

# **Rhode Island Broadband Mapping Project April 2011 Data Submission - Summary and Processes**

## **Prepared By:**

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## **Section A: The Rhode Island Broadband Mapping Team Overview**

In support of the national broadband initiatives being undertaken by President Obama and the Federal Government through the American Recovery & Reinvestment Act of 2009 (Recovery Act), Public Law No. 111-5, and the Broadband Data Improvement Act (BDIA), title I of Public Law No. 110-385, 122 Stat. 4096, the Rhode Island Economic Development Corporation (RIEDC), as the entity assigned by Governor Donald Carcieri, has filed to the United States Department of Commerce – National Telecommunications and Information Administration (NTIA) a request for grant funds from the State Broadband Data and Development Grant Program.

### **Project Description**

EA Engineering, Science, and Technology, Inc. (EA), has been selected by RIEDC for the through their Broadband Initiative for Rhode Island (BBRI) to provide a data management and retrieval system for RIEDC. RIEDC and EA entered into a contractual agreement on January 15, 2010 for a base period of 2 (two) years with 3 (three) option years. The work assignment consists of negotiating non disclosure agreements (NDA) with the State's broadband providers, collecting provider broadband data, verifying data submitted, combining and updating data collected, developing and implementing a broadband website with mapping application, and reporting findings to RIEDC and the NTIA.

This program will create a statewide broadband map which will be maintained for five (5) years, that assesses broadband infrastructure in Rhode Island and distinguishes between served, underserved and un-served communities as per the definition specified by NTIA. The data will be made available to the public, with certain restrictions to account for confidentiality of supplier information, through a state website and will also be linked to a Federal Department of Commerce webpage. The goal of this project is to meet the RIEDC's broadband mapping needs and in doing so provide maps and information that will be used to lend guidance and assistance in the planning of future broadband infrastructure development, as well as provide numerous broadband options to the end users.

The BBRI is a comprehensive effort aimed at producing a high level of detailed inventory of broadband services provided to residential, government and business consumers within the State of Rhode Island. The project is not only a Geographical Information Systems (GIS) mission but a project that needs expertise in GIS, contracting and legal issues, Quality Assurance/Quality Control (QAQC), and project management. In order to acquire, collect, process, analyze and display the data that represents these services it was necessary to combine the resources of several professional firms. Each team member provides unique set of strengths and capabilities needed to create the system that is in place. The team is made up of Rhode Island Economic Development Corporation (RIEDC), EA Engineering (EA), University of Rhode Island (URI), Adler Pollock & Sheehan P.C. (AP&S), Eastern Shore Regional GIS Cooperative (ESRGC), and Mapping



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## RIEDC - Rhode Island Broadband Mapping Program

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& Planning Services (M&PS). The following paragraphs provide information on each team member and their role the project.

The RIEDC is leading the project efforts for the State of Rhode Island (RI). Led by Mr. Stuart Freiman, they oversee all facets of the project and teams involved. The RIEDC coordinates schedules, communicates directly with the National Telecommunications Information Agency (NTIA), reviews and approves all project deliverables, and ensure all project deadlines are met. With their high visibility in the RI business community they are instrumental in arranging meetings between broadband providers and BBRI Team members. The relationship and communication RIEDC has with the State's providers was and continues to be instrumental in making the process of collecting and verifying information from the providers as effortless as possible.

EA is the prime contractor selected to lead the State's data collection, verification, reporting, and mapping efforts. EA has been providing scientific and engineering technical solutions to a wide range of government and industrial clients since 1973. Serving IT and GIS solutions via the web has become a standard business solution for EA's clients. As the prime contractor EA works closely with the RIEDC on all phase of the BBRI project. Included in the work EA has done to date, is the creation of the State's broadband website and mapping application (Digital Atlas). The website provides information on the project, links to related sites, custom mapping capabilities, and user speed test and feedback forms. The site can be viewed at the following address; <http://broadband.ri.gov/>.

M&PS has been providing GIS consulting services in RI for over 20 years. For the RI Broadband Mapping project, M&PS assisted in the development of a verification and analysis process which is used to perform the QA/QC of the data prior to submitting to the NTIA. Prior to each bi-annual NTIA submittal M&PS uses this process to review and check the data. During this process MP&S checks for positional and attribute accuracy of the data by using a random sampling methodology. The service MP&S provides insures data going to the NTIA is of the highest accuracy and precision. Additional M&PS provides data analysis and static maps displaying the data status at each delivery date.

The GIS laboratory in the URI's Department of Natural Resources is the center of technical expertise in the GIS field for the State of RI. On this project URI manages all GIS data report by EA to the RIEDC. They also serve as an additional tier of QA/QC on the data that is collected and submitted to the NTIA. URI provides technical input to the data processes and the types of maps and data to be displayed on the website. Additionally, several data layers including Community Anchor Institute locations and base map layers being used on the Digital Atlas are provided by URI.

The Eastern Shore Regional GIS Cooperative (ESRGC) is an organization that provides technical support, training, and GIS services to local governments on the Eastern Shore



## RIEDC - Rhode Island Broadband Mapping Program

of Maryland. In addition to supporting the BBRI project, ESRGC is leading the broadband mapping efforts for the state of Maryland. For the BBRI project, the ESRGC's provides the project team technical advisor support. They provide guidance on the project's technical approach and peer review support based on knowledge gained from their work in Maryland. ESRGC provided assistance in defining requirements for the QA/QC process, database design, and data verification tasks. The ESRGC provides the Team with a "lessons learned" from the Maryland Broadband project which guided the BBRI Team around common mistakes made on broadband mapping projects.

AP&S is a local RI law firm providing legal advice and representation and has been servicing RI residents and firms for 50 years. The role AP&S plays on this project is providing the necessary legal advice and contracting that is necessary between the RIEDC and the broadband providers. To date, AP&S has brokered the Non-Disclosure Agreements (NDA's) between the RIEDC and 16 broadband providers. These agreements were imperative and had to be in place before any data was submitted by the broadband providers. All provider broadband information that is made public is based on what the NDAs state. AP&S became the State's expert as to what information was legal for the team to make available to the public and modeled the NDAs off of the guidance provided in the NOFA.

### Project Contacts

Contact	Project Role	Phone	Email
<b><i>Rhode Island Economic Development Corp (RIEDC)</i></b>			
Stuart Freiman	<b>RIEDC PM</b>	401-278-9168	<a href="mailto:sfreiman@riedc.com">sfreiman@riedc.com</a>
Shane White	State GIS Coordinator	401-222-6483	<a href="mailto:swhite@doa.ri.gov">swhite@doa.ri.gov</a>
<b><i>University of Rhode Island</i></b>			
Greg Bonyng	URI-EDC Director/BBRI Project Liaison	401-874-2180	<a href="mailto:greg@edc.uri.edu">greg@edc.uri.edu</a>
<b><i>EA Engineering, Science and Technology (EA)</i></b>			
Jon Brownstein, Ph.D.	Principal In Charge	410-771-7950	<a href="mailto:jbrownst@eaest.com">jbrownst@eaest.com</a>
Lou Garcia, PMP	<b>Project Manager</b>	410-771-7950	<a href="mailto:lgarcia@eaest.com">lgarcia@eaest.com</a>
Jason Samus	Senior Technical Review	410-771-7950	<a href="mailto:jsamus@eaest.com">jsamus@eaest.com</a>
Brian Lesinski	Senior Technical Advisor	401-736-3440	<a href="mailto:blesinsk@eaest.com">blesinsk@eaest.com</a>



**RIEDC - Rhode Island Broadband Mapping Program**

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<b><i>Adler Pollock &amp; Sheehan (APS)</i></b>			
Alan Shoer, Esq.	Legal Team	401-274-7200	<a href="mailto:ashoer@apslaw.com">ashoer@apslaw.com</a>
Kristen Sherman, Esq.	Legal Team	401-274-7200	<a href="mailto:KSherman@apslaw.com">KSherman@apslaw.co m</a>
<b><i>Mapping &amp; Planning Services (M&amp;PS)</i></b>			
Mary Hutchinson., GISP	Verification Analyst	401-423-3841	<a href="mailto:mhutch@mappingplan&lt;br/&gt;ning.com">mhutch@mappingplan ning.com</a>
<b><i>Eastern Shore Regional GIS Cooperative (ESRGC)</i></b>			
Michael Scott, Ph.D., GISP	Senior Technical Advisor	410-543-6083	<a href="mailto:msscott@salisbury.edu">msscott@salisbury.edu</a>



**BROADBAND PROVIDER DATA VERIFICATION REPORT  
RHODE ISLAND DATA SUBMITTAL #2  
MARCH 31, 2011**

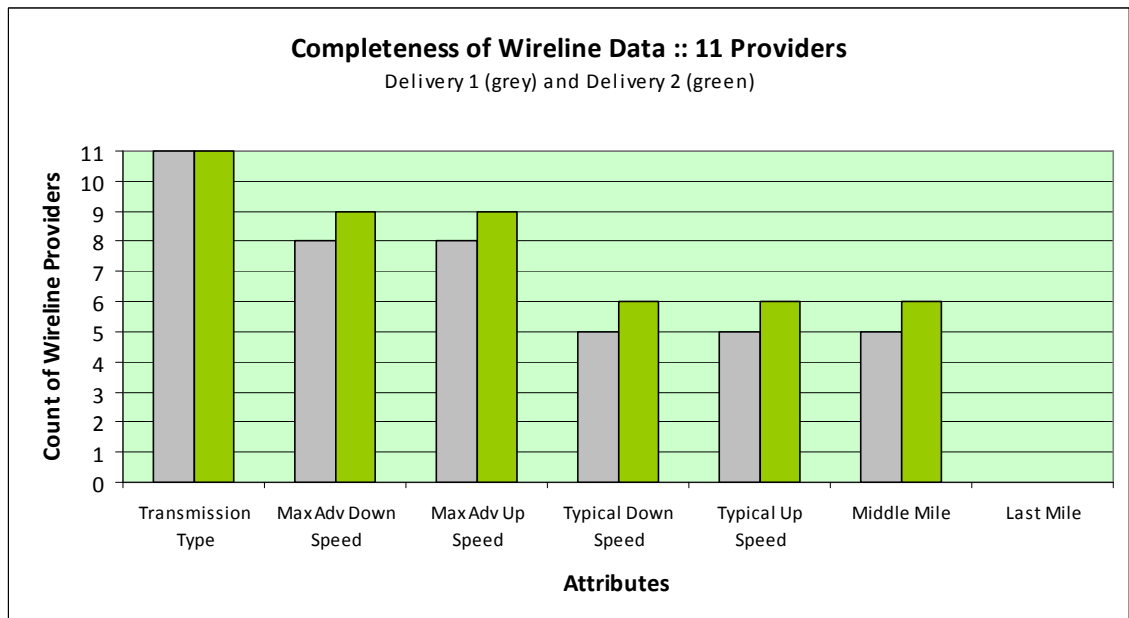
General Findings:

- Rhode Island has extensive broadband coverage from 17 providers using nine different transmission types. There is broadband coverage for the entire state.
- Broadband availability on a census block basis is summarized in the Figure below:

