Flexible Grant Program- Innovative Approaches to Provide Broadband Service to Unserved Towns

NOFA No. 2018-MBI-01

Response from:

WG+E

WESTFIELD GAS + ELECTRIC

whip city fiber

Westfield Gas & Electric, 100 Elm St., Westfield, MA 01085, www.whipcityfiber.com

Massachusetts Technology Collaborative
75 North Drive
Westborough, MA 01581-3340

RE: Flexible Grant Program- Innovative Approach to Provide Broadband Service to Unserved Towns
NOFA No. 2018-MBI-01

Dear Mr. Donnelly,

Please find Westfield Gas + Electric's response for proposal. Please allow this response to indicate our desire and willingness to work with you to successfully provide Engineering, Design, Project Management, ISP and Network Operations the network assets under your jurisdiction.

Westfield Gas & Electric is prepared to discuss our solution with any of the communities in the program, understanding the current list includes;

- Florida
- Hawley
- Monroe
- Middlefield
- New Braintree
- New Marlborough
- Savoy
- Worthington

I look forward to speaking with you further on how Whip City Fiber may be a viable solution to providing network operational services to the MLP and delivering world class ISP services to the residents of Western Massachusetts.

Sincerely,

Daniel J. Howard
General Manager
Whip City Fiber
Westfield Gas + Electric

Flexible Grant Program

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Whip City Fiber offers path to Town Ownership

Introduction Westfield Gas & Electric and Whip City Fiber

Westfield Gas & Electric (WGE) is currently managing the deployment of 20 MLP owned fiber networks in Western Mass. Beginning in 2015 WGE began to offer Gigabit Internet Service offering Whip City Fiber to the more than 18,000 residents and businesses in the City of Westfield. WGE would propose to utilize our experience and find a path for a Town owned Fiber Network.

Design and Engineering

Initial funding would be utilized Whip City Fiber (WCF) to engineer and design the Town border to border. This process identifies the connectivity solution required for most of the premises as well as those premises that may require a solution in conjunction with an adjoining community.

The design also provides a complete project blueprint which will identify the required fiber counts form the network core to border premises. The initial phase will be designed with fiber strand capacity inclusive for future phases.

A centralized hub location would be identified based on proximity to existing MBI Middle Mile connections, town owned land with appropriate access and resources, and premise density. A cost-efficient hub option would be sized and selected, from a range of choices from a pole mounted cabinet to a larger ground shelter. Optical network equipment in the hub would be seized for maximum premise count.

Alternatively, in some instances WCF could approach a neighboring Town about linking a field split cabinet to that neighboring towns central hut leveraging their infrastructure for compensation in return.

Network Construction Phased Deployment

- Based on housing density, available funding would be utilized to construct maximum PDU count.
- WCF would project manage network construction project.
- Potential savings may be garnered by utilizing an economical centralized Hub with middle mile connection or field split from neighboring town.
- WCF would be the Internet Service Provider and Network Operator (ISP/NO).
- WCF would agree a long-term ISP/NO with a reduced rate, charging only direct costs during the phased network construction. This would allow Towns to accumulate funds for future network extensions.

When network construction is completed WCF would require an additional five years at then current published rates.

Town Model

WGE has estimated and modeled the Town of Hawley as a sample project based on the current EOHED Grant funds. Any of the Towns can be modeled on estimated costs with only existing funding, delivering a forecast with extended time frames to achieve complete border to border networks.

Example of Town Model with Additional Funding

With additional funding added to the project the network completion is accelerated dramatically.

WGE chose the Town of Hawley as a single example that illustrates the impact of additional funding. The complete project estimate for Hawley is $1,540,000. The following information compares two models with a common set of assumptions.
These include a Hub at $70,000, Engineering & Design at $50,000, network construction at $55,000 per mile. The first of the two models uses Hawleys available funding of $520,000 projects to take 23 years to complete the border to border network.

