

Charter Communications

**Response to Massachusetts Technology Collaborative Request
for Proposals
For Last Mile Grants to Provide Broadband Service
To Un-served Towns in Western Massachusetts**

RFP No. 2017-MBI-02

January 11, 2017

Attachment A
Grant Application Cover Sheet

Respondent Information	
Primary Respondent – Organization	Charter Communications Entertainment I, LLC
DUNS Number 830044389	Respondent Taxpayer ID# and jurisdiction (e.g., "a Massachusetts corporation") 43-1720016, a Delaware limited liability company
Mailing Street Address: 12405 Powerscourt Drive	Total Funding Requested \$5,103,665.00
State: Missouri	City/Town: St. Louis
Website www.charter.com	Zip Code: 63131
Brief Summary of Project: Charter Communications Entertainment I, LLC is submitting this application for Mass Tech/MBI funding to support the build out of our HFC network to provide broadband, video and voice services in six towns on MBI's list of un-served towns in Massachusetts. The six towns are: Princeton, Shutesbury, New Salem, Egremont, Hancock and Monterey.	

Point of Contact Information	
Respondent's Designated Representative: Authorized to commit organization; notified upon decision of grant award	
Name: Terrence R. Rafferty	Title: RVP Operations
Organization: Charter	Phone: 585-756-1111
Email Address: Terrence.Rafferty@charter.com	Fax:
Mailing Street Address: 71 Mount Hope Avenue	City/ Town: Rochester
State: New York	State: Zip +4 Code: 14620-1090
Respondent's Project Manager: Contact over course of project	
Name: David Poplawski	Title: Director of Field Engineering
Organization: Charter	Phone: 774-243-9732
Email Address: David.Poplawski@charter.com	Fax: 508-852-6379
Mailing Street Address: 301 Barber Avenue	City/ Town: Worcester
State: Massachusetts	State: Zip +4 Code: 01606

Attachment F
Grant Proposal Form

Note: Respondent should indicate N/A for any Town that Respondent does not propose to serve.

Municipality	Proposed Grant Funding (Does Not Exceed MBI Grant Allocation)	Proposed Grant Funding (Exceeds MBI Grant Allocation)	Proposed Level of Residential Coverage
ALFORD	N/A		
ASHFIELD	N/A		
BECKET	N/A		
BLANDFORD	N/A		
CHARLEMONT	N/A		
CHESTERFIELD	N/A		
COLRAIN	N/A		
CUMMINGTON	N/A		
EGREMONT	\$660,000	\$303,276	96%
FLORIDA	N/A		
GOSHEN	N/A		
HANCOCK	\$480,000	\$0	96%
HAWLEY	N/A		
HEATH	N/A		
LEYDEN	N/A		
MIDDLEFIELD	N/A		
MONROE	N/A		
MONTEREY	\$680,000	\$613,150	96%
MONTGOMERY	N/A		
NEW ASHFORD	N/A		
NEW BRAINTREE	N/A		
NEW MARLBOROUGH	N/A		
NEW SALEM	\$400,000	\$547,239	96%
OTIS	N/A		
PERU	N/A		
PETERSHAM	N/A		
PLAINFIELD	N/A		
PRINCETON	\$910,000	\$0	100%
ROWE	N/A		
ROYALSTON	N/A		
SANDISFIELD	N/A		
SAVOY	N/A		
SHUTESBURY	\$510,000	\$0	96%
TOLLAND	N/A		
TYRINGHAM	N/A		
WARWICK	N/A		
WASHINGTON	N/A		

WENDELL	N/A		
WINDSOR	N/A		
WORTHINGTON	N/A		

Charter Communications
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Executive Summary
Section 3.4(a)

- a. Executive Summary. Respondents should provide a summary of their organization, their qualifications and their proposed technical and operational approach for providing last mile broadband connectivity for each Town that Respondent proposes to serve. This summary should be a maximum of three (3) pages in length.*

Charter Communications (Charter) is a Fortune 100 Company based in New England and one of the nation's largest cable operators. With our recent purchase of Time Warner Cable and Bright House Networks, Charter now serves more than 25 million customers in 41 states, including more than 260,000 in 68 Massachusetts communities. We have a major presence in central and western Massachusetts with more than 1,000 employees. The City of Worcester is home to Charter's Southern New England headquarters and Charter's largest New England call center. Our corporate headquarters is located in Stamford, Connecticut.

Charter is now the third largest provider of multi-channel video services in the United States and the second largest provider of high-speed broadband service. In just the past three years, our combined companies have invested more than \$16 billion in technology and infrastructure. Charter is committed to driving innovation in the cable and broadband industry, ensuring customers have access to the fastest, most technologically advanced products in the market. We put our customers first, offering straightforward, nationally uniform pricing with no modem fees, no early termination fees, and no added federal or state Universal Service Fund (USF) fees to customers. Our low cost broadband program for low-income families and seniors – Spectrum Internet Assist – is among the fastest of its kind and not only meets, but exceeds the FCC's definition of high-speed broadband.

