



at the MasTech
Collaborative

FISCAL YEAR 2015 OPERATING PLAN

Overview

MBI achieved a major milestone in FY2014. It completed the construction of a 1200-mile, fiber-optic network in Western Massachusetts, including establishing points of interconnection at roughly 790 locations in 122 towns. More than 1,230 community anchor institutions (CAIs) are now physically connected to the MassBroadband 123 network, including government offices, public safety agencies, community colleges, schools, and healthcare institutions. MBI anticipates closing out contracts with G4S (design-builder) and Tilson (owner's project manager) by September 1, 2014.¹ The construction of 300-mile OpenCape network was also completed in FY2014, funded, in part, by MBI with state bond bonds.²

With the completion of the MassBroadband 123 network, emphasis in FY2015 will be placed on operating the network successfully; boosting broadband adoption and usage, and supporting efforts to expand access to broadband services in underserved areas.

As discussed below, the planned activities and associated budget for FY2015 are, to a great extent, dependent on passage of a bond bill, which authorizes funds for the recapitalization of the Massachusetts Broadband Incentive Fund. The operating plan assumes that the bill will be passed early in the first quarter of FY2015. If this does not happen, MBI will need to revise the operating plan and budget accordingly.

Priorities for FY2015

MassBroadband 123 operations

- **Network management.** MTC owns assets (fiber optic cable, equipment and software) associated with the MassBroadband 123 network. A private contractor, Axia NGNetworks USA, Inc. ("Axia"), is currently operating the network, and providing wholesale services to commercial service providers and other organizations, pursuant to a Master Agreement for Network Operator Services that MTC entered into with Axia in February of 2011, before the network was built (the "Network Operator Agreement"). The final segments of the network were turned over to Axia in February 2014.³ MBI intends to maintain close oversight of Axia to ensure they are complying with contractual obligations and implementing a strategy to advance the long-term viability of the network. In general, attention will be placed on boosting network utilization,

¹ In connection with the close-out of the G4S contract, MassTech has claims against G4S that we believe entitle us to withhold approximately \$4 million from final invoices to be submitted by G4S. G4S contests this, and has also submitted a request for a \$12 million increase, or "equitable adjustment," of the contract price, which MassTech has rejected. See discussion at p. 13.

² As part of the grant agreement, MTC has an observer seat on the OpenCape Board.

³ Note that Axia has requested "relief" from MBI for (i) losses it claims it has incurred as a result of delays in network construction completion, and (ii) less anticipated revenue from the network, at least in the short-term, due to fewer state customers signing up for services than it had anticipated. Although MTC does not believe Axia is entitled to such "relief" under the Network Operator Agreement, we are in the process of discussing these issues with Axia our respective positions on these requests.

establishing requisite systems and strengthening operations, and ensuring that contractually mandated planning and reporting mechanisms are in place. In addition, the Integrated Planning Team (IPT) will be reconstituted and meetings will be held on a regular basis. Ultimately, however, MassTech cannot legally compel Axia to invest additional funds to expand the network. Instead there are financial incentives that inure to Axia's benefit under the Network Operator Agreement if Axia invests in network extensions. Finally, MBI will develop and implement internal systems and standard operating procedures, e.g., referral procedures, customer query tracking, and overall program monitoring.