Broadband Availability	Census Blocks	% of Total
<b>Unserved;</b> census block has no access to broadband	6	<1
<b>Underserved:</b> One to Two broadband providers	8	<1
<b>Competitive:</b> Three to Four broadband providers	99	<1
Five to Nine broadband providers	12,786	61
Ten to Twelve broadband providers	8,124	39
<b>Total</b>	<b>21,023</b>	<b>100</b>

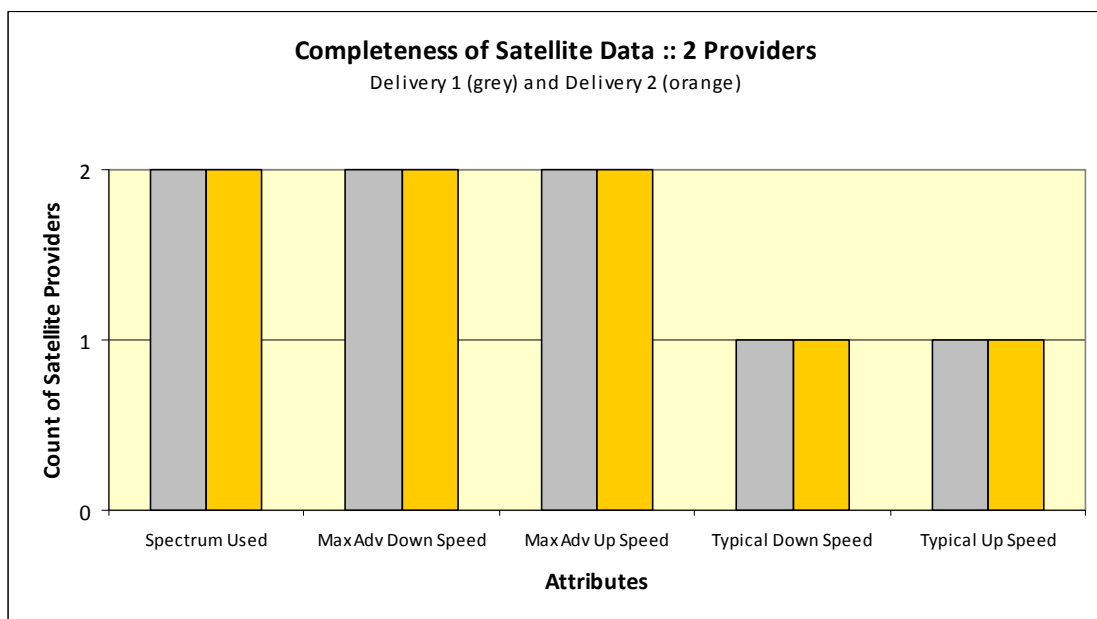
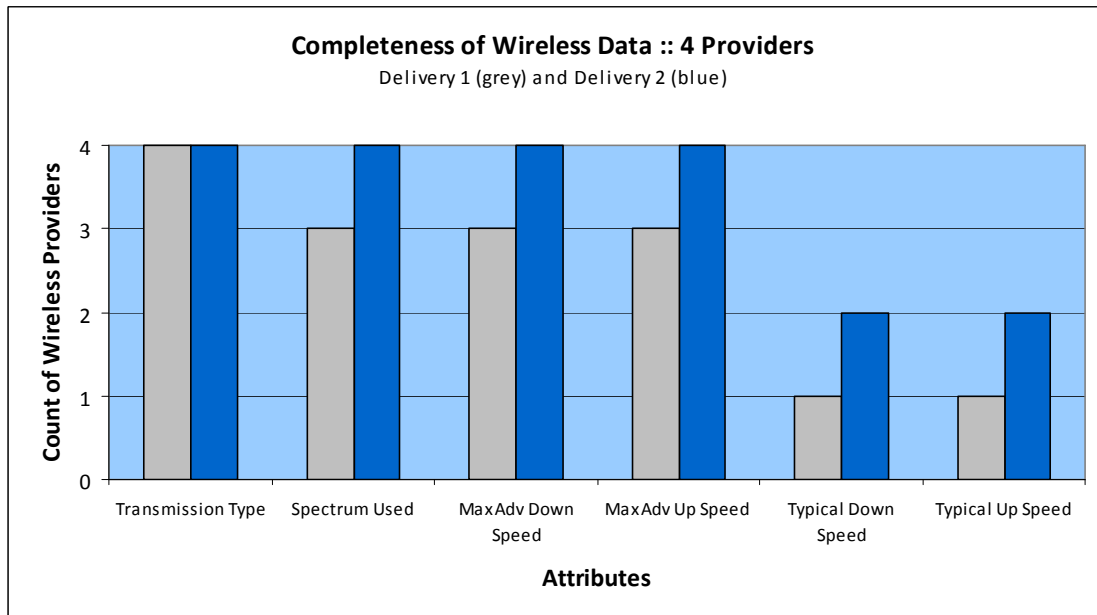
Note: Several of the Provider datasets do not show coverage of some census blocks in Rhode Island coastal waters (for example, the satellite providers). This results in some over-reporting of the availability results at the low end, in particular, the unserved figures. Broadband is defined as being wireline, wireless and satellite service for this table.

- A total of 17 broadband Providers submitted data; 11 wireline and 6 wireless. The completeness of the attributes in the 17 providers' datasets is summarized in the Figures below. (Statistics for NTIA Delivery 1 are included for comparison purposes).





## RIEDC - Rhode Island Broadband Mapping Program



- Middle Mile data was provided by 7 broadband providers. There were a total of 39 facilities (13 owned and 26 leased).
- No Last Mile data was provided by any of the broadband providers.
- A total of 1,115 Community Anchor Institutions are identified. These were verified with available Rhode Island Geographic Information System (RIGIS) datasets and 414 RIEDC and FCC speed tests.



## RIEDC - Rhode Island Broadband Mapping Program

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- The RIEDC has collected 2,798 speed tests in 1,158 (5.5%) of the census blocks within the State. These tests are for the period 3/23/10 to 3/14/11. There is a continued growth both in the number and distribution of the RIEDC speed tests.
- A total 1,693 wireline speed tests from FCC are used for the verification. These tests are for the period 3/11/10 to 12/29/10 and cover 871 (4%) of the census blocks within the State. Tests were collected by OOKLA and MLAB.
- FCC tests for Mobile Applications (accessing Cellular and WiFi) are also used for the verification. These 2,509 speed tests are recorded for the period 3/11/10 to 12/29/10 and cover 699 (3%) of the census blocks within the State. These tests were all collected by OOKLA.
- The distribution of the three speed tests (RIEDC, FCC and FCC Mobile Applications) are similar and follow population and household patterns across the State. The distribution of the speed tests are shown in the Figures on the following page.
- Road Segment data (for census blocks greater than 2 sq miles) was provided by 1 provider. Service Address data (for census blocks greater than 2 sq miles) was provided by 2 providers. A total of 32 of the 36 census blocks greater than 2 sq. miles thus have road segment and/or service address data.

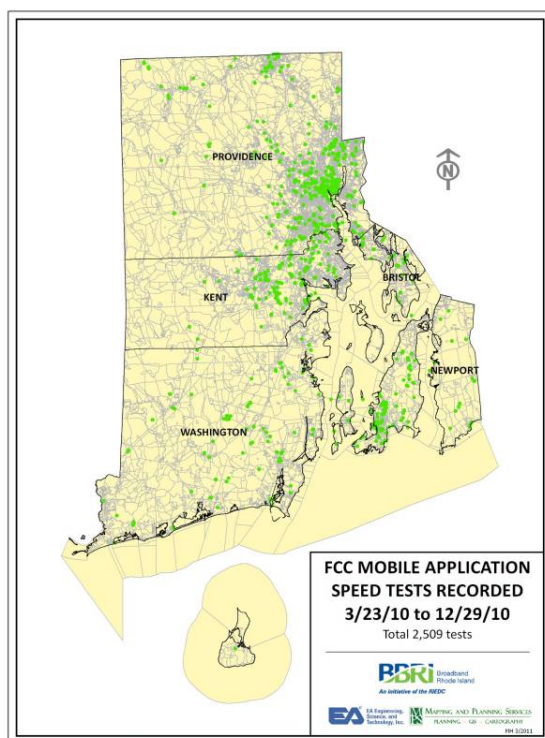




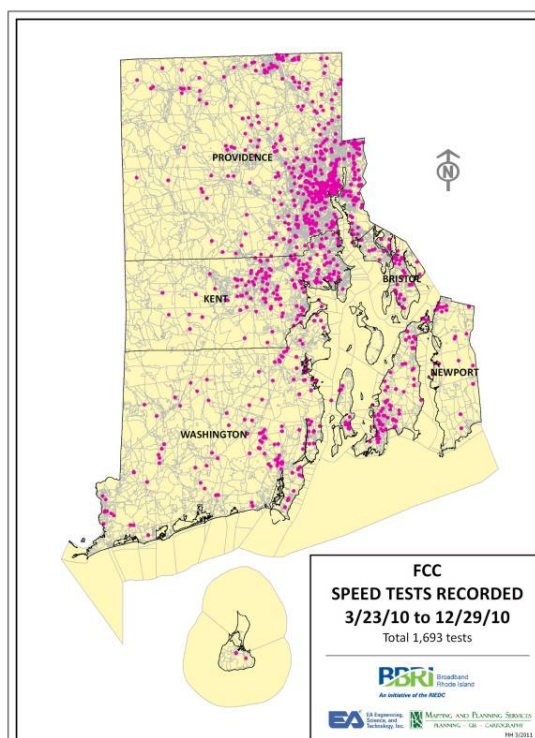
## RIEDC - Rhode Island Broadband Mapping Program

The Figures below show the distribution of speed tests used for verification purposes.

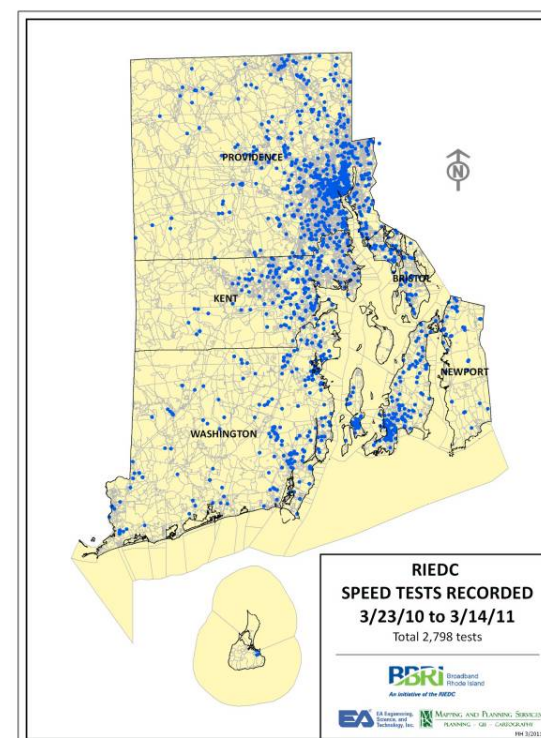
**FCC Collected Speed Test - Mobile**



**FCC Collected Speed Test - Wireline**



**RIEDC Collected Speed Test**

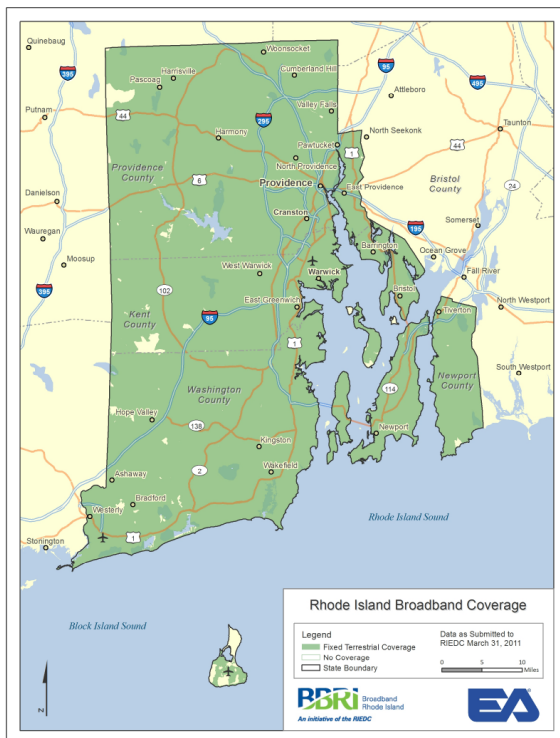


The Figures below display the wireline and wireless coverage areas reported in Rhode Island and the number of providers available per census block.

