



**Solicitation Information
January 20, 2017**

RFI# 7551311

TITLE: 5G AND NEXT GENERATION BROADBAND INFRASTRUCTURE – SUPPLEMENT TO RFI #7551177

SUBMISSION DEADLINE: FEBRUARY 3, 2017 at 03:00 PM ET

This is a supplemental solicitation to the previously issued RFI #7551177 to provide additional time for vendor responses. Previously accepted responses to RFI# 7551177 are on record and those vendors do not need to re-submit to this supplemental solicitation.

There will be NO questions period on this supplemental RFI# 7551311 as questions were previously received and responded to in RFI# 7551177. A copy of all questions and answers is included with this solicitation as Appendix B. No new questions regarding this solicitation will be accepted.

Meredith Skelly, Interdepartmental Project Manager

Applicants must register on-line at the State Purchasing Website at www.purchasing.ri.gov

Note to Applicants:

Proposals received without the entire completed Rhode Island Vendor Information Program (“RIVIP”) generated Bidder Certification Cover Form attached may result in disqualification.

THIS PAGE IS NOT A BIDDER CERTIFICATION COVER FORM

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SECTION 1. INTRODUCTION

The Rhode Island Department of Administration/Division of Purchases, on behalf of the Rhode Island Public Utilities Commission and Division of Public Utilities and Carriers, is soliciting informational proposals from qualified firms on implementation of 5G and next generation broadband infrastructure statewide, in accordance with the terms of this Request for Information and the State's General Conditions of Purchase, which may be obtained at the Rhode Island Division of Purchases' website at www.purchasing.ri.gov.

This is a Request for Information (RFI). No award will be made as a result of this solicitation.

A. Instructions and Notifications to Offerors:

1. Potential vendors are advised to review all sections of this RFI carefully and to follow instructions completely, as failure to make a complete submission as described elsewhere herein may result in rejection of the proposal.
2. The State invites feedback from the community on any questions posed in this RFI. Please note it is not a requirement to answer all questions.
3. Alternative approaches and/or methodologies to accomplish the desired or intended results of this RFI are solicited.
4. This is a Request for Information (RFI), and as such no award will be made as a result of this solicitation.
5. All costs associated with developing or submitting responses to this RFI, or to provide oral or written clarification of its content shall be borne by the vendor. The State assumes no responsibility for any costs.
6. Responses misdirected to other state locations, or which are otherwise not present in the Division at the time of opening for any cause will be determined to be late and will not be considered. For the purposes of this requirement, the official time and date shall be that of the time clock in the reception area of the Division of Purchases.
7. Respondents are advised that all materials submitted to the State for consideration in response to this RFI shall not be considered to be public records as defined in Title 38, Chapter 2 of the General Laws of Rhode Island. The responses may only be released for public inspection if and when there is an award from a subsequent and directly related solicitation. Any proprietary information submitted as part of a response to this RFI must be clearly marked as such. Responses to the RFI shall not be returned.

8. Interested parties are instructed to peruse the Division of Purchases website on a regular basis, as additional information relating to this solicitation may be released in the form of an addendum to this RFI.
9. Equal Employment Opportunity (G.L. 1956 § 28-5.1-1, et seq.) – § 28-5.1-1 Declaration of policy – (a) Equal opportunity and affirmative action toward its achievement is the policy of all units of Rhode Island state government, including all public and quasi-public agencies, commissions, boards and authorities, and in the classified, unclassified, and non-classified services of state employment. This policy applies to all areas where State dollars are spent, in employment, public services, grants and financial assistance, and in state licensing and regulation. For further information, contact the Rhode Island Equal Opportunity Office at (401) 222-3090.
10. In accordance with R. I. Gen. Laws § 7-1.2-1, *et seq.*, no foreign corporation, a corporation without a Rhode Island business address, shall have the right to transact business in the State until it shall have procured a Certificate of Authority to do so from the Rhode Island Department of State (401-222-3040). This is a requirement only of the successful vendor(s).
11. The vendor should be aware of the State’s Minority Business Enterprise (MBE) requirements, which address the State’s goal of ten percent (10%) participation by MBE’s in all State procurements. For further information visit the website www.mbe.ri.gov.

SECTION 2. REQUEST FOR INFORMATION

This RFI outlines the type of information being solicited and response structure requested from potential respondents.

A. Background

Rhode Island is blessed with a beautiful natural environment but its greatest asset has always been its people. The State, however, must constantly assess whether its people have access to the critical tools and jobs of the economy in the future. The global economy is increasingly shifting from being primarily about the manipulation and transportation of atoms to an economy in which the production of goods and services are dependent on high-performance knowledge exchange. In that world, broadband has become the commons of collaboration and it is critical that the cost and availability of bandwidth in Rhode Island never constrains economic or social progress.

To assure that our residents enjoy the benefits of affordable, abundant bandwidth, the State, as well as its municipalities, wish to work with all stakeholders to accelerate, and lower the cost of deployment and operation of next generation broadband networks. This RFI is primarily directed at making the Rhode Island the first state to have 5G networks accessible everywhere while

assuring the State and its communities have the Civic Internet of Things and the fiber networks, described below, that they will need to thrive. The State plans to collaborate closely with municipalities to realize these goals.

B. The Three Network Imperatives.

As the State looks out over the horizon, it sees three networks that need to be constructed. All will share a significant amount of assets. Thus, the state wants to be thoughtful in its policies so that it can obtain what it needs, without duplicating costly efforts, while also improving the economics of deployment so that enterprises can deploy and utilize networks at the lowest possible costs. The three network imperatives are 5G Wireless, the Civic Internet of Things, and an Extensive Fiber Network.

i. 5G Wireless

Currently, Rhode Island residents enjoy fourth generation (4G) wireless services. The wireless industry has suggested, however, that the next generation (fifth generation or 5G) will provide a massive increase in performance and throughput. 5G holds great promise for basic communication needs, advanced new communication services like two-way 4K video, advanced security and privacy controls and many other services.

