



WiValley and Otelco team up to deliver Fiber, Wireless and Hybrid Broadband Solutions for four Western MA Communities



Regional Broadband Proposal for
Florida Hawley, Monroe & Savoy

*Response to
Mass Tech Notice of Funding Availability,*

no. 2018-MBI-01

June 14, 2018

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WiValley Proposal for Broadband in 4 western towns - Update to WiValley's response to NOFA
No. 2018-MBI-01 dated Nov 10, 2017

Dear Mr. Larkin,

I am pleased to present a formal proposal for WiValley to deliver a regional broadband solution for four Western MA communities. This is an update to our expression of interest to the MBI's Notice of Funding Availability, no. 2018-MBI-01.

To eliminate the requirements for project bonds or the Towns to carry the upfront project financing we have established a corporate collaboration with CRC Communications LLC d/b/a OTELCO, which will allow WiValley to construct the network in a multi phased approach and be paid in arrears based on performance metrics and upon completion of each phase as agreed upon between MBI and the towns.

Under the agreement between OTELCO and WiValley, WiValley will construct, own and operate the 4-town network under an agreement with MBI. This agreement is specifically to construct operate and provide broadband service throughout the towns of Florida, Hawley, Monroe and Savoy. OTELCO will operate as the ISP across this network, delivering phone and internet service to each customer throughout these towns. OTELCO will be actively participating in the FCC CAF II auctions, specifically targeting the block groups within the town boundaries of Florida, Savoy, and Hawley. In order to meet federal requirements related to CAF II funding, WiValley's collaboration with OTELCO must be in place for a minimum of 10 years; this ensures sustainability of the proposed broadband solutions for these rural communities.

Under our innovative approach and agreement, WiValley will maintain its responsibility for the design, construction, ownership (apart from MBI123 fiber and vertical assets), operations and maintenance of a multi-town communications network to offer broadband service to a minimum of 96% of each town's residents and businesses. OTELCO will participate in our initial project financing as well as be the exclusive ISP providing broadband service to connected customers over this network throughout this service area.

The provisions of this proposal are intended only as an expression of interest on behalf of WiValley, are not intended to be legally binding on any party, and are expressly subject to the negotiation and execution of an appropriate binding Agreement.

Sincerely,



Brian Foucher
President – WiValley, Inc.

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About WiValley

WiValley leverages the strengths of the latest wireless and fiber technologies to bring broadband to underserved communities, taking advantage of our ability to innovate and scale. We engineer custom hybrid fiber/wireless solutions that address the future communications needs of both business and residential customers, with broadband speeds that exceed those available over traditional copper (wired) infrastructures. Our involvement with state and town initiatives include projects with NH FastRoads and the Massachusetts Broadband Institute (MBI).

Founded in 2008, WiValley provides broadband coverage to a growing list of over 50 communities in MA, NH and VT. Our track record demonstrates that we possess the organizational capacity, financial resources and requisite experience to effectively manage long-term construction and operational risks.

WiValley set itself apart from its competitors by delivering hybrid broadband solutions operating both fiber and wireless networks. In addition to delivering service to residential and business customers, WiValley delivers broadband solutions to many community anchor institutions, hospitals, schools and our network enables critical communications to the community public safety communications networks.

For the purpose of this project, we have engaged the engineering and project management services of the Interisle Consulting Group. Interisle led the original MB123 grant design, and is familiar with the challenges faced by the towns in question, having performed several of their last mile feasibility studies.

Additionally, we are entering into a strategic partnership with Otelco, Inc, to provide initial financing and to offer the depth of ISP solutions to the customers this project will serve, allowing WiValley to focus on our strengths and expertise to construct and operate the core network.

About OTELCO

Otelco Inc. is the corporate parent of a group of rural telephone companies and two competitive local exchange carriers that have operated in Maine, Massachusetts, New Hampshire, Vermont, West Virginia, Alabama, and Missouri since 1889.

Today, Otelco owns and operates a network that includes more than 2,000 miles of redundant and reliable fiber optic cables which provide secure, dependable connectivity to its customers.

Otelco is committed to bring quality broadband services to all of its customers and is actively providing service and continuing to build FTTN and FTTH projects. The company's current capital projects include fiber to the premise in portions of Gray, New Gloucester, and Lowell, Maine, as well as Shoreham, Vermont. The company also has extensive experience with other broadband technologies, operating a fixed wireless network in central Missouri, a Cable TV system in Oneonta, AL and DSL service throughout its service footprint.