Through our hybrid fiber and coaxial cable network, we offer our customers traditional cable video services, as well as advanced video services (such as video on demand, HD television, and DVR service), Internet services and voice services. Our voice services are primarily provided using voice over Internet protocol ("VoIP") technology to transmit digital voice signals over our systems. Our video, Internet, and voice services are offered to residential and commercial customers on a subscription basis, with prices and related charges based on the types of service selected, whether the services are sold as a "bundle" or on an individual basis, and the equipment necessary to receive the services.

Charter's network includes three components: the national backbone, regional/metro networks and the "last-mile" network. Both Charter's national backbone and regional/metro network components utilize a redundant Internet Protocol ("IP") ring/mesh architecture with the capability to differentiate quality of service for each residential or commercial product offering.

Charter's last-mile network utilizes a traditional hybrid fiber coaxial cable (or "HFC") architecture, which combines the use of fiber optic cable with coaxial cable. In our Massachusetts system, we deliver our signals via fiber optic cable from the head end to a group of nodes, and use coaxial cable to deliver the signal from individual nodes to the homes served by that node. For our fiber Internet, Ethernet, carrier wholesale, SIP and PRI commercial customers, fiber optic cable is extended from the individual nodes all the way to the customer's site. On average, our system design enables up to 400 homes passed to be

served by a single node and provides for six strands of fiber to each node, with two strands activated and four strands reserved for spares and future services. We believe that this hybrid network design provides high capacity and excellent signal quality. The design also provides two-way signal capacity for the addition of further interactive services. HFC architecture benefits include: bandwidth capacity to enable traditional and two-way video and broadband services; dedicated bandwidth for two-way services, which avoids return signal interference problems that can occur with two-way communication capability; and signal quality and high service reliability. Charter's network and broadband service is vastly superior in terms of speed, reliability, scalability and sustainability to any satellite or wireless provider's service that requires line-of-sight access to customers in these rural areas that have very challenging topography for such services.

In 2014, Charter completed the transition from analog to digital transmission of the channels we distribute which allows us to recapture bandwidth. The all-digital platform enables us to offer a larger selection of HD channels, faster Internet speeds and better picture quality while providing greater plant security and lower transaction costs. Charter is committed and expects to upgrade the remaining systems the company acquired in Massachusetts to all-digital by the end of the first quarter of 2018.

Our operations are centralized with our corporate office responsible for coordinating and overseeing operations including establishing company-wide strategies, policies and procedures. Sales and marketing, network operations, field operations, customer care, engineering, advertising sales, human resources, legal, government relations, information technology and finance are all directed at the corporate level. Regional and local field operations are responsible for servicing customers and maintenance and construction of outside plant. All of these operational units and business functions are in place today and present in Massachusetts.

Charter is submitting this proposal to serve the following towns that are on MBI's list of un-served towns: Princeton, New Salem, Shutesbury, Hancock, Egremont and Monterey. Our proposal (and proposed level of residential coverage) is contingent on the following: verification of the accuracy of the Mass Tech/MBI data on road miles and house counts for each town; acceptance by Mass Tech/MBI of all the towns in our proposal as a package; receipt of the requested funding in Attachment F; and execution of cable television licenses and grant agreements for the aforementioned towns. We also anticipate and expect the full cooperation of local officials in regard to negotiating a cable television license based on the MBI template and requiring police details only where necessary in pre-determined locations. Charter has chosen these particular towns because 1) they are contiguous to our existing operations, 2) they represent a manageable capital outlay given our other capital obligations and 3) we can complete a build-out of these towns in a reasonable period of time.

Charter Communications
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Company History
Section 3.4(b)

Section 3.4(b) Company History. Provide an overview of Respondent's history, organizational structure and current operations.

Charter Communications is America's fastest growing TV, internet and voice company. We're committed to integrating the highest quality service with superior entertainment and communications products. Charter is at the intersection of technology and entertainment, facilitating essential communications that connect 25 million residential and business customers in 41 states. Our commitment to serving customers and exceeding their expectations is the bedrock of Charter's business strategy and it's the philosophy that guides our nearly 100,000 employees.

A Blend of Rich Cable History

Charter is currently the second largest cable provider in the United States. The company has achieved growth through innovation and acquisitions of cable properties, most recently completing transactions with Time Warner Cable and Bright House Networks.

The Charter name comes from the founding of Charter Communications, Inc. in 1993 and, while the company has grown and evolved on many levels over the past two decades, our roots take us all the way back to the early days of cable. What started as mom-and-pop businesses with cable strung from hilltops to homes in the late 1940s has evolved into the dynamic cable industry we know today.

Some of the highlights in the history of Charter are as follows:

1964 – Newhouse begins operating cable systems with the purchase of its first system in Alabama, branding it NewChannels.

1973 – Warner Communications forms Warner Cable.

1979 – Newhouse forms second cable company, MetroVision, in partnership with former Cox executives.

1981 – Newhouse adds Vision Cable to its cable assets.

1989 – Time Warner Inc. forms through the merger of Warner Communications and Time Inc.

1992 – Warner Cable and American Television & Telecommunications (ATC) combine to form Time Warner Cable.

1993 – Charter Communications, Inc. is founded and acquisitions of cable systems across the country begin. Charter's acquisitions the late '90s included Greater Media Cable, United Video and AMRAC, giving it a major presence in central and western Massachusetts.