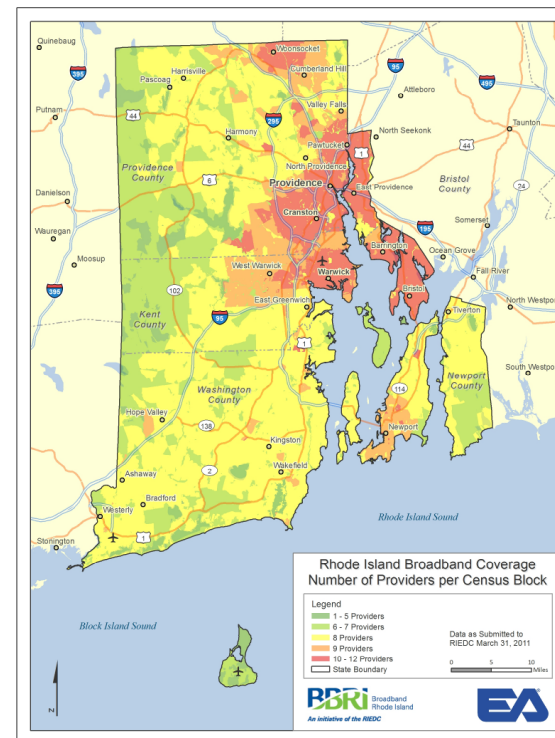


## RIEDC - Rhode Island Broadband Mapping Program

**Rhode Island Broadband Coverage Map**



**Number of Providers Available Per Census Block**

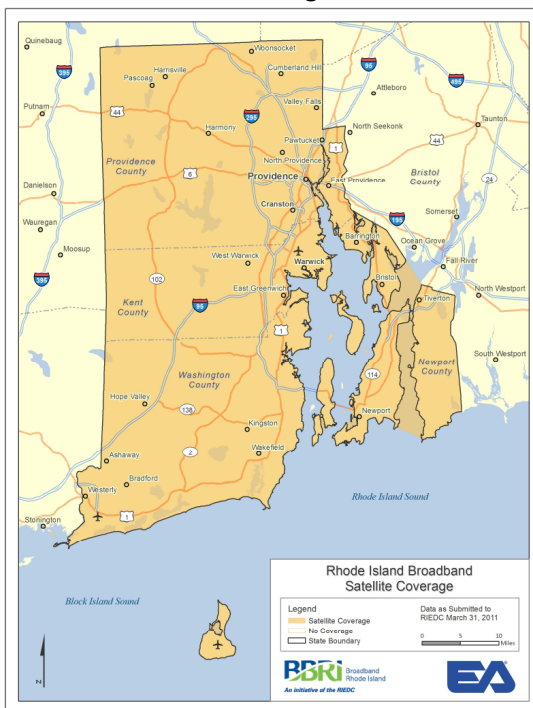




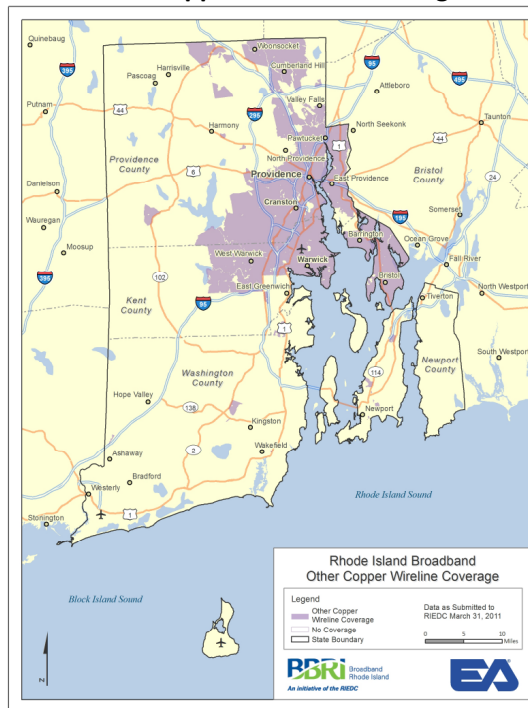
## RIEDC - Rhode Island Broadband Mapping Program

The Figures below display the availability of each technology types offered in Rhode Island.

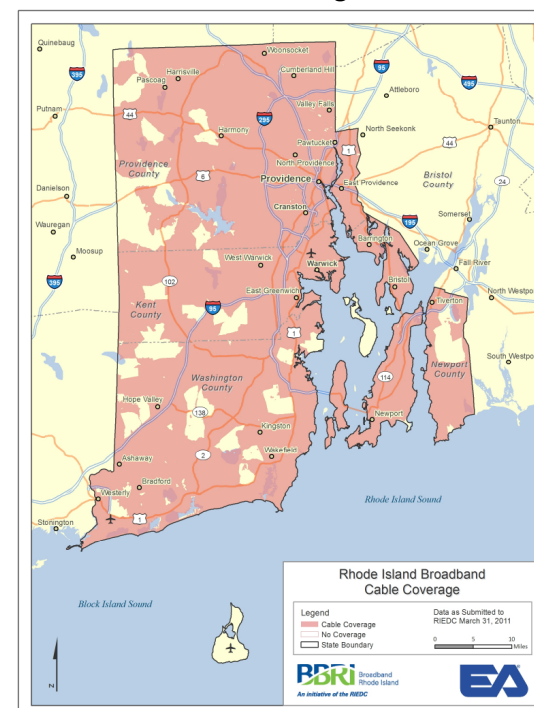
**Satellite Coverage**



**Copper Wireline Coverage**



**Cable Coverage**

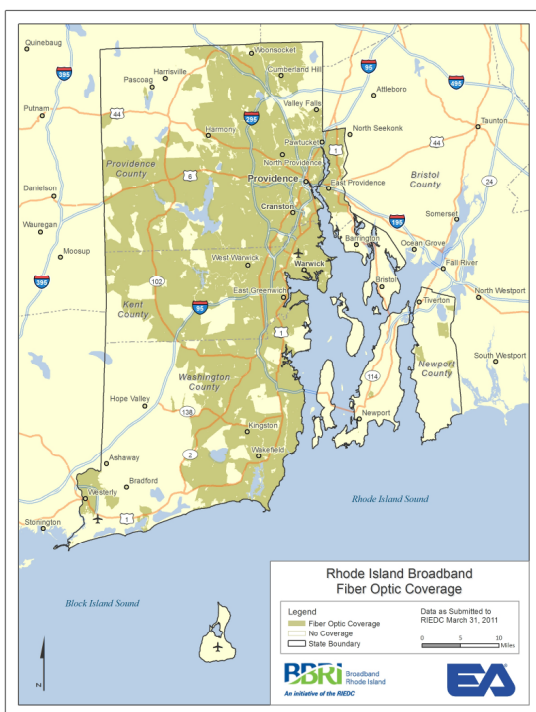




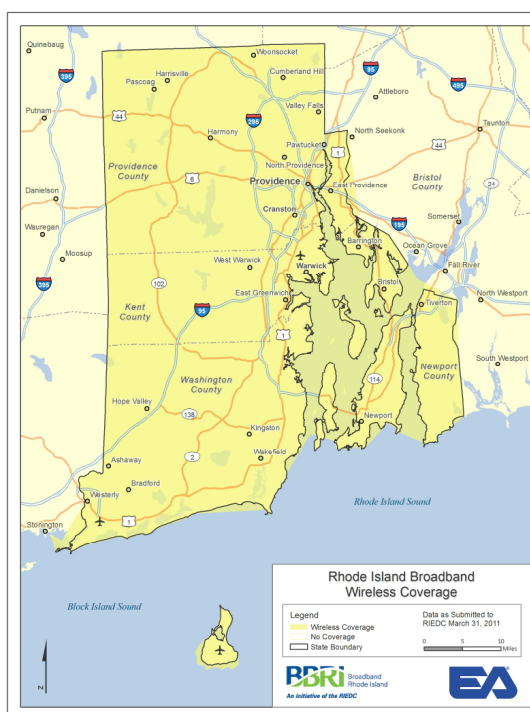
## RIEDC - Rhode Island Broadband Mapping Program

The Figures below display the availability of each technology types offered in Rhode Island.

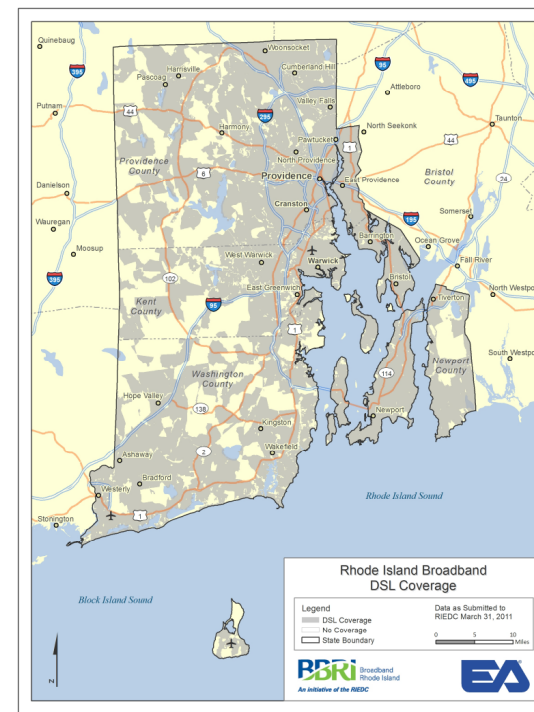
**Fiber Optic Coverage**



**Wireless Coverage**



**DSL Coverage**







**RIEDC - Rhode Island Broadband Mapping Program**

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**Provider Name:** AT&T Mobility LLC