In 2017, Otelco began providing service on municipal broadband networks, becoming the sole ISP on the municipal network in Leverett, MA. While we are new to the municipal business, we have long specialized in providing large scale services on third party networks. Otelco previously served as the wholesale phone service provider for Maine's largest cable company and still provides wholesale phone and Internet services to several small cable TV networks and Internet Service Providers.



Looking forward, Otelco continues to invest in infrastructure and the latest technology to enhance product and service delivery methods. Otelco is excited to participate as a strategic partner with WiValley in this innovative multi town project delivering wireless solutions throughout these communities. Looking back, Otelco will always hold strong its century old tradition of local community involvement and support, and its commitment to provide superior customer care.

The company employs more than 150 men and women in New England who support more than 32,000 business and residential subscriber lines.

A customer care center at Otelco headquarters in New Gloucester, and another in Bangor, Maine, along with a 24/7 Network Operations Center (NOC) and several staffed field service locations in Maine, Massachusetts, and Vermont provide seamless customer support from the initiation of a service order through installation and beyond with technical support and repair when needed.

An Affordable Regional Solution

WiValley is proposing to design, build, maintain, and operate an affordable hybrid wireless/fiber regional network for four of the unserved towns:

- A minimum of 96% of homes & businesses served in each town
- 100% funded via town broadband grants
- No town tax support, funding authorization or financial risk
- Vertical assets will become public property, unlike cable networks built with state subsidies
- Low installation fees, with no subscriber financing or hidden costs
- Rates comparable to urban services, lower than in fiber proposals
- 25/3 Mbps or greater service to 75% or more of homes, minimum of 12/2 Mbps available service to at least 96% of homes

Cross-border Economies

By working across municipal boundaries, the regional project will deliver significant economies:

- Efficient network configuration
- Maximum advantage of existing infrastructure (e.g. Florida & Hawley access to DCR tower in Savoy)
- Construction efficiency
- Administrative & service efficiency
- Lower backhaul costs via combined purchase
- System-wide reliability via redundant paths

Network Resiliency and Redundancy

The regional network will be engineered for resiliency and redundancy, with the aim of assuring reliable access to state and national backbones. It will interconnect with both the Mass Broadband 123 network and a licensed microwave carrier network, providing backhaul redundancy for service during unplanned network outages. Where practical, key wireless sites will have multiple connection paths. Every site will have battery backup power.

Technologies Employed

Services will be provided via the optimal deployment of several technologies:

- 5 GHz for locations where path conditions (line of sight) permit, including point to point backhaul and point to multipoint subscriber access. This band provides the greatest bandwidth (data carrying capacity per sector) at lowest cost.
- 3.5 GHz CBRS band for locations where near-line-of-sight paths permit. This evolves in 2018-2020 from the current 3.65-3.7 GHz band (for which WiValley has a nationwide license) into the new 3.55-3.7 GHz CBRS band, offering the quietest spectrum and higher power levels on a licensed-by-rule or priority-access license basis.
- 2.4 GHz for more obstructed paths in low-density locations. Medium bandwidth.
- 900 MHz or TV white space (TVWS) for cluttered paths. Best non-line-of-sight coverage but least bandwidth.
- Licensed microwave for specific backhaul or transport links.

This proposal is specific to a wireless only design that utilizes MBI fiber as its primary backhaul as well as independent licensed microwave links for higher reliability

Conditions for maximum deployment:

WiValley will undertake the construction of the vertical assets and the core network infrastructure within each town. We will deploy sufficient network equipment on a vertical asset to support the proposed broadband speeds throughout the towns. Upon future expression of interest or growth in an area not yet served, we will extend our network to such an area within an interval in keeping with current industry standards for the selected technology. Upon an award from the FCC CAF II auction, the FCC will hold OTELCO accountable to ensure that we meet all performance and coverage requirements in this service area. This will be enforced by the FCC for a period of 10 years at no cost to the property owner or the town.

The scope of the project deployment will depend upon whether or not we can gain access to the MB123 fiber network off Chapel Road in Savoy with a new ring cut and drop at reasonable, acceptable terms and conditions and service under published MBI123 Service Provider Rates or from an approved Service Provider.

Additionally, the scope of project deployment will depend upon whether or not the Commonwealth of MA can provide an agreement on a timely basis for WiValley to deploy equipment on the DCR site on Borden Mt.

Equipment ownership

WiValley will own all network equipment and infrastructure, except network components associated with middle mile fiber transport. A buyout option of all network assets will be available after Otelco / WiValley meet the obligations as set forth in the FCC CAF II auction. Terms related to the buyout options will be defined at the execution of a contract.

