State of Maryland contacts to help with data collection and maintenance, 2) determine the "universe" of CAIs in Maryland by verifying existing locations and adding additional locations, and 3) determine subcategories and priorities within each major category. Focus broadband data collection on each location with an assigned Priority 1 and/or Priority 2. The following narrative describes the work performed in each area.

Public Schools K-12

The strategy was redirected in 2012 to focus on collecting broadband data for Maryland public schools. The data collection team assigned secondary priority to broadband data collection for Maryland private schools. Contact was made with the Maryland State Department of Education (MSDE), and the results of an annual MSDE technology survey were obtained. The intent was to sustain collection of the broadband data for public schools required by NTIA by obtaining the data from the annual survey. However, MSDE announced that survey will no longer be administered due to lack of funding. The data collection team will therefore continue to search for a reliable, sustainable data source. For the Spring 2012 submission, the dataset contains 1,922 records, an increase of 131 schools, of which 475 schools were categorized as Private and 1,447 were categorized as Public.

Universities

The strategy was redirected to focus on collecting broadband data on Maryland public universities. The data collection team assigned secondary priority to broadband data collection for Maryland private universities, and third priority to regional higher education centers. The data collection team contacted the Chief Network Technology Officer at the Maryland Research and Educational Network (MDREN), formerly the University System of Maryland Academic Telecommunications System (UMATS), to determine if MDREN could assist with the broadband data collection process. MDREN maintains the broadband data for Maryland public universities and agreed to provide the information along with annual updates. The Fall 2012 data submission will include data obtained from MDREN. Additional outreach was made to community colleges. The dataset submitted for Spring 2012 contains 111 records, an increase of 20 records. Of these, we identified the broadband service for 50 entries.

Medical

The strategy was redirected to focus on collecting broadband data for hospitals and long term care facilities, and removing duplicate records from the dataset. Research was successfully conducted to locate resources in Maryland that could assist with broadband data collection, including the Maryland Health Care Commission and the Department of Health and Mental Hygiene, among others. The dataset submitted in for Spring 2012 contains 25,030 records.

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Hospitals and long-term care facilities were determined to be our highest priority for broadband connectivity data collection, followed by ambulatory care facilities and mental health facilities as next highest priority. During this submission period, we were unable to verify that all 65 hospitals and 28 long-term care facilities in the state of Maryland have broadband service. Because of the volume of the data, a large portion of the medical data was not assigned to a prioritized subcategory prior to the Spring 2012 submission deadline. A total of 13,534 records remain to be assigned.

Public Safety

The strategy was redirected to focus on collecting or verifying shelter locations, campus police departments, and fire departments, as well as determining sustainable relationships and data sources. We identified the Maryland Fireman's Association, the State Fire Marshal, and the Maryland Emergency Management Agency (MEMA) for collaboration and assistance in reaching out to the public safety community for data collection. The dataset submitted for Spring 2012 contains 1,695 records, an increase of 973 records since the last submission. All categories of public safety facilities were identified as a high-priority data collection target, except for volunteer fire departments.

Libraries

The Fall 2011 submission in this category primarily contained public libraries. The strategy was redirected to focus on collecting or verifying all library locations in Maryland by using the *American Library Directory, 64th Edition, 2011-2012 Vol. 1*. Finding a cooperative source for broadband information at public libraries continues to be a challenge. The dataset submitted for the Spring 2012 contained 366 records, an increase of 173 records. Public libraries and government and law libraries were given top priority with university/college libraries given secondary priority. The data collection team reviewed state and county library websites and confirmed that at least 114 more public libraries have broadband service and at least 140 more have free public Wi-Fi than were reported in October 2011.

Community Support – Government

Outreach was attempted to the Maryland Deputy State Chief Information Officer at the Department of Information Technology (DoIT), who oversees networkMaryland™, the statewide high-speed network for public sector use. After failed attempts, outreach was successfully made to the Maryland State Geographic Information Officer for assistance in brokering communications. As a secondary strategy, a letter has been drafted to state agency secretaries and department heads, as well as county and municipality leaders, to solicit compliance with the data collection. The dataset submitted for Spring 2012 contains 1,485 records, an increase of 230 entities. Of these, county government offices and state cabinet level departments are our top priority.

Community Support – Non-Government

The strategy was redirected to focus on building relationships with nongovernmental organizations. A relationship with the executive directors of United Way of Central Maryland

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(UWCM) was established. Through this communication and a presentation at the January United Way Executive Committee meeting, the data collection team obtained the 2-1-1 database of health and human services, as well as support for the data collection process. The executive directors agreed to disseminate a survey to all nongovernmental organizations funded by UWCM. Additionally, the State GIO held a meeting with UWCM, the Governor's Office, Maryland Department of Planning, the MBBMI team, and the University of Maryland Center for Substance Abuse Research (CESAR) team to discuss work ongoing in Maryland to map nonprofit organizations and services. The dataset submitted for Spring 2012 contains 2,679 records, an net increase of 1,981 locations. The UWCM provided 4,609 records which were processed against all of our existing CAIs to remove duplicates, inappropriate entities, etc. All of the entities in this category were assigned a secondary priority with regard to broadband connectivity information.

In summary, the Maryland broadband CAI database now contains 33,288 records, an increase of 2,709 (8.1%) from the fall 2011 submission. Information regarding the broadband service for 2,843 (8.5%) of those CAIs has been obtained. As the Universe of CAIs has been expanded for this submission, there was not been the same increase in knowledge of broadband service at these locations. This has resulted in a decrease in percent of CAIs with broadband service.

| Fall 2011 Submission | | | | | Spring 2012 Submission | | |
|---|-----------------------|---------------|--------------------------|--|------------------------|---------------|--------------------------|
| CAI Category | # CAIs with BBSERVICE | Total CAIs | % of CAIs with BBSERVICE | | # CAIs with BBSERVICE | Total CAIs | % of CAIs with BBSERVICE |
| 1 School (K-12) | 1,465 | 1,791 | 81.8% | | 1,418 | 1,922 | 73.7% |
| 2 Library | 139 | 193 | 72.0% | | 252 | 366 | 68.9% |
| 3 Medical / Healthcare | 22 | 25,829 | 0.1% | | 112 | 25,030 | 0.4% |
| 4 Public Safety | 406 | 722 | 56.2% | | 993 | 1,695 | 58.6% |
| 5 University / College/ Other Post-Secondary | 50 | 91 | 55.0% | | 50 | 111 | 45.0% |
| 6 Other Community Support - Government | 692 | 1,255 | 55.1% | | 716 | 1,485 | 48.2% |
| 7 Other Community Support - Non-Government | 69 | 698 | 9.9% | | 74 | 2,679 | 2.8% |
| Total | 2,843 | 30,579 | 9.3% | | 3,615 | 33,288 | 10.9% |

Data Verification

The ESRGC, in partnership with the Center for GIS at Towson University and as a subcontract to the SBDD grantee in Maryland, the Maryland Broadband Cooperative, conducted a number of verification and validation tests on the provider-submitted broadband availability data. In the event that inconsistencies or errors were found, certain changes are made to the provider-submitted data. These changes are either retention but modification to provider-submitted data or the removal of the provider-submitted data, depending on the type and severity of the

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error. Given our extensive review and testing of broadband availability information in Maryland, we feel confident that the changes we make are improving the accuracy of the provider's submission. We continue to search for new ways to refine the submitted data and present an ever-increasing accurate portrayal of broadband availability in our state.

In the first phase of data validation, the provider-submitted data is processed for inclusion within the NTIA transfer model. During this processing, several data inconsistencies can be found. They include:

- 1) Submitted download and upload speeds do not match the values expected for a given technology of transmission
- 2) Service addresses are located hundreds of miles away from the provider's known service areas
- 3) Served blocks with technologies and speeds that do not meet the working definition of broadband
- 4) Addresses/road segments/blocks that have no technology of transmission

For each of these, the initial remedy is to contact the provider for clarification/modification. If that communication is not successful for whatever reason, the data team makes a decision to either modify the data to match expected values or removes the errant data.

In the second phase of data validation, a maximum of fourteen data checks are conducted on each of the provider-submitted broadband availability data, listed below. Different versions of data verification tests were conducted on submissions from wireline broadband providers versus wireless providers, because of the differing submission geometry. Each check will be explained in detail below. The result of each of these tests is an error statistic, cataloged in a data verification report. No changes to the data are made based on these tests.

- 1) Maximum down/upload speeds reported by provider
- 2) Typical down/upload speeds reported by provider
- 3) Typical down/upload speed from 2010 speed test
- 4) Speed tests match reported typical speeds or are within 1 speed tier
- 5) Speed tests present within blocks not reported as served by provider
- 6) Census blocks/coverage area reported to project, but no tract reported directly to FCC
- 7) Tracts reported directly to FCC, but no census blocks/coverage area reported to project
- 8) Census blocks/coverage areas versus unserved area locations reported
- 9) Total number of unserved area locations reported per provider
- 10) Web search verification
- 11) Census blocks that are outside providers Cable Franchise Boundary
- 12) Census blocks that are within another providers Cable Franchise Boundary
- 13) Census blocks that are outside DSL boundary
- 14) Wireless broadband presence and speed systematic field sampling

15) Comparison of areas reported as served in last submission, to areas served this submission

This last test was added during this Spring 2012 submission round. It came to our attention as we were examining the broadband availability data for another purpose that some of the blocks that were submitted as "served" by a provider in previous submissions were being submitted as "unserved" in later submissions. While it is certainly possible that a provider decides to stop serving the residents and businesses of a particular block, it is not probable and is more likely explained by an error either in reporting or geocoding.

Finally, the third and final phase of data validation is an in-depth discussion of a provider's data submission and the subsequent data tests with the provider via web conference. During this discussion, a detailed review of the submission takes place including an examination of their resulting availability maps. Several of these web conferences were attempted in preparation for the Spring 2012 submission, with limited results. Most providers were not willing to admit that any portion of their data were inaccurately portrayed. However, we have now conditioned several of the providers to ask for and review the maps, prior to our submission to the NTIA. While no major (or even minor) modifications have been requested prior to submission, that feedback loop has been established.

Maximum down/upload speeds reported by provider

Facilities-based BSPs are required to provide the maximum downstream and upstream speeds by the NTIA and the NoFA of August 2009. These speeds are dependent upon the technology of transmission the BSP uses to deliver broadband service. Speeds are reported in ordinal categories, or tiers, as defined by the NoFA. They are:

| Downstream Speed Tier | Upstream Speed Tier | Corresponding Speed |
|-----------------------|---------------------|--|
| -- | 1 | Less than or equal to 200 kbps |
| -- | 2 | Greater than 200 kbps and less than 768 kbps |
| 3 | 3 | Greater than or equal to 768 kbps and less than 1.5 mbps |
| 4 | 4 | Greater than or equal to 1.5 mbps and less than 3 mbps |
| 5 | 5 | Greater than or equal to 3 mbps and less than 6 mbps |
| 6 | 6 | Greater than or equal to 6 mbps and less than 10 mbps |
| 7 | 7 | Greater than or equal to 10 mbps and less than 25 mbps |
| 8 | 8 | Greater than or equal to 25 mbps and less than 50 mbps |
| 9 | 9 | Greater than or equal to 50 mbps and less than 100 mbps |
| 10 | 10 | Greater than or equal to 100 mbps and less than 1 gbps |
| 11 | 11 | Greater than or equal to 1 gbps |

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For this data check, the maximum downstream/upstream speeds reported from each provider are summarized in a table. These speeds are summarized for census blocks, wireless coverage areas, road segments, and service address points.

For the data submission, 49 providers (100%) reported maximum downstream/upstream speeds for census blocks. The lowest maximum downstream speed reported is greater than or equal to 768 kbps and less than 1.5 mbps, reported by 14 providers. The highest maximum downstream speed was greater than or equal to 1 gbps, reported by 6 providers. The most frequent maximum downstream speed was greater than or equal to 10 mbps and less than 25 mbps, reported by 18 providers.

Typical down/upload speeds reported by provider

BSPs are required to provide the typical downstream and upstream speeds by the NTIA and the NoFA of August 2009. Typical speeds are, per the NoFA, intended to be “the data transfer throughput rate that most subscribers to service at the maximum advertised downstream speed can achieve consistently during expected periods of heavy network usage.” These speeds are dependent upon the technology of transmission the BSP uses to deliver broadband service. Speeds are reported in ordinal categories, or tiers, as defined by the NoFA (see table above).

For this data check, the typical downstream/upstream speeds reported from each provider are summarized in a table. These speeds are summarized for census blocks, wireless coverage areas, road segments, and service address points

For the data submission, 22 providers (45%) reported typical downstream/upstream speeds. The lowest typical downstream speed was greater than or equal to 768 kbps and less than 1.5 mbps, reported by 8 providers. The highest typical downstream speed was greater than or equal to 1 gbps, reported by 2 providers. The most frequent typical downstream speed of the census blocks was greater than or equal to 768 kbps and less than 1.5 mbps, reported by 8 providers

Typical down/upload speed from 2010 mobile speed test

Typical down/upload speed from 2010 computer-based speed test

Beginning in April 2010, the MBBMI team and the FCC (nearly simultaneously) began collecting speed test information from broadband consumers in the state of Maryland. This speed test information included the downstream and upstream speed in kbps, the signal latency, the street address of the tester, the type of connection location (home, work, etc), the connection technology (cable/DSL, fiber optic, satellite/dial-up, or unknown – MBBMI test only), the IP address of the test machine, and the corresponding BSP. The MBBMI contracted with a

company named Ookla to create their test; the FCC used both Ookla and an alternative method developed by a company named MLab.

From mid-April 2010 until June 30, 2011, 12,141 speed tests were collected by MBBMI and 26,537 PC-based speed tests were collected by the FCC (the FCC also collected mobile speed tests, see below). Of these, 5,527 MLab-based FCC speed tests were eliminated (to insure consistent speed test results and 11,354 were removed because they did not include a valid address. The FCC and the MBBMI speed tests were then combined and geocoded using their street address. Just over 12% of the addresses could not be resolved, thus a total of 19,162 of speed tests were used in verification processing. Note that speed tests were collected after June 30, 2011, however, the updated speed test data was not provided by the NTIA in time for use in this submission

The speed tests associated with each reporting BSP were extracted from the geocoded set. The downstream and upstream speeds were classified according to the NTIA's speed tiers (see table above) and the number of tests in each tier were counted. A table of those results is included in each data validation/verification report. For mobile broadband providers, a distinction was made between the results from mobile speed tests (generated by an iOS or Android app) and the results from computer-based speed tests (generated by a web-based speed test) as those results are likely to be different (due to significant hardware/software differences) even though the network being accessed is the same

For the state of Maryland as a whole, the PC-based speed test results are:

| Speed Tier | Number of Downstream Tests | % of Downstream Tests | Number of Upstream Tests | % of Upstream Tests |
|------------|----------------------------------|-----------------------------|--------------------------------|---------------------------|
| 1 | 483 | 2.5% | 1,461 | 7.6% |
| 2 | 1,541 | 8.0% | 4,720 | 24.6% |
| 3 | 1,674 | 8.7% | 1,154 | 6.0% |
| 4 | 2,077 | 10.8% | 2,580 | 13.5% |
| 5 | 1,713 | 8.9% | 5,895 | 30.8% |
| 6 | 2,387 | 12.5% | 1,440 | 7.5% |
| 7 | 6,803 | 35.5% | 1,754 | 9.2% |
| 8 | 1,959 | 10.2% | 144 | 0.8% |
| 9 | 469 | 2.4% | 12 | 0.1% |
| 10 | 56 | 0.3% | 2 | 0.0% |

Speed tests match reported typical speeds or are within 1 speed tier

For the 22 providers that submitted typical speeds for their data, a comparison was conducted between the mode (the most frequent value) of the typical download speed tier from the provider area and the FCC/Ookla speed tests. In instances where the most frequent download speed tier from the speed tests matched, or was within one tier of, the typical download speed tier from the provider, the response to this statement is affirmative (6 providers). When the

response to this statement is negative (9 providers), there is question about the typical download speeds that have been submitted by the provider. The remaining 7 providers provided typical speeds but none of their customers have taken a speed test to verify.

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted)

Number and percentage of mobile speed tests verifying coverage area

Number and percentage of computer-based speed tests verifying coverage area

Using the location of speed tests submitted through the FCC or the MBBMI speed test tools, the team sought to compare the location of broadband availability submitted by BSPs and the location of actual broadband service reported by speed test takers.

For this verification test on wireline provider census block submissions, the number of census blocks served (as determined by the location of a speed test) but were not reported by provider were calculated. That number is then divided by the total number of blocks submitted by the provider, reported as an error percentage.

For the state of Maryland, the maximum number of census blocks shown to be served by speed test data but not reported by a BSP is 349 (for Comcast Cable Communications, LLC , 0.66% of their total reported blocks). The minimum percentage of served census blocks confirmed by speed test was 0% (7 providers). The maximum percentage was 100% (Cogent and Tata Communications (America) Inc.).

For this verification test on wireless provider coverage area submissions, the following statistics are reported:

- 1) Confirmation of coverage area served
 - The number/percentage of computer-based speed tests that fall within the BSP's reported coverage area(s).
 - The number/percentage of mobile speed tests that fall within the BSP's reported coverage area(s).
- 2) Area served, not reported by provider
 - The number/percentage of computer-based speed tests that fall outside the BSP's reported coverage area(s).
 - The number/percentage of mobile speed tests that fall outside the BSP's reported coverage area(s).

For the wireless providers in the state of Maryland, 41% (7 of 17) had computer-based speed tests submitted by users. The maximum number of computer-based speed tests shown to fall within the reported coverage area of a BSP is 67 (for Hughes Communications, Inc., 100% of their computer-based speed tests). Other BSPs that has 100% of their computer-based speed tests fall within their reported coverage were ATTWireless and Wildblue Communications, Inc..

The minimum percentage of computer-based speed tests shown to fall within the reported coverage area of a BSP was 10% (Easton Utilities, 10 tests fell inside). On average, 86% of computer-based speed tests fell within the BSP's reported coverage area.

Regarding the number of mobile speed tests that fall within the reported coverage area of a BSP, 53% (9 of 17) of the wireless BSPs had tests and the maximum number came from Verizon Wireless customers, with 9,253 tests within their reported coverage area. Two wireless BSPs had 100% of their mobile speed tests fall within their reported coverage area: Hughes, and Wildblue Communications, Inc.. Easton Utilities and nTelos were the BSPs with the smallest percentage of tests falling within their reported coverage area – 0%. On average, 74.8% of mobile speed tests fell within the BSPs reported coverage areas.

***Census blocks/coverage area reported to project, but no census tract reported to FCC
Census tracts reported to FCC, but no census blocks/coverage areas reported to project***

Another source of data validation was the FCC's Form 477 data as of December 2009. This dataset is collected semi-annually by the FCC from BSPs, both facility-based and not facility-based. The BSPs report the number of residential and business subscribers to their broadband service per census tract. For comparison, the average census tract in Maryland contains 67 census blocks. While the Form 477 data is much coarser than the SBDD-reported data, it still should align spatially.

Therefore, as another verification check, we test the number of census blocks that are reported by wireline BSPs that have no corresponding reported census tract in the BSP's Form 477 data. Similarly, we test the number of tracts from the wireline BSP's Form 477 data that do not have corresponded census blocks reported in this initiative.

For the state of Maryland, the maximum number of census blocks that were reported as served but had no corresponding Form 477 census tract was 8,353 from Covad Communications Company. On average, 594 census blocks (from 25 providers) had no corresponding census tract. The maximum number of census tracts that had no corresponded reported census blocks was 192 from DSLnet Communications, LLC. On average, 24 census tracts (from 25 providers) had no corresponding census blocks.

For wireless BSPs, we tested the number of census tracts that either intersect or do not intersect each reported coverage area. Because it is not possible to tell what portion of the Form 477 reported census tract may receive the wireless service, a simple intersect between served tracts and coverage areas is the only test available from these data sources. For those wireless BSPs reporting to the FCC on Form 477 (9 of 17), all but one had 100% of their served census tracts intersecting their reported coverage areas. Only Easton Utilities had less, with 60% of their 477 census tracts intersecting their coverage area. We are almost positive this result is due to the mismatched vintage of the Form 477 data and the provider data.

***Census blocks/coverage areas versus unserved area locations reported
Total number of unserved area locations reported per provider***

At the MBBMI website (www.mdbroadbandmap.org) and at the FCC website (www.broadband.gov), residents and business owners have the opportunity to report unserved areas. These are locations, specifically addresses, at which the potential broadband customer cannot access broadband service. Those unserved area reports are taken in by the MBBMI team, geocoded according to their address, and are examined for their spatial coincidence with BSP availability coverages. For each wireline provider, the number of census blocks reported as served that contain a unserved area report are calculated, as well as the total number of unserved area reports within a BSPs availability area. For each wireless BSP, the number/percentage of unserved area reports from both the FCC and the MBBMI that fall within and outside the reported coverage area are calculated.

It is important to note that, at the present time, these unserved area reports are unverified. It is possible that broadband service may be available either at the address (but the person reporting the unserved area location was unaware of service availability), or not available at the address because of some unique configuration problem at that address specifically. It is also entirely possible that portions of a census block may be served but other portions may not.

For the state of Maryland, the maximum number of a wireline BSP's available census blocks that contain an unserved area location report is 104 (Verizon Communications, Inc.). This represents 0.14% of Verizon's reported census blocks. The maximum rate of deadzone reports as a percentage of blocks reported is 4.6% (Alantech Online, Inc.). The minimum number is 0 (17 providers). The maximum number of unserved area location reports in a wireline BSP's available area is 129 (Verizon Communications, Inc.).

