

### Solution Cover Sheet

Name of Respondent Organization Princeton Municipal Light Department			
Mailing Address PO Box 247, 168 Worcester Road	City/Town Princeton	State MA	Zip Code 01541
Telephone 978-464-2815	Fax 978-464-5377	Respondent Web Address www.pmlidnet.com	
Name of Primary Contact (Individual) Jonathan Fitch			
Primary Contact Title General Manager	Contact e-mail address jfitch@pmlid.com	Direct Telephone # 978-464-2815	
Which of the following best describes the respondent: (You must select at least one)			
<input checked="" type="checkbox"/> Broadband Service Provider <input checked="" type="checkbox"/> Government Organization <input type="checkbox"/> Equipment Manufacturer <input checked="" type="checkbox"/> Non-profit Organization <input type="checkbox"/> Equipment Vendor <input checked="" type="checkbox"/> Owner of Physical Assets (please specify Asset: <u>wireless network</u> _____)		<input type="checkbox"/> Network or Systems Integrator <input type="checkbox"/> Interested Individual <input type="checkbox"/> Investor/Venture Capital <input type="checkbox"/> Consultant <input type="checkbox"/> Advocacy Group <input type="checkbox"/> Other (please specify Other: _____ _____)	
Brief Description of Organization (please outline previous experience with broadband deployment and/or provision of broadband services) PMLD is a community owned, municipal electric utility that also owns and operates a wireless broadband network.			
List of anticipated partner organizations			

## Attachment A

### RESPONSE FORM AND INSTRUCTIONS

In order for your response to be reviewed and considered, the "Solution" must contain, at minimum, the following:

- Completed Cover Sheet (all questions answered)
- "Solution" Articulation

#### Delivery Requirements:

Please submit:

- 2 Printed copies or on CD to:

Massachusetts Broadband Institute  
C/o Massachusetts Technology Collaborative  
75 North Drive  
Westborough, MA 01581

#### AND

- 1 Electronic version
  - o emailed to [broadband@masstech.org](mailto:broadband@masstech.org)

By:

**December 19, 2008**

#### REMINDER:

Any information or materials submitted to MTC in response to this Call for Solutions will be made publicly available through the MTC website ([www.masstech.org](http://www.masstech.org)).

# Princeton Municipal Light Dept.

168 Worcester Road, PO Box 247

Princeton, MA 01541-0247

December 26, 2008

Massachusetts Broadband Institute  
c/o Massachusetts Technology Collaborative  
75 North Drive  
Westborough, MA 01581

Dear MBI,

SUBJECT: MBI "CALL FOR SOLUTIONS"

The Princeton Municipal Light Department (PMLD) hereby submits a response to the Massachusetts Broadband Institute's (MBI) "Call for Solutions". Thank you for allowing Princeton Municipal Light Department (PMLD) to respond. PMLD is a non-profit electric utility operating as a separate government agency of the Town of Princeton. PMLD designed, financed, installed, and operates a wireless high-speed Internet access network for our town's residents and business. This new line of business was created in response to the unmet customer need for town-wide, high-speed Broadband access.

As a result of this unmet need for broadband in the Commonwealth, it is expected that many communities will similarly invest in broadband access technology. The Town of Princeton recognized this unmet need in 2002 and through a Broadband Committee, Princeton examined existing conditions, potential solutions, constraints, and ultimately, recommended the deployment of a wireless based network as an interim solution to our community's Broadband requirements. Other MA communities without broadband availability will more than likely invest in similar wireless technologies. In 2007, Princeton's residents voted and approved at Town Meeting the creation of a broadband business operating under the control of PMLD.

Princeton's investment in wireless network technology to meet its community's need for broadband availability has direct implications for other un-served and underserved communities in the Commonwealth. It is apparent many of the un-served communities are geographically similar to the Town of Princeton, in that they have a low number of customers per mile and are generally located in the more rural, heavily wooded areas of Massachusetts. Princeton's network design and lessons learned can benefit both the BMI and the other communities considering similar investments. Princeton's wireless high-speed Internet network and business model could be a blueprint for other un-served and underserved communities in Massachusetts.

The MBI has limited funds and must leverage these funds as best as possible in order to spread broadband services throughout both the un-served and under-served communities in Massachusetts. PMLD is offering its lessons learned and comments for the MBI's "Call for Solutions" in order assist other communities in meeting their unmet need for broadband.