- **ITD/EOPPS sales support.** The Information Technology Division (ITD) and the Executive Office of Public Safety and Security (EOPPS) provided funds for the construction of the MassBroadband 123 network and were expected to be major customers for wholesale services provided by Axia, providing an important source of operating revenue. While a number of "pilot" activities were initiated in April 2014, the pace of upgrading service at state facilities has been slower than expected. At this point, there are 244 ITD/EOPPS locations that are physically connected to the MassBroadband 123 network, but 211 (86 percent) still lack updated broadband service. Delays are due to institutional constraints within ITD/EOPPS, the limited staff resources committed by Axia, and certain technical matters that still require resolution. In concert with Axia, MBI will take steps to coordinate more closely with ITD/EOPSS, addressing any outstanding issues and effecting a smooth and rapid transition of services to the MassBroadband 123 network. To this end, MBI will appoint an MBI staff person on a temporary basis to serve as a sales engineer, effectively supplementing the Axia team for 9-12 months.
- **Local government advisory service.** As of the May 15, 2014, commercial service providers were providing MassBroadband 123-enabled retail broadband services or were in the process of setting up services at almost 225 locations in 97 towns. Roughly 231 community anchor institutions (CAIs) are housed in these locations, including 96 local government organizations and schools (k-12). While early efforts to provide broadband services have met with some success, there are indications that many, but not all, towns need help to assess their needs, develop appropriate plans, and purchase broadband services. With this in mind, MBI will establish an advisory service program, building on an initiative undertaken by the Franklin Regional Council of Government (FRCOG) in FY2014. The advisory service program will focus on helping local governments upgrade telecommunication services (voice and data) and/or lower the cost of such services by transitioning to MassBroadband-enabled services provided by commercial service providers. Specifically, the program will focus on telecommunication services needed to support current local government functions, including police and fire services, water and sewer service, social services, elementary and secondary education, maintenance of roads and other public works, recreational services, property registration and assessment, and other general services. Emphasis will be placed on the provision of services at locations that are already physically connected to MassBroadband 123 network or have the potential to be connected without substantial capital expenditures.

Technical specialists will document current conditions in selected towns and identify needs, determine the cost and benefit of upgrading/expanding broadband service, and

offer recommendations on how best to proceed. (This will include looking at the potential for connecting those schools that lack access to MassBroadband 123 network,⁴ and looking at the potential for expanding public Wi-Fi hotspots.) MBI will also help towns manage the process of purchasing needed services, including potential joint procurement initiatives. The program could be implemented in conjunction with FRCOG or other regional planning associations (RPA). It is envisioned that a total of 40 towns will receive service in FY2015. Advisory services will be provided at no charge to towns.

- **Geographical information system (GIS).** To date, the GIS team has focused on carrying out work under the federally funded State Broadband Availability Mapping project. MBI will continue to meet all requirements under the federal grant, including the submission of mapping data and the development of an address file toolkit. However, it will also make sure that data pertaining to the MassBroadband 123 network, including pole licenses, fiber routes, and the location and status of all equipment is complete, well documented, and kept up to date. Ongoing planning efforts related to the expansion of broadband service in partial cable towns and other underserved areas will also require mapping and analytical support. The shift from a focus on the federally funded mapping project to a broader set of needs may necessitate change in the GIS team's operations. Requisite data and analytical capabilities will be defined in the near term and identified gaps will be addressed. The federal grant runs through January 31, 2015.⁵ Given that a fully functional GIS is essential to MBI operations, MBI will continue to support a GIS team throughout FY2015, albeit at potentially different staffing levels.

Broadband adoption and usage

- **Assistance to small businesses.** At the end of FY2012, MBI selected four organizations – Dorchester Bay Economic Development Corporation, Pittsfield Economic Revitalization Corporation, Quaboag Valley Community Development Corporation, and the Community Economic Development Center of Southeastern MA – to provide grants to small businesses to help them develop and implement IT plans. Funding for the program was provided through the National Telecommunications and Information Administration's (NTIA) State Broadband Initiative (SBI). The CDCs had provided assistance to 47 small businesses through April 2014. The remaining \$200,000 in unallocated SBI funds was awarded to the four CDCs to extend the program through September 30, 2014. The NTIA SBI grant will run through January 31,

⁴ There are 534 primary and secondary schools in the MassBroadband 123 footprint. While MassBroadband 123 included the provision of fiber and related equipment to 155 schools (29 percent), 379 schools (71 percent) are not physically connect to the network and may lack access to high-speed broadband service. MBI will work with the relevant towns, the Department of Elementary and Secondary Education (DESE), and commercial broadband service providers to explore ways to connect these schools to the MassBroadband 123 network. MBI might also provide grants to help cover the cost to connect additional schools on a cost-shared basis. See Broadband Economic Grant Program.)

⁵ These grants have earlier scheduled termination dates, but we have recently been advised by the federal granting agency that they will be extended through January.