While the promise of 5G is great, so are the challenges to deployment. While a number of technology advances have made 5G possible, 5G will also depend on a different network architecture than 4G. 4G customers received their data from a macro-cell, a large tower that serves a broad area and many customers. 5G customers will receive their data from many small cells that serve a smaller area and many fewer customers. 5G radio deployments will be exponentially larger in number and, more importantly, more densely distributed in order to support the 30 to 50 times faster bandwidth enabled by 5G, in comparison to 4G. 5G service providers will need to be able to build or lease wireline networks that extend much closer to the customers than the wireline networks wireless customers currently depend on.

This however, leads to challenging economics. While 5G plans are still nascent, it appears likely that the network costs will be significantly higher than any previous wireless network deployment. Indeed, it may be cost prohibitive for the major carriers or any new carriers to overbuild end-to-end wireline networks.

Further, as was true in deploying all communications networks, state and local governments have to play a role in overseeing deployment, through zoning, permitting and other regulations. It is critical that government entities protect the public interest but also embrace policies and processes that reduce delays and costs.

Therefore, Rhode Island believes that to successfully deploy 5G, to gain efficiency in managing and maintaining the 5G network, and to optimize the considerable investment required to

deploy the network, the State and our municipalities should work with the carrier community to lower the cost of, and accelerate, deployment and of 5G, as well as assure that public interest and public sector uses are designed into the network architecture.

ii. The Civic Internet of Things

The Internet of Things itself refers to the ability of devices, equipped with far greater computing power and connected to the Cloud and each other through far greater bandwidth, to provide a greater awareness of a situation and to act to improve outcomes. These developments are already having a dramatic impact on how we manufacture goods, in what is generally referred to as the industrial Internet of Things.

The Civic Internet of Things is, at one level, simply adding intelligent devices to a number of infrastructure systems generally run by cities, including, but not limited to water, sewer, power, and transportation. It also creates new opportunities to improve the data on which decisions are made in areas such as public safety, public health, and social services. For example, while numerous cities already have security cameras and gunshot recognition sensors. Developing technologies are enabling such cameras and sensors to automatically detect unusual activities and to enable a rapid response, resulting in a 10% to 30% decrease in crime. The Civic Internet of Things can reduce electrical outages and water losses, improving all manner of resource management. Another big use is adaptive traffic management, which can improve traffic flow and dramatically reduce time spent in cars looking for parking spaces.

Perhaps the opportunity that best demonstrates the power of the Civic Internet of Things is Autonomous Vehicle technology, an important cornerstone of any aspiring smart city. Rhode Island is uniquely situated to benefit from AV technology because it houses a network of incredibly diverse infrastructural and cultural assets within a very compact space. This technology promises to revolutionize and strengthen our carrier industry, connect our civic populations to the vast network of distinct neighborhoods and cultural scenes, and boost quality of life for our immobile populations – elderly, injured, and underage citizens.

All in all, McKinsey estimated that the global economic of state and local government use of the Internet of Things would be between \$930 billion and \$1.7 trillion by 2025. Beyond the financial savings, cities are using such technology to better inform residents of the state of the city and thereby improve the public dialogue as to what a city should prioritize in terms of civic improvements. In short, the Civic Internet of Things represents an opportunity to do for the basic civic infrastructure of the early 20th Century what smart phones have done for communications compared to the standard black dial tone phones of fifty years ago.

Like 5G, the Civic Internet of Things will also depend on ubiquitous, fast and affordable communications networks. Thus, while the State and its municipalities are contemplating how best to facilitate the deployment of 5G networks, it also wishes to consider how to facilitate the deployment of the Civic Internet of Things.

iii. An Extensive Fiber Network

It has been well known for some time that the deployment of fiber networks, in contrast with the historic copper phone networks or hybrid fiber coax cable networks, can provide the abundant bandwidth Rhode Island communities seek. Not only will such fiber be essential for 5G deployment and the Civic Internet of Things, it is also essential for serving enterprise customers, including a number of public institutions, and increasingly is seen as necessary for providing affordable, abundant bandwidth for residential and small business customers as well.

While Rhode Island boasts a robust fiber infrastructure and substantial available bandwidth, the State faces a significant challenge with extending the fiber backbone to all eligible end users. It appears that for both current broadband providers and potential providers, the current cost of deployment and operations of fiber networks is greater than their risk adjusted returns. This is of concern in certain communities including New Shoreham and Aquidneck Island, where the cost and challenge of fiber deployment can be prohibitive. Under such conditions, no one is likely to make the necessary investment in fiber in Rhode Island. The State is interested in exploring whether 5G could be leveraged as an alternative for these “last mile” connections, particularly in hard to serve communities.

We believe Rhode Island and its communities can help change that math and enable capital to flow to new fiber but breaking free from the status quo requires both creative and viable economic models.

In short, Rhode Island and its communities wish to work with all stakeholders to learn ways to lower barriers to entry and enable efficient builds, and provide efficient incentives for the necessary new investment in these three developing and related networks. The State seeks to explore what degree of fiber capacity is required to support 5G deployment and understand whether the existing fiber infrastructure is robust enough to facilitate 5G implementation.

SECTION 3. PURPOSE and OBJECTIVES

Rhode Island is consistently ranked at or near the top of all states in the nation for broadband coverage and speeds. It is aggressively developing its economic position and is seeking to leverage its’ strong position in broadband infrastructure to advance this leadership. To that end, the State of Rhode Island issues this RFI to gather ideas and recommendations from the wireless industry on how the State can create a nation-leading hub & platform to support and collaborate with the industry in the development and implementation of next-generation 5G wireless networks.

Governor Raimondo is committed to adopting the necessary policies and making the critical investments required to assure that Rhode Island can attract and foster a vibrant technology economy and that its communities are well prepared to meet the demands of the 21st Century economy. The specific objectives are as follows:

Goal 1: Facilitate accelerated deployment of competitive 5G networks.

The State seeks to be the first state in the country in which every community has access to a 5G wireless network. The first-in-the-nation platform will support real-world testing and experimentation as well as new application development. To do that, the State seeks information as to how it can adopt 5G friendly policies and practices.

Goal 2: Lay the foundation for the Civic Internet of Things and other governmental uses of communications networks.

