

Last Mile Broadband Expansion in Massachusetts Information for Municipalities

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The Last Mile Program and the MBI **Overview, Roles, and Responsibilities**

About the MBI

Created in 2008, the Massachusetts Broadband Institute (MBI) is a division of the Massachusetts Technology Collaborative, which is a state quasi-public agency. It operates with an executive director and staff, and is governed by a nine-member board of directors, five of whom are ex-officio and four are appointed by the Governor. (www.broadband.masstech.org/) The MBI is charged by the Massachusetts Governor and State Legislature with helping expand broadband in areas lacking access, in order that our residents, businesses, and organizations can compete more fully in the global digital economy. The MBI built and owns *MassBroadband 123*, a 1,200-mile Middle Mile fiber network that provides the essential platform for last mile service expansion.

About the Last Mile Program

In 2014, the Legislature appropriated state capital funds to the MBI for a program that develops broadband last mile solutions, including a \$40 Million investment to support Last Mile broadband service in the 45 communities lacking any residential cable or broadband access. The Last Mile Program will partner with interested municipalities on innovative, sustainable, locally-led strategies to extend broadband access. In early 2015, Governor Baker announced his Administration's commitment to supporting the Last Mile Program and partnering with the MBI and participating towns. The primary project of the Last Mile Program involves development and construction of a fiber-to-the-home network for interested towns, though towns can be eligible for assistance and financial support for additional qualifying projects and solutions. The Last Mile Program also involves working with the leadership of towns with cable franchises that cover a portion of these municipalities ('partial-cable towns'), as well as the private providers that serve these municipalities, to find ways to close the broadband gaps in these regions.

This document deals with the first effort, focused on unserved municipalities.

Through the Last Mile Program, the MBI will:

- Manage the expenditure of state and local funds to design and build high-speed bandwidth capacity in towns;
- Work with towns considering fiber-to-the-home, a wireless network, or a hybrid system that combines components of each; and
- Assist in identifying an operator(s) and service provider.

Towns Eligible to Become Part of the Program

To be part of the Last Mile Program, a town must fall within the definition of "unserved." That is, its residents do not have access to a minimum 25 megabits of high - speed broadband. Forty-five (45) towns in Western and Central Massachusetts meet this definition. Included are towns with DSL and satellite because these services do not meet the threshold.

Broadband Options

- Regional Fiber-to-the-home (FTTH) network. Once designed and built, fiber in a town would extend along all streets and be accessible to all premises in a town, including business and institutional premises as well as residential. The MBI network design for the regional network will enable towns to select a single regional operator, multiple regional operators, or their own town operator (as Leverett has done).
- Single-Town Fiber-to-the-home (FTTH) Enterprise Option. A town partners with a private company that designs, constructs and operates the network for the town, through a multi-year agreement.
- Single-Town Wireless-Fiber hybrid Enterprise Option. A town partners with a private company that designs, constructs and operates the network for the town, through a multi-year agreement.

How a Town Becomes Part of the Last Mile Program

If the cost of a solution being pursued by a Town exceeds available state funding, which will be true for a fiber-to-the-home network and may be true for other options, the MBI requires each community to take three actions before local Last Mile deployment begins.

- Complete and submit to the MBI a grant application for the town's share of the state's \$40 million contribution to the Last Mile project, either individually or as part of a regional application;
- Secure a bond authorization by a 2/3s town meeting vote allowing the town to borrow the total amount of the town's estimated share of project cost; and
- Secure debt exclusion approval in a town-wide vote, by majority, allowing the town to raise additional tax revenue to pay debt service on what it borrows.

MBI Last Mile Program Grant Solicitation

The MBI will be issuing a grant application which must be completed by interested municipalities (by themselves or with their agents, such as WiredWest or a private company).

The grant application is the review process by which the MBI ensures that the \$40 million in state money results in a careful expenditure of the funds, extends broadband to as many homes and businesses as possible, and will be a safe and sound investment over time. It is also the means by which a town secures its share of \$40 million in state funds.

The MBI Regional Fiber Network Project

The Last Mile Program includes an effort to build a regional fiber-optic network in up to 44 unserved towns. The goal is to provide unserved Western and Central Massachusetts residents, businesses and institutions with high-bandwidth access to Internet.