2015. Continuation of the program beyond that date depends on whether new grant funding can be secured.

- **Mass VetsAdvisor.** MassVetsAdvisor.org is an online resource, which provides a comprehensive list of programs and benefits available to veterans and their families, along with information on how to apply to relevant agencies for assistance. The website was launched in FY2013 and significantly expanded in FY2014 with funding provided through National Telecommunications and Information Administration's (NTIA) State Broadband Initiative. As part of this initiative, MBI has also supported training programs targeted toward Veterans' Service Officers and veterans. MBI will continue to operate the website and provide training in FY2015. The NTIA SBI grant runs through January 31, 2015; continuation of the program beyond that date depends on whether new funding can be secured.
- **New initiatives.** A draft report prepared at the request of MBI lays out a number of initiatives that MBI could undertake to spur the adoption and usage of broadband by residents of the Commonwealth. These focus on senior citizens, low-income households, and disadvantaged youth. In general, the initiatives revolve around increasing digital literacy, providing access to public computer centers, and subsidizing purchases of computers and broadband service made by eligible households. In addition, the report calls attention to the potential for working with local governments to consider ways to enhance the efficiency and effectiveness of government services through the adoption of broadband services. The magnitude of funding required for these initiatives depends on the specific nature and scale of operations. In concert with the MBI Board and other stakeholders, MBI will determine which, if any, of these initiatives should be led by MBI. For budgeting purposes, it is envisioned that MBI will select one initiative for detailed planning with the expectation that requisite funds will be secured from external sources and the program launched during FY2015. (The budget includes the cost of program planning and grant writing, but does not include the cost of program implementation.)

Expansion of broadband infrastructure

When the MassBroadband 123 network was conceived it was envisioned that it would "solve, once and for all, the long standing problem of the lack of high speed, affordable broadband in western Massachusetts."⁶ This was based on the critical presumption that public investment in the middle mile network would reduce the amount of money that commercial service providers would need to invest to reach residential and business customers, "enabling them to offer affordable broadband service to all communities in the region, including the remaining unserved and underserved areas." Unfortunately, it appears that this was overly optimistic. No commercial service providers, including the

⁶ BTOP Application

incumbent telecommunication and cable companies appear to have plans to build out networks in the region.⁷

A bond bill filed by Governor Patrick in March 2013, included \$40 million to recapitalize the Massachusetts Broadband Incentive Fund to support efforts to expand broadband service to underserved towns, specifically the towns in Western Massachusetts not served by cable broadband service providers.⁸ The House of Representatives approved the bill in November 2013, increasing the bond authorization to \$50 million. The additional monies are intended, in part, to support the expansion of service in towns that are only “partially” covered by existing cable companies; however, the ability of MBI/MTC to provide funding to companies will depend on the specific language in the legislation. The Senate is expected to consider the measure before the close of the legislative session on July 31, 2014.⁹

As discussed below, there is a broad range of options to extend access to high speed broadband in towns within the MassBroadband 123 footprint. MBI will engage in a collaborative process with key stakeholders to decide on an approach that meets the interests of affected communities. In this regard, it should be noted that additional information may be needed to inform decisions, including detailed town-by-town cost estimates (based on fiber and wireless) and likely subscriber demand for specific services at different price points. Assuming passage of the bond bill, a process for allocating state bond funds across towns will need to be agreed.¹⁰

Assuming that necessary funds are provided, MBI may work in concert with FRCOG and other regional planning associations to support efforts of towns to expand broadband services to homes and businesses in areas that currently lack access to such services. This will focus on three initiatives. As discussed below, all three initiatives include expanding service to unserved or underserved areas of towns in the MassBroadband 123 footprint.

- **Expansion of broadband network in “partial” cable towns.** From MBI’s perspective, the work will center on developing a plan to allocate state bond funds to towns identified as “partial” cable towns. MBI will complete mapping of the towns to identify areas where households lack access to broadband service and identify “partial” cable towns based on objective criteria. MBI will characterize partial cable towns in terms of the number of households lacking access to broadband service, the relative density (households per route mile), and other factors that affect the cost of network expansion. Based on this information, it will work with relevant towns to reach agreement on a fair and transparent process for allocating state bond funds. MBI will

⁷ The BTOP Application includes eight letters from commercial service providers. In this regard, the application states that the letters, “indicate that they plan to use the MassBroadband 123 network to substantially improve next mile services to residents in unserved and underserved areas.”