The second model reflects an doubling of funding, in Hawley's case to $1,000,40. The increased funding is projected to completed the border to border network in 11 years.

This evaluation focused on only one town, Hawley, but an evaluation can be completed for any town interested this this approach to ownership with the assistance of Westfield Gas & Electric.

Attached are the project profile with Current Funding, followed by the profile with the doubled. Lastly is a Phasing Map, comparing the two profiles.

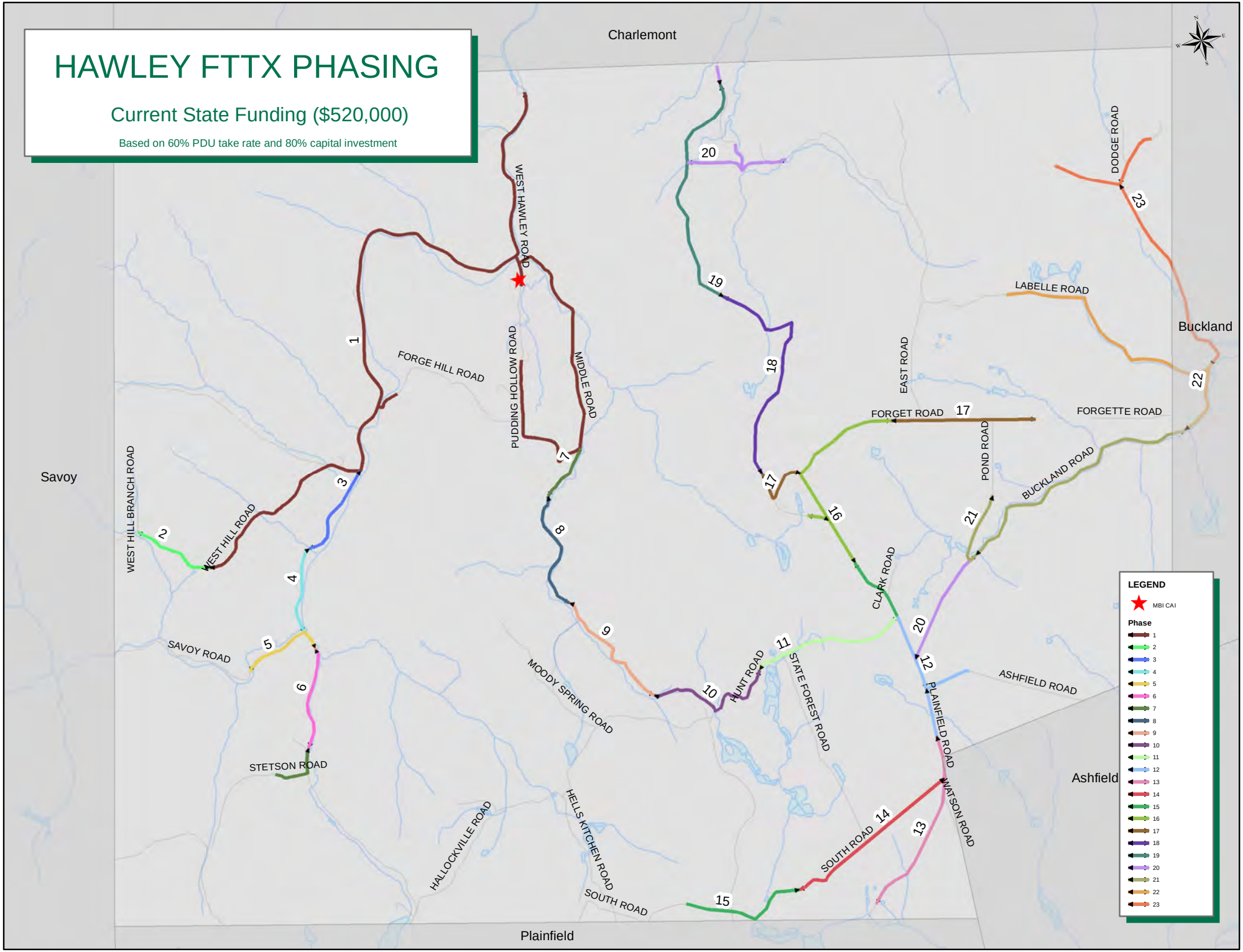
Summary

WGE is proposing to utilize our experience and expertise to design, engineer, project manage, and operate your Town fiber network. WGE would work on a "cost only" basis during the deployment period, plus an additional five years at customary rates.