- 1994 – Time Warner Entertainment and Advance/Newhouse form cable partnership.
- 1998 – Microsoft co-founder Paul Allen buys controlling interest in Charter.
- 1999 – Charter begins trading publicly on NASDAQ stock exchange under symbol CHTR.
- 2001 – Charter earns spot on Fortune 500.
- 2003 – Advance/Newhouse begins operating Bright House Networks with approximately 2.2 million customers in Alabama, California, Florida, Indiana and Michigan.
- 2007 – Time Warner Cable begins trading publicly on the NYSE.
- 2009 – Charter completes financial restructuring under Chapter 11, emerging a stronger company under new equity ownership.
- 2012 – Thomas M. Rutledge is appointed President & CEO of Charter.
- 2013 – Charter gains Liberty Media as an investor and announces Spectrum brand.
- 2016 – Charter, Time Warner Cable and Bright House Networks combine to form larger, stronger Charter.

Charter's Service Area

Headquartered in Stamford, Connecticut, with offices and employees across 41 states, Charter delivers TV, internet and voice products and services to homes and businesses of all sizes.

Our extensive, advanced fiber network passes more than 48 million homes.

Customers can find Charter stores in all of our major markets – many of which feature an interactive showroom to allow visitors to experience Charter's products and services firsthand.

Charter's Operations in Massachusetts

Our operations are centralized with our corporate office responsible for coordinating and overseeing operations including establishing company-wide strategies, policies and procedures. Sales and marketing, network operations, field operations, customer care, engineering, advertising sales, human resources, legal, government relations, information technology and finance are all directed at the corporate level. Regional and local field operations are responsible for servicing customers and maintenance and construction of outside plant. All of these operational units and business functions are in place today and supporting our Massachusetts operations. Charter is the licensed cable television provider in 68 communities in Massachusetts today, with more than 260,000 customers and a workforce of more than 1,000.

Quality Services

Superior, reliable, consistent services that deliver value – that’s our focus. Over the years, Charter has invested billions of dollars in infrastructure improvements, unleashing the power of an advanced, two-way, fully interactive fiber network. By moving to this all-digital network, today’s Charter customers enjoy the most HD TV channels, more On Demand choices and fastest internet speeds.

Charter delivers a wide range of TV, internet and voice services to residential and business customers through the Spectrum brand.

- **Spectrum TV** offers more HD than any other provider, DVR service, and instant access to thousands of On Demand choices, many in HD. Watch live TV anywhere in the home or download movies and shows to go on mobile devices with the Spectrum TV App or take TV Everywhere with over 60 channel apps to watch on the go.
- **Spectrum Internet** provides the fastest Internet speeds available starting at 60 Mbps (100 Mbps in some markets). With Spectrum Internet, customers can simultaneously stream videos, download music and more without sacrificing performance. Charter provides free modems and the fastest, most powerful in-home WiFi to do more on more devices. And because Charter doesn’t limit internet with data caps or extra fees, customers always have the freedom of unlimited internet service.
- **Spectrum Voice** is a fully featured, reliable service with unlimited local and long-distance calling plans that include voicemail and other popular calling features like call waiting and call forwarding, plus free 411. Serving over 10 million voice customers, Charter is among the largest providers of residential phone service in the nation.
- **Spectrum Business** helps small businesses achieve better results by delivering reliable internet, ethernet, voice and enhancement solutions. Spectrum Business customers enjoy a wide range of products – from high-quality broadband services to phone systems and top-tier digital TV and music – all flexible to meet the demands of growing businesses.
- **Spectrum Enterprise** builds business-to-business solutions with a people-to-people focus, providing the bandwidth and support customers need to accelerate business. Charter’s largest customers enjoy enterprise-grade voice, video, data, network, cloud and managed services via a flexible and secure fiber-based network.
- **Spectrum Community Solutions** provides customized, managed WiFi, TV and voice services to residential apartments and other multi-dwelling units via fiber connections. Spectrum Fiber WiFi delivers the fastest, most powerful connection with more bandwidth and no data caps.
- **Spectrum Reach**, the advertising sales division of Charter, offers traditional commercial advertising and new interactive solutions for the modern media landscape. One of the largest providers of media solutions in the United States, Spectrum Reach uses data-driven technologies that allow advertisers to better target and engage customers across a variety of platforms, including national cable networks, online and mobile.

A Customer-Focused Approach

Charter provides essential communications services that connect 25 million customers, underscoring the importance of efforts to exceed customer expectations. We take our role as a leading telecommunications provider seriously, which is why enhancing customer service is a fundamental philosophy that guides investment decisions and the daily work of all Charter employees.

Charter offers convenient evening and weekend customer appointments and has narrowed appointment arrival windows to one hour. We've also increased hiring in customer-facing positions and brought technical work in-house, lessening Charter's reliance on third-party contractors. Charter has expanded U.S. call center operations and updated its facilities to provide streamlined operations that make it easier for customers to reach an agent to answer their questions and provide assistance. These are just some of the many actions we've taken to enhance customer service.

Across the board, business functions related to Charter's people, processes and technologies uphold the goal of making ongoing enhancements to better serve customers. This philosophy starts with our executive leadership team and permeates throughout our company. It's through our continued actions that we give meaning to Charter's focus on enhancing customer service.