⁸ This includes three towns that have cable TV without Internet service.

⁹ We have prepared this Operating Plan and associated FY15 budget on the assumption that such legislation will be passed and that funding will be available in FY15. To the extent that assumption turns out not to be valid, we will have to dramatically modify this Operating Plan and the associated budget.

¹⁰ The FY2014 Operating Plan assumed that the bond bill would be passed at the beginning of FY2014 and that design and make-ready work would begin shortly thereafter.

focus initially on towns where access is well below the state average. It is envisioned that funds will be awarded on a competitive basis based on the commitment of service providers (including incumbent cable companies) to expand access to broadband services, which meet defined performance standards, such that the resulting rate of access in towns is at least equal to the current statewide average in cable towns, i.e., 97 percent, subject to a maximum marginal cost. Note: towns and individuals may choose to supplement MBI funding in order to achieve a higher access rate. Responsibility for building and operating networks in the partial cable towns will rest entirely with service providers.

- **Expansion of broadband network in towns that lack cable broadband service.**

While various statements have been made about alternative approaches, up until recently, MBI has focused its attention on the potential for building a *regional* fiber-to-the-home (FTTH) network covering 45 towns. The capital cost to provide fiber to all homes in the towns (excluding Leverett, which made the decision to build a municipally owned FTTH network backed by a \$3.6 million general obligation bond) is currently estimated at \$95 million to \$134 million, depending on whether video is offered and how drops and on-premises equipment (STB/CPE) are deployed.^{11,12} As such, even assuming \$40 million in state bond funds were allocated to building out the network, an additional \$55 million to \$94 million would still need to be raised to cover the projected CAPEX. (Further funding would also be needed to cover likely operating losses in the early years of operation.) Commercial companies are unlikely to undertake this investment even with the \$40 million public subsidy. Given the magnitude of the funding gap, consideration will need to be given to determining the appropriate scope of the network, incorporating wireless technology,¹³ and securing additional funding directly from towns. Towns will need to be heavily involved in the process, starting with providing a clear articulation of their objectives with respect to broadband coverage, services, and affordability as well as their willingness and ability to take on debt. Given the extent of public funding required, it might be appropriate to establish municipally owned broadband networks.

Providing broadband services on a regional basis would be preferable given network efficiencies, economies of scale, and ongoing operating requirements. In this regard, Axia and Wired West Communications Cooperative Corporation (Wired West) have shown interest in developing a *regional* network to serve homes and businesses in underserved areas.¹⁴ That said, other public or non-for-profit organizations might also

¹¹ Civitium.

¹² The FY2014 Operating Plan estimated that the total cost to deploy fiber to the home at \$80 million to \$100 million. It did not specify how the funding gap would be closed.

¹³ The FY2014 Operating Plan noted that the cost to deploy wireless technology in 45 towns would be on the order of \$40 million to \$50 million. Noting that this technology was not “future resilient,” MBI elected not to conduct any further work on potential wireless solutions in FY2014.

¹⁴ Wired West was established in 2011 and operates as a Municipal Lighting Plant (MLP) Cooperative under M.G.L. Chapter 164, Section 47c. Its mission is to build and operate a fiber-optic network, offering high-speed data, voice, video and ancillary services to homes and businesses. It is dedicated to providing universal access to broadband service in member towns. In this regard, Wired West reports that it has 42 member towns, including 35 towns that are not served by a cable broadband provider. So far, 34 member towns have established MLPs. There are ten non-cable towns that are not members of Wired West.

be interested in building, owning and operating a regional network given potential state subsidies. Moreover, while a regional approach may offer benefits, several towns have expressed interest in establishing municipally owned networks along the lines of Leverett. The decision to participate in a regional cooperative, develop an independent network, or elect not to invest in broadband rests solely with the towns. Moreover, while MBI does not have any intention of offering broadband services on a retail basis, it still needs to define the role that it will play in the ownership and governance of networks built in whole, or in part, with state funds.