Hawley with Current Funding

Take Rate:	60%
Monthly Reven	$85
Distribution Mi	32
PDU Count:	200
Est. Cost per mi	55000
PDU/ mile:	6
Total Funding:	$520,000
Head End:	$70,000
Engineering:	$50,000
Construction:	$400,000

Phase	Phase Length (Miles)	PDU Count	Total PDU With	Annual Rev (60% take
1	7.27	45.0	27	$27,540.00
2	0.50	48.6	29	$29,580.00
3	0.54	51.9	31	$31,620.00
4	0.57	55.5	33	$33,660.00
5	0.61	59.4	35	$35,700.00
6	0.65	63.4	38	$38,760.00
7	0.70	67.8	40	$40,800.00
8	0.74	72.5	43	$43,860.00
9	0.80	77.4	46	$46,920.00
10	0.85	82.8	49	$49,980.00
11	0.91	88.5	53	$54,060.00
12	0.98	94.6	56	$57,120.00
13	1.04	101.1	60	$61,200.00
14	1.11	108.0	64	$65,280.00
15	1.19	115.5	69	$70,380.00
16	1.28	123.5	74	$75,480.00
17	1.37	132.0	79	$80,580.00
18	1.47	141.2	84	$85,680.00
19	1.56	150.9	90	$91,800.00
20	1.67	161.4	96	$97,920.00
21	1.78	172.5	103	$105,060.00
22	1.91	184.4	110	$112,200.00
23	2.04	197.2	118	$120,360.00