The State represents a number of governmental bodies that have their own needs for advanced communications networks. As these entities adopt policies that improve the economics for private enterprises to deploy 5G networks, they also wish to improve their own economics for existing and future communications needs, particularly as it relates to opportunities created by the development of the Internet of Things.

More generally, the goals of this process are:

1. For the State to have the broadband networks necessary to drive economic growth, job creation, innovation and social progress;
2. To enable the State to become a technology hub for all manner of enterprises;
3. To enable all residents to benefit from advances in communications networks and digital applications;
4. To position the State as a destination for testing of 5G network models through collaboration with enterprise; and
5. To meet the communications needs not just in the near future but for the foreseeable future.

The State welcomes ideas and recommendations from interested or potentially interested parties, including organizations with a commercial interest in the communications networks sought by the Issuer. Potential respondents are encouraged to collaborate in offering ideas and recommendations. Respondents are not required to submit responses pertaining to all the requested information herein. The Issuer encourages interested parties to respond to any and all aspects of this RFI relevant to their interests and expertise.

SECTION 4. SCOPE OF THE REQUESTED INFORMATION

The Issuer believes that accelerating the deployment of the networks described above requires private sector expertise and resources, however, traditional models for network deployments and service offerings may be overly narrow and unnecessarily limit innovation in our communities. Through this process we hope to engage in constructive collaboration with the private sector and other stakeholders to identify ways to improve the business economics sufficiently to encourage private sector investments in next generation networks and services for our communities. The Issuer is issuing this RFI to gather comments, ideas, recommendations,

conceptual frameworks, and indications of interest from incumbent service providers, new entrants, other private sector entities, as well as any other stakeholders related to strategies and policies for developing the next generation broadband networks described above. Potential respondents are encouraged to collaborate in offering ideas and recommendations. Respondents are not required to submit responses pertaining to all the requested information herein. The Issuer encourages interested parties to respond to any and all aspects of this RFI relevant to their interests and expertise.

The Issuer requests that respondents provide information related to the following topics and in the following manner:

A. Summary

- i. The response should include a brief narrative with the highlights, key attributes and distinguishing points of the respondent’s proposed approach. The narrative should also explain how the response aligns with the specific goals stated in the RFI.

B. General Information about respondent

- i. The response should include background information including the following details for each company or organization represented in the response: company name, company address, company web page, description of products and services, professional strengths and abilities; identification of a lead company or organization if more than one is represented in the response; and contact information for the company or groups primary contact.

C. Targeted Geographic Areas

- i. To the extent that the response is focused on a specific geographic area, the response should identify which areas in the State or which municipalities the response is meant to target.

D. Desired Network Characteristics

- i. To the extent that the response seeks to offer ideas and recommendations as to any network functionalities that the Issuer should need, the response should identify those characteristics. This is particularly relevant to the functionalities of networks the government entities themselves will need but could also apply to the other networks described above.

E. Government Policies

- i. To the extent that the response seeks to offer ideas and recommendations as to what government policies should be modified or adopted to facilitate deployment, the respondent is welcome to comment on the following:
 - 1. Construction Policies. Governments can affect the cost of deployment in the ways it manages construction. For example, governments often have rules for how entities access facilities to place, splice, upgrade or repair

fiber. Governments also have extensive policies for such activities as trenching, excavation, and trenching, all of which may be necessary for the networks the Issuer seeks. Respondents are welcome to comment on how to improve those policies while still protecting the public interest.

2. Permitting Policies. In addition to permitting related to construction, governments have a number of policies related to obtaining permits to locate certain kinds of equipment, such as cell sites and sensors. This is particularly relevant to the 5G and Civic Internet of Things. Respondents are welcome to comment on how to improve those policies while protecting the public interest.
3. Information Policies. Governments have significant data and information that is necessary or useful for planning network deployment. Respondents are welcome to comment on what data and information can government make available that would facilitate deployment and how can that data and information be made available more effectively, while protecting the public interest?
4. Communications Policies. The State and Local governments regulate existing Internet Service Providers in a number of ways. Respondents are welcome to comment on how these existing regulations could be modified to improve the economics of deployment while still protecting the public interest.
5. Other Regulatory Policies. Respondents are welcome to discuss any other rules or regulations, not described above, which could impact the feasibility or underlying economics associated with the proposed solutions. Responses should also include an explanation of any forms of proposed regulatory relief that could improve the economic case for the business models or network solution.
6. Personnel Policies. The Issuer recognizes that its various personnel policies can affect the economics of deployment. For example, a single construction project might require the private party to interact with numerous and uncoordinated government officials. Some private parties in other regions have suggested that understaffing and limited training have sometimes resulted in unnecessary delays in obtaining construction permits, adding cost and expense. Respondents are welcome to comment on how the State and Local governments might best organize its personnel to facilitate the goals stated in this RFI.
7. Contracting policies. Respondents are welcome to comment on any material considerations or expectations that Respondents have with respect to any of the following issues likely to be negotiated during any future binding proposals with any entities participating in this RFI or other governmental or quasi-governmental entities in the State, including but not limited to:
 - Intellectual property;

- Insurance Indemnities;
 - Warranties;
 - Dispute resolution; and
 - Other contracting issues not specifically listed above
8. Other Policies. Respondents are welcome to comment on any existing policies that may add unnecessary time and cost to the deployment of networks described in this RFI

ii. New Policy Options

1. The Issuer recognizes that the advent of 5G, the Civic Internet of Things, and new fiber deployment, both individually and together, raise issues and opportunities that may not have been raised in previous efforts to facilitate network deployments. Respondents are welcome to propose new policies to take advantage of the opportunities. For example:
 - Should the state adopt an initiative to eliminate paper from all construction oversight, moving all permitting to an electronic process?
 - Should the State place control of construction related to all historic sites under a unified state authority to have consistent rules and processes over these critical sites?
 - Should the State establish an entity to assure neutral open access to assets necessary or valuable for deploying a 5G network?
 - Should the state preempt inconsistent requirements in neighboring municipalities that might result in delays and additional costs?
2. The Issuer recognizes that in order to facilitate the deployment of these new networks, it may be in its best interest to adopt regulatory tools that promote innovative solutions to identifiable issues. To that end, the “Innovation Lanes” initiative was conceived of, which would function as a partnership between the State and entities proposing disruptive and innovative products and strategies. Under this initiative, certain regulatory requirements that would otherwise prevent or impede an innovative solution from moving forward would be temporarily relaxed in exchange for robust data sharing agreements and overall cooperation to monitor progress and manage risk.
 - Would such an initiative be of use to interest groups / entities as they attempt to bring innovative products to market or go about development of networks in new and disruptive ways?
 - Would regulatory leeway be sufficient incentive to allow for fully transparent operation, both in terms of data sharing and close coordination with regulators?
 - In what general ways could the Innovation Lanes concept be improved?