Allocation of \$40 Million in State Funds

Unserved towns are eligible for a share of \$40 million in state funds, which is divided into two pools, up to \$18 million for professional services and \$22 million for construction.

The MBI will use up to \$18 million of the \$40 million for project management, design and engineering, legal and other administrative costs associated with building the MBI regional fiber network. Design and engineering of a regional network will result in significant cost savings and efficiencies for all participating Last Mile Program communities, and will also enable regional operation.

Towns that want a fiber solution in their town but have not selected a regional operator or wish to operate independently will still receive design and engineering services as long as they agree to the regional design parameters of the MBI and to the MBI's procuring and managing the construction.

If a town does not want to pursue a fiber solution or does not want to be part of a regional design and/or construction, it will not receive the MBI's professional services and therefore, an allocation of the \$18 million. However, these towns will receive an allocation of the \$22 million.

If your town agrees to the MBI fiber design solution, it will also be allocated a portion of the \$22 million which is based on each town's fiber miles and number of premises to offset the total municipal cost. If you use the MBI fiber solution, the MBI will manage all aspects of construction, including utility application processing, make-ready, and invoicing and budget management so that the municipality does not have to manage its own construction project.

Important Deadline:

- July 1, 2016 - If a town secures its financing and applies for its grant by July 1, 2016 and agrees to be part of the MBI fiber network design and construction, it will receive a full allocation from both the \$18 million and \$22 million pools. Any extensions beyond July 1, 2016 will be reviewed on a case-by-case basis.

The MBI Regional Fiber Network Project

MBI's Responsibility to Oversee the Project

The MBI will oversee and manage the entire construction project, just as it did for the *MassBroadband 123* middle-mile network. It will again rely on professional firms and individuals who have experience in this type of project. The MBI is already working with several consultants for project cost, business modeling, and bond financing issues. The MBI has also recently hired a Technical Director to manage the construction project. Soon, a project manager and an engineering firm will be engaged as well.

What Will be Constructed?

Simply stated, the construction project involves stringing (fiber) wire onto telephone poles. Homes and businesses are at one end and the facilities that allow them to connect to the Internet, telephone services and television programming are at the other. Situated in between is all the technology necessary to make the system work. That includes equipment and installations essential to a core network, a distribution network, a local network and a “drop” to each premise.

As with any project, planning, engineering, testing, legal and other work is required before actual construction starts. Foremost are route validation, application processing with the telephone and electrical companies, pole surveys, and make-ready. Make-ready refers to the labor-intensive process coordinated by the MBI with the pole owners and 3rd party attachers, first performing the field inspection, then determining a cost and finally making each and every pole and route ready for our fiber to be installed. The completion of make-ready means issuance of a license for each pole. Judgments are made whether a pole is structurally sound and whether existing wire needs to be repositioned. It is estimated that there are more than 60,000 poles in the 44 towns that would need to be individually assessed. Once complete in a town or grouping of towns, work begins on components common to the entire network, followed by the laying of fiber in the towns.

When Will the Construction Project Begin in Earnest?

The MBI is already procuring an Owner’s Project Manager (OPM). Using an OPM is an industry standard that the MBI will follow. The OPM will begin make-ready work and other planning, design, and engineering tasks this summer (2015).

How Long Will Construction Take?

If all 44 unserved towns choose to pursue a fiber Last Mile network, completing the entire project is estimated to take four years. Once work begins in your town, the goal is to complete it and initiate service, on average, within two years. The start-to-finish time will vary for towns depending on geographic size, number of premises, complexity of make-ready work, etc.

Municipal Project Oversight

The MBI will report regularly to towns through project construction meetings, email communications and a project web site. Towns will be able to meet regularly both through their MLP delegates (if applicable) or agents (such as WiredWest) as well as through meetings with municipal officials and, periodically, the public. The specific plan for meetings, reporting and oversight will be mutually agreed upon by the MBI and participating municipalities.

Regional Fiber Network Project Cost

Overall Project Cost

The total cost to complete the fiber network is estimated between \$112 and \$119 million. Included in this estimate are all the fiber, equipment, installations, technology and labor

needed to bring broadband service down streets and up driveways to 100 percent of the premises in all towns, not including Leverett since its build is complete.