Strong U.S. Workforce

Growing to 100,000 employees nationwide, Charter is committed to building a strong U.S. workforce. Charter's business strategy focuses on investing in customer service operations. We believe our team of highly skilled and trained employees provides a competitive advantage to help drive a culture of innovation.

Commitment to the Community

Charter employees are passionate about giving back to the communities in which we live and work.

Charter our Community is Charter's national philanthropic initiative, providing education, resources and financial support to ensure more Americans are able to live in safe and healthy homes, with a goal of improving 25,000 unsafe and unhealthy homes across our service footprint by 2020. Chart our progress – and join us – on this exciting journey by visiting the Charter our Community website to see how our employees are improving communities and impacting lives.

Charter recognizes the central role broadband plays in our daily lives and the economic challenges faced by many Americans; as such, the company plans to launch an industry-leading broadband service for low-income customers. Charter's industry-leading broadband offering will provide substantial benefits for underserved low-income families and senior citizens by delivering fast speeds that exceed the FCC's definition of high-speed broadband, and more than triple the fastest speed currently offered by comparable programs.

Charter Communications
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Technical Proposal
Section 3.4(c)

b. Technical Proposal.

1. *Provide a high level technical description of the proposed Network, including:*
 - i. *Technology to be deployed (e.g. GPON, Active Ethernet, Hybrid Fiber-Coaxial Cable);*
 - ii. *Maximum bandwidth capacity; and*
 - iii. *Design considerations related to long-term sustainability and network reliability, redundancy, security and future expansion.*
 2. *Describe Respondent's approach to upgrading the proposed Network(s) over time to account for future consumer demand and service developments over the next fifteen years.*
 3. *MBI is willing to consider options to allow the selected Respondent to leverage MassBroadband 123 infrastructure and assets for the purpose of reducing public sector costs, accelerating buildout of the Network or supporting cost effective operation of the Network. These options could include, but are not limited to, dark fiber leases and alienation of MassBroadband 123 network spurs, where appropriate and in furtherance of the MBI's public mission. The Respondent may describe its plans, if any, to utilize the MassBroadband 123 network.*
1. Charter's network includes three components: the national backbone, regional/metro networks and the "last-mile" network. Both Charter's national backbone and regional/metro network components utilize a redundant Internet Protocol ("IP") ring/mesh architecture with the capability to differentiate quality of service for each residential or commercial product offering. The national backbone provides connectivity from the regional demarcation points to nationally centralized content, connectivity and services such as HD programming, voice interexchange points and Internet interexchange points. The regional/metro network components provide connectivity between the regional demarcation points and head ends within a specific geographic area and enable the delivery of content and services between these network components.
- Charter's last-mile network utilizes a traditional hybrid fiber coaxial cable (or "HFC") architecture, which combines the use of fiber optic cable with coaxial cable. In our Massachusetts system, we deliver our signals via fiber optic cable from the head end to a group of nodes, and use coaxial cable to deliver the signal from individual nodes to the homes served by that node. For our fiber Internet, Ethernet, carrier wholesale, SIP and PRI commercial customers, fiber optic cable is extended from the individual nodes all the way to the customer's site. On average, our system design enables up to 400 homes passed to be served by a single node and provides for six strands of fiber to each node, with two strands activated and four strands reserved for spares and future services. We believe that this hybrid network design provides high capacity and excellent signal quality. The design also provides two-way signal

capacity for the addition of further interactive services. HFC architecture benefits include: bandwidth capacity to enable traditional and two-way video and broadband services; dedicated bandwidth for two-way services, which avoids return signal interference problems that can occur with two-way communication capability; and signal quality and high service reliability. Charter's network and broadband service is vastly superior in terms of speed, reliability, scalability and sustainability to any satellite or wireless provider's service that requires line-of-sight access to customers in these rural areas that have very challenging topography for such services.

In 2014, Charter completed the transition from analog to digital transmission of the channels we distribute which allows us to recapture bandwidth. The all-digital platform enables us to offer a larger selection of HD channels, faster Internet speeds and better picture quality while providing greater plant security and lower transaction costs.

For set-top boxes, we are implementing a video conditional access strategy utilizing our downloadable security on a set-top box specified by us which can be manufactured by many different manufacturers. As we roll out downloadable security, we will utilize the Worldbox, and are introducing Spectrum Guide® in parallel to virtually all box types. Worldbox, by utilizing downloadable security along with the introduction of Spectrum Guide®, allows for a consistent service for all of our customers and on all of their televisions with a service that is rich in HD, has modern search and discovery features and is capable of improved implementation of future enhancements.

2. Charter's network design and history of continued investment and innovation positions our company well to offer enhanced services to meet the changing needs of our residential and business customers well beyond the 15-year term of a cable television license. In the past three years alone, Charter's combined companies have invested more than \$16 billion in infrastructure and technology.
3. Charter is currently using the Mass Broadband Middle Mile Network, but has not yet determined if there is any need to utilize the MBI Middle Mile Network for this project.