F. Public Assets and Infrastructure.

- i. The Issuer possesses a variety of public assets and infrastructure that may be leveraged to support the development and expansion of communications networks. The use of any of these assets may be subject to certain restrictions, regulation and/or additional authorization by other entities. Some assets may be preempted from use due to existing contractual relationships, limitations due to tax-exempt bonds or grant funding restrictions concerning private use. Some use may be removed from consideration for other reasons. Still, the Issuer is interested in understanding what government assets can be utilized to facilitate deployment. Further, in addition to the assets outlined below, the Issuer may also consider additional investments and support for assets that can be leveraged to accomplish the goals of this RFI. Respondents are welcome to comment on how the Issuer can facilitate deployment by providing access to the following:
 1. Fiber. State and Local government has access to fiber lines that could be leveraged for this effort where spare capacity exists.
 2. Rights of Ways. The Issuer has significant roadways that could be leveraged to support network deployments. For example, planned street maintenance could be utilized to coordinate any proposed work with preexisting construction schedules. These schedules may be adjusted to align with a network deployment.
 3. Tunnels, sewers, water mains. In addition to rights of ways, the Issuer controls a variety of tunnels, sewers and water mains that could be leveraged to support network deployments. Again, planned maintenance could be utilized to coordinate any proposed work with preexisting construction schedules. These schedules may be adjusted to align with a network deployment.
 4. Light and Utility Poles. The Issuer controls a number of light and utility poles that could be leveraged for aerial placement of equipment. Depending on the type of equipment required, certain poles may require concurrent upgrades or even replacement at the time of installation. Pole attachments for virtually all of Rhode Island are governed by a joint pole operating agreement between National Grid and Verizon. Pole attachment requests on Block Island may be directed to the Block Island Power Company. In each case, attachment fees are governed by FCC tariff guidelines. Access to existing underground conduits may be accomplished through lease arrangements with the owners including electric, telecommunications, and wastewater facilities.
 5. Real Property. The Issuer controls a number of buildings and other real property that could be leveraged for the deployment of the networks described in this RFI.

- ii. OSHEAN Beacon 2.0 Network: OSHEAN is a Rhode Island 501c3 corporation with the mission to provide carrier-grade optical network connectivity and services to the State's community anchor institutions (CAIs) -- including schools, libraries, healthcare, public safety, state and local government and other not-for-profits. Given the compact and varied geographic and demographic diversity of Rhode Island and the extensive reach of the Beacon 2.0 network, it is an ideal platform to experiment and provide backhaul and transport services for 5G wireless networks and OSHEAN is a willing partner in this endeavor.
 - 1. Their state-of-the-art Beacon 2.0 optical transport network comprises over 450 miles of fiber optics with a backbone capacity of 400 gigabits per second that connects every municipality in the state except New Shoreham (Block Island) & Little Compton.
 - 2. As a member of the Internet2 Research and Education network, OSHEAN uniquely offers Rhode Island institutions with access to Internet 2 and the NEREN Northeast regional network. From a public network standpoint they offer on-net commercial peering and caching to improve the performance of popular high bandwidth applications. OSHEAN is a member-based organization and currently supports over 125 CAIs across all the sectors. The State of Rhode Island is a member of OSHEAN.
 - 3. Although focused on providing services to CAIs, a basic tenet of Beacon 2.0 is open access (as governed by the Broadband Technology Opportunities Program Nondiscrimination and Interconnection Obligations) and as such OSHEAN has the ability to enter into lease arrangements with companies looking to focus on other markets (commercial or otherwise) for broadband backhaul and services.

G. Government as Enterprise

- i. The issuer and other governmental and quasi-public entities in the State spend millions on a variety of communications network services each year. Respondents are welcome to offer ideas and recommendations for what can government and quasi-public entities can do as an enterprise and purchaser of broadband services to facilitate deployment of the networks sought by this RFI. These entities include, but are not limited to:
 - 1. Governments;
 - 2. Schools;
 - 3. Universities;
 - 4. Health care facilities;
 - 5. Public Safety;
 - 6. Libraries; and
 - 7. Utilities

H. Other Enterprises

- i. Other enterprises in the State are welcome to join and offer ideas and recommendations to facilitate deployment and lower costs for all residents and enterprises in the State.
- ii. In addition, Respondents are welcome to comment on what can other private enterprises do on a voluntary but coordinated basis to help facilitate deployment of the networks sought by this RFI. This could include, but not be limited to:
 1. Real Estate Owners and Developers;
 2. Industrial Parks;
 3. Technology Companies; and
 4. Community Groups

SECTION 5. QUESTIONS AND SUBMISSION

A. Questions

There will be NO questions period on this supplemental RFI# 7551311 as questions were previously received and responded to in RFI# 7551177. A copy of all questions and answers is included with this solicitation as Appendix B. No new questions regarding this solicitation will be accepted.

If technical assistance is required, call the Help Desk at (401) 574-8100. Responses to this RFI should be submitted on or before the date listed on the cover page. Responses received after this date and time, as registered by the official time clock in the reception area of the Division of Purchases, will not be considered.

B. Response Format and Submission

Submissions should be typed, single spaced on 8 ½” by 11” pages with 1” margins using Calibri or Times New Roman 12 font. All pages of the Response are to be sequentially numbered in the footer, starting with number 1 on the first page of the narrative (this does not include the cover page or table of contents) through to the end, including all forms and attachments. The Respondent’s name should appear on every page, including attachments. Each attachment should be referenced appropriately within the proposal section and the attachment title should reference the proposal section it is applicable to. Printed copies are to be only bound with removable binder clips.