Project Costs to Individual Towns

The gross cost to a town is based on the number of fiber miles to be covered (not road miles) plus up-the-drive expenses to reach 100 percent of the town's premises, includes the town's share of estimated soft costs (project management, engineering, legal, etc.), and the cost of equipment to be installed at each premise. Actual driveway lengths are not used. Instead, a street-to-premise cost for the average driveway length in each town was estimated based on aerial photography and other GIS map data. The gross cost estimate is then reduced by the town's share of the \$40 million state contribution to the project.

Financing the Regional Fiber Construction Project

Paying Project Costs

A town's net contribution to the fiber network cost is significant, and will require towns to issue municipal notes or bonds to raise the funds needed – something many have never done. The town's notes and bonds are an investment for the buyer. For the town, the transaction is a loan, which must be paid back through scheduled interest and principal payments. To cover these debt service payments, most towns will find it necessary to increase property taxes.

Town Borrowing Options/Decisions

Municipalities can raise money by issuing notes, which have a term of one year or less, or bonds, which have a term greater than a year. The advantage of a note is that, for up to two years, only a payment of interest is required. The town would then decide to renew the note, move the debt into a long-term bond or pay off the amount borrowed. A town has the option of renewing notes for an additional three years, but must also make a partial payment toward principal.

The town treasurer is legally authorized to make borrowing decisions, but rarely does so in isolation. Potential budget and property tax impacts of debt service payments justify input from selectmen, finance committee members, town administrators, assessors, etc. The treasurer would be wise also to engage the services of a financial advisor early in the process. These consultants help treasurers and local officials understand market dynamics, available options and the best course for the town. They work with treasurers to complete requisite forms and then bring the town's "paper" to the markets.

A financial consultant can also help a town decide whether the State House Notes program or the State Qualified Bond Program is a good option.

Towns will also need the services of a lawyer or law firm to act as bond counsel. Before town meeting, bond counsel would review the bond authorization article to ensure that its wording clearly states the intent, and meets legal and market requirements. Before the actual issuance of bonds, counsel provides a legal opinion to prospective buyers that the debt is tax exempt and the town meeting vote was valid.

The MBI has established a working relationship with a financial advisor and a municipal bond counsel, both are pre-eminent in their field and widely used in Massachusetts. Towns can reach these firms through the MBI or engage the services of other firms that serve Massachusetts municipalities.

Fees for both a financial advisor and bond counsel are typically incorporated into the town's borrowing plan.

Bond Authorization

Selectmen and the town treasurer must receive the authorization of town meeting in order to raise money through bonds. An authorization to borrow must be presented in its own article, approved for the warrant through the selectmen's customary procedure. *The MBI has sent towns a sample article and motion specific to this project.* Approval requires 2/3s vote of town meeting. The authorization is effective immediately (no delay to July 1) and permits the treasurer to issue bonds or notes. No special approvals are needed to access the State House Notes program or the State Qualified Bond program.

Town meeting approval of the bond authorization should be subject to the approval of Proposition 2½ debt exclusion in a town-wide vote. *The MBI has sent towns a sample debt exclusion ballot question specific to this project.*

Proposition 2½ Debt Exclusion

A debt exclusion allows the town to raise, through higher taxes, the money needed to cover debt service payments on amounts the town borrows. Because the town meeting bond authorization is subject to a town-wide debt exclusion vote, the project will only move forward if it receives approvals on both votes. The debt exclusion needs only a majority vote in favor.

The selectmen have sole authority, by 2/3s vote, to place the debt exclusion question before residents. They must call an election no sooner than 35 days after the annual town meeting vote and no later than September 30. If bonds were authorized at a special town meeting, the debt exclusion vote must occur within 90 days.

When will towns be required to provide funds to the project?

Once the towns participating in the project are known, the MBI will generate a construction plan and schedule, including a cash flow budget. The development of these documents will allow the MBI to notify towns when funds are needed. Notifications will allow towns sufficient time to make borrowing arrangements.

It is likely that a town will not be asked to provide its total cost contribution up front. The current plan envisions spending a portion of the state money in the project early stages. A plan might also call for a ramp-up of town contributions over a few years. (But, as described earlier, a significant amount of work and expense is required before the fiber is attached to poles in a town, which is near the final step and one of the simplest. Municipal money will be needed before a town's residents see their investment.)

Once bonds are issued, treasurers can expect a wire transfer depositing the proceeds directly into a town bank account. Accountants will set up a fiber network capital projects account in order to track disbursements and balances. As mentioned, the MBI will notify towns when funds are needed and the treasurer will wire transfer money into an account agreed to in advance.