**DBA:** AT&T Mobility LLC

**Data Characteristics**

<b>FRN:</b>	0004979233
<b>Type of Data Submitted:</b>	Wireless
<b>Census Block Count (unique):</b>	21,008
<b>Provided Technology of Transmission:</b>	YES
<b>Provided Spectrum Used:</b>	YES
<b>Provided Max Advertised Download Speed:</b>	YES
<b>Provided Max Advertised Upload Speed:</b>	YES
<b>Provided Typical Download Speed:</b>	NO
<b>Provided Typical Upload Speed:</b>	NO
<b>Provided Middle Mile:</b>	NO
<b>Provided Last Mile:</b>	NO

**Maximum advertised down/upload speeds reported by provider:**

Max Download Category	Max Upload Category
4	3

**Typical down/upload speeds reported by provider:** Not provided

**Number of technology of transmission types and spectrums reported by provider:** 1, with 2 spectrums

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 21,008 census blocks are served.**

County	Census Blocks per County
Bristol	949
Kent	3,836
Newport	1,902
Providence	11,246
Washington	3,075

**Greatest down/upload speed from Historical<sup>1</sup> speed tests:** 9, 8

**Greatest down/upload speed from RIEDC<sup>2</sup> speed tests:** 7, 5

**Greatest down/upload speed from FCC<sup>3</sup> speed tests:** No speed tests were taken

**Greatest down/upload speed from FCC<sup>4</sup> Mobile Application speed tests:** 7, 3

**Count of Historical speed tests:** 1,010

**Count of RIEDC speed tests:** 5

**Count of FCC speed tests:** 0

**Count of FCC Mobile Application speed tests:** 26



## RIEDC - Rhode Island Broadband Mapping Program

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Speed tests outside of reported service area: 0

%/# of census blocks verified by RIEDC and FCC speed tests:

Confirmation of census blocks served	15
Census blocks served, not reported by provider	0
Total number of served census blocks reported by provider	21,008
% of served census blocks confirmed by speed test	<1%

Middle mile facilities outside of reported service area: No middle mile facilities.

**Footnotes:**

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/10
- 4 FCC Mobile Application Date Range: 3/11/2010 to 12/29/10



**RIEDC - Rhode Island Broadband Mapping Program**

**Provider Name:** Broadview Networks, Inc.

**DBA:** Broadview Networks, Inc.

**Data Characteristics**

**FRN:** 0003775285  
**Type of Data Submitted:** Census Blocks  
**Census Block Count (unique):** 9,015  
**Provided Technology of Transmission:** YES  
**Provided Max Advertised Download Speed:** NO  
**Provided Max Advertised Upload Speed:** NO  
**Provided Typical Download Speed:** YES  
**Provided Typical Upload Speed:** YES  
**Provided Middle Mile:** YES  
**Provided Last Mile:** NO  
**Provided Road Segments for census blocks greater than 2 sq miles:** NO  
**Provided Address Points for census block greater than 2 sq miles:** NO

**Maximum advertised down/upload speeds reported by provider:**

Technology	Max Download Category	Count	Max Upload Category	Count
10	N/A	8,974	N/A	8,974
20	N/A	3	N/A	3
30	N/A	106	N/A	106

**Typical down/upload speeds reported by provider:**

Technology	Max Download Category	Count	Max Upload Category	Count
10	4	3	4	3
20	4	1	4	1
30	5	10	5	10

**Number of technology transmission types reported by provider:** 3

**Count of Middle Mile Facilities:** 8

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 9,015 census blocks are served.**

County	Census Block per County
Bristol	4
Kent	1,190
Newport	717
Providence	7,098
Washington	6



## RIEDC - Rhode Island Broadband Mapping Program

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Greatest down/upload speed from Historical <sup>1</sup> speed tests: 4, 4

Greatest down/upload speed from RIEDC <sup>2</sup> speed tests: 4, 4

Greatest down/upload speed from FCC <sup>3</sup> speed tests: 4, 4

Greatest down/upload speed from FCC Mobile Application speed tests: No speed tests were taken

Count of Historical speed tests: 64

Count of RIEDC <sup>2</sup> speed tests: 5

Count of FCC <sup>3</sup> speed tests: 2

Count of FCC Mobile Application <sup>4</sup> speed tests: 0

RIEDC and FCC speed tests outside of reported service area: 0

Middle mile facilities outside of reported service area: All are centrally located within the reported census blocks.

**%/# of census blocks verified by RIEDC & FCC speed tests:**

Confirmation of census block served	7
Census blocks served, not reported by provider	0
Total number of served census blocks reported by provider	9,015
% of served census blocks confirmed by speed test	<1%

**Footnotes:**

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/10
- 4 FCC Mobile Application Date Range: 3/11/2010 to 12/29/10





**RIEDC - Rhode Island Broadband Mapping Program**

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**Provider Name:** [Cellco Partnership](#)

**DBA:** [Verizon Wireless](#)

**Data Characteristics**

**FRN:** [0003290673](#)  
**Type of Data Submitted:** [Wireless](#)  
**Census Block Count:** [20,929](#)  
**Provided Technology of Transmission:** [YES](#)  
**Provided Spectrum Used:** [YES](#)  
**Provided Max Advertised Download Speed:** [YES](#)  
**Provided Max Advertised Upload Speed:** [YES](#)  
**Provided Typical Download Speed:** [YES](#)  
**Provided Typical Upload Speed:** [YES](#)  
**Provided Middle Mile:** [NO](#)  
**Provided Last Mile:** [NO](#)

**Maximum advertised down/upload speeds reported by provider:**

Max Download Category	Max Upload Category
<a href="#">5</a>	<a href="#">4</a>

**Typical down/upload speeds reported by provider:** [3, 3](#)

**Number of technology of transmission types and spectrums reported by provider:** [1, with 3 spectrums](#)

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 20,929 census blocks are served.**

County	Census Blocks per County
Bristol	<a href="#">948</a>
Kent	<a href="#">3,800</a>
Newport	<a href="#">1,875</a>
Providence	<a href="#">11,241</a>
Washington	<a href="#">3,065</a>

**Greatest down/upload speed from Historical <sup>1</sup> speed tests:** [No speed tests were taken](#)

**Greatest down/upload speed from RIEDC <sup>2</sup> speed tests:** [3, 2](#)

**Greatest down/upload speed from FCC <sup>3</sup> speed tests:** [4,2 and 3, 3](#)

**Greatest down/upload speed from FCC Mobile Application <sup>4</sup> speed tests:** [7,4 and 6,5](#)

**Count of Historical speed tests:** [0](#)

**Count of RIEDC <sup>2</sup> speed tests:** [6](#)

**Count of FCC <sup>3</sup> speed tests:** [8](#)

**Count of FCC Mobile Applications <sup>4</sup> speed tests:** [203](#)



## RIEDC - Rhode Island Broadband Mapping Program

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RIEDC and FCC speed tests outside of reported service area: 0

**%/# of census blocks verified by RIEDC and FCC speed tests:**

Confirmation of census blocks served	25
Census blocks served, not reported by provider	0
Total number of served census blocks reported by provider	20,929
% of served census blocks confirmed by speed test	<1%

**Footnotes:**

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/10
- 4 FCC Mobile Application Date Range: 3/11/2010 to 12/29/10



**RIEDC - Rhode Island Broadband Mapping Program**

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**Provider Name:** Cogent Communication, Inc.

**DBA:** Cogent Communication

**Data Characteristics**

**FRN:** 0004654042  
**Type of Data Submitted:** Census Blocks  
**Census Block Count (unique):** 2  
**Provided Technology of Transmission:** YES  
**Provided Max Advertised Download Speed:** YES  
**Provided Max Advertised Upload Speed:** YES  
**Provided Typical Download Speed:** NO  
**Provided Typical Upload Speed:** NO  
**Provided Middle Mile:** YES  
**Provided Last Mile:** NO  
**Provided Road Segments for census blocks greater than 2 sq miles:** NO  
**Provided Address Points for census block greater than 2 sq miles:** NO

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

Max Download Category	Count	Max Upload Category	Count
11	2	11	2

**Typical down/upload speeds reported by provider:** Not Provided

**Number of technology of transmission types reported by provider:** 1

**Count of Middle Mile Facilities:** 2

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 2 census blocks are served.**

County	Census Blocks per County
Bristol	0
Kent	0
Newport	0
Providence	2
Washington	0

**Greatest down/upload speed from Historical<sup>1</sup> speed tests:** No speed tests were taken

**Greatest down/upload speed from RIEDC<sup>2</sup> speed tests:** No speed tests were taken

**Greatest down/upload speed from FCC<sup>3</sup> speed tests:** No speed tests were taken

**Greatest down/upload speed from FCC Mobile Applications<sup>4</sup> speed tests:** No speed tests were taken



## RIEDC - Rhode Island Broadband Mapping Program

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Count of Historical speed tests: 0

Count of RIEDC <sup>2</sup> Speed tests: 0

Count of FCC <sup>3</sup> speed tests: 0

Count of FCC Mobile Applications <sup>4</sup> speed tests: 0

RIEDC and FCC speed tests outside of reported service area: No speed tests were taken

Middle mile facilities outside of reported service area: All are located within the reported census blocks.

**%/# of census blocks verified by RIEDC and FCC speed tests:**

Confirmation of census block served	0
Census blocks served, not reported by provider	0
Total number of served census blocks reported by provider	2
% of served census blocks confirmed by speed test	0%

**Footnotes:**

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/10
- 4 FCC Mobile Application Date Range: 3/11/2010 to 12/29/10



**RIEDC - Rhode Island Broadband Mapping Program**

**Provider Name:** CoxCom, Inc.  
**DBA:** Cox Communications, Inc.

**Data Characteristics**

**FRN:** 0001524461  
**Type of Data Submitted:** Census Blocks, Address Points  
**Census Block Count (unique):** 20,229  
**Service Address Point Count (unique):** 3,887  
**Provided Technology of Transmission:** YES  
**Provided Max Advertised Download Speed:** YES  
**Provided Max Advertised Upload Speed:** YES  
**Provided Typical Download Speed:** NO  
**Provided Typical Upload Speed:** NO  
**Provided Middle Mile:** YES  
**Provided Last Mile:** NO  
**Provided Road Segments for census blocks greater than 2 sq miles:** NO  
**Provided Address Points for census block greater than 2 sq miles:** YES

**Maximum advertised down/upload speeds reported by provider:**

Data Type	Max Download Category	Max Upload Category	Count
Census Blocks	9	5	20,229
Service Address Points	9	5	3,887

**Typical down/upload speeds reported by provider:** Not provided

**Number of technology of transmission types reported by provider:** 1

**Count of Middle Mile Facilities:** 1

**Data Verification:**

**Counties served by provider and number of census blocks with service (including 31 census blocks with service addresses). A total of 20,229 census blocks are served.**

County	Census Blocks per County
Bristol	910
Kent	3,745
Newport	1,739
Providence	10,958
Washington	2,877

**Greatest down/upload speed from Historical<sup>1</sup> speed tests:** 9, 9 and 10, 6

**Greatest down/upload speed from RIEDC<sup>2</sup> speed tests:** 11,5 and 9,9

**Greatest down/upload speed from FCC<sup>3</sup> speed tests:** 9, 5 and 5, 8

**Greatest down/upload speed from FCC Mobile Applications<sup>4</sup> speed tests:** 7, 6



## RIEDC - Rhode Island Broadband Mapping Program

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Count of Historical speed tests: 98,305

Count of RIEDC <sup>2</sup> speed tests: 1,541

Count of FCC <sup>3</sup> speed tests: 784

Count of FCC Mobile Applications <sup>4</sup> speed tests: 855

RIEDC and FCC speed tests outside of reported service area: 14 of 3,180 speed tests were recorded outside of the coverage area reported by provider.