The Vendor shall submit the following:

1. One (1) printed Paper copy, marked "RFI # 7551311 Response - Original" and signed.
2. One (1) Electronic copy in PDF on a CD-R, marked "RFI# 7551311 Response - Original". (Note: USB Drives or other electronic formats, will not be accepted)
3. Two (2) printed Paper copies.

Response package must be mailed or hand-delivered in a sealed envelope marked "**RFI # 7551311**" to:

RI Department of Administration
Division of Purchases, 2nd floor
One Capitol Hill
Providence, RI 02908-5855

NOTE: Responses received after the above-referenced due date and time will not be considered. Responses misdirected to other State locations or those not presented to the Division of Purchases by the scheduled due date and time will be determined to be late and will not be considered. Responses faxed, or emailed, to the Division of Purchases will not be considered. The official time clock is in the reception area of the Division of Purchases. Based on the responses, the State may invite a vendor(s) to present their approach and demonstrate their technical solution.

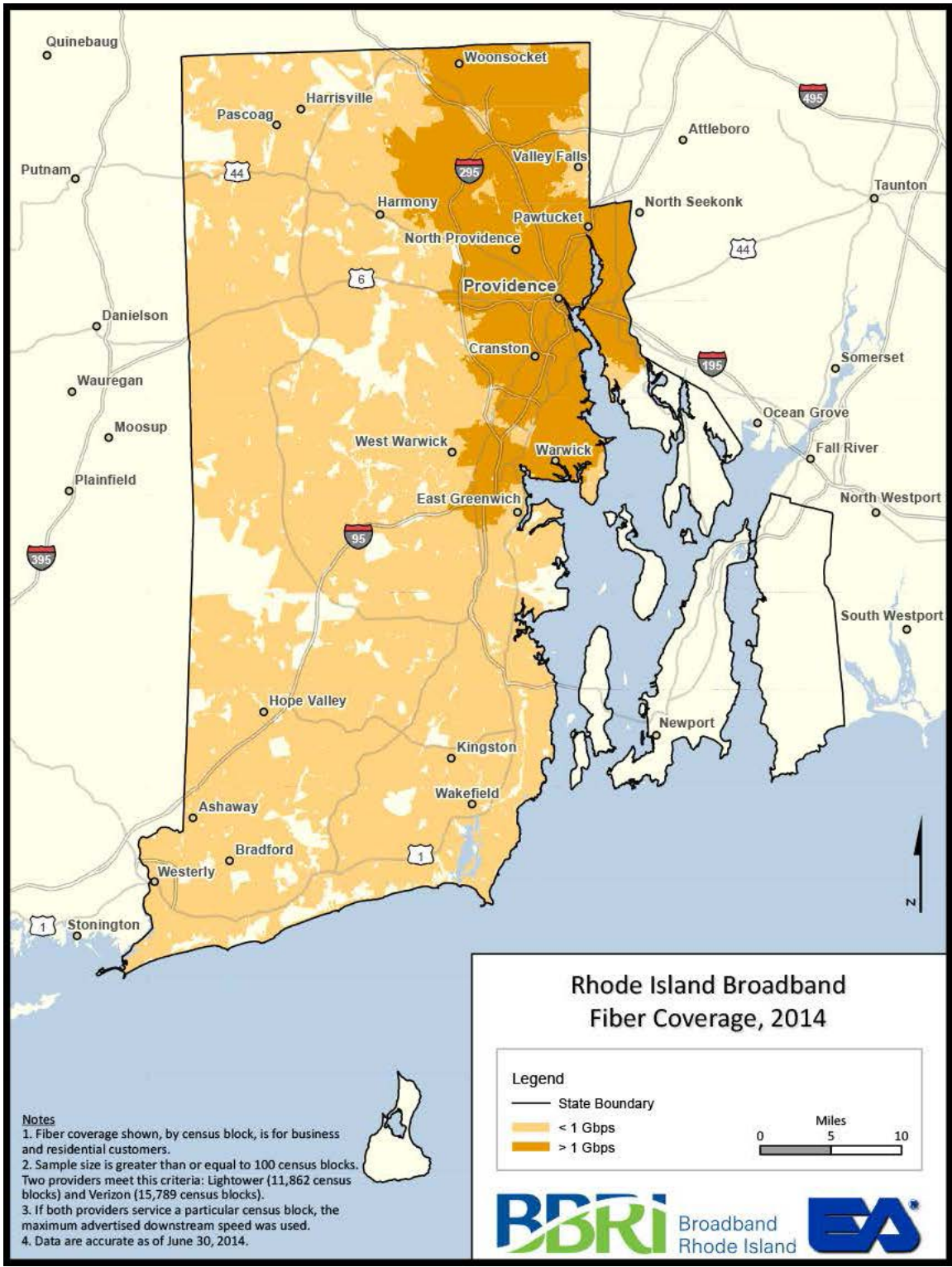
Disclaimer

This Request for Information is solely for information and planning purposes and does not constitute a request for proposals. All materials submitted to the State for consideration in response to this RFI shall not be considered to be public records as defined in Title 38, Chapter 2 of the General Laws of Rhode Island. The responses may only be released for public inspection if and when there is an award from a subsequent and directly related solicitation. Any proprietary information submitted as part of a response to this RFI must be clearly marked as such. Responses to the RFI shall not be returned. Respondents are solely responsible for all expenses associated with replying to this RFI.

APPENDIX A. Information about Rhode Island

This appendix included the following maps for vendor reference:

1. RI Broadband Fiber Coverage 2014
2. RI Broadband: Community Anchor Institution Distance from OSHEAN Network
3. Estimated Broadband Adoption Rates in 2012 by Census Tract
4. Broadband RI: Coverage by Available Speed



- Notes**
1. Fiber coverage shown, by census block, is for business and residential customers.
 2. Sample size is greater than or equal to 100 census blocks. Two providers meet this criteria: Lighttower (11,862 census blocks) and Verizon (15,789 census blocks).
 3. If both providers service a particular census block, the maximum advertised downstream speed was used.
 4. Data are accurate as of June 30, 2014.