Vertical assets and wireless siting assumptions

Our proposal requires the construction of one new antenna tower on town owned property off Chapel Road in the Town of Savoy. We propose granting title to this tower to the Town of Savoy in exchange for our right to use it at no charge. The proposed 90' fiberglass monopole would also have sufficient capacity for public safety



use. No new towers are anticipated for the remaining towns. We will, however, consider construction of a guyed tower at Florida Town Hall for shared public safety use, in lieu of the planned pole, and may consider other sites, especially where wood utility poles appear disadvantageous.

We anticipate placing approximately 30 new wood utility poles extending 42 to 68 feet above ground, for the regional network in Savoy, Florida, Hawley and Monroe. These quantities are preliminary estimates and may change in final engineering. Our proposal is contingent upon there being no zoning or similar obstacles (i.e., tower ordinances) to the placement or use of these poles. These poles will also be available for public safety use, for instance to provide fill-in receiver antenna locations for a town or regional voting repeater system, and our network will be made available to support such applications (i.e., voice-priority bandwidth to the voter site) at no charge, provided that it is within the network's service area.

While most of the utility poles are in the served towns, we anticipate requiring a specific site to place a pole in the Town of Charlemont, which is critical to Hawley's coverage. A site in the Town of Rowe has also been identified which might be useful for serving Monroe. There is general agreement with the Town of Charlemont related to WiValley's proposal and to this project. Upon execution of a contract related to the placement of poles in Charlemont, we will be prepared to execute a separate contract with the Town of Charlemont for services.

No land acquisition is anticipated. Our proposal is contingent on being able to set these utility poles in the public roadside rights-of-way, with the cooperation of the towns and state. Title to these poles will belong to the towns in which they are located, in exchange for our having use rights, at no charge or taxation, for as long as WiValley owns or operates the network. If the necessary governmental are not provided, we likely will not be able to move forward with this Proposal.

We will require the use of the existing DCR fire tower on Borden Mountain in Savoy, which may also be one of our upstream Internet access points. We continue to seek permission to use the meteorological tower at the Avangrid Renewables site in Monroe. It is not required but it will add improved redundancy and coverage. Absent access to the Borden site, our proposal will require change and we would need to adjust our designs and schedule and pricing accordingly.

At wireless subscriber locations, customers will be required to sign a homeowner access agreement, and we reserve the right to select the antenna location and type, upon consultation with the homeowner. If the technologically feasible site selected by WiValley is not acceptable by the homeowner for aesthetic or other non-technical reasons and as a result the installation does not proceed, WiValley will have met its obligation to deliver service to the customer premise and the premise will not count against our commitment to premises covered.

Technology Enhancements

Other delivery options may become available via new or improved technologies and changes in the regulatory environment. As speeds of delivery improve, the percentage of homes capable of receiving 25 Mbps or greater service may increase over time.

While fiber performance already exceeds anticipated residential demand for the next decade and the technology is fairly mature, wireless technology continues to advance rapidly. Improvements will be particularly important for serving non-line-of-sight locations. Among the wireless enhancements that may become practical within the next 5 years, in addition to CBRS, are licensed point-to-multipoint operation, massive (more than 4x4) MIMO (multiple-input multiple-output, meaning coordinated signals) with beam steering, and advanced LTE



transmission. Our business model presumes that wireless electronics have a shorter economic lifespan than do fiber or vertical assets, and our continued success depends upon opportunistic utilization of improved technologies. Higher-speed wireless connections may also be custom-engineered to business locations on demand, dependent upon terrain and path conditions.

Coverage

We will provide at least 96% coverage in every town. In the case of Savoy and Florida, our wireless coverage is expected to exceed 98% of homes. We will make every effort to connect every property in these communities but we are committing to the 96% throughout this region

However, because many homes are located in heavily wooded areas reachable only via non-line-of-sight wireless paths, WiValley is offering a minimum of 12/2 Mbps to all served homes and 25/3 to at least 75% overall.

Service Description

WiValley / Otelco will provide:

- Broadband service to a minimum of 96% of homes and businesses
- No data caps
- Voice priority phone service, with battery backup, free porting of existing numbers, and no charge for calls to anywhere in the United States, Canada, Puerto Rico, U.S. Virgin Islands and Guam
- Hosted email provided by Otelco
- Optional home Wi-Fi router

Service Prices

Otelco will be the ISP across the Multi Town Network. Otelco and WiValley have leveraged our combined economies of scale to offer improved pricing, and we will offer broadband service at the following standard monthly rates:

Service ⁱ	Price
12/2 Mbps	\$44.95
25/3 Mbps	\$54.95
50/10 Mbps	\$79.95
100/20 Mbps	\$109.95
25/25 Mbps Business class ⁱⁱ	\$119.95
100/100 Mbps Business class	\$299.95
Digital Phone Service (Unlimited) ⁱⁱⁱ	\$24.99

ⁱ Service above 25 Mbps only available at locations with sufficient signal strength.