Middle mile facilities outside of reported service area: All are located within the reported census blocks.

**%/# of census blocks verified by RIEDC and FCC speed tests:**

Confirmation of census block served	1,364
Census blocks served, not reported by provider	12
Total number of served census blocks reported by provider	20,229
% of served census blocks confirmed by speed test	7%

**Footnotes:**

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/2010
- 4 FCC Mobile Application Date Range: 3/11/2010 to 12/29/2010



**RIEDC - Rhode Island Broadband Mapping Program**

**Provider Name:** [DIECA Communications, Inc.](#)

**DBA:** [Covad Communications Company](#)

**Data Characteristics**

**FRN:** [0003753753](#)  
**Type of Data Submitted:** [Census Blocks](#)  
**Census Block Count: (unique)** [11,277](#)  
**Provided Technology of Transmission:** [YES](#)  
**Provided Max Advertised Download Speed:** [YES](#)  
**Provided Max Advertised Upload Speed:** [YES](#)  
**Provided Typical Download Speed:** [YES](#)  
**Provided Typical Upload Speed:** [YES](#)  
**Provided Middle Mile:** [NO](#)  
**Provided Last Mile:** [NO](#)  
**Provided Road Segments for census blocks greater than 2 sq miles:** [NO](#)  
**Provided Address Points for census block greater than 2 sq miles:** [NO](#)

**Maximum advertised down/upload speeds reported by provider:**

Technology	Max Download Category	Max Upload Category	Count
10	6	3	3,267
20	5	4	1,578
30	5	5	6,007

**Typical down/upload speeds reported by provider:**

Technology	Max Download Category	Max Upload Category	Count
10	6	3	5
20	4	4	1,568
30	5	5	6,003

**Number of technology of transmission types reported by provider:** [3](#)

**Count of Middle Mile Facilities:** [1](#)

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 11,277 census blocks are served.**

County	Census Blocks per County
Bristol	745
Kent	2,767
Newport	1
Providence	7,764
Washington	0



## RIEDC - Rhode Island Broadband Mapping Program

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Greatest down/upload speed from Historical <sup>1</sup> speed tests: 9, 3

Greatest down/upload speed from RIEDC <sup>2</sup> speed tests: No speed tests were taken

Greatest down/upload speed from FCC <sup>3</sup> speed tests: No speed tests were taken

Greatest down/upload speed from FCC Mobile Applications <sup>4</sup> speed tests: No speed tests were taken

Count of Historical speed tests: 57

Count of RIEDC <sup>2</sup> speed tests: 0

Count of FCC <sup>3</sup> speed tests: 0

Count of FCC Mobile Applications <sup>4</sup> speed tests: 0

RIEDC and FCC speed tests outside of reported service area: No speed tests were taken

### %/# of census blocks verified by RIEDC and FCC speed tests:

Confirmation of census block served	0
Census blocks served, not reported by provider	0
Total number of served census blocks reported by provider	11,277
% of served census blocks confirmed by speed test	0%

#### Footnotes:

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/2010
- 4 FCC Mobile Application Date Range: 3/11/2010 to 12/29/2010





**RIEDC - Rhode Island Broadband Mapping Program**

**Provider Name:** [Fiber Technologies Networks, LLC.](#)

**DBA:** [FiberTech](#)

**Data Characteristics**

**FRN:** [0006797849](#)  
**Type of Data Submitted:** [Census Blocks](#)  
**Census Block Count (unique):** [3](#)  
**Provided Technology of Transmission:** [YES](#)  
**Provided Max Advertised Download Speed:** [YES](#)  
**Provided Max Advertised Upload Speed:** [YES](#)  
**Provided Typical Download Speed:** [NO](#)  
**Provided Typical Upload Speed:** [NO](#)  
**Provided Middle Mile:** [NO](#)  
**Provided Last Mile:** [NO](#)  
**Provided Road Segments for census blocks greater than 2 sq miles:** [NO](#)  
**Provided Address Points for census block greater than 2 sq miles:** [NO](#)

**Maximum advertised down/upload speeds reported by provider:**

Max Download Category	Max Upload Category	Count
<a href="#">7</a>	<a href="#">7</a>	<a href="#">2</a>

**Typical down/upload speeds reported by provider:** [Not provided](#)

**Number of technology of transmission types reported by provider:** [1](#)

**Count of Middle Mile Facilities:** [0](#)

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 3 census blocks are served.**

County	Census Block s per County
Bristol	<a href="#">0</a>
Kent	<a href="#">1</a>
Newport	<a href="#">0</a>
Providence	<a href="#">2</a>
Washington	<a href="#">0</a>

**Greatest down/upload speed from Historical <sup>1</sup> speed tests:** [7, 5](#)

**Greatest down/upload speed from RIEDC <sup>2</sup> speed tests:** [7,4](#)

**Greatest down/upload speed from FCC <sup>3</sup> speed tests:** [No speed tests were taken](#)

**Greatest down/upload speed from FCC Mobile Applications <sup>4</sup> speed tests:** [No speed tests were taken](#)



## RIEDC - Rhode Island Broadband Mapping Program

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Count of Historical speed tests: 3

Count of RIEDC <sup>2</sup> speed tests: 1

Count of FCC <sup>3</sup> speed tests: 0

Count of FCC Mobile Applications <sup>4</sup> speed tests: 0

RIEDC and FCC speed tests outside of reported service area: 0

**%/# of census blocks verified by RIEDC and FCC speed tests:**

Confirmation of census block served	1
Census blocks served, not reported by provider	0
Total number of served census blocks reported by provider	3
% of served census blocks confirmed by speed test	30%

**Footnotes:**

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/2010
- 4 FCC Mobile Application Date Range: 3/11/2010 to 12/29/2010



**RIEDC - Rhode Island Broadband Mapping Program**

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**Provider Name:** Full Channel TV, Inc.

**DBA:** Full Channel

**Data Characteristics**

<b>FRN:</b>	0004973731
<b>Type of Data Submitted:</b>	Census Blocks
<b>Census Block Count (unique):</b>	943
<b>Provided Technology of Transmission:</b>	YES
<b>Provided Max Advertised Download Speed:</b>	YES
<b>Provided Max Advertised Upload Speed:</b>	YES
<b>Provided Typical Download Speed:</b>	YES
<b>Provided Typical Upload Speed:</b>	YES
<b>Provided Middle Mile:</b>	YES
<b>Provided Last Mile:</b>	NO
<b>Provided Road Segments for census blocks greater than 2 sq miles:</b>	NO
<b>Provided Address Points for census block greater than 2 sq miles:</b>	NO

**Maximum advertised down/upload speeds reported by provider:**

Max Download Category	Max Upload Category	Count
6	4	943

**Typical down/upload speeds reported by provider:** 6, 4

**Number of technology of transmission types reported by provider:** 1

**Count of Middle Mile Facilities:** 1

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 943 census blocks are served.**

County	Census Blocks per County
Bristol	943
Kent	0
Newport	0
Providence	0
Washington	0

**Greatest down/upload speed from Historical <sup>1</sup> speed tests:** 10, 3 and 9, 9

**Greatest down/upload speed from RIEDC 2010 <sup>2</sup> speed tests:** 6, 4

**Greatest down/upload speed from FCC 2010 <sup>3</sup> speed tests:** 6, 4

**Greatest down/upload speed from FCC 2010 <sup>4</sup> Mobile Applications speed tests:** 5, 4



## RIEDC - Rhode Island Broadband Mapping Program

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Count of Historical speed tests: 1,819

Count of RIEDC<sup>2</sup> speed tests: 7

Count of FCC<sup>3</sup> speed tests: 9

Count of FCC Mobile Applications<sup>4</sup> speed tests: 9

RIEDC and FCC speed tests outside of reported service area: 0

**%/# of census blocks verified by RIEDC and FCC speed tests:**

Confirmation of census block served	15
Census blocks served, not reported by provider	0
Total number of served census blocks reported by provider	943
% of served census blocks confirmed by speed test	<1%

**Footnotes:**

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/2010
- 4 FCC Mobile Application Date Range: 3/11/2010 to 12/29/2010



**RIEDC - Rhode Island Broadband Mapping Program**

**Provider Name:** Hughes Network Systems, LLC  
**DBA:** Hughes

**Data Characteristics**

**FRN:** 0009559881  
**Type of Data Submitted:** Satellite  
**Census Block Count (unique):** 20,983  
**Provided Technology of Transmission:** YES  
**Provided Max Advertised Download Speed:** YES  
**Provided Max Advertised Upload Speed:** YES  
**Provided Typical Download Speed:** YES  
**Provided Typical Upload Speed:** YES

**Maximum advertised down/upload speeds reported by provider:**

Max Download Category	Max Upload Category
5	2

**Typical down/upload speeds reported by provider:** 5, 1

**Number of technology of transmission types reported by provider:** 1

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 0,983 census blocks are served.**

County	Census Blocks per County
Bristol	945
Kent	3,834
Newport	1,890
Providence	11,243
Washington	3,071

**Greatest down/upload speed from Historical <sup>1</sup> speed tests:** No speed tests were taken  
**Greatest down/upload speed from RIEDC <sup>2</sup> speed tests:** No speed tests were taken  
**Greatest down/upload speed from FCC <sup>3</sup> speed tests:** No speed tests were taken  
**Greatest down/upload speed from FCC Mobile Application <sup>4</sup> speed tests:** 3, 2

**Count of Historical speed tests:** 0  
**Count of RIEDC <sup>2</sup> speed tests:** 0  
**Count of FCC <sup>3</sup> speed tests:** 0  
**Count of FCC Mobile Applications <sup>4</sup> speed tests:** 2

**RIEDC and FCC speed tests outside of reported service area:** 0



**RIEDC - Rhode Island Broadband Mapping Program**

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**%/# of census blocks verified by RIEDC and FCC speed tests:**

Confirmation of census block served	2
Census blocks served, not reported by provider	0
Total number of served census blocks reported by provider	23,198
% of served census blocks confirmed by speed test	<1%

**Footnotes:**

- 5 Historical Date Range: 3/23/2009 to 3/22/2010
- 6 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 7 FCC Date Range: 3/11/2010 to 12/29/2010
- 8 FCC Mobile Application Date Range: 3/11/2010 to 12/29/2010



**RIEDC - Rhode Island Broadband Mapping Program**

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**Provider Name:** Level 3 Communications, LLC

**DBA:** Broadwing

**Data Characteristics**

**FRN:** 0003723822  
**Type of Data Submitted:** Census Blocks  
**Census Block Count (unique):** 2  
**Provided Technology of Transmission:** YES  
**Provided Max Advertised Download Speed:** YES  
**Provided Max Advertised Upload Speed:** YES  
**Provided Typical Download Speed:** YES  
**Provided Typical Upload Speed:** YES  
**Provided Typical Download Speed:** YES  
**Provided Middle Mile:** YES  
**Provided Last Mile:** NO  
**Provided Road Segments for census blocks greater than 2 sq miles:** NO  
**Provided Address Points for census block greater than 2 sq miles:** NO

**Maximum advertised down/upload speeds reported by provider:**

Max Download Category	Count	Max Upload Category	Count
11	3	11	3

**Typical down/upload speeds reported by provider:** 11, 11

**Number of technology of transmission types reported by provider:** 1

**Count of Middle Mile Facilities:** 8

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 2 census blocks are served.**

County	Census Block s per County
Bristol	0
Kent	0
Newport	0
Providence	2
Washington	0

**Greatest down/upload speed from Historical<sup>1</sup> speed tests:** 4, 4

**Greatest down/upload speed from RIEDC<sup>2</sup> speed tests:** 4, 4

**Greatest down/upload speed from FCC<sup>3</sup> speed tests:** 7,5

**Greatest down/upload speed from FCC Mobile Applications<sup>4</sup> speed tests:** No speed tests were taken



## RIEDC - Rhode Island Broadband Mapping Program

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Count of Historical speed tests: 30

Count of RIEDC <sup>2</sup> speed tests: 4

Count of FCC <sup>3</sup> speed tests: 1

Count of FCC Mobile Applications <sup>4</sup> speed tests: 0

**RIEDC and FCC speed tests outside of reported service area:**

5 of 5 speed tests were recorded outside the coverage area reported by provider

**Middle mile facilities outside of reported service area:** None of the 8 facilities reported are located within the reported service areas. The closest is within 995 ft, the furthest is 30 miles.