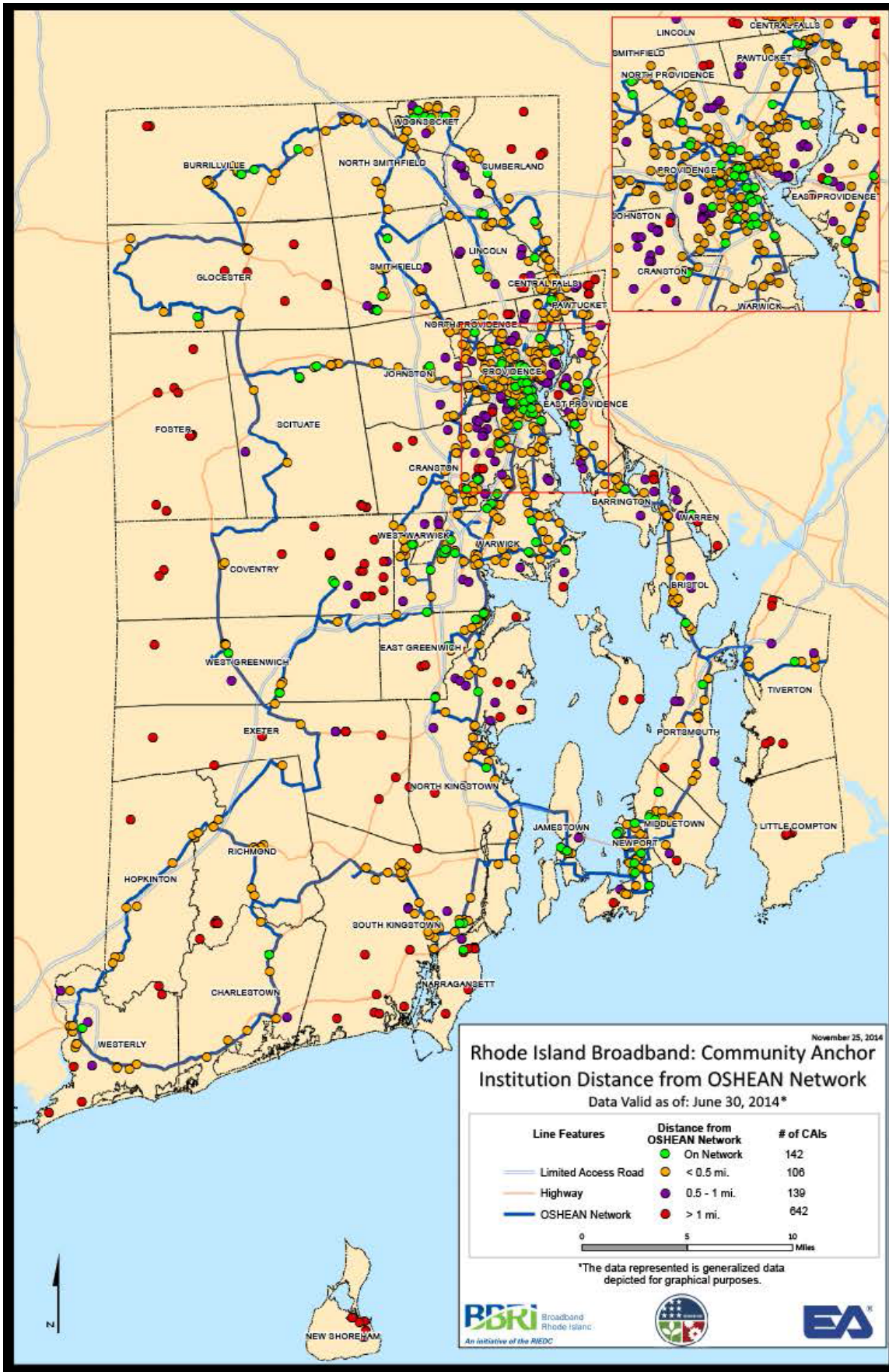
Rhode Island Broadband Fiber Coverage, 2014