For the state of Maryland, the maximum percentage of unserved area locations reported from the FCC within a wireless BSP's reported coverage area is 100% (each are satellite providers). The maximum percentage of unserved area locations reported from the FCC within a non-satellite wireless BSP's reported coverage area is AT&T Wireless at 98.3% (233 of 237). The average percentage of unserved area locations (reported from the FCC) that fall within a wireless BSP's reported coverage area is 41.7% (99 of 237). For those unserved area locations reported by the MBBMI, the maximum percentage of unserved area locations within a wireless BSP's reported coverage area is 100% (203 of 203), true for each of the satellite wireless providers (HughesNet, StarBand, and Wildblue). The maximum percentage of unserved area locations reported from the MBBMI within a non-satellite wireless BSP's reported coverage area is AT&T Wireless at 97.5% (198 of 203). The average percentage of unserved area locations (reported from the MBBMI) that fall within a wireless BSP's reported coverage area is 38.4% (78 of 203).

Web search verification

Some broadband service providers publish service availability query tools on their corporate websites. The MBBMI team took the opportunity to test the broadband availability areas submitted by the BSPs against the BSP's web-based service availability tools. A systematic sampling grid was created for the entire state of Maryland. A sample point was placed every 4000 meters, then the nearest property address (within at most 1000 m) was chosen. This yielded a grid of 1,472 sample points. In Baltimore City, an additional 24 sample points were added (approximately every 2000 meters) in order to have reasonable sampling density within the small area of the City. This brought the total sample points to 1,496.

For each BSP that had a web-based service availability query tool (11 providers), the sample point grid addresses were used to verify the availability of service (or lack thereof) compared to both the reported service area, the area just outside the stated service area, and a random selection of grid points across the state. The following combinations of reported service vs. queried service were tallied:

- 1) A census block/coverage area was reported as served and the sample was returned as served
- 2) A census block/coverage area was reported as served but the sample was returned as unserved
- 3) A census block was not reported as served (or the location was outside the wireless coverage area) and the sample was returned as not served
- 4) A census block was not reported as served (or the location was outside the wireless coverage area) but the sample was returned as served

The total number of sample points in categories 2 and 4 are reported as error (of commission and of omission, respectively).

For Comcast and Verizon, all 1,496 sample points were used as those two BSPs offer broadband service in all areas of the state.

For the eleven wireline BSPs in the state of Maryland that have a Internet-based availability tool, the maximum omission error rate was 24.1% reported by Armstrong Cable. The minimum omission error rate was 0% and was reported by Charter Communications, Comcast and Starpower. The average omission error rate was 11.0%. The maximum commission error rate was 31.2% reported by Verizon Maryland. The minimum commission error rate was 0% and was reported by 4 providers. The average commission error rate was 7.0%. The maximum total error rate was 35.3% reported by Verizon Maryland. The minimum total error rate was 0% reported by StarPower. The average total error rate was 18.0%.

Census blocks that are outside provider's own Cable Franchise Boundary
Census blocks that are within a different provider's Cable Franchise Boundary

For those BSPs that provide broadband service via cable modem technology, they are (supposedly) constrained to a service area defined by a local (or several local) cable franchise boundar(ies). The MBBMI team obtained the spatial extent of the cable franchise boundaries within the state of Maryland from the Maryland Broadband Cooperative. With these cable franchise boundary areas, a test can be performed to count both the number of served census blocks that fall outside of a provider's designated cable franchise boundary area and the number of served census blocks the fall within a different provider's cable franchise boundary. The first statistic may or may not be an error. If a cable provider is surrounded by an area that has no competing franchises, some expansion beyond the existing franchise boundary is expected. The second test may also not be an error in that franchise boundaries usually refer to cable television service specifically. A provider may be allowed to expand non-television services like broadband into competing areas. It is also possible that the cable franchise boundaries are not up-to-date.

In Maryland, we can test if any of seven providers report blocks outside of their own boundary. The maximum number of blocks that fall outside the cable franchise boundaries is 6,669 reported by Comcast Cable Communications, LLC. This represents 12.7% of their total number of served blocks. The minimum number of "outside" blocks is 8 reported by Easton Utilities, or 1.5% . The average number of blocks that fall outside the cable franchise boundary is 1,604.

Thirteen broadband providers that deliver service via cable modem have the potential of serving blocks contained within someone else's boundary. The maximum number of blocks that fall into someone else's cable franchise boundaries is 2,773 reported by Broadstripe, LLC. This represents 94% of their total number of served blocks. The minimum number of blocks to fall in someone else's boundary is 1 reported by Hotwire Communications, but that represents 100% of their coverage area. The average number of blocks that fall outside the cable franchise boundary is 675.

Census blocks that are outside DSL boundary

For those BSPs that provide broadband service via digital subscriber line (DSL) technology, the general area of DSL availability is tracked by several industry groups. The MBBMI team obtained the spatial extent of the DSL availability areas within the state of Maryland from the Maryland Broadband Cooperative. With these DSL availability areas, a test can be performed to count the number of census blocks that fall outside of the DSL availability area. This may indicate an error, although it is possible that the DSL availability boundaries are not up-to-date or correct. There was no metadata concerning currentness or quality included in the DSL availability areas.

In Maryland, 12 providers are eligible for this test. The maximum number of blocks that fall outside the DSL availability areas is 20,183 reported by Verizon Maryland Inc. This represents 26.3% of their total number of served blocks. The minimum number of “outside” blocks is 0 reported by Tata. The average number of blocks that fall outside the DSL availability area is 3,223.

Wireless broadband presence and speed systematic field sampling

For the wireless coverage areas, many of the other data checks and tests are not appropriate to use. In the summer of 2011, the MBBMI embarked on the second phase of a wireless coverage area verification project. For each of the 1,496 systematic sampling grid points (increased slightly from 2010 to sample more intensively in Baltimore City), a research team visited the sample address with nine phones, two each for Sprint, Verizon Wireless, AT&T, and T-Mobile, measuring both 3G and 4G network presence and speed, as well as one phone to test the Cricket network. Using the FCC/Ookla speed test app, the broadband availability, downstream and upstream speeds, and the GPS location of the test were collected.

After the field sampling was completed, 1,486 grid points with valid samples were used to conduct this test; 10 of the original sample locations were not collected due to a communication error with the field team. Of those, the following combinations of reported service vs. sampled service were tallied:

- 1) A sample point was in an area reported by the provider as served and the sample was collected as served
- 2) A sample point was in an area reported by the provider as served but the sample was collected as unserved
- 3) A sample point was in an area reported by the provider as not served and the sample was collected as not served
- 4) A sample point was in an area reported by the provider as not served but the sample was collected as served

The total number of sample points in categories 2 and 4 are reported as error (of commission and of omission, respectively). Verifying the 4G network presence proved more challenging. Because the 4G phones will conduct a mobile broadband test on a 3G network if all that is available, simply noting the presence of a speed test from a 4G phone is not enough to verify that the phone was actually accessing the 4G network. Therefore, in order to isolate those speed tests that were truly taken on the 4G network, we selected those tests that had an average download speed of 2000 kbps or greater. This number was chosen by examining the typical speed results in the known 4G areas of the state, plus consulting published speed comparison studies on numerous popular technology websites.

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For the 3G coverage areas in the state of Maryland, T-Mobile had the maximum number of samples that were reported as omitted (sampled as served but not within the coverage area) was 849 and the error rate was 63.6% (849 of 1,334 samples that had registered service). AT&T Wireless had the minimum number of samples that were reported as omitted (13 or 1.0%). The average omission error rate was 26.3%. Sprint-Nextel had the maximum number of samples that were reported as committed (sampled as not served but within the coverage area) at 263. The commission error rate was 26.9% (977 were tested). Verizon Wireless had the minimum number of samples that were reported as committed (64 or 5.2%). The average commission error rate was 15.5%.

For the 4G coverage areas in the state of Maryland, Verizon Wireless had the maximum number of samples that were reported as omitted (sampled as served but not within the coverage area) was 60 and the error rate was 21.9% (60 of 274 samples that had registered service). AT&T Wireless had the minimum number of samples that were reported as omitted (0). The average omission error rate was 14.0%. AT&T Wireless had the maximum number of samples that were reported as committed (sampled as not served but within the coverage area) at 1,367. The commission error rate was 92% (1,453 were tested). Verizon Wireless had the minimum number of samples that were reported as committed (69 or 24.4%). The average commission error rate was 70.2%. This average rate is so high because most of the tests we took within 4G areas did not return 4G speeds.

Comparison of areas reported as served in last submission, to areas served this submission

It recently became clear as we were examining the broadband availability data that some of the blocks that were submitted as "served" by a provider in previous submissions were being submitted as "unserved" in later submissions. While it is certainly possible that a provider decides to stop serving the residents and businesses of a particular block, it is not probable and is more likely explained by an error either in reporting or geocoding. Therefore, we added a test that simply compares the unique block count from the previous submission to this submission. In addition to this simple test, we are making maps of change for each provider and will be reviewing those maps with the providers.

The range of change from the Fall 2011 submission to Spring 2012 was a loss of 79 blocks (Verizon Communications) to no change (26 providers) to a gain of 3,969 blocks (Comcast Cable). For those registering change (8 providers), the average was a gain of 757 blocks.

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Individual Provider Data Summaries

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Allied Telecom Group, LLC
DBA: Allied Telecom Group, LLC**Data Characteristics**

Date of Original Submission: 3/7/2011
Date of Update Submission: 2/28/2012
Currency of Data: 12/31/2011
FRN: 0014531073
Type of data submitted: Address Table
Census Block Count: 84
Total Matched Address Points Count: 170
Unmatched Address Points: 0
Number of Technology of Transmission Types: 4
Provided Max Advertised Download Speed: Complete
Provided Max Advertised Upload Speed: Complete
Provided Max Typical Download Speed: Complete
Provided Max Typical Upload Speed: Complete
Provided Middle Mile: No
Provided Road Segments for census blocks greater than 2 sq miles: No

See ReadMe.txt*Data Processing****Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 174
 - Number unmatched: 0
- Spatially join matched address points to 2010 census blocks
- Separate addresses by technology of transmission

Census Block Process:

- Join the spatial join result to the 2010 census blocks based on the GEOID10 field for each technology
 - Export results for each technology
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 7 | 29 | 27% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 5 | 29 | 27% |

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| | | | | | |
|----|----|-----|----|----|-----|
| 4 | 5 | 5% | 4 | 5 | 5% |
| 11 | 29 | 27% | 11 | 29 | 27% |
| 10 | 46 | 42% | 10 | 46 | 42% |

Typical down/upload speeds reported by provider:

Census Blocks

| Typical Download Category | Count | % of Blocks |
|---------------------------|-------|-------------|
| 7 | 29 | 27% |
| 4 | 5 | 5% |
| 11 | 29 | 27% |
| 10 | 46 | 42% |

| Typical Upload Category | Count | % of Blocks |
|-------------------------|-------|-------------|
| 5 | 29 | 27% |
| 4 | 5 | 5% |
| 11 | 29 | 27% |
| 10 | 46 | 42% |

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 4 | 1 | 100% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 6 | 1 | 100% |

Speed tests match reported typical speeds or are within 1 speed tier: **No**Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): **1/84 (1.2%)****Form477 Verification:**Number of census blocks reported to project, but no tract reported to FCC: **N/A**Number of tracts reported to FCC, but no census blocks reported to project: **N/A****Dead zones:**Number of census blocks with dead zones reported via broadband.maryland.gov: **0**Total number of dead zones reported per provider via broadband.maryland.gov: **1**Number of census blocks with dead zones reported via mdbroadbandmap.org: **0**Total number of dead zones reported per provider via mdbroadbandmap.org: **0**Web Search Verification: **N/A**Census blocks that are outside DSL boundary: **15/84 (17.9%)**Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: **2 census block increase**

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Antietam Cable Television, Inc.**DBA Name: Antietam Cable Television, Inc****Data Characteristics**

| | |
|---|------------|
| Date of Original Submission: | 7/29/2010 |
| Date of Update Submission: | 3/7/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0002154367 |
| Type of data submitted: | Addresses |
| Census Block Count: | 2424 |
| Total Matched Address Points Count: | 21847 |
| Unmatched Address Points: | 37 |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

See ReadMe.txt*Data Processing****Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 21021
 - Number unmatched: 863
- Unmatched address are geocoded to Maryland Property View address locator
 - Number matched: 548
 - Number unmatched: 315
- Unmatched addresses are geocoded to Maryland centerline address locator
 - Number matched: 278
 - Number unmatched: 37
- Merge matched addresses
- Spatially join address points to 2010 census blocks
- Select by location the address points that are completely within a greater than two square mile census block
 - Export as address points to be loaded into the NTIA data model
 - Result: BB_Service_Address
 - Switch the selection and export as points to create census blocks

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Census Block Process:

- Join the switched selection (BB_Service_Address) address points to the 2010 census blocks based on the GEOID10 field
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 7 | 2424 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 4 | 2424 | 100% |

Typical down/upload speeds reported by provider: [N/A](#)**Typical down/upload speed from 2010 computer based speed test:**

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 1 | 1% |
| 3 | 3 | 2% |
| 4 | 33 | 20% |
| 5 | 119 | 71% |
| 6 | 4 | 2% |
| 7 | 7 | 4% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 1 | 1% |
| 2 | 34 | 20% |
| 3 | 122 | 73% |
| 4 | 8 | 5% |
| 6 | 2 | 1% |

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [2/2424 \(<1%\)](#)**Form 477 Verification:**Number of census blocks reported to project, but no tract reported to FCC: [0](#)Number of tracts reported to FCC, but no census blocks reported to project: [0](#)**Dead zones:**Number of census blocks with dead zones reported via [broadband.maryland.gov](#):[1/2424 \(<1%\)](#)Total number of dead zones reported per provider via [broadband.maryland.gov](#): [1](#)Number of census blocks with dead zones reported via [mdbroadbandmap.org](#):[2/2424 \(<1%\)](#)Total number of dead zones reported per provider via [mdbroadbandmap.org](#): [2](#)

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Web Search Verification: 41/2424 (2%) of census blocks were confirmed using online search feature of given provider.

| Antietam WebSearch Verification Table | Count | Percentage |
|--|-------|------------|
| Total # of sample points | 1496 | |
| Number of sample points with results | 123 | 8% |
| Result is yes and census block is in served area | 41 | 33% |
| Result is yes but not in a census block reported as served | 21 | 17% |
| Result is no and census block is in served area | 5 | 4% |
| Result is no and census block not served area | 56 | 46% |

Census blocks that are outside providers own Cable Franchise Boundary: 735/2424 (30.3%)

Census blocks that fall within another provider's Cable Franchise Boundary: 58/2424 (2.4%)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: no change

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Armstrong Holdings, Inc.**DBA Name: Armstrong Utilities, Inc.****Data Characteristics**

| | |
|---|---------------------------------------|
| Date of Original Submission: | 3/31/2010 |
| Date of Update Submission: | 1/23/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0003765617 |
| Type of data submitted: | Census Block Table & Road Segments |
| Census Block Count: | 2592 |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | Yes |

See ReadMe.txt*Data Processing****Census Block Process:**

- Join the provided census block table to the 2010 census blocks based on the GEOID10 field
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Road Segment Process:

- Create beginning and ending road segment addresses for all submitted road segments by concatenating the address number, street direction, street name, street type.
- Remove any duplicate addresses and those with no address number.
- Address-match those road segment addresses against the ArcGIS US Streets geocoding service to create beginning/ending road segment points
- Select those TIGER line segments that are within 10 m of a segment point location
- Spatial join the points to the TIGER lines so that the Technology of Transmission and Speed Tiers are attached to the appropriate line segment.
- Select just those line segments that intersect the census blocks that are greater than 2 square miles
 - Export results

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- Load exported results into the NTIA data model
 - Result: BB_Service_RoadSegment

Data Verification**Census Blocks**

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 9 | 2592 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 5 | 2592 | 100% |

Road Segments

| Max Download Category | Count | % of Road Segments |
|-----------------------|-------|--------------------|
| 9 | 198 | 100% |

| Max Upload Category | Count | % of Road Segments |
|---------------------|-------|--------------------|
| 5 | 198 | 100% |

Typical down/upload speeds reported by provider: [N/A](#)

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 8 | 10% |
| 3 | 1 | 1% |
| 4 | 1 | 1% |
| 5 | 15 | 19% |
| 6 | 42 | 54% |
| 7 | 11 | 14% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 2 | 3% |
| 2 | 8 | 10% |
| 3 | 10 | 13% |
| 4 | 57 | 73% |
| 6 | 1 | 1% |

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [0/2592 \(0%\)](#)

Form 477 Verification:

Number of census blocks reported to project, but no tract reported to FCC: [92/2592 \(4%\)](#)

Number of tracts reported to FCC, but no census blocks reported to project: [1](#)

Dead zones:

Number of census blocks with dead zones reported via [broadband.maryland.gov](#):

[6/2592 \(<1%\)](#)

Total number of dead zones reported per provider via [broadband.maryland.gov](#): [6](#)

Number or census blocks with dead zones reported via [mdbroadbandmap.org](#): [8/2592 \(<1%\)](#)

Total number of dead zones reported per provider via [mdbroadbandmap.org](#): [9](#)

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Web Search Verification: 46/2592 (2%) of census blocks were confirmed using online search feature of given provider

| Armstrong WebSearch Verification Table | Count | Percentage |
|--|--------------|-------------------|
| Total # of sample points | 1496 | |
| Number of sample points with results | 166 | 11% |
| Result is yes and census block is in served area | 46 | 28% |
| Result is yes but not in a census block reported as served | 40 | 24.1% |
| Result is no and census block is in served area | 0 | 0% |
| Result is no and census block not served area | 80 | 48% |

Census blocks that are outside providers own Cable Franchise Boundary: 2132/2592 (82%)

Census blocks that fall within another provider's Cable Franchise Boundary: 742/2592 (29%)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: no change

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AT&T Mobility LLC**DBA Name: AT&T Mobility LLC****Data Characteristics**

Date of Original Submission: 3/9/2010
 Date of Update Submission: 2/10/2012
 Currency of Data: 12/31/2011
 FRN: 0004979233
 Type of data submitted: Coverage Area
 Census Block Count: N/A
 Total Matched Address Points Count: N/A
 Unmatched Address Points: N/A
 Number of Technology of Transmission Types: 1
 Provided Max Advertised Download Speed: Complete
 Provided Max Advertised Upload Speed: Complete
 Provided Max Typical Download Speed: No
 Provided Max Typical Upload Speed: No
 Provided Middle Mile: No
 Provided Road Segments for census blocks greater than 2 sq miles: No

Data Processing**Coverage Area Process:**

- Repair Geometry on delivered coverage area
- Remove coverage areas less than 0.125 square miles
- Remove coverage area “holes” less than 0.125 square miles
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area |
|-----------------------|-------|-----------|
| 4 | 2 | 100% |

| Max Upload Category | Count | % of Area |
|---------------------|-------|-----------|
| 3 | 2 | 100% |

Typical down/upload speeds reported by provider: N/A**Typical down/upload speed from 2010 mobile speed test:**

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 425 | 37% |
| 3 | 331 | 29% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 667 | 58% |
| 2 | 307 | 27% |

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| | | |
|---|-----|-----|
| 4 | 331 | 29% |
| 5 | 59 | 5% |
| 6 | 3 | 0% |
| 7 | 6 | 1% |

| | | |
|---|-----|-----|
| 3 | 135 | 12% |
| 4 | 31 | 3% |
| 5 | 7 | 1% |
| 6 | 1 | 0% |
| 7 | 4 | 0% |
| 8 | 3 | 0% |

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)

#/% of mobile speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: [1150/1155 \(99.5%\)](#)

Number of mobile speed tests reported outside coverage area: [5/1155 \(0.5%\)](#)

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests | Speed Test Upload Tier | Count | % of Tests |
|--------------------------|-------|------------|------------------------|-------|------------|
| 0 | 7 | 70% | 1 | 5 | 50% |
| 3 | 2 | 20% | 2 | 2 | 20% |
| 4 | 1 | 10% | 3 | 3 | 30% |

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)

#/% of computer based speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: [10/10 \(100%\)](#)

Number of mobile speed tests reported outside coverage area: [0/10 \(0%\)](#)

Form 477Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: [342/342 \(100.0%\)](#)

#/% of tracts reported as served to FCC but do not intersect coverage area: [0/342 \(0%\)](#)

Dead zones:

Number of dead zones reported within coverage area via [broadband.maryland.gov](#):

[233/237 \(98.3%\)](#)

Number of dead zones reported within coverage area via [mdbroadbandmap.org](#):

[198/203 \(97.5%\)](#)

Web Search Verification: [N/A](#)

Wireless Verification:

| ATT Wireless Verification Table - 3G | Count | Percentage |
|--|-------|------------|
| Total # of sample points | 1486 | |
| Number of sample points within coverage area | 1453 | |
| Total number of sample points with results | 1293 | |

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| | | |
|--|------|-------|
| Verified served AND within reported coverage area (yes,yes) | 1280 | |
| Verified served AND found outside reported coverage area (yes,no) | 13 | 1.0% |
| Verified unserved AND found within reported coverage area (no,yes) | 173 | 11.6% |
| Verified unserved AND found outside reported coverage area (no,no) | 20 | |
| Total error | 186 | 12.5% |

| ATT Wireless Verification Table - 4G | Count | Percentage |
|--|--------------|-------------------|
| Total # of sample points | 1486 | |
| Number of sample points with expected 4G results | 1453 | |
| Total number of sample points with 4G results | 86 | |
| Verified 4G AND within reported coverage area (yes,yes) | 86 | |
| Verified 4G AND found outside reported coverage area (yes,no) | 0 | 0.0% |
| Verified not 4G AND found within reported coverage area (no,yes) | 1367 | 92.0% |
| Verified not 4G AND found outside reported coverage area (no,no) | 33 | |
| Total error | 1367 | 94.1% |