Charter Communications
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Proposed Coverage
Section 3.4 (d)

*d. **Proposed Coverage.** The Respondent should describe the proposed coverage to be achieved in each Town included in the Grant Application. The Grant Application should include the following information. Respondents are encouraged to provide additional information and/or data useful to MBI's evaluation of the coverage area within each Town that the Respondent's proposed Network will serve.*

- 1. Provide a map delineating the proposed coverage area in each Town that would be achieved upon completion of the Network(s). The Respondent may utilize the Town Profile maps posted on the MBI website <http://broadband.masstech.org/sites/mbi/files/documents/building-the-network/mbi-unserved-town-profiles-2016-05-17.pdf> to overlay the proposed coverage area. The Respondent should achieve coverage that meets or exceeds 96% of the Premises in each Town. "Premises" means standalone residential buildings, commercial properties, governmental buildings, healthcare facilities, K-12 schools, libraries, institutions of higher education, and other community institutions. A multi-dwelling or multi-tenant property should be counted as one Premise.*
- 2. Identify the number of premises and percentage of Premises in each Town that will be passed and become serviceable when construction of each Network is completed.*
- 3. Indicate whether the proposed coverage area includes premises located on private roads and ways.*
- 4. Indicate any support or cooperation or legal agreements that the Respondent will require from each Town to facilitate the development of the Network(s). Examples include access to right of ways, permitting, property for siting of a hut for electronics.*

NOTE: Preliminary data on each Town is provided in Attachment E. If Respondent would like additional preliminary unserved premise location data and/or data on the MassBroadband 123 network, please submit an email [to proposals@masstech.org](mailto:to_proposals@masstech.org) for further details. MBI does not warrant the accuracy or completeness of this data. Respondents are responsible for verifying the accuracy of data used to compile their grant application.

Charter is proposing to construct a hybrid fiber-coax (HFC) network to serve at least 96% of the existing premises passed along the public right of way where there are existing poles for aerial attachment in the following towns:

<u>Town</u>	<u>Coverage</u>	<u>Number of Premises (approximate)*</u>
Princeton	100%**	1325/1325
Shutesbury	96%	811/845
New Salem	96%	445/464
Egremont	96%	883/920

Hancock	96%	655/682
Monterey	96%	839/874

**** Charter has submitted an application for a cable television license in the Town of Princeton, committing to offer service to 100% of the existing homes on public ways within the town.**

Please see the attached maps (Exhibit 3.4(d)) for each town, showing the areas that represent the 4% of premises that are likely to remain un-served. We should note that these are estimates based on the available household data on the MBI maps. We reserve the right to make adjustments after we complete the walk-out/design phase of the project.

Charter will require Town officials to negotiate a cable television license agreement consistent with the template provided as part of this application. To facilitate network construction, Charter will request advance notification of which streets/locations in each of the towns will reasonably require a police detail during the construction phase and the ability of the town to provide such police details.

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Broadband Service Offerings and Prices
Section 3.4 (e)

e. Broadband Service Offerings and Prices. Describe all proposed broadband and related or additional services that the Respondent plans to offer to residential customers.

Charter Spectrum offers the fastest Internet speeds, starting at 60 Mbps, virus detection with Security Suite and no data caps. In addition to offering speeds 20x faster than DSL, Spectrum Internet™ delivers the fastest, most powerful in-home WiFi with enough speed and range to stream, game and upload with ease across all the devices in one's home. Technical Support is available 24x7 to assist with account issues or connection problems. Spectrum Internet™ is paired perfectly with Spectrum TV™ to allow Spectrum TV™ customers to enjoy the freedom to watch live TV anywhere in the home with the Spectrum TV App. Prices quoted below are subject to change, and Charter services are subject to a variety of taxes and fees.

1. Indicate speed tiers and proposed rates to be charged for each tier of residential broadband service.

Spectrum Internet™ offers speeds of 60 Mbps or 100 Mbps. When bundled with in standard Triple Play package, new customers receive the 60 Mbps service for \$29.99 for the first twelve months, with no additional modem fee. Standard rates are as follows:

Spectrum Standard Service Offerings (month-to-month plan)	
Spectrum Internet 60/4	\$59.99
Spectrum Internet 60/4 with Spectrum TV	\$53.99
Spectrum Internet 60/4 with WiFi	\$64.99
Spectrum Internet Ultra 100/5	\$119.99
Spectrum Internet Ultra 100/5 with Spectrum TV	\$113.99
Spectrum Internet Ultra 100/5 with WiFi	\$124.99

2. List any fees, charges and costs that would be paid by the subscriber, including any equipment or installation fees.

Other Charges and Terms

Data included with monthly charge	Unlimited
Charges for additional data usage	No Charge
Optional modem or gateway lease - Charter equipment included with service	No Charge
Security Suite	No Charge

One-time Charges

Standard Installation Fee	\$49.99
Spectrum Ultra Installation Fee	\$199.99

Self-Installation	No Charge
WiFi Activation Fee (in addition to installation fee)	\$39.99
WiFi Self-Installation (Must be existing video customer in order to qualify for self-installation)	No Charge

3. *Describe approach to pricing of residential broadband services. Include minimum period of time during which initial rates will be in effect. Indicate any targeted or discounted services for low income and senior citizen customers.*

Charter's promotional pricing for residential broadband service is good for the first twelve months, then pricing reverts to the standard pricing with the best value being offered to customers who bundle services with a triple play.