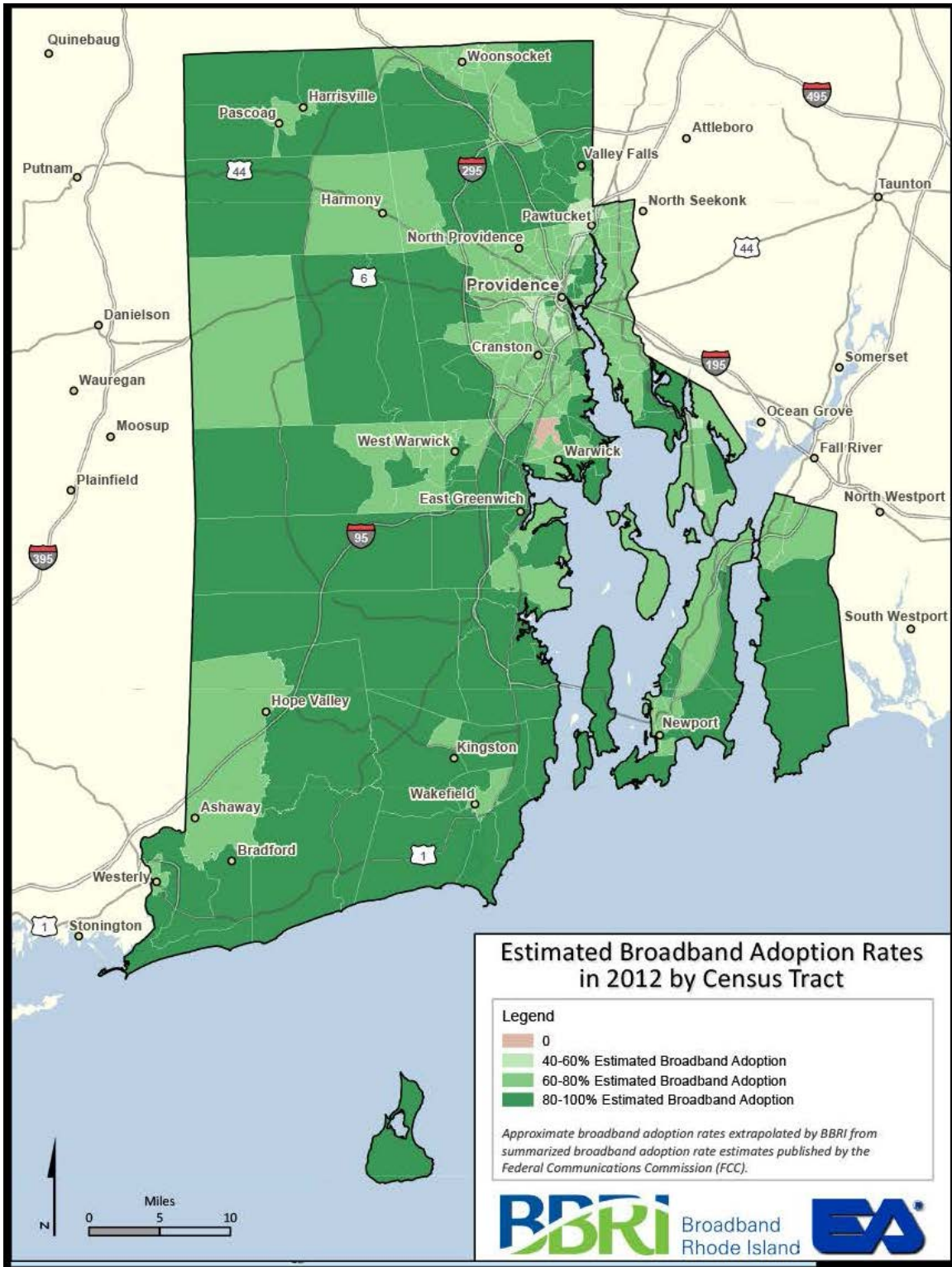
Legend

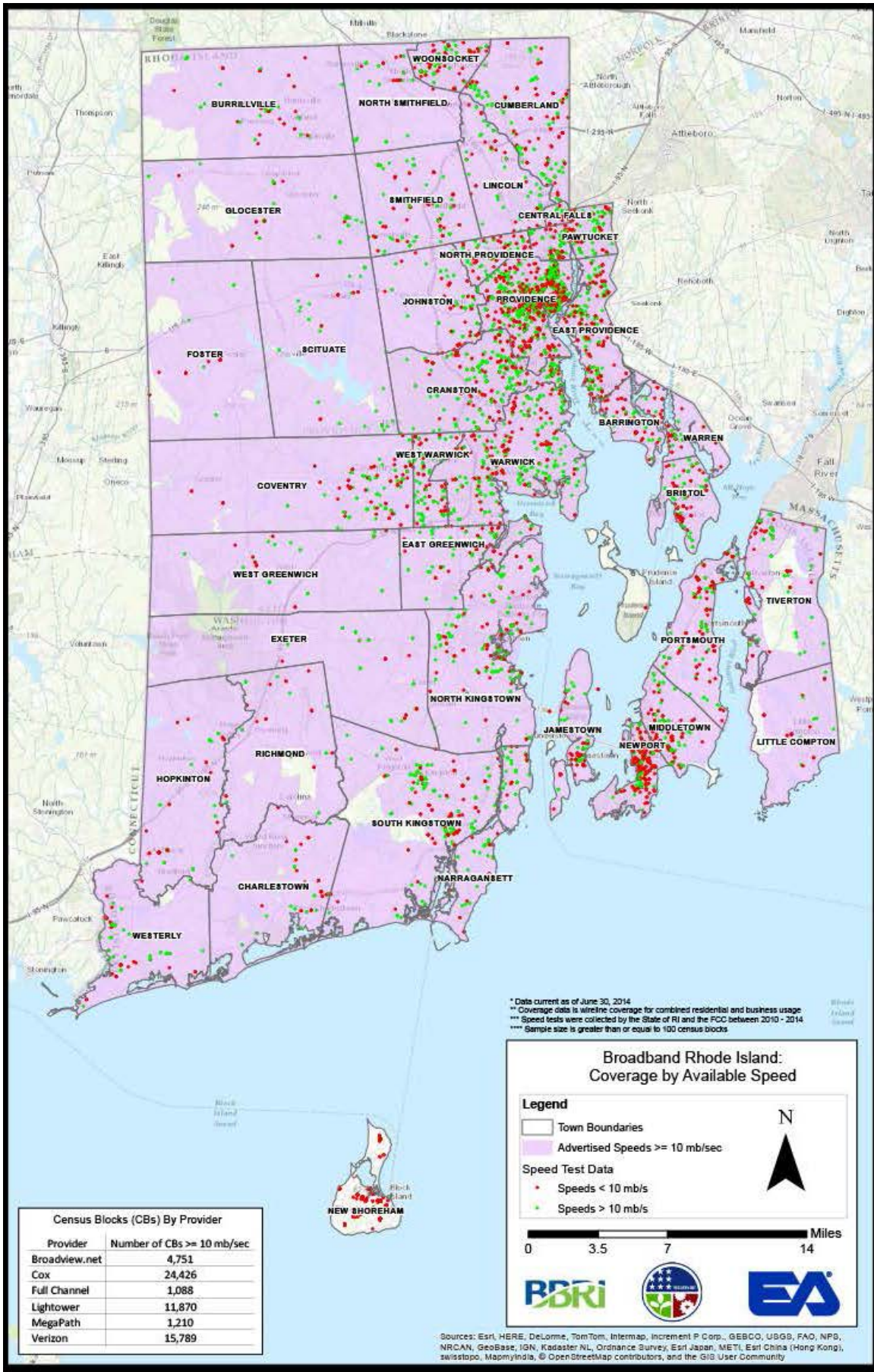
- State Boundary
- Light Orange: < 1 Gbps
- Dark Orange: > 1 Gbps

Miles
0 5 10









Census Blocks (CBs) By Provider

Provider	Number of CBs \geq 10 mb/sec
Broadview.net	4,751
Cox	24,426
Full Channel	1,088
Lightower	11,870
MegaPath	1,210
Verizon	15,789

* Data current as of June 30, 2014
 ** Coverage data is wireline coverage for combined residential and business usage
 *** Speed tests were collected by the State of RI and the FCC between 2010 - 2014
 **** Sample size is greater than or equal to 100 census blocks

Broadband Rhode Island: Coverage by Available Speed

Legend

- Town Boundaries
- Advertised Speeds \geq 10 mb/sec
- Speed Test Data
 - Speeds $<$ 10 mb/s
 - Speeds $>$ 10 mb/s

0 3.5 7 14 Miles

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, MapboxIndia, © OpenStreetMap contributors, and the GIS User Community

APPENDIX B. Responses to Questions Received on RFI# 7551177

Attached is Addendum #2 for RFI# 7551177 with Responses to Questions Received.