*4G service defined as average down speed of > 2000 bps

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Atlantech Online, Inc.**DBA: Atlantech Online, Inc.****Data Characteristics**

| | |
|---|-------------------------------|
| Date of Original Submission: | 3/7/2011 |
| Date of Update Submission: | 3/13/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0018854935 |
| Type of data submitted: | Address Table |
| Census Block Count: | 22 |
| Total Matched Address Points Count: | 39 |
| Unmatched Address Points: | 0 |
| Number of Technology of Transmission Types: | 2 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Census Block Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: [39](#)
 - Number unmatched: [39](#)
- Spatially join matched address points to 2010 census blocks
- Separate addresses by technology of transmission

Census Block Process:

- Join the spatial join result to the 2010 census blocks based on the GEOID10 field for each technology
 - Export results for each technology
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 11 | 2 | 9% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 11 | 2 | 9% |

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| | | | | | |
|---|----|-----|---|----|-----|
| 7 | 20 | 91% | 7 | 20 | 91% |
|---|----|-----|---|----|-----|

Typical down/upload speeds reported by provider: [N/A](#)

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 3 | 6 | 14% |
| 4 | 1 | 2% |
| 5 | 20 | 47% |
| 6 | 7 | 16% |
| 7 | 3 | 7% |
| 8 | 3 | 7% |
| 9 | 3 | 7% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 2 | 1 | 2% |
| 3 | 10 | 23% |
| 4 | 12 | 28% |
| 5 | 10 | 23% |
| 6 | 2 | 5% |
| 7 | 4 | 9% |
| 8 | 2 | 5% |
| 9 | 2 | 5% |

Speed tests match reported typical speeds or are within 1 speed tier: [N/A](#)

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [9/22 \(41%\)](#)

Form477 Verification:

Number of census blocks reported to project, but no tract reported to FCC: [0](#)

Number of tracts reported to FCC, but no census blocks reported to project: [84](#)

Dead zones:

Number of census blocks with dead zones reported via [broadband.maryland.gov](#): [1/22 \(4.5%\)](#)

Total number of dead zones reported per provider via [broadband.maryland.gov](#): [2](#)

Number of census blocks with dead zones reported via [mdbroadbandmap.org](#): [0](#)

Total number of dead zones reported per provider via [mdbroadbandmap.org](#): [0](#)

Web Search Verification: [N/A](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [no change](#)

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Atlantic Broadband (Penn), LLC**DBA Name: Atlantic BroadBand****Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | 3/26/2011 |
| Date of Update Submission: | 3/13/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0009596883 |
| Type of data submitted: | Address Table |
| Census Block Count: | 3870 |
| Total Matched Address Points Count: | 63765 |
| Unmatched Address Points: | 4183 |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Complete |
| Provided Max Typical Upload Speed: | Complete |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

See ReadMe.txt*Data Processing****Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 59443
 - Number unmatched: 8505
- Unmatched address are geocoded to Maryland Property View address locator
 - Number matched: 3282
 - Number unmatched: 5223
- Unmatched addresses are geocoded to Maryland center line address locator
 - Number matched: 1040
 - Number unmatched: 4183
- Merge matched addresses
- Spatially join address points to 2010 census blocks
- Select by location the address points that are completely within a greater than two square mile census block
 - Export as address points to be loaded into the NTIA data model
 - Result: BB_Service_Address
 - Switch the selection and export as points to create census blocks

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Census Block Process:

- Join the switched selection (BB_Service_Address) address points to the 2010 census blocks based on the GEOID10 field
 - Export results Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modification:

- Provider submitted 92 addresses with Category of End User of 3 - Small Business. The SBDD data model does not allow this code for addresses; the 92 addresses were changed to 5 – Other.

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 7 | 3870 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 3 | 3611 | 93% |
| 4 | 259 | 7% |

Typical down/upload speeds reported by provider:

Census Blocks

| Typical Download Category | Count | % of Blocks |
|---------------------------|-------|-------------|
| 7 | 3870 | 100% |

| Typical Upload Category | Count | % of Blocks |
|-------------------------|-------|-------------|
| 3 | 3870 | 100% |

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 31 | 15% |
| 3 | 8 | 4% |
| 4 | 17 | 8% |
| 5 | 104 | 49% |
| 6 | 39 | 18% |
| 7 | 13 | 6% |
| 9 | 1 | 0% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 1 | 0% |
| 2 | 192 | 90% |
| 3 | 17 | 8% |
| 4 | 3 | 1% |

Speed tests match reported typical download speeds or are within 1 speed tier: **No**

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): **10/3870 (< 1%)**

Form 477Verification:

Number of census blocks reported to project, but no tract reported to FCC: **128/3870 (3.3%)**

Number of tracts reported to FCC, but no census blocks reported to project: **5**

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Dead zones:**Number of census blocks with dead zones reported via broadband.maryland.gov:**[2/3870 \(< 1%\)](#)**Total number of dead zones reported per provider via broadband.maryland.gov:** [2](#)**Number of census blocks with dead zones reported via mdbroadbandmap.org:** [7/3870 \(< 1%\)](#)**Total number of dead zones reported per provider via mdbroadbandmap.org:** [9](#)**Web Search Verification:** [87/3870 \(2.2%\)](#) of census blocks were confirmed using online search feature of given provider

| Atlantic Broadband WebSearch Verification Table | Count | Percentage |
|--|-------|------------|
| Total # of sample points | 1496 | |
| Number of sample points with results | 1496 | 100% |
| Result is yes and census block is in served area | 87 | 6% |
| Result is yes but not in a census block reported as served | 116 | 8% |
| Result is no and census block is in served area | 2 | 0% |
| Result is no and census block not served area | 1289 | 86% |

Census blocks that are outside providers own Cable Franchise Boundary: [1255/3870 \(32.4%\)](#)**Census blocks that fall within another provider's Cable Franchise Boundary:** [266/3870 \(6.9%\)](#)**Change in coverage area from Fall 2011 Submission to Spring 2012 Submission:** [no change](#)

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Bay Country Communications, Inc.**DBA Name: Bay Country Communications, Inc.****Data Characteristics**

| | |
|---|--------------------|
| Date of Original Submission: | 8/9/2010 |
| Date of Update Submission: | 1/17/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0020136552 |
| Type of data submitted: | Census Block Table |
| Census Block Count: | 1841 |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Complete |
| Provided Max Typical Upload Speed: | Complete |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Census Block Process:**

- Join the provided census block table to the 2010 census blocks based on the 2000 block name field
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 7 | 1841 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 7 | 1841 | 100% |

Typical down/upload speeds reported by provider:

Census Blocks

| Typical Download Category | Count | % of Blocks |
|---------------------------|-------|-------------|
| 4 | 1841 | 100% |

| Typical Upload Category | Count | % of Blocks |
|-------------------------|-------|-------------|
| 2 | 1841 | 100% |

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Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 3 | 2 | 100% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 2 | 2 | 100% |

Speed tests match reported typical download speeds or are within 1 speed tier: [Yes](#)

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [0/1841 \(0%\)](#)

Form 477 Verification:

Number of census blocks reported to project, but no tract reported to FCC: [N/A](#)

Number of tracts reported to FCC, but no census blocks reported to project: [N/A](#)

Dead zones:

Number of census blocks with dead zones reported via [broadband.maryland.gov](#):

[1/1841 \(<1%\)](#)

Total number of dead zones reported per provider via [broadband.maryland.gov](#): [2](#)

Number of census blocks with dead zones reported via [mdbroadbandmap.org](#):

[1/1841 \(<1%\)](#)

Total number of dead zones reported per provider via [mdbroadbandmap.org](#): [1](#)

Web Search Verification: [N/A](#)

Census blocks that are outside providers own Cable Franchise Boundary: [N/A](#)

Census blocks that fall within another provider's Cable Franchise Boundary:

[1439/1841 \(78.2%\)](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [no change](#)

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Believe Wireless, LLC.**DBA: Believe Wireless Broadband****Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | 3/1/2011 |
| Date of Update Submission: | 3/22/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 9999 |
| Type of data submitted: | Coverage Area |
| Census Block Count: | N/A |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Complete |
| Provided Max Typical Upload Speed: | Complete |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Coverage Area Process:**

- Spectrum not provided
 - Spectrum selected by comparing similar providers and choosing the most likely option
- Use raster analysis to extract coverage area from map
- Repair Geometry on coverage area
- Remove coverage areas less than 0.125 square miles
- Remove coverage area “holes” less than 0.125 square miles
- Simplify Polygon of coverage area
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Speed Domains:

- Maximum Advertized Speeds changed
 - Reported speeds exceed domain – changed from tier 11 to 7

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Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area |
|-----------------------|-------|-----------|
| 6 | 1 | 100% |

| Max Upload Category | Count | % of Area |
|---------------------|-------|-----------|
| 6 | 1 | 100% |

Typical down/upload speeds reported by provider:

Coverage Area

| Typical Download Category | Count | % of Area |
|---------------------------|-------|-----------|
| 6 | 1 | 100% |

| Typical Upload Category | Count | % of Area |
|-------------------------|-------|-----------|
| 6 | 1 | 100% |

Typical down/upload speed from 2010 mobile speed test: N/A

Speed tests match reported typical download speeds or are within 1 speed tier: N/A

#/% of mobile speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: N/A

Number of mobile speed tests reported outside coverage area: N/A

Form 477 Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: N/A

#/% of tracts reported as served to FCC but do not intersect coverage area: N/A

Dead zones:

Number of dead zones reported within coverage area via broadband.maryland.gov:

15/237(6.2%)

Number of dead zones reported within coverage area via mdbroadbandmap.org:

7/203 (3.4%)

Web Search Verification: N/A

Wireless Verification: N/A

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Bloosurf**DBA: Bloosurf****Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | 2/28/2011 |
| Date of Update Submission: | 3/18/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0019496462 |
| Type of data submitted: | Coverage Area |
| Census Block Count: | N/A |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Coverage Area Process:**

- Digitize coverage area from map
- Repair Geometry on coverage area
- Remove coverage areas less than 0.125 square miles
- Remove coverage area “holes” less than 0.125 square miles
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area |
|-----------------------|-------|-----------|
| 5 | 1 | 100% |

| Max Upload Category | Count | % of Area |
|---------------------|-------|-----------|
| 3 | 1 | 100% |

Typical down/upload speeds reported by provider: N/A

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Typical down/upload speed from 2010 mobile speed test: [N/A](#)

Speed tests match reported typical speeds or are within 1 speed tier: [N/A](#)

#/% of mobile speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: [N/A](#)

Number of mobile speed tests reported outside coverage area: [N/A](#)

Form 477 Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: [N/A](#)

#/% of tracts reported as served to FCC but do not intersect coverage area: [N/A](#)

Dead zones:

Number of dead zones reported within coverage area via broadband.maryland.gov:

[5/237 \(2%\)](#)

Number of dead zones reported within coverage area via mdbroadbandmap.org:

[1/203 \(.5%\)](#)

Web Search Verification: [N/A](#)

Wireless Verification: [N/A](#)

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Broadstripe, LLC**DBA Name: Broadstripe, LLC****Data Characteristics**

| | |
|---|-------------------------------|
| Date of Original Submission: | 4/14/2010 |
| Date of Update Submission: | 1/31/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0003773843 |
| Type of data submitted: | Address Table |
| Census Block Count: | 2949 |
| Total Matched Address Points Count: | 107378 |
| Unmatched Address Points: | 100 |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: [103647](#)
 - Number unmatched: [840](#)
- Unmatched address are geocoded to Maryland Property View address locator
 - Number matched: [636](#)
 - Number unmatched: [204](#)
- Unmatched address are geocoded to Maryland street centerline address locator
 - Number matched: [636](#)
 - Number unmatched: [204](#)
- Merge matched addresses
- Spatially join address points to 2010 census blocks
- Select by location the address points that are completely within a greater than two square mile census block
 - Export as address points to be loaded into the NTIA data model
 - Result: BB_Service_Address
 - Switch the selection and export as points to create census blocks

Census Block Process:

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- Join the switched selection (BB_Service_Address) address points to the 2010 census blocks based on the GEOID10 field
 - Export results Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modification:

- Removed 2 addresses from data set – address out of provider area
 - Milford, MI
 - Cecil County, MD

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 7 | 2949 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 4 | 2949 | 100% |

Typical down/upload speeds reported by provider: [N/A](#)**Typical down/upload speed from 2010 computer based speed test:**

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 3 | 3 | 5% |
| 4 | 1 | 2% |
| 5 | 10 | 18% |
| 6 | 17 | 31% |
| 7 | 20 | 36% |
| 8 | 1 | 2% |
| 9 | 2 | 4% |
| 10 | 1 | 2% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 3 | 5% |
| 2 | 4 | 7% |
| 3 | 5 | 9% |
| 4 | 43 | 78% |

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [0/2949 \(0%\)](#)**Form477 Verification:**Number of census blocks reported to project, but no tract reported to FCC: [8/2949 \(<1%\)](#)Number of tracts reported to FCC, but no census blocks reported to project: [0](#)**Dead zones:**Number of census blocks with dead zones reported via [broadband.maryland.gov](#):[1/2949 \(<1%\)](#)Total number of dead zones reported per provider via [broadband.maryland.gov](#): [1](#)

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Number of census blocks with dead zones reported via mdbroadbandmap.org:

1/2949 (<1%)

Total number of dead zones reported per provider via mdbroadbandmap.org: 1

Web Search Verification: 17/2949 (1%) of census blocks were confirmed using online search feature of given provider

| Broadstripe WebSearch Verification Table | Count | Percentage |
|--|-------|------------|
| Total # of sample points | 1496 | |
| Number of sample points with results | 85 | 6% |
| Result is yes and census block is in served area | 17 | 20% |
| Result is yes but not in a census block reported as served | 15 | 18% |
| Result is no and census block is in served area | 0 | 0% |
| Result is no and census block not served area | 53 | 62% |

Census blocks that are outside providers own Cable Franchise Boundary: N/A

Census blocks that fall within another provider's Cable Franchise Boundary: 2773/2949 (94%)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: no change

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Broadview Networks Holdings, Inc.**DBA Name: Broadview Networks Holdings, Inc.****Data Characteristics**

| | |
|---|-------------------------------|
| Date of Original Submission: | 2/24/2010 |
| Date of Update Submission: | 3/19/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0010296853 |
| Type of data submitted: | Address Table |
| Census Block Count: | 600 |
| Total Matched Address Points Count: | 797 |
| Unmatched Address Points: | 10 |
| Number of Technology of Transmission Types: | 3 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: [786](#)
 - Number unmatched: [23](#)
- Unmatched address are geocoded to Maryland Property View address locator
 - Number matched: [12](#)
 - Number unmatched: [11](#)
- Unmatched address are geocoded to Maryland street centerline address locator
 - Number matched: [1](#)
 - Number unmatched: [10](#)
- Merge matched addresses
- Spatially join address points to 2010 census blocks
- Separate and export the address points according to technology of transmission

Census Block Process:

- Join the address points to the 2010 census blocks based on the GEOID10 field
 - Export results for each technology of transmission
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modification:

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- Dropped 32 blocks reported by provider that do not meet broadband speeds

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 3 | 20 | 3% |
| 4 | 496 | 81% |
| 5 | 84 | 14% |
| 6 | 11 | 2% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 2 | 37 | 6% |
| 3 | 33 | 5% |
| 4 | 459 | 75% |
| 5 | 72 | 12% |
| 6 | 10 | 2% |

Typical down/upload speeds reported by provider: N/A**Typical down/upload speed from 2010 computer based speed test:**

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 3 | 1 | 100% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 3 | 1 | 100% |

Speed tests match reported typical download speeds or are within 1 speed tier: N/A**Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted):** 2/600 (<1%)**Form 477 Verification:****Number of census blocks reported to project, but no tract reported to FCC:** 45/600 (7.5%)**Number of tracts reported to FCC, but no census blocks reported to project:** 54**Dead zones:****Number of census blocks with dead zones reported via broadband.maryland.gov:** 0/600 (0%)**Total number of dead zones reported per provider via broadband.maryland.gov:** 0**Number of census blocks with dead zones reported via mdbroadbandmap.org:** 2/600 (<1%)**Total number of dead zones reported per provider via mdbroadbandmap.org:** 2**Web Search Verification:** N/A**Census blocks that are outside DSL boundary:** 111/600 (19%)**Change in coverage area from Fall 2011 Submission to Spring 2012 Submission:** no change

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Brookwood Ventures LLC**DBA Name: Brookwood Ventures LLC****Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | 3/12/2010 |
| Date of Update Submission: | 3/7/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0010296853 |
| Type of data submitted: | Coverage Area |
| Census Block Count: | N/A |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Coverage Area Process:**

- Repair Geometry on delivered coverage area
- Perform Topology on coverage area
 - Rule: Coverage area should not overlap
 - Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area | Max Upload Category | Count | % of Area |
|-----------------------|-------|-----------|---------------------|-------|-----------|
| 5 | 1 | 100% | 3 | 1 | 100% |

Typical down/upload speeds reported by provider: N/A**Typical down/upload speed from 2010 mobile speed test:** N/A**Speed tests match reported typical download speeds or are within 1 speed tier:** N/A

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#/% of mobile speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: N/A

Number of mobile speed tests reported outside coverage area: N/A

Form 477 Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: 2/2 (100%)

#/% of tracts reported as served to FCC but do not intersect coverage area: 0/2 (0%)

Dead zones:

Number of dead zones reported within coverage area via broadband.maryland.gov:

1/237 (0.4%)

Number of dead zones reported within coverage area via mdbroadbandmap.org:

0/203 (0%)

Web Search Verification: N/A

Wireless Verification: N/A

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Cavalier Telephone Mid-Atlantic, LLC**DBA Name: Cavalier Telephone Mid-Atlantic, LLC****Data Characteristics**

| | |
|---|------------------------------------|
| Date of Original Submission: | 3/10/2010 |
| Date of Update Submission: | N/A |
| Currency of Data: | 6/30/2011 |
| FRN: | 0015799133 |
| Type of data submitted: | Census Block Table, Middle Mile |
| Census Block Count: | 6858 |
| Total Matched Address Points Count: | 10263 |
| Unmatched Address Points: | 34 |
| Number of Technology of Transmission Types: | 2 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | Yes |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 10212
 - Number unmatched: 85
- Unmatched address are geocoded to Maryland Property View address locator
 - Number matched: 42
 - Number unmatched: 43
- Unmatched addresses are geocoded to Maryland center line address locator
 - Number matched: 9
 - Number unmatched: 34
- Merge matched addresses
- Spatially join address points to 2010 census blocks
- Separate and export the address points according to technology of transmission

Census Block Process:

- Join the address points to the 2010 census blocks based on the GEOID10 field
 - Export results for each technology of transmission
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modification:

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- 6342 blocks with technology of transmission 10 exceed domain speed
 - changed to MAXADUP speed tier 7
- Provider did not submit elevation for middle mile. Check submission script does not allow a Null elevation or -9999 default value - elevation changed to 0.

Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area |
|-----------------------|-------|-----------|
| 8 | 7015 | 100% |

| Max Upload Category | Count | % of Area |
|---------------------|-------|-----------|
| 8 | 7015 | 100% |

Typical down/upload speeds reported by provider: N/A**Typical down/upload speed from 2010 computer based speed test:**

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 36 | 23% |
| 3 | 23 | 14% |
| 4 | 31 | 19% |
| 5 | 37 | 23% |
| 6 | 22 | 14% |
| 7 | 7 | 4% |
| 8 | 2 | 1% |
| 10 | 1 | 1% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 14 | 9% |
| 2 | 98 | 62% |
| 3 | 38 | 24% |
| 4 | 1 | 1% |
| 5 | 3 | 2% |
| 6 | 2 | 1% |
| 7 | 3 | 2% |

Speed tests match reported typical download speeds or are within 1 speed tier: N/A**Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted):** 16/6856 (< 1%)**Form477 Verification:****Number of census blocks reported to project, but no tract reported to FCC:** 60/6856 (1%)**Number of tracts reported to FCC, but no census blocks reported to project:** 79**Dead zones:****Number of census blocks with dead zones reported via broadband.maryland.gov:**

9/6856 (< 1%)

Total number of dead zones reported per provider via broadband.maryland.gov: 13**Number of census blocks with dead zones reported via mdbroadbandmap.org:**

4/6856 (< 1%)

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Total number of dead zones reported per provider via mdbroadbandmap.org: 4

Web Search Verification: 20/6856 (1%) of census blocks were confirmed using online search feature of given provider

| Cavalier WebSearch Verification Table | Count | Percentage |
|--|--------------|-------------------|
| Total # of sample points | 1496 | |
| Number of sample points with results | 432 | 29% |
| Result is yes and census block is in served area | 20 | 5% |
| Result is yes but not in a census block reported as served | 47 | 11% |
| Result is no and census block is in served area | 26 | 6% |
| Result is no and census block not served area | 339 | 78% |

Census blocks that are outside DSL boundary: 263/6856 (4%)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: no change

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Cellco Partnership and its Affiliated Entities**DBA Name:** Verizon Wireless**Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | 3/8/2010 |
| Date of Update Submission: | 2/14/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0003290673 |
| Type of data submitted: | Coverage Area |
| Census Block Count: | N/A |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Complete |
| Provided Max Typical Upload Speed: | Complete |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Coverage Area Process:**

- Repair Geometry on delivered coverage area
- Remove coverage areas less than 0.125 square miles
- Remove coverage area “holes” less than 0.125 square miles
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area |
|-----------------------|-------|-----------|
| 3 | 3 | 75% |
| 7 | 1 | 25% |

| Max Upload Category | Count | % of Area |
|---------------------|-------|-----------|
| 2 | 3 | 75% |
| 5 | 1 | 25% |

Typical down/upload speeds reported by provider:

Coverage Area

| Typical Download Category | Count | % of Area |
|---------------------------|-------|-----------|
| 3 | 3 | 75% |
| 6 | 1 | 25% |

| Typical Upload Category | Count | % of Area |
|-------------------------|-------|-----------|
| 2 | 3 | 75% |
| 5 | 1 | 25% |