**%/# of census blocks verified by RIEDC and FCC speed tests:**

Confirmation of census blocks served	0
Census blocks served, not reported by provider	4
Total number of served census blocks reported by provider	3
% of served census blocks confirmed by speed test	0%

**Footnotes:**

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/2010
- 4 FCC Mobile App Date Range: 3/11/2010 to 12/29/2010





**RIEDC - Rhode Island Broadband Mapping Program**

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**Provider Name:** [Light Tower Fiber, LLC](#)  
**DBA:** [Light Tower Fiber Networks](#)

**Data Characteristics**

**FRN:** [00017625567](#)  
**Type of Data Submitted:** [Census Blocks](#)  
**Census Block Count (unique):** [74](#)  
**Provided Technology of Transmission:** [YES](#)  
**Provided Max Advertised Download Speed:** [YES](#)  
**Provided Max Advertised Upload Speed:** [YES](#)  
**Provided Typical Download Speed:** [YES](#)  
**Provided Typical Upload Speed:** [YES](#)  
**Provided Middle Mile:** [NO](#)  
**Provided Last Mile:** [NO](#)  
**Provided Road Segments for census blocks greater than 2 sq miles:** [NO](#)  
**Provided Address Points for census block greater than 2 sq miles:** [NO](#)

**Maximum advertised down/upload speeds reported by provider:**

Max Download Category	Max Upload Category	Count
<a href="#">11</a>	<a href="#">11</a>	<a href="#">74</a>

**Typical down/upload speeds reported by provider:** [11, 11](#)

**Number of technology of transmission types reported by provider:** [1](#)

**Count of Middle Mile Facilities:** [0](#)

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 74 census blocks are served.**

County	Census Blocks per County
Bristol	<a href="#">0</a>
Kent	<a href="#">3</a>
Newport	<a href="#">0</a>
Providence	<a href="#">71</a>
Washington	<a href="#">0</a>

**Greatest down/upload speed from Historical <sup>1</sup> speed tests:** [No speed tests were taken](#)

**Greatest down/upload speed from RIEDC <sup>2</sup> speed tests:** [No speed tests were taken](#)

**Greatest down/upload speed from FCC <sup>3</sup> speed tests:** [No speed tests were taken](#)

**Greatest down/upload speed from FCC Mobile Applications <sup>4</sup> speed tests:** [No speed tests were taken](#)



## RIEDC - Rhode Island Broadband Mapping Program

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Count of Historical speed tests: 0

Count of RIEDC <sup>2</sup> speed tests: 0

Count of FCC <sup>3</sup> speed tests: 0

Count of FCC Mobile Application <sup>4</sup> speed tests: 0

RIEDC and FCC speed tests outside of reported service area: No speed tests were taken

**%/# of census blocks verified by RIEDC and FCC speed tests:**

Confirmation of census block served	0
Census blocks served, not reported by provider	0
Total number of served census blocks reported by provider	74
% of served census blocks confirmed by speed test	0%

**Footnotes:**

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/2010
- 4 FCC Mobile App Date Range: 3/11/2010 to 12/29/2010



**RIEDC - Rhode Island Broadband Mapping Program**

**Provider Name:** [MegaPath, Inc.](#)

**DBA:** [MegaPath](#)

Note: Information in this report includes numbers reported by MegaPath (FRN# 0018105601), DSL.net (FRN# 0015321136), and DSLnet Communications (FRN# 0004324851) as they are all owned by MegaPath, Inc.

**Data Characteristics**

**FRN:** [0018105601](#)  
**Type of Data Submitted:** [Census Blocks](#)  
**Census Block Count:** [20](#)  
**Provided Technology of Transmission:** [YES](#)  
**Provided Max Advertised Download Speed:** [YES](#)  
**Provided Max Advertised Upload Speed:** [YES](#)  
**Provided Typical Download Speed:** [NO](#)  
**Provided Typical Upload Speed:** [NO](#)  
**Provided Middle Mile:** [NO](#)  
**Provided Last Mile:** [NO](#)  
**Provided Road Segments for census blocks greater than 2 sq miles:** [NO](#)  
**Provided Address Points for census block greater than 2 sq miles:** [NO](#)

**Maximum advertised down/upload speeds reported by provider:**

Technology	Max Download Category	Max Upload Category	Count
10	4	3	1
20	4	4	4
30	4	4	2
40	5	2	3

**Typical down/upload speeds reported by provider:** [Typical speeds were not reported by MegaPath](#)

**Number of technology of transmission types reported by provider:** [4](#)

**Count of Middle Mile Facilities:** [0](#)

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 20 census blocks are served:**

County	Census Block per County
Bristol	0
Kent	1
Newport	3
Providence	16
Washington	0



## RIEDC - Rhode Island Broadband Mapping Program

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Greatest down/upload speed from Historical <sup>1</sup> speed test: No speed tests were taken

Greatest down/upload speed from RIEDC <sup>2</sup> speed test: No speed tests were taken

Greatest down/upload speed from FCC <sup>3</sup> speed test: No speed tests were taken

Greatest down/upload speed from FCC Mobile Applications <sup>4</sup> speed test: 4,4

Count of Historical speed tests: 0

Count of RIEDC <sup>2</sup> speed tests: 0

Count of FCC <sup>3</sup> speed tests: 0

Count of FCC Mobile Applications <sup>4</sup> speed test: 8

RIEDC and FCC speed tests outside of reported service area: 8 of 8 speed tests were reported outside the coverage area reported by provider.

### %/# of census blocks verified by RIEDC and FCC speed tests:

Confirmation of census block served	0
Census blocks served, not reported by provider	6
Total number of served census blocks reported by provider	20
% of served census blocks confirmed by speed test	0%

### Footnotes:

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/2010
- 4 FCC Mobile Application Date Range: 3/11/2010 to 12/29/2010



**RIEDC - Rhode Island Broadband Mapping Program**

**Provider Name:** One Communications Corp.

**DBA:** One Communications

**Data Characteristics**

**FRN:** 0015337702  
**Type of Data Submitted:** Census Blocks, Address Points  
**Census Block Count (unique):** 515  
**Service Address Points (unique):** 941  
**Provided Technology of Transmission:** YES  
**Provided Max Advertised Download Speed:** YES  
**Provided Max Advertised Upload Speed:** YES  
**Provided Typical Download Speed:** NO  
**Provided Typical Upload Speed:** NO  
**Provided Middle Mile:** YES  
**Provided Last Mile:** NO  
**Provided Road Segments for census blocks greater than 2 sq miles:** NO  
**Provided Address Points for census blocks greater than 2 sq miles:** YES

**Maximum advertised down/upload speeds reported by provider:**

Technology	Max Download Category	Max Upload Category	Count
0	5	4	1
0	4	6	2
10	8	8	1
20	8	3	2
20	3	8	1

**Typical down/upload speeds reported by provider:** Not provided for any of the transmission types

**Number of technology of transmission types reported by provider:** 3

**Total count of Middle Mile facilities:** 17

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 515 census blocks are served.**

County	Census Block per County
Bristol	16
Kent	41
Newport	30
Providence	397
Washington	31



## RIEDC - Rhode Island Broadband Mapping Program

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Greatest down/upload speed from Historical <sup>1</sup> speed tests: 5, 5

Greatest down/upload speed from RIEDC <sup>2</sup> speed tests: 8, 8

Greatest down/upload speed from FCC <sup>3</sup> speed tests: 3, 2

Greatest down/upload speed from FCC Mobile Applications <sup>4</sup> speed tests: 3, 2

Count of Historical speed tests: 889

Count of RIEDC <sup>2</sup> speed tests: 38

Count of FCC <sup>3</sup> speed tests: 3

Count of FCC Mobile Application <sup>4</sup> speed tests: 3

Speed tests outside of reported service area: 4 of 44 speed tests were reported outside the coverage area reported by the provider.

Middle mile facilities outside of reported service area: All facilities are in the general area of served areas.

**%/# of census blocks verified by RIEDC and FCC speed tests:**

Confirmation of census block served	24
Census blocks served, not reported by provider	4
Total number of served census blocks reported by provider	515
% of served census blocks confirmed by speed test	<1%

**Footnotes:**

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/2010
- 4 FCC Mobile Application Date Range: 3/11/2010 to 12/29/2010



**RIEDC - Rhode Island Broadband Mapping Program**

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**Provider Name:** Sprint Nextel Corporation

**DBA:** Sprint

**Data Characteristics**

**FRN:** 0003774593  
**Type of Data Submitted:** Wireless  
**Census Block Count (unique):** 20,115  
**Provided Technology of Transmission:** YES  
**Provided Spectrum Used:** YES  
**Provided Max Advertised Download Speed:** YES  
**Provided Max Advertised Upload Speed:** YES  
**Provided Typical Download Speed:** YES  
**Provided Typical Upload Speed:** YES  
**Provided Middle Mile:** NO  
**Provided Last Mile:** NO

**Maximum advertised down/upload speeds reported by provider:**

Max Download Category	Max Upload Category
3	2

**Typical down/upload speeds reported by provider:** 5, 3

**Number of technology of transmission types reported by provider:** 1, with 2 spectrums

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 20,115 census blocks are served.**

County	Census Blocks per County
Bristol	949
Kent	3,695
Newport	1,792
Providence	10,915
Washington	2,764

**Greatest down/upload speed from Historical <sup>1</sup> speed tests:** 6, 3

**Greatest down/upload speed from RIEDC <sup>2</sup> speed tests:** 5, 3

**Greatest down/upload speed from FCC <sup>3</sup> speed tests:** 7, 6

**Greatest down/upload speed from FCC Mobile Applications <sup>4</sup> speed tests:** 5, 3

**Count of Historical speed tests:** 10

**Count of RIEDC <sup>2</sup> speed tests:** 19

**Count of FCC <sup>3</sup> speed tests:** 5

**Count of FCC Mobile Applications <sup>4</sup> speed tests:** 146



## RIEDC - Rhode Island Broadband Mapping Program

---

RIEDC and FCC speed tests outside of reported service area: 0

**%/# of census blocks verified by RIEDC and FCC speed tests:**

Confirmation of census blocks served	44
Census blocks served, not reported by provider	0
Total number of served census blocks reported by provider	20,115
% of served census blocks confirmed by speed test	<1%

**Footnotes:**

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/2010
- 4 FCC Mobile Application Date Range: 3/11/2010 to 12/29/2010





**RIEDC - Rhode Island Broadband Mapping Program**

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**Provider Name:** T-Mobile USA, Inc.