With this in mind, MBI will work in concert with FRCOG and other regional planning associations to undertake the following activities in FY2015:

- Conduct extensive outreach effort with town representatives to present an objective assessment of the current situation and discuss potential paths going forward.
- Support planning efforts aimed at establishing a regional municipally owned broadband cooperative and/or alternative institutional structures.
- Manage contracts or provide grants for the design and engineering of networks in participating towns, including the use of wireless technology.
- Support demand aggregation efforts, including pre-registration of broadband subscribers.
- Develop and launch a grant program to fund network construction based on a fair and transparent process for allocating state bond funds across participating towns.

With respect to the latter, while a comprehensive regional network may take up to three years to design and build, it may be possible to deploy wireless solutions in selected areas in a much shorter time frame.

- **Broadband economic development projects.** MBI may allocate a portion of the state bond funds to help defray the cost of extending fiber or providing wireless solutions to private companies or other organizations (including schools) deemed by towns in the region served by MassBroadband 123 to be critical to economic development. Funding may require cost sharing from both towns and targeted companies/organizations.

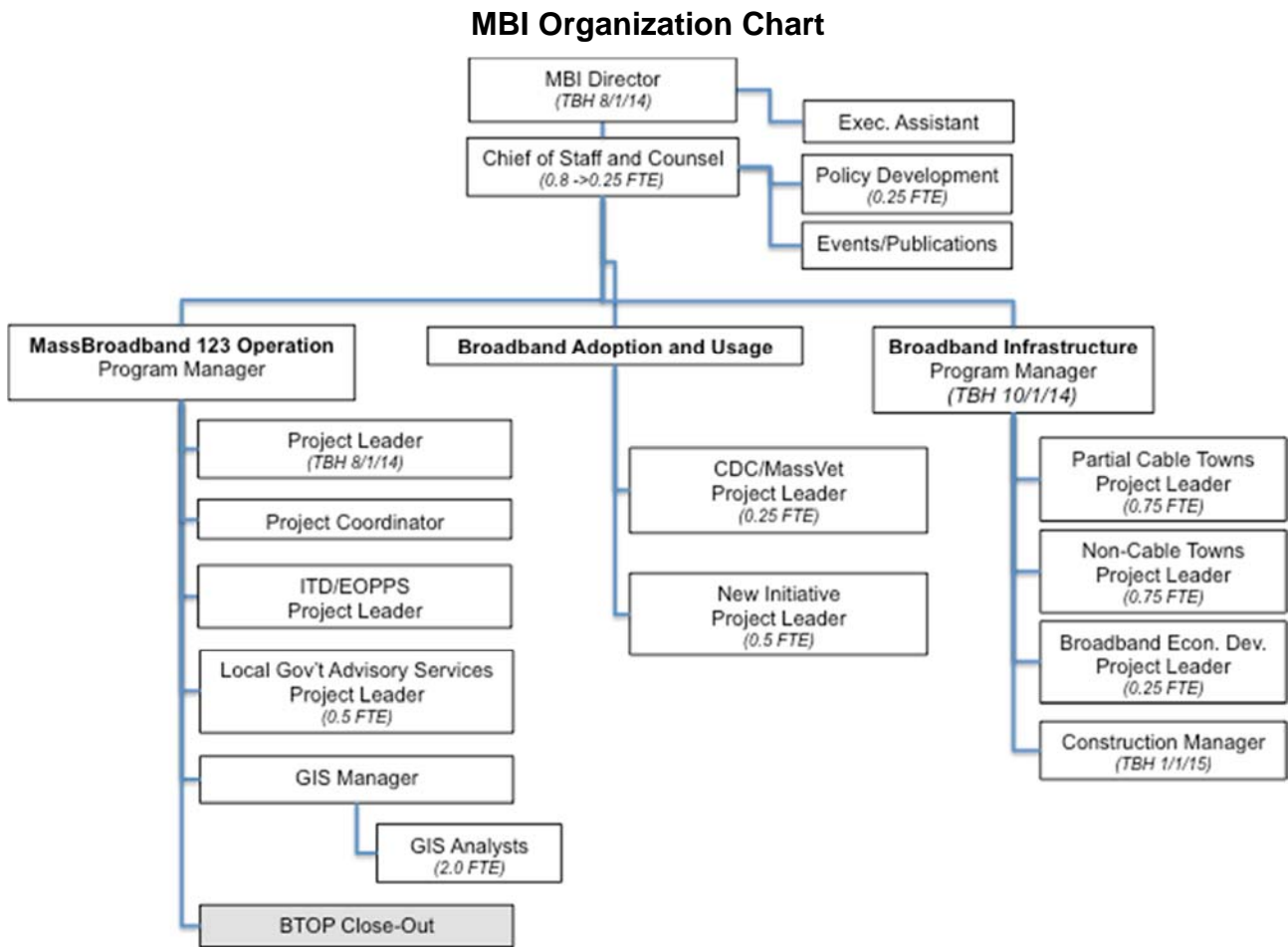
Primary Tactics and Action Steps

Areas	FY15 Objectives	Tactics
MassBroadband 123 Network Operations	<ul style="list-style-type: none"> • Improve relationship with network operator and strengthen management • Increase network utilization and move toward sustainability 	<ul style="list-style-type: none"> • Review Axia business strategy and provide support, as required • Reconstitute IPT and hold regularly scheduled meetings • Monitor network and business performance based, in part, on reports submitted by Axia using agreed template • Develop and Implement plan with ITD, EOPPS, and other state partners
Broadband adoption and usage	<ul style="list-style-type: none"> • Increase adoption of MassBroadband 123-enabled broadband services by connected CAs, resulting in improved service and/or lower cost 	<ul style="list-style-type: none"> • Conduct outreach in conjunction with commercial service providers and Axia • Provide advisory services to towns
	<ul style="list-style-type: none"> • Increase broadband adoption/usage among target populations 	<ul style="list-style-type: none"> • Complete work under the two federally funded SBI grants. • Design and launch new broadband adoption/usage program