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Typical down/upload speed from 2010 mobile speed test:

| Speed Test Download Tier | Count | % of Tests | Speed Test Upload Tier | Count | % of Tests |
|--------------------------|-------|------------|------------------------|-------|------------|
| 0 | 597 | 6% | 1 | 353 | 4% |
| 3 | 553 | 6% | 2 | 1395 | 15% |
| 4 | 1108 | 12% | 3 | 460 | 5% |
| 5 | 1180 | 13% | 4 | 1321 | 14% |
| 6 | 1599 | 17% | 5 | 2768 | 30% |
| 7 | 4127 | 44% | 6 | 1218 | 13% |
| 8 | 162 | 2% | 7 | 1803 | 19% |
| 10 | 1 | 0% | 8 | 9 | 0% |

Speed tests match reported typical download speeds or are within 1 speed tier: **No**

#/% of mobile speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: **9253/9327 (99.2%)**

Number of mobile speed tests reported outside coverage area: **74/9327 (0.8%)**

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests | Speed Test Upload Tier | Count | % of Tests |
|--------------------------|-------|------------|------------------------|-------|------------|
| 0 | 225 | 57% | 1 | 120 | 31% |
| 3 | 122 | 31% | 2 | 270 | 69% |
| 4 | 45 | 11% | 3 | 2 | 1% |
| 5 | 1 | 0% | 4 | 1 | 0% |

Speed tests match reported typical download speeds or are within 1 speed tier: **No**

#/% of computer based speed tests verifying coverage area:

Number of computer based speed tests reported inside coverage area: **385/393 (98%)**

Number of computer based speed tests reported outside coverage area: **8/393 (2%)**

Form 477 Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: **N/A**

#/% of tracts reported as served to FCC but do not intersect coverage area: **N/A**

Dead zones:

Number of dead zones reported within coverage area via broadband.maryland.gov:
214/237 (90.3%)

Number of dead zones reported within coverage area via mdbroadbandmap.org:
189/203 (93.1%)

Web Search Verification: **N/A**

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Wireless Verification:

| Verizon Wireless Verification Table - 3G | Count | Percentage |
|--|--------------|-------------------|
| Total # of sample points | 1486 | |
| Number of sample points within coverage area | 1225 | |
| Total number of sample points with results | 1334 | |
| Verified served AND within reported coverage area (yes,yes) | 1161 | |
| Verified served AND found outside reported coverage area (yes,no) | 173 | 13.0% |
| Verified unserved AND found within reported coverage area (no,yes) | 64 | 5.2% |
| Verified unserved AND found outside reported coverage area (no,no) | 88 | |
| Total error | 237 | 15.9% |

*for three different spectrums the results were identical

| Verizon Wireless Verification Table - 4G | Count | Percentage |
|--|--------------|-------------------|
| Total # of sample points | 1486 | |
| Number of sample points with expected 4G results | 283 | |
| Total number of sample points with 4G results | 274 | |
| Verified 4G AND within reported coverage area (yes,yes) | 214 | |
| Verified 4G AND found outside reported coverage area (yes,no) | 60 | 21.9% |
| Verified not 4G AND found within reported coverage area (no,yes) | 69 | 24.4% |
| Verified not 4G AND found outside reported coverage area (no,no) | 1143 | |
| Total error | 129 | 8.7% |

*4G service defined as average down speed of > 2000 bps

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CHARTER COMMUNICATIONS INC.**DBA Name: CHARTER COMMUNICATIONS INC.****Data Characteristics**

| | |
|---|--------------------------------------|
| Date of Original Submission: | 3/31/2010 |
| Date of Update Submission: | 1/17/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0017179383 |
| Type of data submitted: | Census Block Table, Road Segments |
| Census Block Count: | 421 |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Complete |
| Provided Max Typical Upload Speed: | Complete |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | Yes |

Data Processing**Census Block Process:**

- Join the provided census block table to the 2010 census blocks based on the 2010 block name field
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Road Segment Process:

- Join road segments to TigerLine by TLID
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_RoadSegment

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 7 | 421 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 3 | 421 | 100% |

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Road Segments

| Max Download Category | Count | % of Road Segments |
|-----------------------|-------|--------------------|
| 7 | 49 | 100% |

| Max Upload Category | Count | % of Road Segments |
|---------------------|-------|--------------------|
| 3 | 49 | 100% |

Typical down/upload speeds reported by provider:

Census Blocks

| Typical Download Category | Count | % of Blocks |
|---------------------------|-------|-------------|
| 7 | 421 | 100% |

| Typical Upload Category | Count | % of Blocks |
|-------------------------|-------|-------------|
| 3 | 421 | 100% |

Road Segments

| Typical Download Category | Count | % of Road Segments |
|---------------------------|-------|--------------------|
| 7 | 49 | 100% |

| Typical Upload Category | Count | % of Road Segments |
|-------------------------|-------|--------------------|
| 3 | 49 | 100% |

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 4 | 3 | 50% |
| 5 | 2 | 33% |
| 7 | 1 | 17% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 2 | 3 | 50% |
| 3 | 3 | 50% |

Speed tests match reported typical download speeds or are within 1 speed tier: **No**

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): **0/421 (0%)**

Form477 Verification:

Number of census blocks reported to project, but no tract reported to FCC: **0**

Number of tracts reported to FCC, but no census blocks reported to project: **0**

Dead zones:

Number of census blocks with dead zones reported via broadband.maryland.gov: **0**

Total number of dead zones reported per provider via broadband.maryland.gov: **1**

Number of census blocks with dead zones reported via mdbroadbandmap.org: **0**

Total number of dead zones reported per provider via mdbroadbandmap.org: **0**

Web Search Verification: **2/421 (1%)** of census blocks were confirmed using online search feature of given provider

| Charter WebSearch Verification Table | Count | Percentage |
|--|-------|------------|
| Total # of sample points | 1496 | |
| Number of sample points with results | 55 | 4% |
| Result is yes and census block is in served area | 2 | 4% |

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| | | |
|--|----|-----|
| Result is yes but not in a census block reported as served | 0 | 0% |
| Result is no and census block is in served area | 3 | 5% |
| Result is no and census block not served area | 50 | 91% |

Census blocks that are outside providers own Cable Franchise Boundary: [208/421 \(49%\)](#)

Census blocks that fall within another provider's Cable Franchise Boundary: [0/421 \(0%\)](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [no change](#)

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Clearwire Corporation**DBA Name: Clearwire Corporation****Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | 3/5/2010 |
| Date of Update Submission: | 1/17/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0017775628 |
| Type of data submitted: | Coverage Area |
| Census Block Count: | N/A |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Complete |
| Provided Max Typical Upload Speed: | Complete |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Coverage Area Process:**

- Repair Geometry on delivered coverage area
- Remove coverage areas less than 0.125 square miles
- Remove coverage area “holes” less than 0.125 square miles
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area | Max Upload Category | Count | % of Area |
|-----------------------|-------|-----------|---------------------|-------|-----------|
| 5 | 1 | 100% | 1 | 1 | 100% |

Typical down/upload speeds reported by provider:

Coverage Area

| Typical Download Category | Count | % of Area | Typical Upload Category | Count | % of Area |
|---------------------------|-------|-----------|-------------------------|-------|-----------|
| 5 | 1 | 100% | 4 | 1 | 100% |

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Typical down/upload speed from 2010 mobile speed test:

| Speed Test Download Tier | Count | % of Tests | Speed Test Upload Tier | Count | % of Tests |
|--------------------------|-------|------------|------------------------|-------|------------|
| 0 | 36 | 14% | 1 | 15 | 6% |
| 3 | 83 | 31% | 2 | 106 | 40% |
| 4 | 91 | 34% | 3 | 142 | 54% |
| 5 | 48 | 18% | 7 | 2 | 1% |
| 6 | 5 | 2% | | | |
| 7 | 2 | 1% | | | |

Speed tests match reported typical download speeds or are within 1 speed tier: **Yes**

#/% of mobile speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: **209/265 (78.9%)**

Number of mobile speed tests reported outside coverage area: **56/265 (21.1%)**

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests | Speed Test Upload Tier | Count | % of Tests |
|--------------------------|-------|------------|------------------------|-------|------------|
| 0 | 7 | 8% | 1 | 2 | 2% |
| 3 | 11 | 13% | 2 | 22 | 26% |
| 4 | 19 | 23% | 3 | 60 | 71% |
| 5 | 35 | 42% | | | |
| 6 | 10 | 12% | | | |
| 7 | 2 | 2% | | | |

Speed tests match reported typical download speeds or are within 1 speed tier: **Yes**

#/% of computer based speed tests verifying coverage area:

Number of computer based speed tests reported inside coverage area: **81/84 (96.4%)**

Number of computer based speed tests reported outside coverage area: **3/84 (3.6%)**

Form 477 Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: **N/A**

#/% of tracts reported as served to FCC but do not intersect coverage area: **N/A**

Dead zones:

Number of dead zones reported within coverage area via broadband.maryland.gov:

38/237 (16%)

Number of dead zones reported within coverage area via mdbroadbandmap.org:

11/203 (5.4%)

Web Search Verification: **N/A**

Wireless Verification: **N/A**

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Cogent Communications Group**DBA Name: Cogent Communications Group****Data Characteristics**

| | |
|---|-------------------------------|
| Date of Original Submission: | 2/1/2010 |
| Date of Update Submission: | 1/26/2012 |
| Currency of Data: | 6/30/2011 |
| FRN: | 0019066034 |
| Type of data submitted: | Address Table, Middle Mile |
| Census Block Count: | 3 |
| Total Matched Address Points Count: | 3 |
| Unmatched Address Points: | 3 |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | Yes |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

See ReadMe.txt*Data Processing****Address Table Process:**

- Geocode address table to ESRI US streets address locator
 - Number matched: 3
 - Number unmatched: 0
- Spatially join address points to 2010 census blocks

Census Block Process:

- Join the address points to the 2010 census blocks based on the GEOID10 field
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modifications:

- Provider did not submit elevation for middle mile. Check submission script does not allow a Null elevation or -9999 default value - elevation changed to 0.

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Data Verification**Maximum down/upload speeds reported by provider:**

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 11 | 3 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 11 | 3 | 100% |

Typical down/upload speeds reported by provider: [N/A](#)**Typical down/upload speed from 2010 computer based speed test:**

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 1 | 8% |
| 3 | 2 | 15% |
| 4 | 1 | 8% |
| 6 | 8 | 62% |
| 8 | 1 | 8% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 2 | 1 | 8% |
| 3 | 2 | 15% |
| 6 | 7 | 54% |
| 7 | 3 | 23% |

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)**Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted):** [8/3 \(> 100%\)](#)**Form477 Verification:****Number of census blocks reported to project, but no tract reported to FCC:** [3](#)**Number of tracts reported to FCC, but no census blocks reported to project:** [3](#)**Dead zones:****Number of census blocks with dead zones reported via [broadband.maryland.gov](#):** [0](#)**Total number of dead zones reported per provider via [broadband.maryland.gov](#):** [0](#)**Number of census blocks with dead zones reported via [mdbroadbandmap.org](#):** [0](#)**Total number of dead zones reported per provider via [mdbroadbandmap.org](#):** [0](#)**Web Search Verification:** [N/A](#)**Change in coverage area from Fall 2011 Submission to Spring 2012 Submission:** [no change](#)

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Comcast Corporation**DBA Name: Comcast Cable Communications, LLC****Data Characteristics**

| | |
|---|--------------------------------------|
| Date of Original Submission: | 1/19/2010 |
| Date of Update Submission: | 2/21/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0004441663 |
| Type of data submitted: | Census Block Table, Road Segments |
| Census Block Count: | 52689 |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 2 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | Yes |

Data Processing**Census Block Process:**

- Join the census block table to the 2010 census blocks based on the GEOID10 field
 - Export results for each technology of transmission
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Road Segment Process:

- Create beginning and ending road segment addresses for all submitted road segments by concatenating the address number, street direction, street name, street type.
- Remove any duplicate addresses and those with no address number.
- Address-match those road segment addresses against the ArcGIS US Streets geocoding service to create beginning/ending road segment points
- Select those TIGER line segments that are within 10 m of a segment point location
- Spatial join the points to the TIGER lines so that the Technology of Transmission and Speed Tiers are attached to the appropriate line segment.
- Select just those line segments that intersect the census blocks that are greater than 2 square miles
 - Export results
 - Load exported results into the NTIA data model

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▪ Result: BB_Service_RoadSegment

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 7 | 4 | 0% |
| 10 | 52685 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 7 | 52689 | 100% |

Road Segments

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 10 | 1347 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 7 | 1347 | 100% |

Typical down/upload speeds reported by provider: [N/A](#)**Typical down/upload speed from 2010 computer based speed test:**

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 63 | 1% |
| 3 | 144 | 3% |
| 4 | 117 | 2% |
| 5 | 450 | 8% |
| 6 | 734 | 13% |
| 7 | 3737 | 66% |
| 8 | 372 | 7% |
| 9 | 41 | 1% |
| 10 | 13 | 0% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 36 | 1% |
| 2 | 183 | 3% |
| 3 | 292 | 5% |
| 4 | 1101 | 19% |
| 5 | 3841 | 68% |
| 6 | 192 | 3% |
| 7 | 26 | 0% |

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [349/52689 \(< 1%\)](#)**Form477 Verification:**Number of census blocks reported to project, but no tract reported to FCC: [1108/52689 \(2.1%\)](#)Number of tracts reported to FCC, but no census blocks reported to project: [0](#)**Dead zones:**

Number of census blocks with dead zones reported via broadband.maryland.gov:

[83/52689 \(< 1%\)](#)Total number of dead zones reported per provider via broadband.maryland.gov: [118](#)

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Number of census blocks with dead zones reported via mdbroadbandmap.org:

53/52689 (< 1%)

Total number of dead zones reported per provider via mdbroadbandmap.org: 70

Web Search Verification:

380/52689 (1%) of census blocks were confirmed using online search feature of given provider

| Comcast WebSearch Verification Table | Count | Percentage |
|--|-------|------------|
| Total # of sample points | 1496 | |
| Number of sample points with results | 797 | 53% |
| Result is yes and census block is in served area | 380 | 48% |
| Result is yes but not in a census block reported as served | 0 | 0% |
| Result is no and census block is in served area | 206 | 26% |
| Result is no and census block not served area | 210 | 26% |

Census blocks that are outside providers own Cable Franchise Boundary: 6669/52689 (13%)

Census blocks that fall within another provider's Cable Franchise Boundary: 295/52689 (.6%)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: 3969 census block increase

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DIECA Communications, Inc.**DBA: Covad Communication Company****Data Characteristics**

| | |
|---|--|
| Date of Original Submission: | 2/1/2010 |
| Date of Update Submission: | 3/6/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0003753753 |
| Type of data submitted: | Census Block Table, Road Segments, Middle Mile |
| Census Block Count: | 73662 |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 3 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Incomplete |
| Provided Max Typical Upload Speed: | Incomplete |
| Provided Middle Mile: | Yes |
| Provided Road Segments for census blocks greater than 2 sq miles: | Yes |

Data Processing**Census Block Process:**

- Join the census block table to the 2010 census blocks based on the GEOID10 field
 - Export results for each technology of transmission
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Road Segment Process:

- Join road segments to TigerLine by TLID
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_RoadSegment

Data Modification:

- Provider submitted 4,383 census blocks with a Maximum Advertised Download Speed at speed tier 7 - check submission script returns WARNING statement. Maryland checked with provider - provider confirms speeds.

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Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 3 | 8288 | 5% |
| 4 | 23273 | 14% |
| 5 | 81225 | 50% |
| 6 | 23946 | 15% |
| 7 | 22623 | 14% |
| 8 | 2013 | 1% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 2 | 18726 | 12% |
| 3 | 36026 | 22% |
| 4 | 15256 | 9% |
| 5 | 70118 | 43% |
| 6 | 989 | 1% |
| 7 | 18240 | 11% |
| 8 | 2013 | 1% |

Road Segments

| Max Download Category | Count | % of Road Segments |
|-----------------------|-------|--------------------|
| 3 | 7 | 0% |
| 4 | 195 | 10% |
| 5 | 1647 | 84% |
| 6 | 98 | 5% |
| 7 | 22 | 1% |

| Max Upload Category | Count | % of Road Segments |
|---------------------|-------|--------------------|
| 2 | 88 | 4% |
| 3 | 103 | 5% |
| 4 | 168 | 9% |
| 5 | 1588 | 81% |
| 7 | 22 | 1% |

Typical down/upload speeds reported by provider:

Census Blocks

| Typical Download Category | Count | % of Blocks |
|---------------------------|-------|-------------|
| NULL | 7390 | 5% |
| 3 | 9947 | 6% |
| 4 | 37634 | 23% |
| 5 | 79560 | 49% |
| 6 | 6000 | 4% |
| 7 | 18824 | 12% |
| 8 | 2013 | 1% |

| Typical Upload Category | Count | % of Blocks |
|-------------------------|-------|-------------|
| 2 | 48259 | 30% |
| 3 | 7525 | 5% |
| 4 | 26527 | 16% |
| 5 | 57815 | 36% |
| 6 | 1942 | 1% |
| 7 | 17287 | 11% |
| 8 | 2013 | 1% |

Road Segments

| Typical Download Category | Count | % of Road Segments |
|---------------------------|-------|--------------------|
| | 0 | 0% |
| 3 | 27 | 1% |
| 4 | 251 | 13% |
| 5 | 1662 | 84% |
| 7 | 22 | 1% |

| Typical Upload Category | Count | % of Road Segments |
|-------------------------|-------|--------------------|
| 2 | 191 | 10% |
| 4 | 192 | 10% |
| 5 | 1564 | 79% |
| 7 | 22 | 1% |

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Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests | Speed Test Upload Tier | Count | % of Tests |
|--------------------------|-------|------------|------------------------|-------|------------|
| 0 | 9 | 11% | 1 | 22 | 27% |
| 3 | 42 | 51% | 2 | 33 | 40% |
| 4 | 23 | 28% | 3 | 17 | 20% |
| 5 | 4 | 5% | 4 | 8 | 10% |
| 6 | 2 | 2% | 5 | 3 | 4% |
| 7 | 3 | 4% | | | |

Speed tests match reported typical speeds or are within 1 speed tier: **No**

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): **0/73662 (0%)**

Form477 Verification:

Number of census blocks reported to project, but no tract reported to FCC:

8353/73662 (11.3%)

Number of tracts reported to FCC, but no census blocks reported to project: **0**

Dead zones:

Number of census blocks with dead zones reported via broadband.maryland.gov:

60/73662 (<1%)

Total number of dead zones reported per provider via broadband.maryland.gov: **75**

Number of census blocks with dead zones reported via mdbroadbandmap.org:

31/73662 (<1%)

Total number of dead zones reported per provider via mdbroadbandmap.org: **40**

Web Search Verification: **N/A**

Census blocks that are outside DSL boundary: **17955/73662 (24.4%)**

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: **1706 census block increase**

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DSLnet Communications, LLC**DBA Name:** [DSLnet Communications, LLC](#)**Data Characteristics**

| | |
|---|-------------------------------|
| Date of Original Submission: | 3/11/2010 |
| Date of Update Submission: | N/A |
| Currency of Data: | 6/30/2011 |
| FRN: | 0004324857 |
| Type of data submitted: | Address Table |
| Census Block Count: | 171 |
| Total Matched Address Points Count: | 595 |
| Unmatched Address Points: | 6 |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: [592](#)
 - Number unmatched: [9](#)
- Unmatched address are geocoded to Maryland Property View address locator
 - Number matched: [1](#)
 - Number unmatched: [8](#)
- Unmatched address are geocoded to Maryland centerline address locator
 - Number matched: [2](#)
 - Number unmatched: [6](#)
- Merge matched addresses
- Spatially join address points to 2010 census blocks
- Separate and export the address points according to technology of transmission
- Select by location the address points that are completely within a greater than two square mile census block
 - Export as address points to be loaded into the NTIA data model
 - Result: BB_Service_Address
 - Switch the selection and export as points to create census blocks

Census Block Process:

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- Join the switched selection (BB_Service_Address) address points to the 2010 census blocks based on the GEOID10 field
 - Export results for each technology of transmission
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modification:

- Removed 301 addresses from provider submission that do not meet broadband speeds
- Removed 1 address from provider submission reported with no technology of transmission

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks | Max Upload Category | Count | % of Blocks |
|-----------------------|-------|-------------|---------------------|-------|-------------|
| 3 | 104 | 61% | 3 | 104 | 61% |
| 4 | 67 | 39% | 4 | 67 | 39% |

Typical down/upload speeds reported by provider: [N/A](#)Typical down/upload speed from 2010 computer based speed test: [N/A](#)Speed tests match reported typical speeds or are within 1 speed tier: [N/A](#)Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [N/A](#)**Form477 Verification:**Number of census blocks reported to project, but no tract reported to FCC: [N/A](#)Number of tracts reported to FCC, but no census blocks reported to project: [N/A](#)**Dead zones:**Number of census blocks with dead zones reported via [broadband.maryland.gov](#): 0Total number of dead zones reported per provider via [broadband.maryland.gov](#): 0Number of census blocks with dead zones reported via [mdbroadbandmap.org](#): 0Total number of dead zones reported per provider via [mdbroadbandmap.org](#): 0Web Search Verification: [N/A](#)Census blocks that are outside DSL boundary: [6/171 \(3.5%\)](#)Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [no change](#)

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DSLnet, Inc
DBA: DSLnet, Inc

Data Characteristics

| | |
|---|------------|
| Date of Original Submission: | 3/11/2010 |
| Date of Update Submission: | N/A |
| Currency of Data: | 6/30/2011 |
| FRN: | 0015321136 |
| Type of data submitted: | Addresses |
| Census Block Count: | 30 |
| Total Matched Address Points Count: | 63 |
| Unmatched Address Points: | 0 |
| Number of Technology of Transmission Types: | 2 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 63
 - Number unmatched: 0
- Spatially join address points to 2010 census blocks
- Separate and export the address points according to technology of transmission

Census Block Process:

- Join the address points to the 2010 census blocks based on the GEOID10 field
 - Export results for each technology of transmission
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modification:

- Removed 31 addresses from provider submission that do not meet broadband speeds

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Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks | Max Upload Category | Count | % of Blocks |
|-----------------------|-------|-------------|---------------------|-------|-------------|
| 3 | 13 | 42% | 3 | 13 | 42% |
| 4 | 17 | 55% | 4 | 17 | 55% |
| 8 | 1 | 3% | 8 | 1 | 3% |

Typical down/upload speeds reported by provider: [N/A](#)**Typical down/upload speed from 2010 computer based speed test:** [N/A](#)**Speed tests match reported typical download speeds or are within 1 speed tier:** [N/A](#)**Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted):** [N/A](#)**Form477 Verification:****Number of census blocks reported to project, but no tract reported to FCC:** [0](#)**Number of tracts reported to FCC, but no census blocks reported to project:** [192](#)**Dead zones:****Number of census blocks with dead zones reported via [broadband.maryland.gov](#):** [0](#)**Total number of dead zones reported per provider via [broadband.maryland.gov](#):** [0](#)**Number of census blocks with dead zones reported via [mdbroadbandmap.org](#):** [0](#)**Total number of dead zones reported per provider via [mdbroadbandmap.org](#):** [0](#)**Web Search Verification:** [N/A](#)**Census blocks that are outside DSL boundary:** [11/30 \(36.7%\)](#)**Change in coverage area from Fall 2011 Submission to Spring 2012 Submission:** [no change](#)

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Easton Utilities Commission

DBA Name: Easton Utilities Commission

* Easton Utilities Commission provides wireline and wireless service

Data Characteristics

| | |
|---|-----------------------------|
| Date of Original Submission: | 2/5/2010 |
| Date of Update Submission: | 1/27/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0003793726 |
| Type of data submitted: | Addresses, Coverage Area |
| Census Block Count: | 530 |
| Total Matched Address Points Count: | 4687 |
| Unmatched Address Points: | 3 |
| Number of Technology of Transmission Types: | 2 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Wireline Data Processing

Address Table Process:

- Geocode address table to ESRI address locator
 - Number matched: 4316
 - Number unmatched: 374
- Unmatched address are geocoded to MDPV address locator
 - Number matched: 367
 - Number unmatched: 7
- Unmatched address are geocoded to Maryland street centerline address locator
 - Number matched: 4
 - Number unmatched: 3
- Merge matched addresses
- Spatially join address points to 2000 census blocks
- Select by location the address points that are completely within a greater than two square mile census block
 - Export as address points to be loaded into the NTIA data model
 - Result: BB_Service_Address
 - Switch the selection and export as points to create census blocks

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Census Block Process:

- Join the switched selection (BB_Service_Address) address points to the 2000 census blocks based on the BLK2000 field
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modification:

- 258 blocks with Technology of Transmission 41 Maximum Advertised Up speed does not fit domain - changed to speed tier 2. Provider was informed of this issue and approved change.