Network Operation Options and WiredWest

What is WiredWest?

The WiredWest Municipal Light Plant Cooperative (WiredWest) was established under Massachusetts General Laws, Chapter 164, §47C. (<http://WiredWest.net/>) WiredWest operates in accordance with §47C and its bylaws. It is governed by a board of directors consisting of delegates from member towns. An eight-member executive committee is elected from among town delegates, as are officers. Decision-making resides with the directors who rely on recommendations of the executive committee, other standing committees as well as a separately appointed Advisory Committee. The MBI did not establish WiredWest and is not represented on its board or committees. WiredWest operates independently of the MBI.

What is the role of the WiredWest Cooperative?

The MBI understands that, pursuant to the request and instruction of its member towns, WiredWest plans to perform three functions: (1) serving as a delegated agent for member towns in applying for those towns' participation in the MBI Regional Fiber Network Project and through construction; (2) developing the capacity to be the long-term operator for some or all of the towns in the regional fiber-to-the-home network; and (3) developing the capacity to be the long-term internet service provider for some or all of the towns in the regional fiber-to-the-home network.

The MBI Grant Application Process and WiredWest

It is anticipated that many towns will choose WiredWest to be their delegated agent for grant application and during construction. Thus, WiredWest will submit its business, operating and governance plan to the MBI as part of the grant application it submits on behalf of the towns that select WiredWest as their delegated agent.

Towns that choose to develop their own plans, submit their own applications, operate their own network or find a different regional operator will also be required to submit an application with a detailed business and operating plan. In all cases, the MBI will assess the submitted plans to ensure that the significant state and municipal capital investment will be well cared for over the long term and will provide residents with affordable and dependable high-speed broadband.

Can towns choose a different service provider and/or a different network operator than WiredWest?

Yes. Whether towns build a fiber-optic or other network, they retain the ability to choose their network operator and/or service provider. From the perspective of the MBI grant application, the choice need not be made in advance of building the network.

If my town chooses not to be part of WiredWest, is state funding forfeited?

No. You do not need to be part of the WiredWest project to receive an allocation of the \$40 million in state investment or participate fully in the regional FTTH network project. The MBI will support towns that pursue other eligible options. Contact Chris Hatch at the MBI (hatch@masstech.org) or Joe Markarian markarian@frcog.org and Linda Dunlavy lindad@frcog.org at the Franklin Regional Council of Governments (FRCOG).

Other Important Questions – Timing and Municipal Action

How many participating towns are needed for the fiber network project to move forward?

The MBI will move forward in your town as long as you agree to the MBI technical specifications for fiber and the MBI's management and procurement of construction, approve local financing, and meet other eligibility criteria outlined in the MBI Last Mile Grant Solicitation.

Do we need a 40 percent subscriber sign-up for design and construction to begin?

No. The number of subscribers you need really depends on whom you are using for operations and services. Forty percent is a WiredWest requirement.

What if my town is not ready for a vote this spring?

Towns are not required to vote at their spring 2015 town meeting. The MBI is holding funding for at least two annual town meeting cycles. As noted earlier, you should plan to have your funding authorized by Summer 2016. The MBI will be sending out quarterly communications as the project gets underway and will update you with any deadlines.

If my town is first to authorize bonds, approve a debt exclusion, and submit an acceptable grant application, will we be first in line for construction?

That depends on what other towns are also ready to move forward. Construction sequencing decisions will be based on what makes the most sense and is most efficient.

Will my town be included in the project if it authorizes bonds and approves a debt exclusion, but doesn't have a 40 percent sign-up rate?

Yes, if the town is part of the MBI regional design and construction. The 40 percent sign-up rate is a WiredWest requirement so towns that choose to join WiredWest and apply for their grant funds through WiredWest should refer this question to them.

The MBI emphasis is on local financing approvals and a thorough and thoughtful application for the MBI funds that recognizes the need for an operator and service provider, and demonstrates a sound business plan. If your town has not decided on an operator or service provider, the MBI will assist you with procuring these services.

If my town meeting in May 2016 authorizes borrowing for the project, but the debt exclusion vote won't happen until after July 1, 2016, will we lose our share of the \$18 million?

No. In this case, if the subsequent debt exclusion vote succeeds, the town's position will be protected.