Charter's Spectrum Internet Assist service is a low-cost, high-speed broadband service being offered to eligible low-income U.S. families and seniors across Charter's national footprint. Spectrum Internet Assist service offers eligible customers low-cost broadband speeds three times faster than comparable services offered by competitors, making Spectrum Internet Assist one of the only low-cost broadband service for low-income households that meets and even exceeds the Federal Communications Commission's (FCC's) definition of "high-speed."

Families with students who participate in the National School Lunch Program and Seniors who are 65 and older and who receive Supplemental Security Income program benefits are eligible for the Spectrum Internet Assist service. The monthly price for a 30/4 speed package is \$14.99 per month. It includes all standard Internet features; i.e. security suite, mailboxes, etc. and a free modem. WiFi in the home is also available for a \$5.00 locked-in monthly fee, with a router and no activation fee.

4. *If applicable, provide a rate sheet for a territory within the Respondent's existing service area that is relatively close in geographic proximity to each Town that Respondent proposes to serve.*

See attached Residential Rate Card for West Stockbridge, MA (Exhibit 3.4(e)).

5. *Indicate willingness to offer Triple Play (broadband, telephone, multi-channel video programming) services on a bundled and unbundled basis.*

Charter will offer a Triple Play service that includes high-speed broadband, multi-channel digital video programming, and fully featured voice service. Services will be available on a bundled or unbundled basis.

6. *Describe any proposed "value enhancements", such as offering a free baseline level of service to all residents, public wi-fi hotspots or free or reduced fee service for public users.*

Charter's primary broadband value lies in the speed and reliability of its Spectrum Internet™ service. As stated above, Charter will offer its low-cost Spectrum Internet Assist service for low income families and senior citizens. Charter may establish public WiFi hotspots in these targeted communities.

7. *Explain Respondent's approach to working with business and institutional customers to develop customized service offerings.*

Spectrum Enterprise serves mid-market and enterprise businesses via a flexible and secure fiber-based network. This group provides enterprise-grade voice, video, data, network, cloud and managed services to Charter's largest customers including national accounts, carrier/wholesale and key verticals (such as government, K-12 education, universities, hospitality, hospitals and healthcare). In addition, through the NaviSite® team, Spectrum Enterprise sells cloud and hosted solutions to businesses in and out of our U.S. footprint and in the U.K. The Spectrum Enterprise team consists of product, strategy, sales, marketing, operations, finance and human resources. Spectrum Enterprise serves more than 95, 000 primary service units ("PSUs") nationwide, including more than 1,000 in Massachusetts.

Through Spectrum Business, Charter provides scalable, tailored broadband communications solutions to small and medium sized businesses, such as video entertainment services, Internet access and business telephone services. Spectrum Business serves more than 1.5 million primary service units ("PSUs") nationwide.

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Operational Structure and Capacity
Section 3.4(f)

f. Operational Structure and Capacity. Describe planned approach, infrastructure and resources that Respondent will put in place to perform core operational functions, including construction, customer service, subscriber billing, subscriber marketing and acquisition, installing customer premises equipment, and operating and maintaining the Network. Respondent should indicate if existing operational capacity (e.g. staffing, resources and network monitoring infrastructure, including the Respondent's network operations center) will be sufficient to operate and maintain the new Network(s) that Respondent proposes to build. Respondent should also clearly identify the extent to which existing operational capacity will need to be expanded or augmented to construct, operate and maintain the new Networks.

Charter's existing operational capacity (i.e., staffing, resources, network monitoring infrastructure and network operations center) will be sufficient to operate and maintain the extensions of Charter's existing network that it proposes to build in the communities identified in this proposal. Charter has selected the identified communities because the Company believes it can handle the required capital outlay, complete the project and begin to offer services to customers in a reasonable time frame.

Charter Communications
RFP No. 2017-MBI-02
Assurance of Long-Term Service
Section 3.4(g)

g. Assurance of Long-Term Service.

1. *MBI's goal in providing the grant funding is to secure long-term access to broadband internet service for subscribers in the designated Towns on terms and at service levels comparable to those available elsewhere in Massachusetts. MBI is seeking a multi-year commitment, with a ten-year term from the date of final Network completion desired and a longer term preferred. During this period Respondent will commit to: (i) maintain each Network in a state of good operation and repair consistent with applicable industry standards; and (ii) continue to make broadband service available to Premises passed by each Network on terms, conditions, and prices comparable to those available for similar service in the region. In prior grant agreements with broadband providers, MBI has required 10 year commitments. A second point of reference is provided in the Draft Cable Television License Agreement (discussed below in sub-section (l)), which proposes a 15-year relationship between a grant recipient and a Town where the grant recipient intends to provide multi-channel video programming service. (from Addendum #2)*
2. *Respondent should explicitly state its willingness to make these commitments. In doing so, a Respondent may identify specific terms or measures it proposes to employ as standards for measuring adherence to these commitments. Useful standards might include: (1) reference to the Respondent's description of its proposed offerings and terms of service in section (e) above; (ii) reference to published terms of service and pricing that Respondent now provides in similar, geographically proximate communities; and/or (iii) reference to relevant industry standards published by third-party authorities generally relied on within the telecommunications industry.*

Charter is proposing to build an extension of its existing networks in each of the communities identified in this proposal. It is Charter's intention to negotiate and execute 15-year cable television licenses in each of these communities, consistent with the cable television license template submitted with this proposal and subject to standard transfer provisions.