Wireline Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 3 | 275 | 52% |
| 5 | 255 | 48% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 2 | 501 | 95% |
| 3 | 24 | 5% |
| 4 | 5 | 1% |

Typical down/upload speeds reported by provider: [N/A](#)**Typical down/upload speed from 2010 computer based speed test:**

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 4 | 4% |
| 3 | 11 | 11% |
| 4 | 9 | 9% |
| 5 | 57 | 56% |
| 6 | 19 | 19% |
| 7 | 1 | 1% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 12 | 12% |
| 2 | 57 | 56% |
| 3 | 29 | 29% |
| 4 | 2 | 2% |
| 6 | 1 | 1% |

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [0/530 \(0%\)](#)**Form477 Verification:**Number of census blocks reported to project, but no tract reported to FCC: [7/530 \(1.3%\)](#)Number of tracts reported to FCC, but no census blocks reported to project: [0](#)**Dead zones:**Number of census blocks with dead zones reported via [broadband.maryland.gov](#): [0](#)Total number of dead zones reported per provider via [broadband.maryland.gov](#): [0](#)

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Number of census blocks with dead zones reported via mdbroadbandmap.org: 0**Total number of dead zones reported per provider via mdbroadbandmap.org: 0****Web Search Verification:** N/A**Census blocks that are outside providers own Cable Franchise Boundary:** 8/530 (1.5%)**Census blocks that fall within another provider's Cable Franchise Boundary:** 3/530 (<1%)**Change in coverage area from Fall 2011 Submission to Spring 2012 Submission:** no change

Wireless Data Processing

Coverage Area Process:

- Repair Geometry on delivered coverage area
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Wireless Data Verification

Maximum down/upload speeds reported by provider:

Coverage Area

| Max Download Category | Count | % of Area |
|-----------------------|-------|-----------|
| 3 | 1 | 100% |

| Max Upload Category | Count | % of Area |
|---------------------|-------|-----------|
| 2 | 1 | 100% |

Typical down/upload speeds reported by provider: N/A

Typical down/upload speed from 2010 mobile speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 1 | 8% |
| 3 | 1 | 8% |
| 4 | 1 | 8% |
| 5 | 5 | 42% |
| 6 | 2 | 17% |
| 7 | 2 | 17% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 2 | 8 | 67% |
| 3 | 2 | 17% |
| 5 | 2 | 17% |

Speed tests match reported typical download speeds or are within 1 speed tier: N/A**#/% of mobile speed tests verifying coverage area:****Number of mobile speed tests reported inside coverage area:** 0/12 (0%)**Number of mobile speed tests reported outside coverage area:** 12/12 (100%)

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Typical down/upload speed from 2010 computer based speed test:

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)

#/% of computer based speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: [10/101 \(10%\)](#)

Number of mobile speed tests reported outside coverage area: [91/101 \(90%\)](#)

Form 477 Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: [3/5 \(60%\)](#)

#/% of tracts reported as served to FCC but do not intersect coverage area: [2/5 \(40%\)](#)

Dead zones:

Number of dead zones reported within coverage area via [broadband.maryland.gov](#):

[0/237 \(100%\)](#)

Number of dead zones reported within coverage area via [mdbroadbandmap.org](#):

[2/203 \(1%\)](#)

Web Search Verification: [N/A](#)

Wireless Verification: [N/A](#)

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FiberLight LLC**DBA Name: FiberLight LLC****Data Characteristics**

Date of Original Submission: 3/31/2010
Date of Update Submission: 3/13/2012
Currency of Data: 12/31/2011
FRN: 0014117139
Type of data submitted: Census Block Table
Census Block Count: 1128
Total Matched Address Points Count: N/A
Unmatched Address Points: N/A
Number of Technology of Transmission Types: 1
Provided Max Advertised Download Speed: Complete
Provided Max Advertised Upload Speed: Complete
Provided Max Typical Download Speed: No
Provided Max Typical Upload Speed: No
Provided Middle Mile: No
Provided Road Segments for census blocks greater than 2 sq miles: No

Data Processing**Census Block Process:**

- Join census block table to the 2010 census blocks based on the GEOID10 field
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks | Max Upload Category | Count | % of Blocks |
|-----------------------|-------|-------------|---------------------|-------|-------------|
| 10 | 1128 | 100% | 10 | 1128 | 100% |

Typical down/upload speeds reported by provider: N/A**Typical down/upload speed from 2010 computer based speed test:** N/A**Speed tests match reported typical download speeds or are within 1 speed tier:** N/A

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Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [N/A](#)

Form477 Verification:

Number of census blocks reported to project, but no tract reported to FCC: [0](#)

Number of tracts reported to FCC, but no census blocks reported to project: [0](#)

Dead zones:

Number of census blocks with dead zones reported via broadband.maryland.gov: [0](#)

Total number of dead zones reported per provider via broadband.maryland.gov: [0](#)

Number of census blocks with dead zones reported via mdbroadbandmap.org: [0](#)

Total number of dead zones reported per provider via mdbroadbandmap.org: [0](#)

Web Search Verification: [N/A](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [no change](#)

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Freedom Wireless Broadband, LLC**DBA Name: Freedom Wireless Broadband, LLC****Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | 1/28/2010 |
| Date of Update Submission: | 2/23/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0018643155 |
| Type of data submitted: | Coverage Area |
| Census Block Count: | N/A |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Coverage Area Process:**

- Repair Geometry on delivered coverage area
- Remove coverage areas less than 0.125 square miles
- Remove coverage area “holes” less than 0.125 square miles
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Data Verification**Maximum down/upload speeds reported by provider:**

| Coverage Area | | | | | |
|-----------------------|-------|-----------|---------------------|-------|-----------|
| Max Download Category | Count | % of Area | Max Upload Category | Count | % of Area |
| 4 | 1 | 100% | 4 | 1 | 100% |

Typical down/upload speeds reported by provider: N/A**Typical down/upload speed from 2010 mobile speed test:** N/A**Speed tests match reported typical download speeds or are within 1 speed tier:** N/A

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#/% of mobile speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: N/A

Number of mobile speed tests reported outside coverage area: N/A

Form 477 Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: 13/13 (100%)

#/% of tracts reported as served to FCC but do not intersect coverage area: 0/13 (0%)

Dead zones:

Number of dead zones reported within coverage area via broadband.maryland.gov:

10/237 (4.2%)

Number of dead zones reported within coverage area via mdbroadbandmap.org:

5/203 (2.5%)

Web Search Verification: N/A

Wireless Verification: N/A

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Gans Communications, LP**DBA: MetroCast Communications****Data Characteristics**

| | |
|---|--------------------------------------|
| Date of Original Submission: | 3/5/2010 |
| Date of Update Submission: | 3/19/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0016642761 |
| Type of data submitted: | Census Block Table, Road Segments |
| Census Block Count: | 2467 |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Complete |
| Provided Max Typical Upload Speed: | Complete |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | Yes |

Data Processing**Census Block Process:**

- Join the census block table to the 2010 census blocks based on the GEOID10 field
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Road Segment Process:

- Road segments are 2009 geometry
- Join road segments to TigerLine by TLID
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_RoadSegment

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 7 | 2467 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 4 | 2467 | 100% |

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Road Segments

| Max Download Category | Count | % of Segments |
|-----------------------|-------|---------------|
| 7 | 800 | 100% |

| Max Upload Category | Count | % of Segments |
|---------------------|-------|---------------|
| 4 | 800 | 100% |

Typical down/upload speeds reported by provider:

Census Blocks

| Typical Download Category | Count | % of Blocks |
|---------------------------|-------|-------------|
| 6 | 2467 | 100% |

| Typical Upload Category | Count | % of Blocks |
|-------------------------|-------|-------------|
| 2 | 2467 | 100% |

Road Segments

| Typical Download Category | Count | % of Segments |
|---------------------------|-------|---------------|
| 7 | 800 | 100% |

| Typical Upload Category | Count | % of Segments |
|-------------------------|-------|---------------|
| 2 | 800 | 100% |

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 3 | 3 | 7% |
| 4 | 9 | 20% |
| 5 | 10 | 22% |
| 6 | 21 | 47% |
| 7 | 2 | 4% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 18 | 40% |
| 2 | 24 | 53% |
| 3 | 2 | 4% |
| 4 | 1 | 2% |

Speed tests match reported typical download speeds or are within 1 speed tier: [Yes](#)

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [1/2467 \(< 1%\)](#)

Form477 Verification:

Number of census blocks reported to project, but no tract reported to FCC: [N/A](#)

Number of tracts reported to FCC, but no census blocks reported to project: [N/A](#)

Dead zones:

Number of census blocks with dead zones reported via [broadband.maryland.gov](#):

[6/2467 \(< 1%\)](#)

Total number of dead zones reported per provider via [broadband.maryland.gov](#): [7](#)

Number of census blocks with dead zones reported via [mdbroadbandmap.org](#):

[6/2467 \(< 1%\)](#)

Total number of dead zones reported per provider via [mdbroadbandmap.org](#): [7](#)

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Web Search Verification: 36/2467 (2%) of census blocks were confirmed using online search feature of given provider

| MetroCast Web Search Verification Table | Count | Percentage |
|--|--------------|-------------------|
| Total # of sample points | 1496 | |
| Number of sample points with results | 107 | 7% |
| Result is yes and census block is in served area | 36 | 34% |
| Result is yes but not in a census block reported as served | 20 | 19% |
| Result is no and census block is in served area | 1 | 1% |
| Result is no and census block not served area | 50 | 47% |

Census blocks that are outside providers own Cable Franchise Boundary: N/A

Census blocks that fall within another provider's Cable Franchise Boundary: 1094/2467 (44%)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: no change

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HNS License Sub, LLC**DBA: Hughes Communications, Inc.****Data Characteristics**

Date of Original Submission: 2/2/2010
 Date of Update Submission: 3/7/2012
 Currency of Data: 12/31/2011
 FRN: 0018483073
 Type of data submitted: Coverage Area
 Census Block Count: N/A
 Total Matched Address Points Count: N/A
 Unmatched Address Points: N/A
 Number of Technology of Transmission Types: 1
 Provided Max Advertised Download Speed: Complete
 Provided Max Advertised Upload Speed: Complete
 Provided Max Typical Download Speed: Complete
 Provided Max Typical Upload Speed: Complete
 Provided Middle Mile: No
 Provided Road Segments for census blocks greater than 2 sq miles: No

Data Processing**Coverage Area Process:**

- Repair Geometry on delivered coverage area
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area |
|-----------------------|-------|-----------|
| 5 | 1 | 100% |

| Max Upload Category | Count | % of Area |
|---------------------|-------|-----------|
| 2 | 1 | 100% |

Typical down/upload speeds reported by provider:

| Typical Download Category | Count | % of Area |
|---------------------------|-------|-----------|
| 3 | 1 | 100% |

| Typical Upload Category | Count | % of Area |
|-------------------------|-------|-----------|
| 2 | 1 | 100% |

Typical down/upload speed from 2010 mobile speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 23 | 70% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 10 | 30% |

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| | | |
|---|---|-----|
| 3 | 8 | 24% |
| 4 | 1 | 3% |
| 5 | 1 | 3% |

| | | |
|---|----|-----|
| 2 | 10 | 30% |
| 4 | 5 | 15% |
| 5 | 6 | 18% |
| 7 | 2 | 6% |

Speed tests match reported typical download speeds or are within 1 speed tier: **No**

#/% of computer based speed tests verifying coverage area:

Number of computer based speed tests reported inside coverage area: **33/33 (100%)**

Number of computer based speed tests reported outside coverage area: **0/33 (0%)**

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 9 | 13% |
| 3 | 34 | 51% |
| 6 | 8 | 12% |
| 7 | 10 | 15% |
| 8 | 5 | 7% |
| 9 | 1 | 1% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 18 | 27% |
| 2 | 27 | 40% |
| 3 | 2 | 3% |
| 4 | 3 | 4% |
| 5 | 4 | 6% |
| 6 | 8 | 12% |
| 7 | 4 | 6% |
| 8 | 1 | 1% |

Speed tests match reported typical download speeds or are within 1 speed tier: **No**

#/% of computer based speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: **67/67 (100%)**

Number of mobile speed tests reported outside coverage area: **0/67 (0%)**

Form477 Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: **295/295 (100%)**

#/% of tracts reported as served to FCC but do not intersect coverage area: **0/295 (0%)**

Dead zones:

Number of dead zones reported within coverage area via broadband.maryland.gov:

237/237 (100%)

Number of dead zones reported within coverage area via mdbroadbandmap.org:

203/203 (100%)

Web Search Verification: **N/A**

Wireless Verification: **N/A**

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Hotwire Communications, Ltd**DBA Name: Hotwire Communications, Ltd****Data Characteristics**

Date of Original Submission: 2/19/2010
Date of Update Submission: 1/17/2012
Currency of Data: 12/31/2011
FRN: 0009846494
Type of data submitted: Addresses
Census Block Count: 1
Total Matched Address Points Count: 1
Unmatched Address Points: 0
Number of Technology of Transmission Types: 1
Provided Max Advertised Download Speed: Complete
Provided Max Advertised Upload Speed: Complete
Provided Max Typical Download Speed: No
Provided Max Typical Upload Speed: No
Provided Middle Mile: No
Provided Road Segments for census blocks greater than 2 sq miles: No

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 1
 - Number unmatched: 0
- Spatially join address points to 2010 census blocks

Census Block Process:

- Join the address points to the 2000 census blocks based on the GEOID10 field
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks | Max Upload Category | Count | % of Blocks |
|-----------------------|-------|-------------|---------------------|-------|-------------|
| 5 | 1 | 100% | 3 | 1 | 100% |

Typical down/upload speeds reported by provider: N/A

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Typical down/upload speed from 2010 computer based speed test: [N/A](#)

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [N/A](#)

Form477 Verification:

Number of census blocks reported to project, but no tract reported to FCC: [1/1 \(100%\)](#)

Number of tracts reported to FCC, but no census blocks reported to project: [1](#)

Dead zones:

Number of census blocks with dead zones reported via [broadband.maryland.gov](#): [0](#)

Total number of dead zones reported per provider via [broadband.maryland.gov](#): [0](#)

Number of census blocks with dead zones reported via [mdbroadbandmap.org](#): [0](#)

Total number of dead zones reported per provider via [mdbroadbandmap.org](#): [0](#)

Web Search Verification: [N/A](#)

Census blocks that are outside providers own Cable Franchise Boundary: [N/A](#)

Census blocks that fall within another provider's Cable Franchise Boundary: [1/1 \(100%\)](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [no change](#)

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Leap Wireless International, Inc**DBA: Cricket Communications****Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | 3/17/2010 |
| Date of Update Submission: | 3/9/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0002963528 |
| Type of data submitted: | Coverage Area |
| Census Block Count: | N/A |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Coverage Area Process:**

- Repair Geometry on delivered coverage area
- Remove coverage areas less than 0.125 square miles
- Remove coverage area “holes” less than 0.125 square miles
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area | Max Upload Category | Count | % of Area |
|-----------------------|-------|-----------|---------------------|-------|-----------|
| 3 | 1 | 100% | 2 | 1 | 100% |

Typical down/upload speeds reported by provider: N/A**Typical down/upload speed from 2010 mobile speed test:** N/A**Speed tests match reported typical speeds or are within 1 speed tier:** N/A

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#/% of mobile speed tests verifying coverage area:Number of mobile speed tests reported inside coverage area: [N/A](#)Number of mobile speed tests reported outside coverage area: [N/A](#)**Form 477 Verification:**#/% of tracts reported as served to FCC that overlaps with coverage area: [N/A](#)#/% of tracts reported as served to FCC but do not intersect coverage area: [N/A](#)**Dead zones:**Number of dead zones reported within coverage area via broadband.maryland.gov:[105/237 \(44.3%\)](#)Number of dead zones reported within coverage area via mdbroadbandmap.org:[69/203 \(34%\)](#)**Web Search Verification:** [N/A](#)**Wireless Verification:**

| Cricket Wireless Verification Table - 3G | Count | Percentage |
|--|-------|------------|
| Total # of sample points | 1486 | |
| Number of sample points within coverage area | 446 | |
| Total number of sample points with results | 489 | |
| Verified served AND within reported coverage area (yes,yes) | 356 | |
| Verified served AND found outside reported coverage area (yes,no) | 133 | 27.2% |
| Verified unserved AND found within reported coverage area (no,yes) | 90 | 20.2% |
| Verified unserved AND found outside reported coverage area (no,no) | 907 | |
| Total error | 223 | 15.0% |

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Level 3 Communications, LLC**DBA Name: Level 3 Communications, LLC****Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | 1/18/2010 |
| Date of Update Submission: | 3/7/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0003723822 |
| Type of data submitted: | Address Table |
| Census Block Count: | 170 |
| Total Matched Address Points Count: | 210 |
| Unmatched Address Points: | 5 |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Complete |
| Provided Max Typical Upload Speed: | Complete |
| Provided Middle Mile: | Yes |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

See ReadMe.txt*Data Processing****Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 196
 - Number unmatched: 19
- Unmatched address are geocoded to Maryland Property View address locator
 - Number matched: 9
 - Number unmatched: 10
- Unmatched address are geocoded to Maryland centerline address locator
 - Number matched: 5
 - Number unmatched: 5
- Merge matched addresses
- Spatially join address points to 2010 census blocks
- Select by location the address points that are completely within a greater than two square mile census block
 - Export as address points to be loaded into the NTIA data model
 - Result: BB_Service_Address
 - Switch the selection and export as points to create census blocks

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Census Block Process:

- Join the switched selection (BB_Service_Address) address points to the 2010 census blocks based on the GEOID10 field
 - Export results Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modifications:

- Provider did not submit elevation for middle mile. SBDD check submission script does not allow a Null elevation or -9999 default value - elevation changed to 0.
- Provider did not submit owned/leased information for middle mile and SBDD check submission script does not allow Null field. Maryland calculated field to "Leased" as default.