If my town meeting vote occurs in May 2018, but the debt exclusion vote won't happen until after July 1, 2018, will we lose our share of the \$22 million?

No. In this case, if the subsequent debt exclusion vote succeeds, the town's position will be protected.

Other Important Questions – Construction Costs and Financing

How reliable is the cost estimate provided to each town?

Every effort has been made to provide towns with reliable cost estimates. The local project cost is based on fiber miles and number of premises in the town. Fiber miles are measurable and we have sent our premise counts to towns for validation with the expectation of achieving greater accuracy. Remember, cost estimates are based on models and exact numbers will not be known until town-specific design work is completed and firm proposals for construction are received.

How are potential risks during construction mitigated?

All companies doing construction work for the MBI will be monitored by an Owner's Project Manager (OPM), engineers, and an MBI construction manager. It is their job to follow the everyday construction details of the project. They will monitor expenses, work schedules, as well as quality of work performed. They will review project design and provide recommendations to gain savings and efficiencies. In short, it is their job to protect the interest of the MBI and the towns.

What project overview will towns have during construction?

The MBI intends a transparent process for keeping towns up-to-date during design and construction stages. The MBI will report regularly to towns through project construction meetings, email communications and a project web site. Towns will be able to meet regularly both through their MLP delegates (if applicable) or agents (such as WiredWest) as well as through meetings with municipal officials and, periodically, the public. The specific plan for meetings, reporting and oversight will be mutually agreed upon by the MBI and participating municipalities.

Can a town make some of its own design decisions like choose to pay the additional connection costs for very long driveways or not pay for the equipment required at each premise?

Yes, if decisions are made early enough to be incorporated into design and engineering plans being developed by the MBI. Any cost increase, or decrease, that results will be assessed to or realized by the town.

How will private ways be handled?

It is up to each town to decide how to deal with private ways. Currently the municipal cost estimates include bringing broadband to all premises, including those on private ways. At this point, the design and engineering will proceed assuming inclusion of private ways. If the town wants to exclude private ways, the MBI will need to know this early on in the design process. This means that residents on private ways would carry the full cost to bring fiber from a connection point on a public way down roads and up driveways to premises.

On completion, who owns the network assets?

The MBI recognizes that significant municipal investment is being made to this project, up to 65% of the project's costs. As a result, the MBI believes that each community should own assets within its boundaries. However, towns can choose to transfer ownership of assets outright or they can grant long-term care and custody through a license agreement with their network operator (for example, WiredWest).

Who pays if there are construction cost overruns?

At this point, towns should expect that there are no additional state funds available. Thus, if the project cost exceeds estimates, the town(s) will be responsible for covering cost overruns.

What recourse does a town have if it has concerns about construction?

Establishing good relations with towns and neighbors to construction is part of the Owner's Project Manager's (OPM) job. If a town has issues with what is physically happening on a job site, communicating with the OPM is their first recourse. The MBI would expect the OPM to be sensitive and responsive. If unaddressed, issues would escalate to the MBI. Finance or other non-construction related concerns should be directed to a designated MBI staff person assigned community relations responsibilities. When communication regarding project oversight is agreed to between MBI and participating municipalities (and their agents), protocols for communication, change orders and project oversight will be among the issues addressed.

Other Important Questions - Services and the Business Operation

If construction is complete in my town, when will service begin?

This question is best answered by the network operator/ISP that is chosen for your town. For example, if WiredWest will be your service provider, they would best be able to provide a timeline.

How are service levels decided?

These are typically service provider decisions. Towns should address this question to their potential service providers when selecting a provider.

Who decides the charges for services?

These are typically operator and service provider decisions. Towns should address this question to their potential service providers when selecting a provider.

Who pays if there is an operational deficit?

The town's contract with its operator and the operator's business and governance plan will determine what happens if there are operating deficits. The MBI will not have any resources to cover operating deficits.

Who decides the use of potential excess revenue from operations?

The town's contract with the operator and the operator's business and governance plan will determine how decisions are made concerning any excess revenues.

What happens if, five or ten years from now, the network fails as a business?

The town's contract with its operator and the operator's business and governance plan will determine what will happen if the business fails and may be affected by ownership of the physical assets of the system in the town. It can be expected that the Commonwealth will want to protect its investment and will be involved in some manner with recovery planning.

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