Charter will commit to: (i) maintain each Network in a state of good operation and repair consistent with applicable industry standards; and (ii) continue to make broadband service available to Premises passed by each Network on terms, conditions, and prices comparable to those available for similar service other communities in the region where Charter is the licensed cable television provider.

Charter Communications
RFP No. 2017-MBI-02
Project Schedule
Section 3.4(h)

h. Project Schedule. Provide a proposed schedule for the development of the Network in each Town that is included in the Grant Application broken out into the phases shown below. MBI's Grant Agreement with each selected Respondent will include a project schedule with defined milestones that the Respondent must satisfy to receive grant disbursements.

- 1. Planning and Design*
- 2. Make Ready*
- 3. Construction*
- 4. Network Turn-Up and Provisioning of Service, including the anticipated deployment strategy and scope and timing of the proposed rollout of the Network, including customer acquisition and onboarding of new customers.*

Charter's Project Schedule is contingent upon a number of factors that are outside its control: 1) the award of the grant money being requested by Charter in this proposal, 2) the selection of Charter to be the provider in the six towns included in this proposal; 3) the award of a cable television license authorizing Charter to use the public right of way and all related easements in each of the six towns in this proposal and 4) the cooperation of pole owners in completing make-ready work and providing us with pole licenses.

Charter will begin the Planning and Design phase of the project upon execution of a Grant Agreement with MassTech/MBI, and will complete this phase of the project within six to eight months. In conjunction with the Planning and Design phase, Charter will simultaneously be negotiating a cable television license with each of the six towns. Given that the Town of Princeton has already initiated its cable television licensing process, there may be an opportunity to expedite the Project Schedule for this town.

As we proceed through the Planning and Design phase, we will begin the process of applying for pole licenses and determining with the applicable pole owners the amount of make-ready work and a schedule for completing all the necessary make-ready work. Charter's experience with pole owners that are investor-owned utilities is that the licensing and make-ready work for a large scale project such as this can take a year or more.

Charter is committed to completing the Construction and Network Turn-up and Provisioning of Service phases within twelve months of receipt of the pole licenses. We will begin construction in each town as we receive the pole licenses for the town. The order will be determined by where we experience the path of least resistance in obtaining the pole licenses.

Charter Communications
RFP No. 2017-MBI-02
Proposed Grant Amount
Section 3.4(i)

- i. Proposed Grant Amount. Utilize the Grant Proposal Form in Attachment F and list the amount of the available grant funding (see Attachment D) that Respondent is requesting to achieve at least 96% coverage in each Town that Respondent proposes to serve. Additionally, Respondent should identify additional Town(s) that it would be willing to serve at the minimum 96% coverage level if additional funding were made available. In these instances please list the additional amount of funding requested by the Respondent.*
- MBI may in its sole discretion and in consultation with the Towns consider grant requests that exceed the grant allocation amounts listed in Attachment D.*

See Attachment F.

Charter Communications
RFP No. 2017-MBI-02
Experience and References
Section 3.4(j)

j. Experience and References. Provide brief descriptions of all broadband networks of similar size, scope and characteristics located in the United States that the Respondent has built or significantly expanded within the past five years and that Respondent continues to operate. Provide contact information for municipal or other governmental references for each network.

Charter, upon the completion of its transaction to merge with Time Warner Cable and Bright House Networks in May 2016, provides high speed broadband service in more than 8,600 communities in 41 states. Charter, Time Warner Cable and Bright Networks have invested \$16 billion in infrastructure since 2014. Charter, which has operated in 53 Massachusetts communities, is already all-digital. Over the next year, Charter will invest significantly in the former Time Warner Cable and Bright House Networks to take these networks all digital, too.

Charter's last-mile network utilizes a traditional hybrid fiber coaxial cable (or "HFC") architecture, which combines the use of fiber optic cable with coaxial cable. In our Massachusetts system, we deliver our signals via fiber optic cable from the head end to a group of nodes, and use coaxial cable to deliver the signal from individual nodes to the homes served by that node. For our fiber Internet, Ethernet, carrier wholesale, SIP and PRI commercial customers, fiber optic cable is extended from the individual nodes all the way to the customer's site. On average, our system design enables up to 400 homes passed to be served by a single node and provides for six strands of fiber to each node, with two strands activated and four strands reserved for spares and future services. We believe that this hybrid network design provides high capacity and excellent signal quality. The design also provides two-way signal capacity for the addition of further interactive services. HFC architecture benefits include: bandwidth capacity to enable traditional and two-way video and broadband services; dedicated bandwidth for two-way services, which avoids return signal interference problems that can occur with two-way communication capability; and signal quality and high service reliability. Charter's network and broadband service is vastly superior in terms of speed, reliability, scalability and sustainability to any satellite or wireless provider's service that requires line-of-sight access to customers in these rural areas that have very challenging topography for such services.