Expansion of broadband infrastructure	<ul style="list-style-type: none"> • Expand access to broadband service in “partial” cable towns • Expand access to broadband services in towns that do not have cable broadband service. 	<ul style="list-style-type: none"> • Working in concert with towns and cable companies, develop plan for expanding access to broadband services in “partial” cable towns and allocating bond funds • Working in concert with towns and relevant organizations, develop plan for establishing broadband networks in non-cable towns. • Design and engineer network in non-cable towns (44), including potential use of wireless technologies • Provide network construction grants.

Organization structure and staffing

An organization chart for MBI is presented below. The budget assumes that a new Director will be hired and in place by August 1, 2014. The operating plan, including organizational structure and staffing, will be reviewed by the new Director and potentially revised.

MBI currently employs 13 people on a FTE basis. It is anticipated that the staffing level will remain comparable in FY2015, albeit with some shift in the resources devoted to particular programs. A construction manager would only be hired if MBI assumes responsibility for construction projects in non-cable towns and the position would not be filled until January 1, 2015 at the earliest.



Note: The shaded positions would be filled by individuals retained on a consulting basis for defined periods.

BTOP Close-Out will be handled by existing consultants from MorSecure and Tilson. Close-Out is expected to be completed by September 30, 2014. MBI plans to enter into a cooperative agreement with an external organization to implement the local government advisory service program and to assist in outreach efforts undertaken as part of initiatives to expand broadband access in Western Massachusetts.

Budget

It is anticipated that MBI will have a total of \$3.6 million available as of June 30, 2014 to fund ongoing operations of MBI. In addition \$1.95 million in funds are projected to become available as a result of retainage of funds from G4S for liquidated damages and other claims.¹⁵ Assumptions with respect to available funds for MBI in FY2015 follow:

- Federal agencies will extend current grant SBI programs through January 30, 2015.
- Axia will pay the guaranteed oversight fee of \$512,000 for MBI operations.¹⁶ In addition, it will pay \$400,000 into the Capital Upgrade Fund (5% of network revenue or \$100,000 per quarter, whichever is greater) and approximately \$60,000 into the Decommissioning Fund (2% of network revenue). The CapEx and Decommissioning Fund amounts will be segregated for those purposes and will not be used to cover Mass Broadband 123 Network Operations.
- The state will authorize \$50 million in state bonds by July 31st to recapitalize the Massachusetts Broadband Incentive Fund and that MBI will be able to continue to utilize those funds and remaining funds under its original bond authorization to fund its programs.
- Our positions will prevail in the disputes with G4S and with Axia. More on this below.