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 11 | 170 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 11 | 170 | 100% |

Typical down/upload speeds reported by provider:

Census Blocks

| Typical Download Category | Count | % of Blocks |
|---------------------------|-------|-------------|
| 11 | 129 | 100% |

| Typical Upload Category | Count | % of Blocks |
|-------------------------|-------|-------------|
| 11 | 129 | 100% |

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 39 | 37% |
| 3 | 21 | 20% |
| 4 | 7 | 7% |
| 5 | 7 | 7% |
| 6 | 5 | 5% |
| 7 | 10 | 10% |
| 8 | 12 | 11% |
| 9 | 3 | 3% |
| 10 | 1 | 1% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 20 | 19% |
| 2 | 28 | 27% |
| 3 | 20 | 19% |
| 4 | 11 | 10% |
| 5 | 3 | 3% |
| 6 | 13 | 12% |
| 7 | 7 | 7% |
| 8 | 3 | 3% |

Speed tests match reported typical download speeds or are within 1 speed tier: **No**

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): **56/170 (33%)**

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Form477 Verification:

Number of census blocks reported to project, but no tract reported to FCC: [79/170 \(46.5%\)](#)

Number of tracts reported to FCC, but no census blocks reported to project: [48](#)

Dead zones:

Number of census blocks with dead zones reported via [broadband.maryland.gov](#): [1/170 \(.5%\)](#)

Total number of dead zones reported per provider via [broadband.maryland.gov](#): [2](#)

Number of census blocks with dead zones reported via [mdbroadbandmap.org](#): [0](#)

Total number of dead zones reported per provider via [mdbroadbandmap.org](#): [0](#)

Web Search Verification: [N/A](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [no change](#)

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Mediacom Communications**DBA: Mediacom Maryland LLC****Data Characteristics**

| | |
|---|------------|
| Date of Original Submission: | 8/4/2011 |
| Date of Update Submission: | 2/13/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0003572633 |
| Type of data submitted: | Addresses |
| Census Block Count: | 551 |
| Total Matched Address Points Count: | 11445 |
| Unmatched Address Points: | 227 |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Complete |
| Provided Max Typical Upload Speed: | Complete |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 11274
 - Number unmatched: 399
- Unmatched address are geocoded to Maryland Property View address locator
 - Number matched: 97
 - Number unmatched: 302
- Unmatched addresses are geocoded to Maryland center line address locator
 - Number matched: 75
 - Number unmatched: 227
- Merge matched addresses
- Spatially join address points to 2010 census blocks

Census Block Process:

- Join the address points to the 2010 census blocks based on the GEOID10 field
 - Export results Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modification:

- Removed 1 address from provider submission – out of service area bounds

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Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 7 | 551 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 3 | 551 | 100% |

Typical down/upload speeds reported by provider:

Census Blocks

| Typical Download Category | Count | % of Blocks |
|---------------------------|-------|-------------|
| 7 | 551 | 100% |

| Typical Upload Category | Count | % of Blocks |
|-------------------------|-------|-------------|
| 3 | 551 | 100% |

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 4 | 8 | 20% |
| 5 | 4 | 10% |
| 6 | 10 | 25% |
| 7 | 18 | 45% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 2 | 4 | 10% |
| 3 | 28 | 70% |
| 4 | 6 | 15% |
| 5 | 2 | 5% |

Speed tests match reported typical download speeds or are within 1 speed tier: **Yes**Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): **0/551 (0%)****Form477 Verification:**Number of census blocks reported to project, but no tract reported to FCC: **2/551 (<1%)**Number of tracts reported to FCC, but no census blocks reported to project: **1****Dead zones:**Number of census blocks with dead zones reported via broadband.maryland.gov: **1/551 (<1%)**Total number of dead zones reported per provider via broadband.maryland.gov: **3**Number of census blocks with dead zones reported via mdbroadbandmap.org: **0**Total number of dead zones reported per provider via mdbroadbandmap.org: **0**Web Search Verification: **11/551 (1.9%)** of census blocks were confirmed using online search feature of given provider

| Mediacom WebSearch Verification Table | Count | Percentage |
|---|-------|------------|
| Total # of sample points | 1496 | |
| Number of sample points with results | 85 | 6% |
| Result is yes and coverage area is in served area | 11 | 13% |

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| | | |
|---|----|-----|
| Result is yes but not in a coverage area reported as served | 17 | 20% |
| Result is no and coverage area is in served area | 3 | 4% |
| Result is no and coverage area is not in served area | 54 | 64% |

Census blocks that are outside providers own Cable Franchise Boundary: [224/551 \(40.7%\)](#)

Census blocks that fall within another provider's Cable Franchise Boundary: [69/551 \(12.5%\)](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [14 census block increase](#)

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MegaPath, Inc.**DBA Name: MegaPath****Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | 3/11/2010 |
| Date of Update Submission: | N/A |
| Currency of Data: | 6/30/2011 |
| FRN: | 0018105601 |
| Type of data submitted: | Address Table |
| Census Block Count: | 68 |
| Total Matched Address Points Count: | 85 |
| Unmatched Address Points: | 1 |
| Number of Technology of Transmission Types: | 2 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 82
 - Number unmatched: 2
- Unmatched address are geocoded to Maryland Property View address locator
 - Number matched: 2
 - Number unmatched: 2
- Unmatched addresses are geocoded to Maryland center line address locator
 - Number matched: 1
 - Number unmatched: 1
- Merge matched addresses
- Spatially join address points to 2000 census blocks
- Separate and export the address points according to technology of transmission
- Select by location the address points that are completely within a greater than two square mile census block
 - Export as address points to be loaded into the NTIA data model
 - Result: BB_Service_Address
 - Switch the selection and export as points to create census blocks

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Census Block Process:

- Join the switched selection (BB_Service_Address) address points to the 2010 census blocks based on the GEOID10 field
 - Export results for each technology of transmission
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modification:

- Removed 12 addresses from provider submission for not having a Maximum Advertised Upload Speed
- 30 census blocks with Technology of Transmission 20 speed changed to tier 3 to fit domain

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 3 | 65 | 94% |
| 4 | 3 | 4% |
| 5 | 1 | 1% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 2 | 28 | 41% |
| 3 | 40 | 58% |
| 5 | 1 | 1% |

Typical down/upload speeds reported by provider: [N/A](#)**Typical down/upload speed from 2010 computer based speed test:**

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 5 | 63% |
| 3 | 2 | 25% |
| 10 | 1 | 13% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 2 | 25% |
| 2 | 4 | 50% |
| 3 | 1 | 13% |
| 5 | 1 | 13% |

Speed tests match reported typical speeds or are within 1 speed tier: [N/A](#)**Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted):** [6/68 \(9%\)](#)**Form477 Verification:****Number of census blocks reported to project, but no tract reported to FCC:** [N/A](#)**Number of tracts reported to FCC, but no census blocks reported to project:** [N/A](#)**Dead zones:****Number of census blocks with dead zones reported via [broadband.maryland.gov](#):** [0](#)**Total number of dead zones reported per provider via [broadband.maryland.gov](#):** [0](#)

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Number of census blocks with dead zones reported via mdbroadbandmap.org: 0

Total number of dead zones reported per provider via mdbroadbandmap.org: 0

Web Search Verification: N/A

Census blocks that are outside DSL boundary: 1/68 (1%)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: no change

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Mountain Communications, LLC**DBA: ProCom****Data Characteristics**

Date of Original Submission: 5/31/2010
Date of Update Submission: N/A
Currency of Data: 5/31/2010
FRN: 0008039323
Type of data submitted: Census Block Table,
Road Segments
Census Block Count: 161
Total Matched Address Points Count: N/A
Unmatched Address Points: N/A
Number of Technology of Transmission Types: 1
Provided Max Advertised Download Speed: Complete
Provided Max Advertised Upload Speed: Complete
Provided Max Typical Download Speed: No
Provided Max Typical Upload Speed: No
Provided Middle Mile: No
Provided Road Segments for census blocks greater than 2 sq miles: Yes

Data Processing**Census Block Process:**

- Join the census block table to the 2010 census blocks based on the GEOID10 field
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Road Segment Process:

- Road segments are 2009 geometry
- Join road segments to TigerLine by TLID
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_RoadSegment

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 10 | 161 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 10 | 161 | 100% |

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Road Segments

| Max Download Category | Count | % of Blocks | Max Upload Category | Count | % of Blocks |
|-----------------------|-------|-------------|---------------------|-------|-------------|
| 10 | 95 | 100% | 10 | 161 | 100% |

Typical down/upload speeds reported by provider: [N/A](#)

Typical down/upload speed from 2010 computer based speed test: [N/A](#)

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [N/A](#)

Form477 Verification:

Number of census blocks reported to project, but no tract reported to FCC: [N/A](#)

Number of tracts reported to FCC, but no census blocks reported to project: [N/A](#)

Dead zones:

Number of census blocks with dead zones reported via broadband.maryland.gov: [0](#)

Total number of dead zones reported per provider via broadband.maryland.gov: [0](#)

Number of census blocks with dead zones reported via mdbroadbandmap.org: [0](#)

Total number of dead zones reported per provider via mdbroadbandmap.org: [0](#)

Web Search Verification: [N/A](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [no change](#)

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Neon Connect, Inc**DBA: Sidera Networks****Data Characteristics**

| | |
|---|------------------------|
| Date of Original Submission: | 3/5/2010 |
| Date of Update Submission: | 2/14/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0005052741 |
| Type of data submitted: | Addresses, Middle Mile |
| Census Block Count: | 1 |
| Total Matched Address Points Count: | 1 |
| Unmatched Address Points: | 0 |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Complete |
| Provided Max Typical Upload Speed: | Complete |
| Provided Middle Mile: | Yes |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 1
 - Number unmatched: 0
- Spatially join address points to 2010 census blocks

Census Block Process:

- Join the address points to the 2010 census blocks based on the GEOID10 field
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modifications:

- Provider did not submit elevation for middle mile. Check submission script does not allow a Null elevation or -9999 default value - elevation changed to 0.

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Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 10 | 1 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 10 | 1 | 100% |

Typical down/upload speeds reported by provider:

Census Blocks

| Typical Download Category | Count | % of Blocks |
|---------------------------|-------|-------------|
| 10 | 1 | 100% |

| Typical Upload Category | Count | % of Blocks |
|-------------------------|-------|-------------|
| 10 | 1 | 100% |

Typical down/upload speed from 2010 computer based speed test: [N/A](#)Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [N/A](#)**Form477 Verification:**Number of census blocks reported to project, but no tract reported to FCC: [N/A](#)Number of tracts reported to FCC, but no census blocks reported to project: [N/A](#)**Dead zones:**Number of census blocks with dead zones reported via broadband.maryland.gov: 0Total number of dead zones reported per provider via broadband.maryland.gov: 0Number of census blocks with dead zones reported via mdbroadbandmap.org: 0Total number of dead zones reported per provider via mdbroadbandmap.org: 0Web Search Verification: [N/A](#)Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [no change](#)

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New Edge Holding Company**DBA Name: New Edge Network, Inc****Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | 1/22/2010 |
| Date of Update Submission: | N/A |
| Currency of Data: | 6/30/2011 |
| FRN: | 0003720471 |
| Type of data submitted: | Address Table |
| Census Block Count: | 275 |
| Total Matched Address Points Count: | 371 |
| Unmatched Address Points: | 0 |
| Number of Technology of Transmission Types: | 3 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Complete |
| Provided Max Typical Upload Speed: | Complete |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Address Table Process:**

- Geocode address table to ESRI address locator
 - Number matched: 335
 - Number unmatched: 2
- Unmatched address are geocoded to MDPV address locator
 - Number matched: 1
 - Number unmatched: 1
- Unmatched address are geocoded to Maryland street centerline address locator
 - Number matched: 1
 - Number unmatched: 1
- Merge matched addresses
- Spatially join address points to 2100 census blocks
- Separate and export the address points according to technology of transmission Select by location the address points that are completely within a greater than two square mile census block
 - Export as address points to be loaded into the NTIA data model
 - Result: BB_Service_Address
 - Switch the selection and export as points to create census blocks

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Census Block Process:

- Join the switched selection (BB_Service_Address) address points to the 2010 census blocks based on the BLK2000 field
 - Export results (for each technology of transmission)
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modification:

- Provider submitted 3 locations with a technology 40, Cable Modem - DOCSIS 3.0 Down. This technology is regarded as an error as all other locations are served by DSL technologies and were removed from the submission.

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 3 | 58 | 20% |
| 4 | 216 | 73% |
| 5 | 20 | 7% |
| 7 | 1 | 0% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 2 | 167 | 57% |
| 3 | 80 | 27% |
| 4 | 47 | 16% |
| 7 | 1 | 0% |

Typical down/upload speeds reported by provider:

Census Blocks

| Typical Download Category | Count | % of Blocks |
|---------------------------|-------|-------------|
| 3 | 58 | 20% |
| 4 | 216 | 73% |
| 5 | 20 | 7% |
| 7 | 1 | 0% |

| Typical Upload Category | Count | % of Blocks |
|-------------------------|-------|-------------|
| 2 | 167 | 56% |
| 3 | 80 | 28% |
| 4 | 47 | 16% |
| 7 | 1 | 0% |

Typical down/upload speed from 2010 computer based speed test: [N/A](#)

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [N/A](#)

Form477 Verification:

Number of census blocks reported to project, but no tract reported to FCC: [74/275 \(27%\)](#)

Number of tracts reported to FCC, but no census blocks reported to project: [39](#)

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Dead zones:

Number of census blocks with dead zones reported via broadband.maryland.gov: 0

Total number of dead zones reported per provider via broadband.maryland.gov: 0

Number of census blocks with dead zones reported via mdbroadbandmap.org: 0

Total number of dead zones reported per provider via mdbroadbandmap.org: 0

Web Search Verification: [N/A](#)

Census blocks that are outside DSL boundary: [45/275 \(16%\)](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [no change](#)

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NTELOS Inc**DBA Name: NTELOS****Data Characteristics**

Date of Original Submission: 2/3/2012
 Date of Update Submission: 2/3/2012
 Currency of Data: 12/31/2011
 FRN: 0005849518
 Type of data submitted: Coverage Area
 Census Block Count: N/A
 Total Matched Address Points Count: N/A
 Unmatched Address Points: N/A
 Number of Technology of Transmission Types: 1
 Provided Max Advertised Download Speed: Complete
 Provided Max Advertised Upload Speed: Complete
 Provided Max Typical Download Speed: No
 Provided Max Typical Upload Speed: No
 Provided Middle Mile: No
 Provided Road Segments for census blocks greater than 2 sq miles: No

Data Processing**Coverage Area Process:**

- Repair Geometry on delivered coverage area
- Remove coverage areas less than 0.125 square miles
- Remove coverage area “holes” less than 0.125 square miles
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area | Max Upload Category | Count | % of Area |
|-----------------------|-------|-----------|---------------------|-------|-----------|
| 3 | 1 | 100% | 2 | 1 | 100% |

Typical down/upload speeds reported by provider: N/A**Typical down/upload speed from 2010 mobile speed test:**

| Speed Test Download Tier | Count | % of Tests | Speed Test Upload Tier | Count | % of Tests |
|--------------------------|-------|------------|------------------------|-------|------------|
| 3 | 1 | 100% | 2 | 1 | 100% |

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Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)

#/% of mobile speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: [0/1 \(0%\)](#)

Number of mobile speed tests reported outside coverage area: [1/1 \(100%\)](#)

Form 477 Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: [N/A](#)

#/% of tracts reported as served to FCC but do not intersect coverage area: [N/A](#)

Dead zones:

Number of dead zones reported within coverage area via [broadband.maryland.gov](#):

[2/237 \(0.8%\)](#)

Number of dead zones reported within coverage area via [mdbroadbandmap.org](#):

[2/203 \(1%\)](#)

Web Search Verification: [N/A](#)

Wireless Verification: [N/A](#)

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PAETEC Communications, Inc.**DBA Name: PAETEC Communications, Inc.****Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | 2/28/2011 |
| Date of Update Submission: | N/A |
| Currency of Data: | 12/31/2011 |
| FRN: | 0011017795 |
| Type of data submitted: | Address Table |
| Census Block Count: | 301 |
| Total Matched Address Points Count: | 373 |
| Unmatched Address Points: | 4 |
| Number of Technology of Transmission Types: | 2 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Complete |
| Provided Max Typical Upload Speed: | Complete |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 359
 - Number unmatched: 18
- Unmatched address are geocoded to Maryland Property View address locator
 - Number matched: 9
 - Number unmatched: 9
- Unmatched address are geocoded to Maryland centerline address locator
 - Number matched: 5
 - Number unmatched: 4
- Merge matched addresses
- Spatially join address points to 2010 census blocks
- Separate and export the address points according to technology of transmission

Census Block Process:

- Join the address points to the 2010 census blocks based on the GEOID10 field
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

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Data Modification:

- 52 blocks with Technology of Transmission 30 exceed Maximum Advertised Down and Maximum Advertised Up speed domain (delivered as tier 11)
 - Changed to speed tier 8 to fit domain

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 11 | 315 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 11 | 315 | 100% |

Typical down/upload speeds reported by provider:

Census Blocks

| Typical Download Category | Count | % of Blocks |
|---------------------------|-------|-------------|
| 3 | 92 | 29% |
| 4 | 223 | 71% |

| Typical Upload Category | Count | % of Blocks |
|-------------------------|-------|-------------|
| 3 | 92 | 29% |
| 4 | 223 | 71% |

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 3 | 7% |
| 3 | 21 | 49% |
| 4 | 11 | 26% |
| 5 | 5 | 12% |
| 8 | 3 | 7% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 2 | 6 | 14% |
| 3 | 20 | 47% |
| 4 | 9 | 21% |
| 5 | 6 | 14% |
| 6 | 1 | 2% |
| 7 | 1 | 2% |

Speed tests match reported typical download speeds or are within 1 speed tier: [Yes](#)Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [20/301 \(7%\)](#)**Form477 Verification:**Number of census blocks reported to project, but no tract reported to FCC: [17/301 \(5.6%\)](#)Number of tracts reported to FCC, but no census blocks reported to project: [74](#)**Dead zones:**Number of census blocks with dead zones reported via [broadband.maryland.gov](#): [0](#)Total number of dead zones reported per provider via [broadband.maryland.gov](#): [0](#)Number of census blocks with dead zones reported via [mdbroadbandmap.org](#): [0](#)Total number of dead zones reported per provider via [mdbroadbandmap.org](#): [0](#)

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Web Search Verification: [N/A](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [no change](#)

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QCOL, Inc.**DBA Name: QCOL****Data Characteristics**

Date of Original Submission: 5/31/2010
Date of Update Submission: 3/7/2012
Currency of Data: 12/31/2011
FRN: 0019663095
Type of data submitted: Census Block Table,
Road Segments
Census Block Count: 308
Total Matched Address Points Count: N/A
Unmatched Address Points: N/A
Number of Technology of Transmission Types: 2
Provided Max Advertised Download Speed: Complete
Provided Max Advertised Upload Speed: Complete
Provided Max Typical Download Speed: No
Provided Max Typical Upload Speed: No
Provided Middle Mile: No
Provided Road Segments for census blocks greater than 2 sq miles: Yes

Data Processing**Census Block Process:**

- Join the census block table to the 2010 census blocks based on the GEOID10 field
 - Export results for each technology of transmission
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Road Segment Process:

- Road segments are 2009 geometry
- Join road segments to TigerLine by TLID
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_RoadSegment

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 10 | 205 | 55% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 10 | 205 | 55% |

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| | | | | | |
|---|-----|-----|---|-----|-----|
| 6 | 167 | 45% | 6 | 167 | 45% |
|---|-----|-----|---|-----|-----|

Road Segments

| Max Download Category | Count | % of Segments |
|-----------------------|-------|---------------|
| 10 | 27 | 56% |
| 6 | 21 | 44% |

| Max Upload Category | Count | % of Segments |
|---------------------|-------|---------------|
| 10 | 27 | 56% |
| 6 | 21 | 44% |

Typical down/upload speeds reported by provider: [N/A](#)

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 4 | 1 | 25% |
| 5 | 2 | 50% |
| 6 | 1 | 25% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 2 | 1 | 25% |
| 3 | 2 | 50% |
| 5 | 1 | 25% |

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [1/308 \(< 1%\)](#)

Form477 Verification:

Number of census blocks reported to project, but no tract reported to FCC: [N/A](#)

Number of tracts reported to FCC, but no census blocks reported to project: [N/A](#)

Dead zones:

Number of census blocks with dead zones reported via [broadband.maryland.gov](#): [2/308 \(0.6%\)](#)

Total number of dead zones reported per provider via [broadband.maryland.gov](#): [2](#)

Number of census blocks with dead zones reported via [mdbroadbandmap.org](#): [0](#)

Total number of dead zones reported per provider via [mdbroadbandmap.org](#): [0](#)

Web Search Verification: [N/A](#)

Census blocks that are outside providers own Cable Franchise Boundary: [N/A](#)

Census blocks that fall within another provider's Cable Franchise Boundary: [272/308 \(88.3%\)](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [no change](#)

March 30, 2012

Shentel Cable Company
DBA: Shentel Cable Company**Data Characteristics**

Date of Original Submission: 5/31/2010
Date of Update Submission: 3/8/2012
Currency of Data: 12/31/2011
FRN: 0013962170
Type of data submitted: Census Blocks, Road Segments
Census Block Count: 611
Total Matched Address Points Count: N/A
Unmatched Address Points: N/A
Number of Technology of Transmission Types: 1
Provided Max Advertised Download Speed: Complete
Provided Max Advertised Upload Speed: Complete
Provided Max Typical Download Speed: Complete
Provided Max Typical Upload Speed: Complete
Provided Middle Mile: No
Provided Road Segments for census blocks greater than 2 sq miles: Yes

Data Processing**Census Block Process:**

- Join the census block table to the 2010 census blocks based on the GEOID10 field
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Road Segment Process:

- Join the road segment table to the 2010 Tiger Lines based on TLID field
 - Load exported results into the NTIA data model
 - Result: BB_Service_RoadSegment

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 9 | 611 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 5 | 611 | 100% |

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Typical down/upload speeds reported by provider:

Census Blocks

| Typical Download Category | Count | % of Blocks |
|---------------------------|-------|-------------|
| 9 | 611 | 100% |

| Typical Upload Category | Count | % of Blocks |
|-------------------------|-------|-------------|
| 5 | 611 | 100% |

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 1 | 2% |
| 3 | 1 | 2% |
| 4 | 7 | 14% |
| 5 | 13 | 25% |
| 7 | 3 | 6% |
| 8 | 6 | 12% |
| 9 | 9 | 18% |
| 10 | 11 | 22% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 2 | 4% |
| 2 | 9 | 18% |
| 3 | 18 | 35% |
| 4 | 22 | 43% |

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [6/611 \(<1%\)](#)

Form477 Verification:

Number of census blocks reported to project, but no tract reported to FCC: [611](#)

Number of tracts reported to FCC, but no census blocks reported to project: [1](#)

Dead zones:

Number of census blocks with dead zones reported via [broadband.maryland.gov](#): [0](#)

Total number of dead zones reported per provider via [broadband.maryland.gov](#): [0](#)

Number of census blocks with dead zones reported via [mdbroadbandmap.org](#): [0](#)

Total number of dead zones reported per provider via [mdbroadbandmap.org](#): [0](#)

Web Search Verification: [N/A](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [29 census block increase](#)

March 30, 2012

Sprint Nextel Corporation**DBA Name: Sprint****Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | 2/18/2010 |
| Date of Update Submission: | 1/23/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0003774593 |
| Type of data submitted: | Coverage Area |
| Census Block Count: | N/A |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Complete |
| Provided Max Typical Upload Speed: | Complete |
| Provided Middle Mile: | Yes |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Coverage Area Process:**

- Repair Geometry on delivered coverage area
- Remove coverage areas less than 0.125 square miles
- Remove coverage area “holes” less than 0.125 square miles
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Data Modifications:

- Provider did not submit elevation for middle mile. Check submission script does not allow a Null elevation or -9999 default value - elevation changed to 0.