**DBA:** T-Mobile

**Data Characteristics**

**FRN:** 0006945950  
**Type of Data Submitted:** Wireless  
**Census Block Count (unique):** 19,679  
**Provided Technology of Transmission:** YES  
**Provided Spectrum Used:** YES  
**Provided Max Advertised Download Speed:** YES  
**Provided Max Advertised Upload Speed:** YES  
**Provided Typical Download Speed:** NO  
**Provided Typical Upload Speed:** NO  
**Provided Middle Mile:** YES  
**Provided Last Mile:** NO

**Maximum advertised down/upload speeds reported by provider:**

Technology	Max Download Category	Max Upload Category
80	6	4

**Typical down/upload speeds reported by provider:** Not provided

**Number of technology of transmission types reported by provider:** 1, with 1 spectrum

**Total count of Middle Mile facilities:** 2

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 19,679 census blocks are served.**

County	Census Blocks per County
Bristol	943
Kent	3,630
Newport	1,800
Providence	10749
Washington	2,557

**Greatest down/upload speed from Historical<sup>1</sup> speed tests:** No speed tests were taken

**Greatest down/upload speed from RIEDC<sup>2</sup> speed tests:** No speed tests were taken

**Greatest down/upload speed from FCC<sup>3</sup> speed tests:** No speed tests were taken

**Greatest down/upload speed from FCC Mobile Applications<sup>4</sup> speed tests:** 4, 3

**Count of Historical speed tests:** 0

**Count of RIEDC 2010<sup>2</sup> speed tests:** 0

**Count of FCC 2010<sup>3</sup> speed tests:** 0

**Count of FCC 2010 Mobile Applications<sup>4</sup> speed tests:** 25



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**RIEDC - Rhode Island Broadband Mapping Program**

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**RIEDC and FCC speed tests outside of reported service area:** 0.

**Middle mile facilities outside of reported service area:** The two facilities are within the reported service area, though are located within 280 ft of each other.

**%/# of census blocks verified by RIEDC and FCC speed tests:**

Confirmation of census blocks served	17
Census blocks served, not reported by provider	0
Total number of served census blocks reported by provider	19,679
% of served census blocks confirmed by speed test	<1%

**Footnotes:**

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/2010
- 4 FCC Mobile Application Date Range: 3/11/2010 to 12/29/2010



**RIEDC - Rhode Island Broadband Mapping Program**

**Provider Name:** Verizon New England Inc.

**DBA:** Verizon

**Data Characteristics**

**FRN:** 0003628971  
**Type of Data Submitted:** Census Blocks, Road Segments  
**Census Block Count (unique):** 17,846  
**Road Segment Count (unique):** 906  
**Provided Technology of Transmission:** YES  
**Provided Max Advertised Download Speed:** NO  
**Provided Max Advertised Upload Speed:** NO  
**Provided Typical Download Speed:** NO  
**Provided Typical Upload Speed:** NO  
**Provided Middle Mile:** NO  
**Provided Last Mile:** NO  
**Provided Road Segments for census blocks greater than 2 sq miles:** YES  
**Provided Address Points for census blocks greater than 2 sq miles:** NO

**Maximum advertised down/upload speeds reported by provider:**

Technology	Max Download Category	Max Upload Category	Count
10	NULL	NULL	14,809
50	NULL	NULL	13,609

**Typical down/upload speeds reported by provider:** Not provided

**Number of technology of transmission types reported by provider:** 2

**Count of middle mile facilities:** 0

**Data Verification:**

**Counties served by provider and number of census blocks with service (inc. 32 census blocks for road segment service data). A total of 17,846 census blocks are served.**

County	Census Blocks per County
Bristol	826
Kent	3,368
Newport	1,460
Providence	9,877
Washington	2,315

**Greatest down/upload speed from Historical<sup>1</sup> speed tests:** 10, 7 and 9, 8

**Greatest down/upload speed from RIEDC 2010<sup>2</sup> speed tests:** 9, 6 and 8, 8

**Greatest down/upload speed from FCC 2010<sup>3</sup> speed tests:** 9, 4

**Greatest down/upload speed from FCC 2010<sup>4</sup> Mobile Application speed tests:** 7, 7



## RIEDC - Rhode Island Broadband Mapping Program

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Count of Historical speed tests: 44,322

Count of RIEDC <sup>2</sup> speed tests: 730

Count of FCC <sup>3</sup> speed tests: 327

Count of FCC Mobile Application <sup>4</sup> speed tests: 578

RIEDC and FCC speed tests outside of reported service area: 0

### %/# of census blocks verified by RIEDC and FCC speed tests:

Confirmation of census block served	635
Census blocks served, not reported by provider	0
Total number of served census blocks reported by provider	17,846
% of served census blocks confirmed by speed test	4%

### Footnotes:

- 1 Historical Date Range: 3/23/2009 to 3/22/2010
- 2 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 3 FCC Date Range: 3/11/2010 to 12/29/2010
- 4 FCC Mobile Application Date Range: 3/11/2010 to 12/29/2010



**RIEDC - Rhode Island Broadband Mapping Program**

**Provider Name:** Wild Blue Communications, Inc.

**DBA:** Wild Blue Communications, Inc.

**Data Characteristics**

**FRN:** 0007843766  
**Type of Data Submitted:** Satellite  
**Census Block Count (unique):** 20,992  
**Provided Technology of Transmission:** YES  
**Provided Spectrum Used:** YES  
**Provided Max Advertised Download Speed:** YES  
**Provided Max Advertised Upload Speed:** YES  
**Provided Typical Download Speed:** NO  
**Provided Typical Upload Speed:** NO

**Maximum advertised down/upload speeds reported by provider:**

Max Download Category	Max Upload Category
4	2

**Typical down/upload speeds reported by provider:** Not provided

**Number of technology of transmission types reported by provider:** 1, and 1 spectrum

**Data Verification:**

**Counties served by provider and number of census blocks with service. A total of 20,992 census blocks are served.**

County	Census Blocks per County
Bristol	948
Kent	3,834
Newport	1,898
Providence	11,237
Washington	3,075

**Greatest down/upload speed from Historical <sup>1</sup> speed tests:** 4, 1

**Greatest down/upload speed from RIEDC <sup>2</sup> speed tests:** No speed tests were taken

**Greatest down/upload speed from FCC <sup>3</sup> speed tests:** No speed tests were taken

**Greatest down/upload speed from FCC Mobile Application <sup>4</sup> speed tests:** No speed tests were taken

**Count of Historical speed tests:** 0

**Count of RIEDC <sup>2</sup> speed tests:** 0

**Count of FCC <sup>3</sup> speed tests:** 0

**Count of FCC Mobile Application <sup>4</sup> speed tests:** 0

**RIEDC and FCC speed tests outside of reported service area:** 0



**RIEDC - Rhode Island Broadband Mapping Program**

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**%/# of census blocks verified by RIEDC and FCC speed tests:**

Confirmation of census block served	0
Census blocks served, not reported by provider	0
Total number of served census blocks reported by provider	20,992
% of served census blocks confirmed by speed test	0%

**Footnotes:**

- 5 Historical Date Range: 3/23/2009 to 3/22/2010
- 6 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 7 FCC Date Range: 3/11/2010 to 12/29/2010
- 8 FCC Mobile Application Date Range: 3/11/2010 to 12/29/2010



## RIEDC - Rhode Island Broadband Mapping Program

Community Anchor Institutions: [All categories](#)

### Data Characteristics

Type of Data Submitted:	Point
Feature Count:	1,115
Provided Technology of Transmission:	YES, INCOMPLETE (640 of 1,115)
Provided Advertised Downstream Speed:	YES, INCOMPLETE (643 of 1,115)
Provided Advertised Upstream Speed:	YES, INCOMPLETE (1,085 of 1,115)
Provided Street Address:	YES, COMPLETE
Provide Public Wifi:	YES, COMPLETE
Provided URL:	NO
Provided CAIID:	YES, INCOMPLETE (759 of 1,115)

### Count of Community Anchor Institutions by category:

CAI Category	Count of Features
1 – School K through Grade 12	654
2 - Library	92
3 – Medical/healthcare	55
4 – Public safety	242
5 – Univ., college, other post-secondary	24
6 – Other govt support - govt	44
7 – Other govt support - nongovt	4

### Maximum advertised down/upstream speeds reported by institutions:

CAI Category	Max Downstream Category	Count	Max Upstream Category	Count
1	11	1	6	1
2	9	1	9	1
3	10	4	10	4
4	11	1	11	1
5	10	1	10	1
6	7	5	4	5
7	5	1	<Null>	1

Number of technology of transmission types reported by provider: [8](#)

### Data Verification:

Greatest down/upload speed from Historical speed test: [10, 10](#)

Greatest down/upload speed from RIEDC <sup>1</sup> speed test: [5, 5](#)

Greatest down/upload speed from FCC <sup>2</sup> speed test: [8, 8](#)

Greatest down/upload speed from FCC Mobile Applications <sup>3</sup> speed tests: [7, 5](#)

Count of RIEDC speed tests: [294](#)

Count of FCC speed tests: [51](#)

Count of FCC Mobile Applications speed tests: [69](#)



## RIEDC - Rhode Island Broadband Mapping Program

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**Footnotes:**

- 1 RIEDC Date Range: 3/23/2010 to 3/14/2011
- 2 FCC Date Range: 3/11/2010 to 12/29/2010
- 3 FCC Mobile Application Date Range: 3/11/2010 to 12/29/2010





## **Section C: Data Processes and Submission Overview**

### **Submission Summary**

The Broadband Rhode Island Mapping Team (BBRI) Team, led by EA Engineering, Science & Technology, Inc. (EA) in its role as primary technical lead for the Rhode Island Broadband Mapping project, contacted 39 facilities-based broadband service providers (BSPs) and received data from 17 providers. An overall summary of the data submission is described below:

- 39 potential facilities-based broadband service providers were contacted
- 13 BSPs did not respond
- 5 BSPs responded but did not provide data
- 17 BSPs responded and provided data

Of those that provided data:

- 13 provided only census block information
- 2 provided census blocks and addresses
- 1 provided census blocks and road segments
- 6 provided wireless coverage areas

In addition, 7 of the 17 responsive BSPs provided middle mile infrastructure points

### **Rhode Island Broadband Mapping Data Processes**

**Data Received From Providers** – The process begins by receiving data from each provider that offers service in the State of Rhode Island (RI). Broadband data is currently received from 17 broadband service providers within the State who have signed Non-Disclosure Agreements with RIEDC. Once all of the available data is received from a provider it is reviewed and archived in its native format. While the same data is requested from each provider the information often comes in different formats and with missing attribute data. If attributes are missing from the data set the provider is contacted to see if the missing information is available.