**State of Rhode Island
Department of Administration / Division of Purchases
One Capitol Hill, Providence, Rhode Island 02908-5855
Tel: (401) 574-8100 Fax: (401) 574-8387**

ADDENDUM # 2

RFP # 7551177

TITLE: 5G AND NEXT GENERATION BROADBAND INFRASTRUCTURE

SUBMISSION DEADLINE: January 13, 2017 at 11:00 AM ET

Addendum Description: Responses to Questions Received

Responses to Questions Received via email by December 7, 2016 at 05:00 PM ET:

- 1. Question:** In the event RIPUC moves forward with an RFP, is there an estimated time frame for when it may be issued?
Answer: Currently the focus is on this RFI and a timeline for any potential RFP is not available as of yet.
- 2. Question:** Has funding been allocated and if so, from where?
Answer: At this time no funding has been allocated for the objectives outlined in this RFI.
- 3. Question:** Who is/will be the project manager?
Answer: A project manager will be identified at the conclusion of this RFI process.
- 4. Question:** Does RIPUC anticipate procuring any services related to the effort? For example: IV&V, QA, Staff augmentation, integration, solicitation prep, etc. If so, what, when and how?
Answer: Not at this time, no.
- 5. Question:** Was a third-party consulting/advisory assisting in developing this RFI. And if so, who?

Answer: Blair Levin, Nonresident Senior Fellow with the Metropolitan Policy Program and Executive Director of Gig,U: The Next Generation Network Innovation Project, as well as the Executive Director for the team that wrote the 2010 National Broadband Plan assisted in the development of this RFI.

6. **Question:** What vendor provides the current fiber?

Answer: There are numerous vendors providing commercial, residential and institutional fiber statewide. For residential and business customers, Verizon provides fiber optic to the premises service in Providence, Kent and Washington Counties. Lightower is a principal provider of business and dark fiber service for commercial and industrial customers. The OSHEAN network provides these services for institutional and municipal customers in Rhode Island. Other principal fiber providers include Cox and Full Channel.

7. **Question:** What vendor provides the current broadband?

Answer: There are numerous vendors, both fixed and wireless, providing broadband service in Rhode Island. The principal fixed broadband providers are Cox Communications, Verizon, Full Channel, and OSHEAN.

8. **Question:** What is the desired gigabit/bandwidth speed?

Answer: We have not identified a specific speed target. We are requesting information about this question as part of this RFI process.

9. **Question:** Did anything in the Bidder Certification Cover Form change in Addendum 1 extending the December 27th submission deadline until January 13th?

Answer: The only change with any addendum to the RIVIP generated Bidder Certification form is the "Solicitation Number" and "Bid Proposal Submission Deadline Date & Time" (if applicable) referenced early on the first page will be updated to reflect the current addendum.

10. **Question:** Will the State provide a copy of the OSHEAN Beacon 2.0 Network route map?

Answer: We certainly have the ability to provide this information. In addition, OSHEAN posts information about Beacon 2.0 publicly at <http://www.oshean.org/?page=beacon20network>

11. **Question:** Is the intent of the State to build the network as a profit center or will it be at no cost to the user?

Answer: The State intends to facilitate the development of next generation networks in Rhode Island in collaboration with public and private partners. The State does not intend to build a 5G network.

12. **Question:** Will the State provide the specific fiber routes available to support this project along with the available capacity for each route?

Answer: No, a comprehensive dataset of this nature will not be provided.

13. **Question:** Will the State provide the locations of the Light and Utility Poles available to support this initiative?

Answer: A comprehensive dataset of this nature is available via National Grid, but we would have to assess whether it can be distributed—and in what form—on a case by case basis.

14. **Question:** What would be the best way to get our sites info into the hands of the right people for this initiative?

Answer: Please submit a proposal response to this RFI as all responses will be evaluated by the project team.

15. **Question:** What type of audience are you looking at to develop all of the 5G/IOT/Fiber parts of this project?

Answer: Any and all interested public/private parties, including but not limited to MNOs, MVNOs, vendors and manufacturers.

16. **Question:** One group to do everything or have each part completed by groups specializing in each field?

Answer: The State welcomes recommendations for partnerships necessary to meet the goals outlined in this RIF. Per page 8, Section 3, "Potential respondents are encouraged to collaborate in offering ideas and recommendations.

17. **Question:** On page 3, Section 1.A.7 "Respondents are advised that *all* [emphasis added] materials submitted to the State for consideration in response to this RFI shall not be considered to be public records as defined in Title 38, Chapter 2 of the General Laws of Rhode Island." Please help us understand why you believe all materials submitted are not considered public records?

Answer: A Request for Information (RFI) is the State's public notice to gather information from industry leaders to assist our agencies in further understanding their project needs. Section 1.A.7 of the RFI fully reads: "*Respondents are advised that all materials submitted to the State for consideration in response to this RFI shall not be considered to be public records as defined in Title 38, Chapter 2 of the General Laws of Rhode Island. The responses may only be released for public inspection if and when there is an award from a subsequent and directly related solicitation. Any proprietary information submitted as part of a response to this RFI must be clearly marked as such. Responses to the RFI shall not be returned.*"

Initially responses to an RFI are not made public as an RFI's purpose is information gathering with no award made. However RFI proposal responses can be made public if a subsequent and directly related solicitation is issued and award(s) is made.

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