Data Verification**Maximum down/upload speeds reported by provider:**

| Coverage Area | | | | | |
|-----------------------|-------|-----------|---------------------|-------|-----------|
| Max Download Category | Count | % of Area | Max Upload Category | Count | % of Area |
| 3 | 1 | 100% | 2 | 1 | 100% |
| 5 | 1 | 100% | 3 | 1 | 100% |

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Typical down/upload speeds reported by provider:

Coverage Area

| Typical Download Category | Count | % of Area |
|---------------------------|-------|-----------|
| 3 | 1 | 100% |
| 5 | 1 | 100% |

| Typical Upload Category | Count | % of Area |
|-------------------------|-------|-----------|
| 2 | 1 | 100% |
| 3 | 1 | 100% |

Typical down/upload speed from 2010 mobile speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 3252 | 44% |
| 3 | 1339 | 18% |
| 4 | 1332 | 18% |
| 5 | 1311 | 18% |
| 6 | 145 | 2% |
| 7 | 28 | 0% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 1863 | 25% |
| 2 | 3323 | 45% |
| 3 | 2025 | 27% |
| 4 | 95 | 1% |
| 5 | 48 | 1% |
| 6 | 8 | 0% |
| 7 | 21 | 0% |
| 8 | 24 | 0% |

Speed tests match reported typical download speeds or are within 1 speed tier: **No**

#/% of mobile speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: 7226/7407 (97.6%)

Number of mobile speed tests reported outside coverage area: 181/7407 (2.4%)

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 342 | 57% |
| 3 | 229 | 38% |
| 4 | 18 | 3% |
| 5 | 4 | 1% |
| 6 | 2 | 0% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 206 | 35% |
| 2 | 376 | 63% |
| 3 | 9 | 2% |
| 4 | 1 | 0% |
| 5 | 2 | 0% |
| 6 | 1 | 0% |

Speed tests match reported typical download speeds or are within 1 speed tier: **Yes**

#/% of computer based speed tests verifying coverage area:

Number of computer based speed tests reported inside coverage area: 581/595 (97.6%)

Number of computer based speed tests reported outside coverage area: 14/595 (2.4%)

Form 477 Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: 71/71 (100%)

#/% of tracts reported as served to FCC but do not intersect coverage area: 0/71 (0%)

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Dead zones:**Number of dead zones reported within coverage area via broadband.maryland.gov:**[186/237 \(78.5%\)](#)**Number of dead zones reported within coverage area via mdbroadbandmap.org:**[149/203 \(73.4%\)](#)**Web Search Verification:** [N/A](#)**Wireless Verification:**

| Sprint Wireless Verification Table - 3G | Count | Percentage |
|--|--------------|-------------------|
| Total # of sample points | 1486 | |
| Number of sample points within coverage area | 977 | |
| Total number of sample points with results | 975 | |
| Verified served AND within reported coverage area (yes,yes) | 714 | |
| Verified served AND found outside reported coverage area (yes,no) | 261 | 26.8% |
| Verified unserved AND found within reported coverage area (no,yes) | 263 | 26.9% |
| Verified unserved AND found outside reported coverage area (no,no) | 248 | |
| Total error | 524 | 35.3% |

| Sprint Wireless Verification Table - 4G | Count | Percentage |
|--|--------------|-------------------|
| Total # of sample points | 1486 | |
| Number of sample points with expected 4G results | 136 | |
| Total number of sample points with 4G results | 16 | |
| Verified 4G AND within reported coverage area (yes,yes) | 10 | |
| Verified 4G AND found outside reported coverage area (yes,no) | 6 | 37.5% |
| Verified not 4G AND found within reported coverage area (no,yes) | 126 | 92.6% |
| Verified not 4G AND found outside reported coverage area (no,no) | 1344 | |
| Total error | 132 | 8.9% |

*4G service defined as average down speed of > 2000 bps

March 30, 2012

StarBand Communications Inc.**DBA Name: StarBand Communications Inc.****Data Characteristics**

Date of Original Submission: 1/26/2010
Date of Update Submission: 1/19/2012
Currency of Data: 12/31/2011
FRN: 0005087457
Type of data submitted: Coverage
Census Block Count: N/A
Total Matched Address Points Count: N/A
Unmatched Address Points: N/A
Number of Technology of Transmission Types: 1
Provided Max Advertised Download Speed: Complete
Provided Max Advertised Upload Speed: Complete
Provided Max Typical Download Speed: Complete
Provided Max Typical Upload Speed: Complete
Provided Middle Mile: No
Provided Road Segments for census blocks greater than 2 sq miles: No

Data Processing**Coverage Area Process:**

- Repair Geometry on delivered coverage area
 - Result: BB_Service_Wireless

Data Modifications: Speed Domains:

- Provider delivered Typical Upstream Speed less than speed tier 2
 - Calculated Typical Upstream speed to 2

Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area | Max Upload Category | Count | % of Area |
|-----------------------|-------|-----------|---------------------|-------|-----------|
| 3 | 1 | 100% | 2 | 1 | 100% |

Typical down/upload speeds reported by provider:

Coverage Area

| Typical Download Category | Count | % of Area | Typical Upload Category | Count | % of Area |
|---------------------------|-------|-----------|-------------------------|-------|-----------|
| 3 | 1 | 100% | 2 | 1 | 100% |

Typical down/upload speed from 2010 mobile speed test: N/A

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Speed tests match reported typical speeds or are within 1 speed tier: [N/A](#)

of mobile speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: [N/A](#)

Number of mobile speed tests reported outside coverage area: [N/A](#)

Form 477 Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: [34/34 \(100.0%\)](#)

#/% of tracts reported as served to FCC but do not intersect coverage area: [0/34 \(0%\)](#)

Dead zones:

Number of dead zones reported within coverage area via [broadband.maryland.gov](#):

[237/237 \(100%\)](#)

Number of dead zones reported within coverage area via [broadband.maryland.gov](#):

[203/203 \(100%\)](#)

Web Search Verification: [N/A](#)

Wireless Verification: [N/A](#)

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Starpower Communications, LLC**DBA Name: RCN & RCN Business Solutions****Data Characteristics**

| | |
|---|-------------------------------|
| Date of Original Submission: | 3/5/2010 |
| Date of Update Submission: | 2/24/2012 |
| Currency of Data: | 1/31/2012 |
| FRN: | 0003735016 |
| Type of data submitted: | Address Table, Middle Mile |
| Census Block Count: | 1764 |
| Total Matched Address Points Count: | 48953 |
| Unmatched Address Points: | 212 |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | Yes |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 48950
 - Number unmatched: 215
- Unmatched address are geocoded to Maryland Property View address locator
 - Number matched: 3
 - Number unmatched: 212
- Unmatched addresses are geocoded to Maryland Centerline address locator
 - Number matched: 0
 - Number unmatched: 212
- Merge matched addresses
- Spatially join address points to 2010 census blocks

Census Block Process:

- Join the address points to the 2010 census blocks based on the GEOID10 field
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

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Data Modifications:

- Provider submitted technologies 40 and 41 for the same area with the same speed tier of 9. Maryland submitted the entire service area as technology 40 and speed tier 9.
- Provider did not submit elevation for middle mile. Check submission script does not allow a Null elevation or -9999 default value - elevation changed to 0.

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 9 | 1764 | 100% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 6 | 1318 | 75% |
| 7 | 446 | 25% |

Typical down/upload speeds reported by provider: [N/A](#)**Typical down/upload speed from 2010 computer based speed test:**

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 1 | 2% |
| 3 | 1 | 2% |
| 4 | 7 | 14% |
| 5 | 13 | 25% |
| 7 | 3 | 6% |
| 8 | 6 | 12% |
| 9 | 9 | 18% |
| 10 | 11 | 22% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 2 | 4% |
| 2 | 9 | 18% |
| 3 | 18 | 35% |
| 4 | 22 | 43% |

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)Error reported as proportion of total blocks submitted: [7/1764 \(< 1%\)](#)**Form477 Verification:**Number of census blocks reported to project, but no tract reported to FCC: [7/1764 \(<1%\)](#)Number of tracts reported to FCC, but no census blocks reported to project: [4](#)**Dead zones:**Number of census blocks with dead zones reported via [broadband.maryland.gov](#): [0](#)Total number of dead zones reported per provider via [broadband.maryland.gov](#): [2](#)Number of census blocks with dead zones reported via [mdbroadbandmap.org](#): [0](#)Total number of dead zones reported per provider via [mdbroadbandmap.org](#): [0](#)

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Web Search Verification: 4/1764 (< 1%) of census blocks were confirmed using online search feature of given provider

| Starpower WebSearch Verification Table | Count | Percentage |
|--|--------------|-------------------|
| Total # of sample points | 1496 | |
| Number of sample points with results | 55 | 4% |
| Result is yes and census block is in served area | 4 | 7% |
| Result is yes but not in a census block reported as served | 0 | 0% |
| Result is no and census block is in served area | 0 | 0% |
| Result is no and census block not served area | 51 | 93% |

Census blocks that are outside providers own Cable Franchise Boundary: N/A

Census blocks that fall within another provider's Cable Franchise Boundary: 1761/1764 (99%)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: 383 census block increase

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Tata Communications (America) Inc.**DBA Name:** **Tata Communications (America) Inc.****Data Characteristics**

Date of Original Submission: 2/1/2010
Date of Update Submission: 2/22/2012
Currency of Data: 12/31/2011
FRN: 0009480302
Type of data submitted: Address Table
Census Block Count: 1
Total Matched Address Points Count: 1
Unmatched Address Points: 0
Number of Technology of Transmission Types: 1
Provided Max Advertised Download Speed: Complete
Provided Max Advertised Upload Speed: Complete
Provided Max Typical Download Speed: No
Provided Max Typical Upload Speed: No
Provided Middle Mile: No
Provided Road Segments for census blocks greater than 2 sq miles: No

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 1
 - Number unmatched: 0
- Spatially join address points to 2010 census blocks

Census Block Process:

- Join the address points to the 2010 census blocks based on the GEOID10 field
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks | Max Upload Category | Count | % of Blocks |
|-----------------------|-------|-------------|---------------------|-------|-------------|
| 4 | 1 | 100% | 4 | 1 | 100% |

Typical down/upload speeds reported by provider: N/A

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Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests | Speed Test Upload Tier | Count | % of Tests |
|--------------------------|-------|------------|------------------------|-------|------------|
| 0 | 1 | 100% | 2 | 1 | 100% |

Speed tests match reported typical downloaded speeds or are within 1 speed tier: [N/A](#)

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [1/1 \(100%\)](#)

Form477 Verification:

Number of census blocks reported to project, but no tract reported to FCC: [0](#)

Number of tracts reported to FCC, but no census blocks reported to project: [0](#)

Dead zones:

Number of census blocks with dead zones reported via [broadband.maryland.gov](#): [0](#)

Total number of dead zones reported per provider via [broadband.maryland.gov](#): [0](#)

Number of census blocks with dead zones reported via [mdbroadbandmap.org](#): [0](#)

Total number of dead zones reported per provider via [mdbroadbandmap.org](#): [0](#)

Web Search Verification: [N/A](#)

Census blocks that are outside DSL boundary: [0/1 \(0%\)](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [no change](#)

March 30, 2012

T-Mobile USA, Inc.**DBA Name: T-Mobile****Data Characteristics**

Date of Original Submission: 2/25/2010
Date of Update Submission: 2/22/2012
Currency of Data: 12/31/2011
FRN: 0006945950
Type of data submitted: Coverage Area
Census Block Count: N/A
Total Matched Address Points Count: N/A
Unmatched Address Points: N/A
Number of Technology of Transmission Types: 1
Provided Max Advertised Download Speed: Complete
Provided Max Advertised Upload Speed: Complete
Provided Max Typical Download Speed: No
Provided Max Typical Upload Speed: No
Provided Middle Mile: Yes
Provided Road Segments for census blocks greater than 2 sq miles: No

See ReadMe.txt*Data Processing****Coverage Area Process:**

- Repair Geometry on delivered coverage area
- Remove coverage areas less than 0.125 square miles
- Remove coverage area “holes” less than 0.125 square miles
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area |
|-----------------------|-------|-----------|
| 4 | 1 | 33% |
| 6 | 1 | 33% |
| 7 | 1 | 33% |

| Max Upload Category | Count | % of Area |
|---------------------|-------|-----------|
| 2 | 1 | 33% |
| 4 | 2 | 67% |

Typical down/upload speeds reported by provider: N/A

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Typical down/upload speed from 2010 mobile speed test:

| Speed Test Download Tier | Count | % of Tests | Speed Test Upload Tier | Count | % of Tests |
|--------------------------|-------|------------|------------------------|-------|------------|
| 0 | 3019 | 36% | 1 | 1229 | 15% |
| 3 | 1599 | 19% | 2 | 3597 | 43% |
| 4 | 2034 | 24% | 3 | 2538 | 31% |
| 5 | 1466 | 18% | 4 | 848 | 10% |
| 6 | 156 | 2% | 5 | 51 | 1% |
| 7 | 31 | 0% | 6 | 15 | 0% |
| | | | 7 | 20 | 0% |
| | | | 8 | 7 | 0% |

Speed tests match reported typical speeds or are within 1 speed tier: **No**

#/% of computer based speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: **8152/8305 (98.2%)**

Number of mobile speed tests reported outside coverage area: **153/8305 (1.8%)**

Form477 Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: **N/A**

#/% of tracts reported as served to FCC but do not intersect coverage area: **N/A**

Dead zones:

Number of dead zones reported within coverage area via broadband.maryland.gov:

135/237 (57%)

Number of dead zones reported within coverage area via mdbroadbandmap.org:

78/203 (38.4%)

Web Search Verification: **N/A**

Wireless Verification:

| TMobile Wireless Verification Table - 3G | Count | Percentage |
|--|--------------|-------------------|
| Total # of sample points | 1486 | |
| Number of sample points within coverage area | 560 | |
| Total number of sample points with results | 1334 | |
| Verified served AND within reported coverage area (yes,yes) | 485 | |
| Verified served AND found outside reported coverage area (yes,no) | 849 | 63.6% |
| Verified unserved AND found within reported coverage area (no,yes) | 75 | 13.4% |
| Verified unserved AND found outside reported coverage area (no,no) | 77 | |
| Total error | 924 | 62.2% |

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| TMobile Wireless Verification Table - 4G (Speed 6-10) | Count | Percentage |
|--|--------------|-------------------|
| Total # of sample points | 1486 | |
| Number of sample points with expected 4G results | 402 | |
| Total number of sample points with 4G results | 120 | |
| Verified 4G AND within reported coverage area (yes,yes) | 116 | |
| Verified 4G AND found outside reported coverage area (yes,no) | 4 | 3.3% |
| Verified not 4G AND found within reported coverage area (no,yes) | 286 | 71.1% |
| Verified not 4G AND found outside reported coverage area (no,no) | 1080 | |
| Total error | 290 | 19.5% |

*4G service defined as average down speed of > 2000 bps

| TMobile Wireless Verification Table - 4G (Speed 10-25) | Count | Percentage |
|--|--------------|-------------------|
| Total # of sample points | 1486 | |
| Number of sample points with expected 4G results | 382 | |
| Total number of sample points with 4G results | 120 | |
| Verified 4G AND within reported coverage area (yes,yes) | 111 | |
| Verified 4G AND found outside reported coverage area (yes,no) | 9 | 7.5% |
| Verified not 4G AND found within reported coverage area (no,yes) | 271 | 70.9% |
| Verified not 4G AND found outside reported coverage area (no,no) | 1095 | |
| Total error | 280 | 18.8% |

*4G service defined as average down speed of > 2000 bps

March 30, 2012

tw telecom of maryland llc**DBA Name: tw telecom of maryland llc****Data Characteristics**

| | |
|---|----------------------------|
| Date of Original Submission: | 1/30/2010 |
| Date of Update Submission: | 2/21/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0017348202 |
| Type of data submitted: | Address table, Middle Mile |
| Census Block Count: | 84 |
| Total Matched Address Points Count: | 120 |
| Unmatched Address Points: | 0 |
| Number of Technology of Transmission Types: | 2 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | Yes |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 120
 - Number unmatched: 0
- Spatially join address points to 2010 census blocks
- Separate and export the address points according to technology of transmission

Census Block Process:

- Join the address points to the 2010 census blocks based on the GEOID10 field
 - Export results for each technology of transmission
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modification:

- Removed 26 records from provider data – do not meet broadband speeds
- Provider did not submit elevation for middle mile. Check submission script does not allow a Null elevation or -9999 default value - elevation changed to 0.

Data Verification**Maximum down/upload speeds reported by provider:**

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Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 3 | 11 | 13% |
| 4 | 17 | 20% |
| 5 | 10 | 12% |
| 6 | 2 | 2% |
| 7 | 25 | 29% |
| 8 | 7 | 8% |
| 9 | 5 | 6% |
| 10 | 5 | 6% |
| 11 | 3 | 4% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 3 | 11 | 13% |
| 4 | 17 | 20% |
| 5 | 10 | 12% |
| 6 | 2 | 2% |
| 7 | 25 | 29% |
| 8 | 7 | 8% |
| 9 | 5 | 6% |
| 10 | 5 | 6% |
| 11 | 3 | 4% |

Typical down/upload speeds reported by provider: [N/A](#)

Typical down/upload speed from 2010 computer based speed test:

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 6 | 40% |
| 3 | 1 | 7% |
| 4 | 3 | 20% |
| 5 | 3 | 20% |
| 7 | 2 | 13% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 5 | 33% |
| 2 | 1 | 7% |
| 3 | 1 | 7% |
| 4 | 3 | 20% |
| 5 | 5 | 33% |

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)

Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [6/84 \(7.1%\)](#)

Form477 Verification:

Number of census blocks reported to project, but no tract reported to FCC: [30/84 \(36%\)](#)

Number of tracts reported to FCC, but no census blocks reported to project: [11](#)

Dead zones:

Number of census blocks with dead zones reported via [broadband.maryland.gov](#): [0](#)

Total number of dead zones reported per provider via [broadband.maryland.gov](#): [0](#)

Number of census blocks with dead zones reported via [mdbroadbandmap.org](#): [0](#)

Total number of dead zones reported per provider via [mdbroadbandmap.org](#): [0](#)

Web Search Verification: [N/A](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [29 census block increase](#)

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United States Cellular Corporation**DBA Name: US Cellular****Data Characteristics**

Date of Original Submission: 2/2/2012
 Date of Update Submission: 2/2/2012
 Currency of Data: 12/31/2011
 FRN: 0004372322
 Type of data submitted: Coverage Area
 Census Block Count: N/A
 Total Matched Address Points Count: N/A
 Unmatched Address Points: N/A
 Number of Technology of Transmission Types: 1
 Provided Max Advertised Download Speed: Complete
 Provided Max Advertised Upload Speed: Complete
 Provided Max Typical Download Speed: Complete
 Provided Max Typical Upload Speed: Complete
 Provided Middle Mile: No
 Provided Road Segments for census blocks greater than 2 sq miles: No

Data Processing**Coverage Area Process:**

- Repair Geometry on delivered coverage area
- Remove coverage areas less than 0.125 square miles
- Remove coverage area “holes” less than 0.125 square miles
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area | Max Upload Category | Count | % of Area |
|-----------------------|-------|-----------|---------------------|-------|-----------|
| 4 | 1 | 100% | 3 | 1 | 100% |

Typical down/upload speeds reported by provider: N/A

Coverage Area

| Typical Download Category | Count | % of Area | Typical Upload Category | Count | % of Area |
|---------------------------|-------|-----------|-------------------------|-------|-----------|
| 4 | 1 | 100% | 3 | 1 | 100% |

Typical down/upload speed from 2010 mobile speed test: N/A

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Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)

#/% of mobile speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: [N/A](#)

Number of mobile speed tests reported outside coverage area: [N/A](#)

Form 477 Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: [13/13 \(100%\)](#)

#/% of tracts reported as served to FCC but do not intersect coverage area: [0/13 \(0%\)](#)

Dead zones:

Number of dead zones reported within coverage area via [broadband.maryland.gov](#):

[22/237 \(9.3%\)](#)

Number of dead zones reported within coverage area via [mdbroadbandmap.org](#):

[14/203 \(7%\)](#)

Web Search Verification: [N/A](#)

Wireless Verification: [N/A](#)

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Vector Data Systems LLC**DBA Name: Vector Data Systems LLC****Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | February 2010 |
| Date of Update Submission: | 3/7/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0017306663 |
| Type of data submitted: | Coverage Area |
| Census Block Count: | N/A |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 1 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | Complete |
| Provided Max Typical Upload Speed: | Complete |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Coverage Area Process:**

- Repair Geometry on delivered coverage area
- Remove coverage areas less than 0.125 square miles
- Remove coverage area “holes” less than 0.125 square miles
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area |
|-----------------------|-------|-----------|
| 5 | 1 | 100% |

| Max Upload Category | Count | % of Area |
|---------------------|-------|-----------|
| 5 | 1 | 100% |

Typical down/upload speeds reported by provider:

Coverage Area

| Typical Download Category | Count | % of Area |
|---------------------------|-------|-----------|
| 5 | 1 | 100% |

| Typical Upload Category | Count | % of Area |
|-------------------------|-------|-----------|
| 4 | 1 | 100% |

Typical down/upload speed from 2010 mobile speed test: N/A**Speed tests match reported typical download speeds or are within 1 speed tier:** N/A

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#/% of mobile speed tests verifying coverage area:

Number of mobile speed tests reported inside coverage area: [N/A](#)

Number of mobile speed tests reported outside coverage area: [N/A](#)

Form 477 Verification:

#/% of tracts reported as served to FCC that overlaps with coverage area: [5/5 \(100%\)](#)

#/% of tracts reported as served to FCC but do not intersect coverage area: [0/5 \(0%\)](#)

Dead zones:

Number of dead zones reported within coverage area via broadband.maryland.gov:
[4/237 \(1.7%\)](#)

Number of dead zones reported within coverage area via mdbroadbandmap.org:
[0/110 \(0%\)](#)

Web Search Verification: [N/A](#)

Wireless Verification: [N/A](#)

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Verizon Communications Inc**DBA: Verizon Maryland Inc****Data Characteristics**

| | |
|---|--------------------------------------|
| Date of Original Submission: | 2/15/2010 |
| Date of Update Submission: | 3/14/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0002166825 |
| Type of data submitted: | Census Block Table, Road Segments |
| Census Block Count: | 76689 |
| Total Matched Address Points Count: | N/A |
| Unmatched Address Points: | N/A |
| Number of Technology of Transmission Types: | 2 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | Yes |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Census Block Process:**

- Join the census block table to 2010 census blocks based on the GEOID10 field
 - Export results for each technology of transmission
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Road Segment Process:

- Join road segments to TigerLine by TLID
 - Export results
 - Load exported results into the NTIA data model
 - Result: BB_Service_RoadSegment

Data Modification:

- Provider did not submit elevation for middle mile. Check submission script does not allow a Null elevation or -9999 default value - elevation changed to 0.