**Data Evaluated & Processed** – The EA project team first gives the data spatial attributes through geocoding to the RI E911 data or by joining the data to the 2000 census block data. (2010 census block data will be used starting with the fall 2011 data submittal). The attribute data is then formatted so that the database can easily be entered in the RI Broadband geodatabase. Speeds reported below broadband levels are removed from the data set and archived. Data that is located in census blocks great than 2 square miles is loaded into either the address or street segment feature classes. All remaining data is loaded into the census block feature class. The data is loaded using ESRI tools and software. The data analysis geodatabase stores the most recent broadband information. Data is extracted from the geodatabase and formatted as needed to be used for the State's web map and for biannual NTIA submittals. Data is pulled from the analysis database, formatted to meet the web and NTIA



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## RIEDC - Rhode Island Broadband Mapping Program

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formatting requirements, and loaded into either the NTIA transfer database or the web mapping database using automated FME tools.

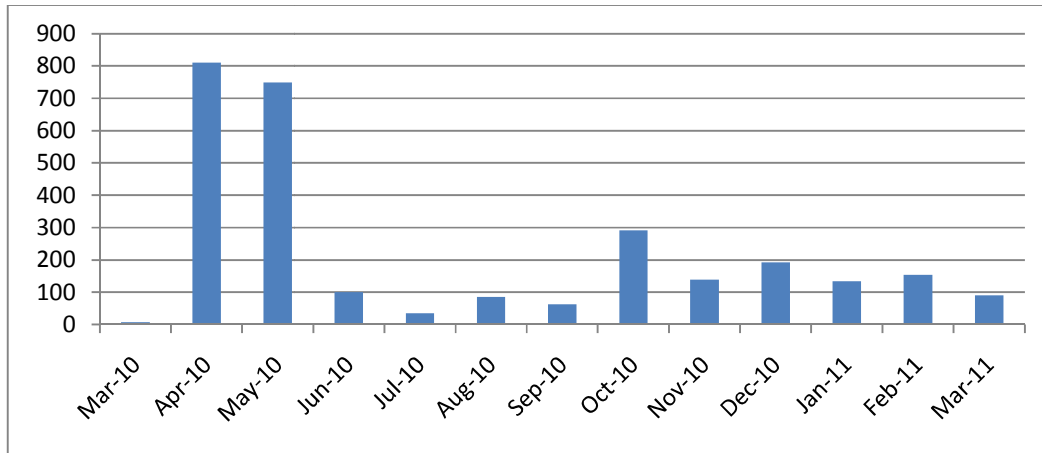
- **Community Anchor Institute (CAI) Data:** The initial list of CAIs were received from URI and populated into the BBRI database. This data was then compared to and updated using 3<sup>rd</sup> party datasets in order to create the most comprehensive CAI list available for RI. In order to collect the broadband data for the CAIs, the BBRI Team utilized a top down approach. The agencies that oversaw a large number of CAIs such as RINET and OSHEAN were contacted regarding the data collection. CAIs that still had missing attribute data after contacting these agencies were contact directly via phone and email. Once contacted, the CAIs were directed to an online survey. The online survey walked the user through a short questionnaire that collected the required CAI broadband data. At the end of the survey the user was directed to take a speed test in order to help with the data collection and verification process.

**Data Verification** – Once the data is loaded into the geodatabase the verification process can begin. This process is comprised of several steps to ensure that the actual facilities and services provided to the public match the provider's data being reported.

- **Compared to Available Datasets -**
  - **Speed test** – Using Ookla's speed test application, EA has been collecting speed test data for the state of RI since March 2010. A breakdown of speed test collected by EA broken out by month can be found in the table below. EA uses both the FCC speed test collected for RI and the speed test collected on the RI broadband website to get a better view of the actual speeds and coverage area providers are offering the public. The speed tests are geocoded and mapped by provider. (FCC speed test providers are identified by the speed test's IP address) Each provider's speed test data is compared to their stated coverage area. Discrepancies are noted and reported back to the provider. The provider either gives a reason for the discrepancy or instructs us to modify their coverage area to match the speed test data.



## RIEDC - Rhode Island Broadband Mapping Program



- User feedback - user feedback information is captured by both the FCC and RI's broadband mapping website. This information is reviewed on a case by case basis. Changes are made as needed to the data and reported to the provider, similar to the speed test data update process.
- Best practices for final data quality checks include the review and comparison to 3rd party datasets (such as the FCC's 477 data) with the information received from the providers. The FCC's data is used to check for previously unknown providers, perform spatial analysis and comparisons on the data, and to give a better understanding of our confidence in the data. Since FCC data is broken out by census tract the provider's data must be converted to the tract level in order to perform a full data comparison.
- Spatial Analysis of Coverage Area— Spatial Analysis is performed on each provider's data set. The analysis checks for small areas in populated sections of the state that are surrounded by coverage areas but do not show coverage. These "donut holes" in the data are reviewed and reported to the provider if we feel they have a high probability of actually being covered by the providers' broadband services.
- 3<sup>rd</sup> Party Verification – A 3<sup>rd</sup> party Mapping & Planning Services (M&PS) is used to do an independent review and provide a report on the status of each provider's data. These reports summarize the data collected and provide a second review of the verification steps listed above.

**Data Analysis** – In addition to the data verification steps, a complete summary of each provider's data and static broadband coverage maps are created for RIEDC. These maps are used to analyze existing data availability and plan for future broadband development and outreach projects.



**Future Verification Processes To Be Implemented** – The following verification processes were utilized for our Spring 2011 submission:

- **Street Survey** - As part of the expanding need to verify broadband coverage within RI, a street survey pilot project will be performed within a limited set of selected towns. The physical survey will verify the validity of broadband physical facilities coverage presence within these towns. EA will perform the survey via field discernment and location collection utilizing GPS equipment and industry knowledge. Only above ground facilities within rights of way will be captured. Buried facility data will only be collected if a provider and location can be determined without any digging or use of specialized underground location equipment. This pilot project will be completed in the spring of 2011. The additional services (deliverables) to be added for Wireline Coverage Verification Survey are as follows:
  - a) A dataset delivered consisting of actual location (X-Y coordinates) of physical plant, i.e. poles, nodes, hubs, etc. and carrier presence by service type (DSL, Coaxial Cable, Fiber, etc.)
  - b) Data analysis to consist of test procured data results vs. provider data submitted displayed in comparative reports, maps, and a new data layer within RI geodatabase.

**Geodatabase Checks**– Once the data is processed and verified the database is checked prior to submittal to the NTIA. This process is comprised of several steps to ensure that the information in the geodatabase is as accurate and complete and possible.

- **Visual Checks** - These visual checks inspect the data to ensure completeness, accuracy, and engineering logic. The visual inspection process employs random sampling techniques to validate feature placement and attribution. The random sampling is performed in accordance with ANSI standards for attribute inspection.
- **Automated Checks** – These checks are performed on 100% of the data. ESRI's Production Line Tool Set (PLTS) and the NTIA's QC toolbox are utilized for the automated check of the data. PLTS check for both schema and logical errors in the data. The following checks are performed on the data.
  - **Geodatabase Format.** Verify that the geodatabase name and feature classes are correct per the corresponding RIEDC data model and NOFA requirements.
  - **Coordinate System Errors.** Check for proper projection definition.
  - **Validity Checks.** Verify the attribution fields in the tables and field values fall within the domain specified in the geodatabase.
  - **Duplicate Item Values.** Verify the uniqueness of attribute values within a user-specified item (such as Feature IDs).



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## RIEDC - Rhode Island Broadband Mapping Program

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- Invalid Item Values. Check for invalid codes using discrete values and ranges defined in the appropriate domain tables.
  - Spatial Logic Checks. Checks the geodatabase to validate minimum size polygons, minimum length lines, and dangles in line feature classes.
- If the geodatabase has passed all tests listed above, and has met the acceptance criteria, the dataset is considered passed and can be processed for delivery to RIEDC and the NTIA. If the geodatabase fails any test and does not meet acceptance criteria, the data is considered failed and will be returned with error reports to the data processing team for correction. Additional follow-up with the providers may be necessary to correct the issue(s). Once edits are completed or exceptions are documented, the geodatabase will be returned to the QC team for an additional sequence of all QC procedures. This process will be repeated until all tests have received a pass status or exceptions have been documented.



## **Section D: Rhode Island's Current Broadband Mapping Issues**

This section lists the issues the BBRI Team has encountered and is currently developing mitigation efforts against. These issues are being reviewed by the BBRI Team in conjunction with other States and the NTIA. Recommended solutions to each issue have been or will be presented to the NTIA when they are available.

1. No last mile information was provided by any providers or resellers for the state of RI. The NTIA has recently stated that a provider is defined as a company that provides broadband service and owns the last mile of infrastructure from which it is provided. All other providers that own middle mile, but not last mile infrastructure, are actually resellers of broadband. Since the state of RI has received no last mile information should all broadband providers in RI be labeled as resellers or unknown?
2. Currently the NTIA requires data at the address or street segment level for census blocks that are greater than 2 square miles in diameter. This is a model that was developed to work for all states. However, in the north east region and RI in particular, the BBRI Team feels that the size standard for reporting at the address and street segment level should be smaller due to the higher density levels of population. The BBRI Team is currently looking into a size standard that would better fit RI.
3. Wireline location data was provided by one or more providers for the state of RI. The current data transfer model only allows for middle mile data to be transferred as point geometry. Therefore, we have no way to transfer this data to the NTIA in the current data transfer model. Similarly, broadband data was provided at the county and metropolitan statistical area levels but did not include providers pricing information. Per the NTIA's instructions, if no pricing information is included then these datasets should not be included in the Service Overview feature class. Therefore the current transfer model has no method of storing or transferring this information. Should the NTIA want this information, the BBRI Team can transfer it in ESRI shapefile format or by adding new feature classes to the transfer model.
4. One or more providers have submitted coverage areas that were not consistent with previous submittals. The BBRI Team was able to identify the error through our existing QA/QC processes and we reported it back to the providers. After reviewing the BBRI Team's comments the providers determined their errors and were able to submit updated and accurate coverage information.
5. The NTIA's National Broadband Map analyzes data based on population information while the RI Broadband Map analyzes data based on geography. When the results of both analysis processes are compared at the county or state level, differences in coverage become apparent. This issue has been identified by providers and the public.



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**RIEDC - Rhode Island Broadband Mapping Program**

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The BBRI Team is looking into ways of standardizing the two processes in order to create more consistency.

6. Speed tests are currently being extensively utilized by the BBRI team. The tests are very good at showing that coverage is available in a given area, but the actual speeds reported vary widely from one test to the next. The speeds are inconsistent even if they are taken at the same location within minutes of one another. Therefore the speed results taken from this test cannot be used to verify or populate provider's typical speeds. Additionally speed test information has not been provided by the NTIA or FCC since January 7, 2011.
7. The NTIA continues to require data to be submitted in 2000 census block format. This data is now over 10 years old and doesn't accurately display the current conditions that exist in RI. The BBRI Team is recommending that the NTIA switch to 2010 census data.