ⁱⁱ Business class services are customized for business applications; basic services are available everywhere. Additional phone service options including business-grade electronic PBX service will also be available at competitive prices.

ⁱⁱⁱ No additional "FCC subscriber line charge" will be assessed; Universal Service Fund and E911 taxes do apply.

Otelco will invoice customers directly and offer single pricing where there is no breakdown to the customer of Wholesale / ISP costs. No MLP fee will be assessed within the FHMS network

The installation charge for each subscriber will be as follows.

- Installation is free until 90 days after the completion of phase IV
- Installation cost of \$50 up to 1 year following the completion of phase IV
- Installation cost of \$100 after 1 year following the completion of Phase IV

These installation rates are available if subscriber agrees to a minimum service term of 1 year

ISP and Network Operator Services

ISP and network operator services provided by Otelco and WiValley include:

- Customer service
- Billing
- 24/7 Tech support
- Network monitoring and security
- Product development
- Sales and marketing
- Legal & regulatory requirements related to ISP services

Assurance of Long-Term Service

WiValley commits to maintain its network in a state of good operation and repair, and perform upgrades, when necessary, in keeping with current industry standards. WiValley commits to providing broadband service to the communities included in this proposal for a minimum of ten (10) years with two renewable 7 year terms. If before each of the renewable terms, customer adoption for any of the towns is below or falls below 35%, WiValley can elect for the network assets and customer base to revert to an entity designated by the Town or Commonwealth. If for some reason WiValley is unable to provide service to a Town before then, its network assets and customer base will revert to an entity designated by the Town or Commonwealth.

Buy-out by the Towns

The Towns will have the option to purchase the network from WiValley. Terms related to the buyout options will be defined at the execution of a contract. If this project receives FCC CAF II funding, WiValley/Otelco will be obligated to own and maintain the network infrastructure for a minimum period of 10 years.

Project Schedule

While it is difficult to ascertain a definitive project schedule, should the state and towns complete their reviews and approvals – including rights of way and other access rights and zoning variances – by July 1, 2018, it is anticipated that the majority of the core network infrastructure (transmitter sites) would be installed and fully operational by December 31, 2018 with customer installations beginning immediately upon the successful deployment of each transmitter site.

WiValley plans to target connection of the most challenging customers first while the leaves and foliage are out in full. We anticipate that we will begin delivering service to those customers in August 2018. While we aim for substantial completion in 2018, we recognize that there may be local delays caused by factors beyond our

control, such as environmental review, or vendor equipment availability. Below are the highlights of each of the 4 phases:

Phase I - Core POP, Chapel Road, Savoy; Borden Mt; Florida (Oleson); Hawley (Side Hill)

This phase is focused on establishing the core of the network. A 90 foot fiberglass monopole will be installed on town owned property just off Chapel Rd in the Town of Savoy. A network Shelter with utility power, batteries and additional Solar power backup will be constructed to be the primary connection to the MB123 Fiber.

The Borden Mountain Department of Conservation and Resources (DCR) site is critical. This proposal assumes that the Commonwealth of Massachusetts will provide WiValley an agreement with reasonable terms and conditions to deploy the needed infrastructure. Additionally, this site will provide service to many homes in the towns of Florida, Monroe and Savoy.

We will install a 70 foot wooden utility pole off of Oleson Road in the Town of Florida. This installation of a wooden utility pole (Vertical Asset) is an example of what will be commonly deployed throughout the towns to achieve the results and proposed service.

We will install two (2) 70 foot wooden poles on Forget Road in Hawley, one at Sidehill Farm, allowing us to begin serving customers in the Town of Hawley.

Customer Installations. We will begin installing customers immediately upon turning up service to the Chapel Road POP. This site will also deploy most of the technologies we have planned for the multi-town deployment, including 5GHz, 3.6GHz and TVWS. The customers fed with TVWS will be typical examples of delivering 25/3 or 12/2 Mbps service to the hardest to reach customers.

Completion of Phase I will provide service for up to 150 customers throughout 3 of the 4 communities with an anticipated completion of Aug 2018 if awarded a contract by the first week of July 2018.

Phase II – Florida POP, 7 wooden utility poles 6 in Hawley, one in Charlemont

This phase is a targeted buildout into the Town of Hawley with the critical installation of a wooden utility pole installed under an agreement in the Town of Charlemont. Additionally, a second POP installed at the Florida Town Hall will provide fiber redundancy to the core network. This fiber establishes both an eastbound fiber route and a westbound fiber route on the MBI 123 network providing increased resilience across the network.