Assuming that the state bond passes, it is expected that MBI will spend roughly \$16.2 million in FY2015, including programmatic costs and infrastructure implementation expenses (excluding depreciation). A summary of projected expenditures is provided below. Financial assistance is based on disbursement and would be tied to the achievement of agreed milestones and cost sharing. If the bond bill fails to pass, the operating plan and budget will need to be adjusted significantly. In particular, MBI will curtail activities related to the expansion of broadband infrastructure and refrain from making any new capital expenditure grants.

¹⁵ It is projected that MassTech will withhold approximately \$4.3 million in funds from the G4S contract and will be required to return \$2.4 million to NTIA for its share in the project.

¹⁶ Axia must generate \$3 million in revenue annually before MTC receives revenue sharing. Axia is not expected to reach this revenue level in FY2015.

FY2015 Budget

	Budget With New Bond Funds	Potential Revised Budget Without New Bond Funds
<u>Program expenses</u>		
MassBroadband Institute	\$455,100	\$455,100
BTOP	\$1,114,300	\$1,114,300
MassBroadband 123 Network	\$1,901,600	\$1,901,600
Broadband Adoption and Usage	\$253,700	\$253,700
Broadband Infrastructure	\$1,745,200	\$400,000
<u>Financial assistance</u>		
<i>MassBroadband123 Network</i>		
Additional CAI construction	\$200,000	\$200,000
Local Gov't Advisory Services	\$250,000	\$250,000
GIS – Mapping (a)	\$294,100	\$294,100
<i>Broadband Adoption and Usage</i>		
CDC/MassVet (a)	\$390,000	\$390,000
<i>Broadband Infrastructure</i>		
Network Expansion –Non Cable Towns	\$5,800,000	\$0
Network Expansion- partial cable towns	\$2,800,000	\$0
Broadband economic development	\$1,000,000	\$0
Total	\$16,204,000	\$5,258,800

Note: (a) Federally funded

G4S has asserted a claim against MassTech for approximately \$12 million, and MassTech has claims against G4S that we believe entitle us to withhold approximately \$4 million from final invoices to be submitted by G4S.¹⁷ For purposes of the FY15 plan and budget we are assuming that G4S will not be entitled to receive any of the amounts we will be withholding, that we will not pay any amount to G4S pursuant to its claims, and that we will defend our position on these issues in any subsequent legal proceedings that arise out of them. Also, we have included approximately \$1,000,000 in the FY15 operating budget to cover costs of outside legal counsel and expert consultants handling this dispute, defending against the G4S claim, and supporting the claim documentation. In this regard, it is important to note that while we have reason to believe that the G4S claims lack merit and that ours are valid, the results of settlement discussions and/or litigation are inherently difficult to predict. The \$1,000,000 amount represents a conservative estimate of the costs that MassTech would incur in FY15 if the dispute with G4S results in litigation in Superior Court that is still ongoing at the end of the fiscal year. If this matter were to go to trial, that would not occur until sometime in FY16. MassTech has done extensive work upfront to analyze and refute the validity of the G4S claims and a settlement of this matter could still occur at any point in the process. The additional costs incurred by MassTech could be as

¹⁷ Note that to the extent we are entitled to withhold funds from G4S, the federal government would likely be entitled to be repaid its proportionate share of those funds. That share is approximately 55% (its share of the MassBroadband123 project funding). In calculating the amount of funds remaining available to MBI as we enter FY15, we have assumed that we are entitled to withhold the approximately \$4.3 million from G4S mentioned above, but that we have to return \$2.4 million of that amount to the federal government.

low as a few hundred thousand dollars if this matter were to be settled during the first half of FY15.

Similarly, the FY15 plan and budget assume that no “relief” will be provided to Axia pursuant to its requests for reimbursement for incremental costs due to construction delays or to its concerns about network sustainability.

To the extent that our planning assumptions are not valid, we would have to cover any amounts owed to G4S or to Axia out of bond funds, to the extent available.