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Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 4 | 11727 | 12% |
| 5 | 37120 | 40% |
| 6 | 12512 | 13% |
| 9 | 32486 | 35% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 2 | 11727 | 12% |
| 3 | 49632 | 53% |
| 7 | 32486 | 35% |

Road Segments

| Max Download Category | Count | % of Segments |
|-----------------------|-------|---------------|
| 4 | 1227 | 31% |
| 5 | 1566 | 39% |
| 6 | 114 | 3% |
| 9 | 1077 | 27% |

| Max Upload Category | Count | % of Segments |
|---------------------|-------|---------------|
| 2 | 1227 | 31% |
| 3 | 1680 | 42% |
| 7 | 1077 | 27% |

Typical down/upload speeds reported by provider: [N/A](#)**Typical down/upload speed from 2010 computer based speed test:**

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 571 | 8% |
| 3 | 526 | 8% |
| 4 | 1364 | 20% |
| 5 | 391 | 6% |
| 6 | 692 | 10% |
| 7 | 2199 | 32% |
| 8 | 1130 | 16% |
| 9 | 37 | 1% |
| 10 | 21 | 0% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 589 | 8% |
| 2 | 2060 | 30% |
| 3 | 56 | 1% |
| 4 | 882 | 13% |
| 5 | 1437 | 21% |
| 6 | 624 | 9% |
| 7 | 1186 | 17% |
| 8 | 96 | 1% |
| 9 | 1 | 0% |

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [31/76689 \(< 1%\)](#)**Form 477 Verification:**Number of census blocks reported to project, but no tract reported to FCC: [4209/76689 \(5.5%\)](#)Number of tracts reported to FCC, but no census blocks reported to project: [0](#)

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Dead zones:**Number of census blocks with dead zones reported via broadband.maryland.gov:**

104/76689 (<1%)

Total number of dead zones reported per provider via broadband.maryland.gov: 129**Number of census blocks with dead zones reported via mdbroadbandmap.org:**

85/76689 (<1%)

Total number of dead zones reported per provider via mdbroadbandmap.org: 105**Web Search Verification:** 459/76689 (<1%) of census blocks were confirmed using online search feature of given provider

| VerizonMD WebSearch Verification Table | Count | Percentage |
|--|-------|------------|
| Total # of sample points | 1496 | |
| Number of sample points with results | 1435 | 96% |
| Result is yes and census block is in served area | 459 | 32% |
| Result is yes but not in a census block reported as served | 59 | 4% |
| Result is no and census block is in served area | 448 | 31% |
| Result is no and census block not served area | 465 | 32% |

Census blocks that are outside DSL boundary: 20183/76689 (26.3%)**Change in coverage area from Fall 2011 Submission to Spring 2012 Submission:** 79 census block decrease

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Wildblue Communications, Inc**DBA Name: Wildblue Communications, Inc****Data Characteristics**

Date of Original Submission: 4/21/2010
 Date of Update Submission: 2/8/2012
 Currency of Data: 12/31/2011
 FRN: 0007843766
 Type of data submitted: Coverage Area
 Census Block Count: N/A
 Total Matched Address Points Count: N/A
 Unmatched Address Points: N/A
 Number of Technology of Transmission Types: 1
 Provided Max Advertised Download Speed: Complete
 Provided Max Advertised Upload Speed: Complete
 Provided Max Typical Download Speed: Complete
 Provided Max Typical Upload Speed: Complete
 Provided Middle Mile: No
 Provided Road Segments for census blocks greater than 2 sq miles: No

Data Processing**Coverage Area Process:**

- Repair Geometry on delivered coverage area
- Load coverage area into the NTIA data model
 - Result: BB_Service_Wireless

Data Modification:

- Provider submitted Typical Downstream Speed as speed tier 2
 - Calculated Typical Downstream Speed to 3
- Provider submitted Typical Upstream Speed as speed tier 1
 - Calculated Typical Upstream Speed to 2

Data Verification**Maximum down/upload speeds reported by provider:**

Coverage Area

| Max Download Category | Count | % of Area | Max Upload Category | Count | % of Area |
|-----------------------|-------|-----------|---------------------|-------|-----------|
| 4 | 1 | 100% | 2 | 1 | 100% |

Typical down/upload speeds reported by provider:

Coverage Area

| Typical Download Category | Count | % of Area | Typical Upload Category | Count | % of Area |
|---------------------------|-------|-----------|-------------------------|-------|-----------|
| 3 | 1 | 100% | 2 | 1 | 100% |

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Typical down/upload speed from 2010 mobile speed test:

| Speed Test Download Tier | Count | % of Tests | Speed Test Upload Tier | Count | % of Tests |
|--------------------------|-------|------------|------------------------|-------|------------|
| 0 | 4 | 50% | 1 | 8 | 100% |
| 3 | 4 | 50% | | | |

Speed tests match reported typical download speeds or are within 1 speed tier: Yes**#/% of mobile speed tests verifying coverage area:****Number of mobile speed tests reported inside coverage area:** 8/8 (100%)**Number of mobile speed tests reported outside coverage area:** 0/8 (0%)**Typical down/upload speed from 2010 computer based speed test:**

| Speed Test Download Tier | Count | % of Tests | Speed Test Upload Tier | Count | % of Tests |
|--------------------------|-------|------------|------------------------|-------|------------|
| 0 | 31 | 60% | 1 | 52 | 100% |
| 3 | 14 | 27% | | | |
| 4 | 7 | 13% | | | |

Speed tests match reported typical download speeds or are within 1 speed tier: No**#/% of computer based speed tests verifying coverage area:****Number of mobile speed tests reported inside coverage area:** 52/52 (100%)**Number of mobile speed tests reported outside coverage area:** 0/52 (0%)**Form 477 Verification:****#/% of tracts reported as served to FCC that overlaps with coverage area:** 214/214 (100%)**#/% of tracts reported as served to FCC but do not intersect coverage area:** 0/214 (0%)**Dead zones:****Number of dead zones reported within coverage area via broadband.maryland.gov:**
237/237 (100%)**Number of dead zones reported within coverage area via mdbroadbandmap.org:**
203/203 (100%)**Web Search Verification:** N/A**Wireless Verification:** N/A

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XO Holdings, Inc**DBA Name: XO Communications, LLC****Data Characteristics**

| | |
|---|---------------|
| Date of Original Submission: | 2/1/2010 |
| Date of Update Submission: | 3/8/2012 |
| Currency of Data: | 12/31/2011 |
| FRN: | 0006275945 |
| Type of data submitted: | Census Blocks |
| Census Block Count: | 322 |
| Total Matched Address Points Count: | 354 |
| Unmatched Address Points: | 0 |
| Number of Technology of Transmission Types: | 3 |
| Provided Max Advertised Download Speed: | Complete |
| Provided Max Advertised Upload Speed: | Complete |
| Provided Max Typical Download Speed: | No |
| Provided Max Typical Upload Speed: | No |
| Provided Middle Mile: | No |
| Provided Road Segments for census blocks greater than 2 sq miles: | No |

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 354
 - Number unmatched: 0
- Spatially join address points to 2010 census blocks
- Separate and export the address points according to technology of transmission

Census Block Process:

- Join the address points to the 2010 census blocks based on the GEOID10 field
 - Export results for each technology of transmission
 - Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Modification:

- 27 addresses do not meet broadband speeds – dropped from submission

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Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 3 | 30 | 9% |
| 4 | 193 | 60% |
| 5 | 48 | 15% |
| 6 | 13 | 4% |
| 7 | 29 | 9% |
| 8 | 7 | 2% |
| 10 | 3 | 1% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 2 | 7 | 2% |
| 3 | 28 | 9% |
| 4 | 188 | 58% |
| 5 | 48 | 15% |
| 6 | 13 | 4% |
| 7 | 29 | 9% |
| 8 | 7 | 2% |
| 10 | 3 | 1% |

Typical down/upload speeds reported by provider: [N/A](#)**Typical down/upload speed from 2010 computer based speed test:**

| Speed Test Download Tier | Count | % of Tests |
|--------------------------|-------|------------|
| 0 | 571 | 8% |
| 3 | 526 | 8% |
| 4 | 1364 | 20% |
| 5 | 391 | 6% |
| 6 | 692 | 10% |
| 7 | 2199 | 32% |
| 8 | 1130 | 16% |
| 9 | 37 | 1% |
| 10 | 21 | 0% |

| Speed Test Upload Tier | Count | % of Tests |
|------------------------|-------|------------|
| 1 | 589 | 8% |
| 2 | 2060 | 30% |
| 3 | 56 | 1% |
| 4 | 882 | 13% |
| 5 | 1437 | 21% |
| 6 | 624 | 9% |
| 7 | 1186 | 17% |
| 8 | 96 | 1% |
| 9 | 1 | 0% |

Speed tests match reported typical download speeds or are within 1 speed tier: [N/A](#)Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted): [36/322 \(11.2%\)](#)**Form477 Verification:**Number of census blocks reported to project, but no tract reported to FCC: [18/322 \(5.6%\)](#)Number of tracts reported to FCC, but no census blocks reported to project: [8](#)

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Dead zones:

Number of census blocks with dead zones reported via broadband.maryland.gov:
[3/322 \(0.9%\)](#)

Total number of dead zones reported per provider via broadband.maryland.gov: [3](#)

Number of census blocks with dead zones reported via mdbroadbandmap.org: [1](#)

Total number of dead zones reported per provider via mdbroadbandmap.org: [1](#)

Web Search Verification: [N/A](#)

Census blocks that are outside DSL boundary: [59/322 \(18.3%\)](#)

Change in coverage area from Fall 2011 Submission to Spring 2012 Submission: [no change](#)

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Zayo Bandwidth LLC**DBA Name: Zayo Bandwidth LLC****Data Characteristics**

Date of Original Submission: 1/13/2011
Date of Update Submission: 3/8/2012
Currency of Data: 12/31/2011
FRN: 0019133826
Type of data submitted: Address Table
Census Block Count: 2
Total Matched Address Points Count: 2
Unmatched Address Points: 0
Number of Technology of Transmission Types: 1
Provided Max Advertised Download Speed: Complete
Provided Max Advertised Upload Speed: Complete
Provided Max Typical Download Speed: No
Provided Max Typical Upload Speed: No
Provided Middle Mile: No
Provided Road Segments for census blocks greater than 2 sq miles: No

Data Processing**Address Table Process:**

- Geocode address table to ESRI US Streets address locator
 - Number matched: 2
 - Number unmatched: 0
- Spatially join address points to 2010 census blocks

Census Block Process:

- Join the address points to the 2010 census blocks based on the GEOID10 field
 - Export results Load exported results into the NTIA data model
 - Result: BB_Service_CensusBlock

Data Verification**Maximum down/upload speeds reported by provider:**

Census Blocks

| Max Download Category | Count | % of Blocks |
|-----------------------|-------|-------------|
| 7 | 1 | 50% |
| 8 | 1 | 50% |

| Max Upload Category | Count | % of Blocks |
|---------------------|-------|-------------|
| 7 | 1 | 50% |
| 8 | 1 | 50% |

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Typical down/upload speeds reported by provider:**Census Blocks**

| Typical Download Category | Count | % of Blocks |
|---------------------------|-------|-------------|
| 7 | 1 | 50% |
| 8 | 1 | 50% |

| Typical Upload Category | Count | % of Blocks |
|-------------------------|-------|-------------|
| 7 | 1 | 50% |
| 8 | 1 | 50% |

Typical down/upload speed from 2010 computer based speed test: [N/A](#)**Speed tests match reported typical download speeds or are within 1 speed tier:** [N/A](#)**Speed tests present within blocks not reported as served by provider (error reported as proportion of total blocks submitted):** [N/A](#)**Form477 Verification:****Number of census blocks reported to project, but no tract reported to FCC:** [2/2 \(100%\)](#)**Number of tracts reported to FCC, but no census blocks reported to project:** [1](#)**Dead zones:****Number of census blocks with dead zones reported via [broadband.maryland.gov](#):** [0](#)**Total number of dead zones reported per provider via [broadband.maryland.gov](#):** [0](#)**Number of census blocks with dead zones reported via [mdbroadbandmap.org](#):** [0](#)**Total number of dead zones reported per provider via [mdbroadbandmap.org](#):** [0](#)**Web Search Verification:** [N/A](#)**Change in coverage area from Fall 2011 Submission to Spring 2012 Submission:** [no change](#)

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Appendix A

| | Name | Status |
|----|-----------------------------------|---------------|
| 1 | Allied Telecom Group, LLC. | Participating |
| 2 | Antietam Cable Television, Inc. | Participating |
| 3 | Armstrong Holdings, Inc. | Participating |
| 4 | Atlantech Online, Inc. | Participating |
| 5 | Atlantic Broadband (Delmar), LLC | Participating |
| 6 | AT&T Mobility LLC | Participating |
| 7 | Bay Country Communications, Inc. | Participating |
| 8 | Believe Wireless, LLC. | Participating |
| 9 | Bloosurf | Participating |
| 10 | Broadstripe, LLC | Participating |
| 11 | Broadview Networks Holdings, Inc. | Participating |
| 12 | Brookwood Ventures LLC | Participating |
| 13 | Cavalier Telephone LLC | Participating |
| 14 | Charter Communications Inc | Participating |
| 15 | Clearwire Corporation | Participating |
| 16 | Cogent Communications Group | Participating |
| 17 | Comcast Corporation | Participating |
| 18 | DIECA Communications, Inc | Participating |
| 19 | DSL.net, Inc. | Participating |
| 20 | DSLnet Communications, LLC | Participating |
| 21 | Easton Utilities Commission | Participating |
| 22 | FiberLight LLC | Participating |
| 23 | Freedom Wireless Broadband, LLC | Participating |
| 24 | Hotwire Communications, Ltd. | Participating |
| 25 | HNS License Sub, LLC | Participating |
| 26 | Level 3 Communications, LLC | Participating |
| 27 | Mediacom Delaware LLC | Participating |
| 28 | MegaPath | Participating |
| 29 | Gans Communciations, LP | Participating |
| 30 | New Edge Holding Company | Participating |
| 31 | NTELOS Inc | Participating |
| 32 | Mountain Communications, LLC | Participating |
| 33 | QCOL | Participating |
| 34 | Neon Optica, Inc | Participating |
| 35 | RCN Corporation | Participating |
| 36 | Leap Wireless International, Inc. | Participating |
| 37 | PAETEC Communications, Inc. | Participating |

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| | | |
|----|--|--|
| 38 | Shenandoah Telecommunications | Participating |
| 39 | Sprint Nextel Corporation | Participating |
| 40 | StarBand Communications Inc. | Participating |
| 41 | Tata Communications (America) Inc. | Participating |
| 42 | T-Mobile USA, Inc. | Participating |
| 43 | TWTelecom of Maryland, LLC | Participating |
| 44 | United States Cellular Corporation | Participating |
| 45 | Vector Data Systems LLC | Participating |
| 46 | Verizon Communications Inc | Participating |
| 47 | Cellco Partnership and its Affiliated Entities | Participating |
| 48 | WildBlue Communications, Inc. | Participating |
| 49 | XO Holdings, Inc. | Participating |
| 50 | Zayo Bandwidth Northeast, LLC | Participating |
| | | |
| 51 | ABOVENET COMMUNICATIONS | Unresponsive |
| 52 | ADC Telecommunications | Not a broadband provider |
| 53 | airBand Communications | Fixed Wireless provider - Unresponsive |
| 54 | Airespring, Inc. | Reseller - Refuses to participate |
| 55 | Apogee Telecom | Unresponsive |
| 56 | Broadcore, Inc. | Unresponsive |
| 57 | BullsEye Telecom, Inc. | Reseller - Refuses to participate |
| 58 | Cablespeed - Maryland | Unresponsive |
| 59 | Cbeyond Communications, LLC | Unresponsive - Participates with DC |
| 60 | CenturyLink | Reseller - Refuses to participate |
| 61 | Cequel III Communications II | No longer participating - sold property to Shentel |
| 62 | COMBNET | Unresponsive |
| 63 | CONXX, Inc. | Refuses to Participate |
| 64 | Coretel America | Unresponsive |
| 65 | Cox Communications | Not a broadband provider in Maryland |
| 66 | DELMARVA ONLINE | Not a broadband provider |
| 67 | Distributed Management Information Systems, Inc. | Unresponsive |
| 68 | EarthLink | Unresponsive |
| 69 | Eduro Networks, LLC | Unresponsive |
| 70 | Enventis Telecom Inc. | Not a broadband provider in Maryland |
| 71 | FCB Communications | Not believed to be a broadband provider |
| 72 | FDCservers.net | Not believed to be a broadband provider |
| 73 | FiberNet of West Virginia | Unresponsive - Is a broadband provider |

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| | | |
|-----|--|--|
| 74 | First Communications LLC | Not a broadband provider in Maryland |
| 75 | Frontier Communications | Not a broadband provider in Maryland |
| 76 | GLOBAL CROSSING TELECOMMUNICATIONS, INC. | Not a facilities based broadband provider in Maryland |
| 77 | Global Telecom Brokers/VDL | Refuses to participate |
| 78 | GMP CABLE TV | Research returns Metrocast as provider; Metrocast participating |
| 79 | iCore | NDA signed - Provider never sent data |
| 80 | Intellifiber | Unresponsive |
| 81 | InterGlobe Communications | Unresponsive |
| 82 | Internap Network Services | Unable to provide service in 7 - 10 days |
| 83 | Last Mile, Inc. | Not a broadband provider in Maryland |
| 84 | LightEdge Solutions, Inc. | Not a facilities based broadband provider in Maryland |
| 85 | Litecast / Balticore | Unresponsive |
| 86 | Metropolitan Telecommunications Holding Company | Reseller - Refuses to participate |
| 87 | MediaMax Wireless | Unresponsive |
| 88 | Motorola | Not a broadband provider |
| 89 | NationsLine Inc. | Unresponsive - Participates with DC |
| 90 | NEW FRONTIERS INTERNET SERVICES | Unresponsive |
| 91 | Northern Neck Wireless Broadband Services, LLC | Not a broadband provider in Maryland |
| 92 | NTT America | Unresponsive |
| 93 | Nunet | Unresponsive |
| 94 | One Communications Corporation | No longer participating |
| 95 | Port Networks, LLC | Fixed Wireless provider - Unresponsive |
| 96 | Quantum Telecommunications, Inc. | Reseller - Unresponsive |
| 97 | Qwest Communications Company, LLC | Unable to provide service in 7 - 10 days |
| 98 | Road Runner | Reseller - Unresponsive |
| 99 | RapidDSL & Wireless | Reseller - Refuses to participate |
| 100 | Reliance Globalcom Services, Inc. | Unresponsive - Participates with DE |
| 101 | SAVVIS Communications Corporation | Not a broadband provider |
| 102 | SES Americom | Unresponsive |
| 103 | SkyWay USA | Unresponsive |
| 104 | Southwest Wireless Group, L.L.C. | Not a broadband provider in Maryland |
| 105 | SpeakEasy | Unresponsive |
| 106 | STSN GENERAL HOLDINGS | Unresponsive |
| 107 | Sungard Network Solutions | Unresponsive |
| 108 | SWIFT SYSTEMS | Unresponsive |
| 109 | Sybase | Not a broadband provider |

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| | | |
|-----|----------------------------------|---|
| 110 | System Source | Unresponsive |
| 111 | Telovations, Inc. | Not a broadband provider in Maryland |
| 112 | Transbeam Inc. | Refuses to Participate |
| 113 | Two-Way Radio Service Inc | Unresponsive |
| 114 | United Online | Reseller - Unresponsive |
| 115 | VINAKOM COMMUNICATIONS | Not a broadband provider |
| 116 | WiTopia | Not a broadband provider |
| 117 | Windstream | Not a broadband provider in Maryland |
| 118 | Wholesale Carrier Services, Inc. | Unresponsive |
| 119 | Xecunet, LLC. | Unresponsive - DSL provider |
| 120 | Xspedius Communications Co. | Purchased by twtelecom; twtelecom participating |