Completion of Phase II will provide service for up to 550 customers throughout the 4 communities with an anticipated completion of October 2018 if awarded a contract by the first week of July 2018.

Additionally, this phase completes the infrastructure build-out of the Town of Hawley.

Phase III – Complete Hawley & Savoy

This phase completes the buildout of all of Savoy by adding 6 wooden utility poles in Savoy.

Completion of Phase III will provide service for up to 760 customers throughout the 4 communities with an anticipated completion of Nov 2018 if awarded a contract by the first week of July 2018

Phase IV - Complete Florida & Monroe

This phase completes the buildout of all of Florida and Monroe with 5 wooden utility poles in Florida and 2 in Monroe. One additional pole in Rowe with a utility easement agreement with Rowe will support increased speeds in Monroe as well as provide service to Rowe Residents that currently will be unserved in the Rowe Fiber deployment.

Completion of Phase IV will make service available to up to 96% of the 1038 customers throughout the 4 communities with an anticipated completion of Dec 2018 if awarded a contract by the first week of July 2018

Pricing to the Towns and Commonwealth

WiValley proposes to build the networks fully funding the construction of infrastructure and Customer Premise Equipment (CPE) upfront in a 4 phased approach for the following amounts of grant funding:

- | | |
|-------------|-----------|
| • Phase I | \$450,000 |
| • Phase II | \$500,000 |
| • Phase III | \$500,000 |
| • Phase IV | \$574,100 |

Payment will be on a negotiated milestone basis with MBI and the Commonwealth. The contract will detail invoice breakdown amounts related to construction within each town that will be due within 30 days of technical acceptance of each phase and upon successful delivery of broadband service to at least 1 customer within that town. The details defining the minimum customers for each phase as well as the technical acceptance will be defined in the contract.

Payments to WiValley will be made directly by the Commonwealth at the completion of each phase. Work would begin within 30 days after the execution of a contract.

If the completion of a phase is delayed for a reason outside of WiValley's control, (such as delayed access to the DCR Tower at Borden Mountain), a weighted partial payment for the completed portion of the phase will be made with the remaining value allocated to a subsequent phase.

Summary of Project Requirements

The following items must be provided from MBI and the Towns in order to proceed:

- Agreement to make milestone (Phase) payments (a) within 30 days of milestone completion, and (b) upon technical acceptance of the milestone and service provided to at least the minimum number of customers as set forth in the contract.
- MBI and WiValley to agree to technical acceptance standards that will be used to determine the successful completion of each phase.
- Provision of access to the MB123 fiber network off Chapel Road in Savoy with a new ring cut and drop at reasonable, acceptable terms and conditions and service under published MB1123 Service Provider Rates or from an approved Service Provider.
- Access to DCR Tower on Borden Mountain.



- This proposal requires the Commonwealth to expedite access to the DCR Tower with reasonable terms to install equipment directly on the DCR Tower and provide space within the equipment shelter at the site.
 - If access is not granted to the DCR Tower, the Commonwealth will need to allow WiValley to install a new 80 to 100 foot guyed lattice tower adjacent to the existing DCR tower. Installation of our own tower at this location will increase the cost to complete Phase I from \$450,000 to \$525,000. This tower would be a vertical asset of the network and since this is state land the asset would be assigned to the Commonwealth or, if preferred, to the Town of Savoy.
 - With either option above, the Commonwealth needs to provide access and easement authorization to WiValley for use of this site.
- Towns must provide written authorization to WiValley granting access to the easements in the road right of way or on Town-owned property for the purpose of constructing and maintaining vertical assets (Poles and Towers). If a vertical asset is installed on State property (DCR Tower Site), the Commonwealth needs to provide access and easement authorization to WiValley. For clarity, the vertical assets (Poles and Towers) constructed during this project will become the property of the applicable town.
 - The Town of Charlemont must enter into an agreement with WiValley to provide access to the easements in the road right of way or on town-owned property for the purpose of constructing and maintaining vertical assets (Poles and Towers) for the multi town network. This agreement with the Town of Charlemont will also detail the use of this or any other site constructed with funding under the Flexible Grant Program to deliver service to residents within the Town of Charlemont and to work in collaboration with the Charlemont MLP to provide broadband service to residents that are potential customers.
 - The Town of Rowe must enter into an agreement with WiValley to authorize access to the easements in the road right of way or on town owned property for the purpose of construction and maintaining vertical assets (Poles and Towers) for the FHMS network. With an executed agreement WiValley will commit to deliver service to the residents of Rowe near Monroe Bridge that currently are excluded from the Rowe FTTH project.