Charter is committed to driving innovation in the cable and broadband industry, ensuring customers have access to the fastest, most technologically advanced products on the market. All Charter customers in Massachusetts have available DOCSIS 3.0 wideband technology, allowing us to offer residential customers multiple tiers of Internet services with download speeds of up to 100 Mbps, and up to 300 Mbps in certain markets. Since going all-digital, our base Internet download speed is 60 Mbps. Accelerated growth in the number of IP devices and bandwidth used in homes has created a need for faster speeds and greater reliability. Charter is focused on providing services to fill those needs.

The most relevant example for MassTech and MBI to consider is the Charter experience in Massachusetts. In the fall of 2014, Charter completed the upgrade to all-digital of all of its

Massachusetts systems, with the exception of three towns in the Berkshires. This investment in technology and infrastructure resulted in, among other things, the doubling of the residential broadband speed offered by Charter from 30 Mbps to 60 Mbps, with an option for 100 Mbps also available. In the summer of 2016, Charter completed the all-digital upgrade of the existing systems in the remaining three towns in the Berkshires, and in partnership with MassTech and MBI will extend the network in these three communities in 2017 to make broadband available to all of the premises along the public ways in these three previously un-served communities.

Charter is also committed to upgrading the 15 recently-acquired Time Warner Cable communities in Massachusetts to all-digital by the end of the first quarter of 2018. Charter offers high speed broadband in these communities today, but service and speed will be enhanced with the planned upgrade.

Attached as Exhibit 3.4(j) is list of the contacts for Charter's franchised communities in Massachusetts.

**Charter Communications
RFP No. 2017-MBI-02
Financial Resources
Section 3.4(k)**

k. Financial Resources.

- 1. Provide three years of Respondent's most recent audited financial statements. If Respondent's most recent financials are over 180-days old, add the most recent interim statements. Should the Respondent not have audited financial statements, Respondent should provide an explanation as to why it does not have such audits and submit three years of the most recent set of audited financial statements of its parent company, together with an explanation of corporate organization that clearly demonstrates the relationship between the Respondent and its parent. Should neither the Respondent, nor its parent, have audited financial statements, Respondent should: (1) submit a statement explaining why such audited financial statements do not exist; and (2) provide unaudited financial statements sufficient, in the determination of MBI, to allow MBI to evaluate the Respondent's financial condition, including three years of the Respondent's most recent income statements, balance sheets, and cash-flow statements.***
- 2. Submit the completed Officer's Certificate (see Attachment C).***

Attached as **Exhibit 3.4(k)** are the Charter Communications Annual Reports for 2015, 2014 and 2013, in addition to the Form 10Q for the third quarter of 2016. Charter's financial reports are also available on-line at www.charter.com under Investor Relations.

See the Attached Officer's Certificate (**Attachment C**).

Charter Communications
RFP No. 2017-MBI-02
Cable Television Licenses
Section 3.4(l)

l. Cable Television Licenses. *If the Respondent intends to offer subscribers multi-channel video programming service in any Town, State law will require the Respondent to obtain a cable television license agreement with each such Town. MBI has prepared a Draft Cable Television License Agreement (which has been posted to the MBI website <http://broadband.masstech.org/news-and-resources/procurements/rfp-last-mile-grants-provide-broadband-service-unserved-towns>) and the Mass Tech Collaborative website (<http://www.masstech.org/rfp-last-mile-grants-provide-broadband-service-unserved-towns-western-massachusetts>) to set a baseline framework for cable franchise negotiations between a Town and a Respondent. The Respondent should indicate its willingness accept the general terms of the Draft Agreement or in the alternative indicate any terms that it will seek to negotiate.*

Charter intends to negotiate and execute cable television license agreements with each of the communities identified in this proposal, under terms and conditions consistent with the MBI Draft Cable Television License Agreement. Charter is willing to accept the general terms of the Draft Agreement, with some minor revisions highlighted in the attached Cable Television License template attached as **Exhibit 3.4(l)**.

Charter Communications
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Rights of Way Access
Section 3.4 (m)

m. Rights of Way Access. A cable television license provides a well understood arrangement for a network operator to obtain from a Town rights of way and other access rights necessary to the construction of a Network within the Town. Provide the Respondent's proposed approach to obtaining these necessary rights of way and other access rights in a Town(s) if such access will not be obtained via a cable television license(s).

This is not applicable to Charter.

Charter Communications
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Administrative Forms
Section 3.4(n)

n. Administrative Forms.

- 1. Grant Application Cover Sheet (see Attachment A)*
- 2. Authorized Respondent's Signature and Acceptance Form (see Attachment B)*

See Attached Grant Application Cover Sheet (Attachment A).

See Attached Authorized Respondent's Signature and Acceptance Form (Attachment B).

Exhibits included with this Proposal

Exhibit 3.4(d) – Town Maps

Exhibit 3.4(e) – Sample Rate Card from West Stockbridge, MA

Exhibit 3.4(j) – List of Massachusetts Local Franchise Authority Contacts

Exhibit 3.4(K) – Charter Annual Reports for 2015, 2014 and 2013; Charter Form 10Q for Q3 2016

Exhibit 3.4(L) – Cable Television License Template