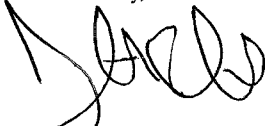
PMLD strongly believes that the most prudent and financially feasible method to achieve the objectives of the MBI is through an investment in broadband technologies with a partnership between MBI and the existing broadband service providers such as Verizon, Comcast, or Charter

Communications, even though they have not up to now, provided these essential services in the more rural areas of Massachusetts. PMLD prepared the following bullet points that MBI should consider:

- There are 32 un-served communities identified by the MBI.
- There are 1,631 total road miles within these 32 communities (Source: <http://www.mma.org/communityInfo.php>)
- The rural nature and low density of homes and businesses within the 32 communities makes the delivery of wireless broadband very difficult. PMLD has operated a wireless network in a very rural community for the past year and coverage zones and access speeds are not adequate for all three; data, voice, and video broadband services.
- Assume that it costs \$20,000 per mile to install Fiber-to-the home (FTTH), similar to a FIOS product.
- Based on the assumption above, it would cost approximately \$33M to install FTTH in all 32 communities
- MBI negotiates directly with Verizon, an incumbent provider of telecommunications services in Massachusetts.
- Verizon operates essentially as a natural monopoly and operates as the default provider of wire based voice services in MA.
- Verizon already has utility pole rights and ownership, community franchise rights, and capital investment in head-end technology to provide data, voice, and video broadband services.
- MBI sponsors MA legislation that prohibits the telecommunications companies from serving selectively in existing communities that are considered un-served and under-served. Once a service provider desires to provide any broadband services in a community, that provider must make it available to every resident and business in the community.
- MBI funds the investment in FTTH/FIOS through low interest loans with Verizon.
- MBI also negotiates with either Comcast or Charter Communications and provides a similar investment opportunity in their network in the applicable communities. This would at least have the effect of adding some level of completion between Verizon and the cable companies.
- Verizon leases the assets from MBI at a nominal rate and in exchange Verizon provides voice, data, and video services to every resident and business within the 32 communities. The lease ensures that Verizon operates and maintains the FTTH network based on prudent industry practice.
- At the end of the lease term, Verizon would gain ownership of the facilities.
- The Commonwealth of Massachusetts excludes these telecommunication facilities from either state or local property tax for the first 15-20 years as an additional incentive.

PMLD's response is intended to help MBI leverage the limited amount of state funding it may receive for broadband infrastructure and partnerships. Partnering with the largest incumbent provider makes the most financial sense. Verizon's status as a natural monopoly obligates them to provide community and even state-wide service. Use this status to the state's advantage and ensure that all communities in Massachusetts receive equal broadband service. PMLD sincerely appreciates the opportunity to respond to MBI's "Call for Solutions". Please contact me if you have any questions related to our response.

Sincerely,



Jonathan Fitch  
General Manager

Attachments:

1. Un-served Community FTTH/FIOS Cost Estimate

**Attachment 1: Un-served Community FTTH/FIOS Cost Estimate**

	<b>Un-served Communities</b>	<b>Road Miles</b>	<b>Sq-Miles</b>	<b>Population</b>		<b>FTTH Cost</b>
1	Alford	17.65	11.57	393	\$	353,000
2	Becket	82.46	46.92	1,775	\$	1,649,200
3	Blandford	84.92	52.70	1,264	\$	1,698,400
4	Colrain	84.16	43.21	1,860	\$	1,683,200
5	Cummington	59.83	23.01	994	\$	1,196,600
6	Florida	46.87	24.55	661	\$	937,400
7	Goshen	38.52	17.31	958	\$	770,400
8	Hancock	28.15	35.55	1,012	\$	563,000
9	Hawley	48.31	30.99	346	\$	966,200
10	Heath	53.75	24.95	807	\$	1,075,000
11	Leverett	39.99	22.90	1,764	\$	799,800
12	Leyden	35.54	18.09	808	\$	710,800
13	Middlefield	38.35	24.13	546	\$	767,000
14	Monroe	18.39	10.85	98	\$	367,800
15	Montgomery	30.81	15.01	736	\$	616,200
16	Mount Washington	17.62	22.22	133	\$	352,400
17	New Ashford	17.66	13.65	245	\$	353,200
18	New Braintree	49.79	20.76	1,066	\$	995,800
19	New Marlborough	84.67	47.85	1,514	\$	1,693,400
20	New Salem	101.54	45.04	988	\$	2,030,800
21	Peru	35.43	26.05	823	\$	708,600
22	Plainfield	47.90	21.29	604	\$	958,000
23	Rowe	35.89	23.78	349	\$	717,800
24	Sandisfield	91.95	52.51	823	\$	1,839,000
25	Savoy	54.67	36.03	720	\$	1,093,400
26	Tolland	42.71	31.93	443	\$	854,200
27	Tyringham	25.56	18.77	355	\$	511,200
28	Warwick	62.92	37.19	759	\$	1,258,400
29	Washington	48.72	38.20	543	\$	974,400
30	Wendell	65.21	31.65	1,028	\$	1,304,200
31	Windsor	76.31	35.13	854	\$	1,526,200
32	Worthington	64.23	32.04	1,300	\$	1,284,600
					<b>\$</b>	<b>32,609,600</b>

**Data Source:**

<http://www.mma.org/communityInfo.php>

**Assumptions:**

FTTH Cost is based on \$20,000 per mile