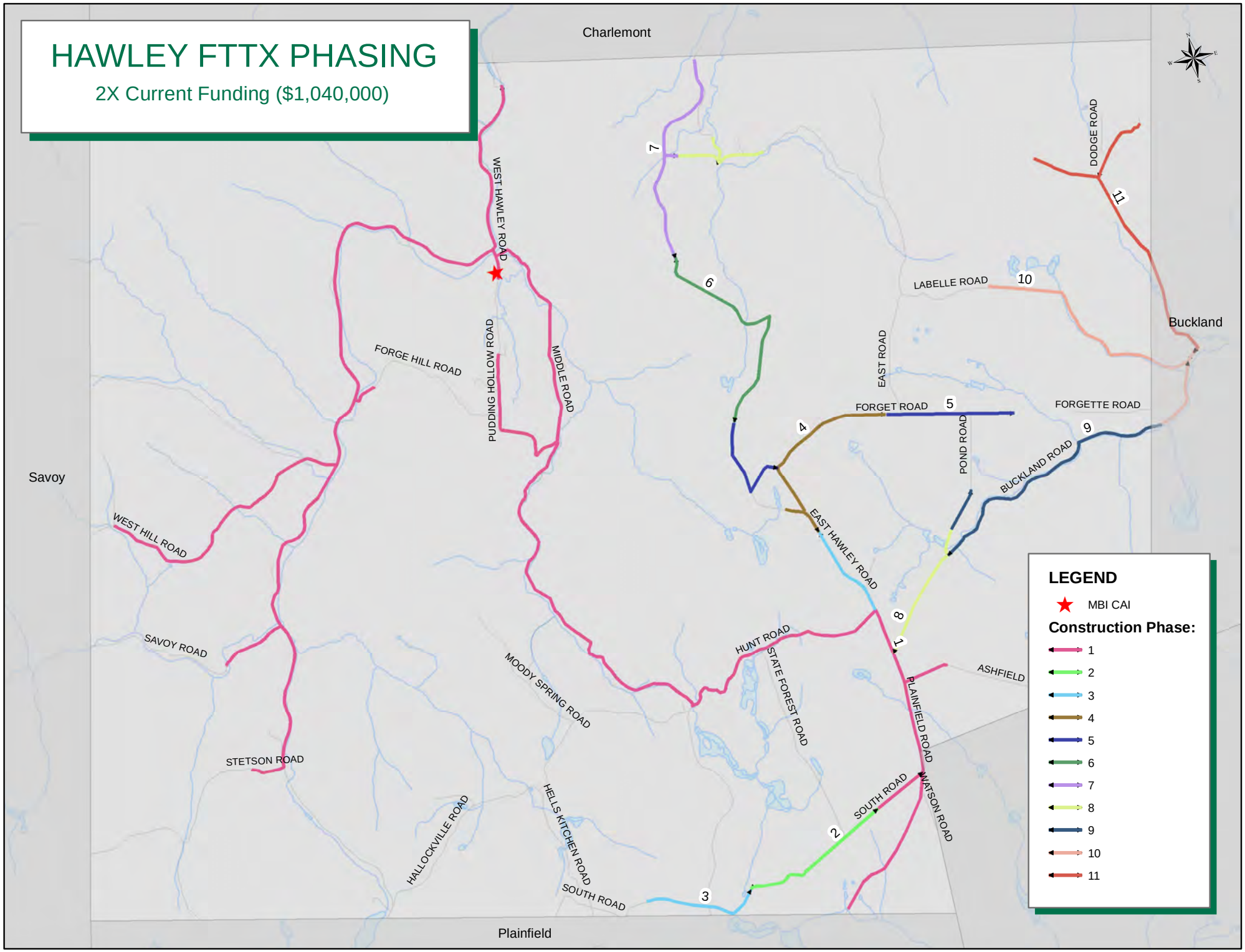

HAWLEY FTTX PHASING
Current State Funding ($520,000)
Based on 60% PDU take rate and 80% capital investment
Charlemont
Savoy
Buckland
Ashfield
Plainfield
WEST HAWLEY ROAD
FORGE HILL ROAD
PUDDING HOLLOW ROAD
MIDDLE ROAD
WEST HILL BRANCH ROAD
WEST HILL ROAD
SAVOY ROAD
STETSON ROAD
HALLOCKVILLE ROAD
HELLS KITCHEN ROAD
SOUTH ROAD
MOODY SPRING ROAD
HUNT ROAD
STATE FOREST ROAD
CLARK ROAD
EAST ROAD
FORGET ROAD
POND ROAD
DODGE ROAD
LABELLE ROAD
FORGETTE ROAD
BUCKLAND ROAD
ASHFIELD ROAD
PLAINFIELD ROAD
WATSON ROAD
SOUTH ROAD
LEGEND
MBI CAI
Phase

Hawley with 2X Current Funding

Take Rate:	60%
Monthly Revenue:	$85
Distribution Miles:	32
PDU Count:	200
Est. Cost per mile:	55000
PDU/ mile:	6
Total Funding:	$1,040,000
Head End:	$70,000
Engineering:	$50,000
Construction:	$920,000

Phase	Phase Length (Miles)	PDU Count	Total PDU With Take	Annual Rev (60% take @$56/mo)
1	16.73	104.0	62	$63,240.00
2	1.15	111.7	67	$68,340.00
3	1.24	119.5	71	$72,420.00
4	1.32	127.7	76	$77,520.00
5	1.41	136.5	81	$82,620.00
6	1.50	145.9	87	$88,740.00
7	1.61	156.0	93	$94,860.00
8	1.72	166.8	100	$102,000.00
9	1.85	178.4	107	$109,140.00
10	1.98	190.8	114	$116,280.00
11	2.11	204.0	122	$124,440.00

32.64


HAWLEY FTTX PHASING
2X Current Funding ($1,040,000)
Charlemont
Buckland
Savoy
Plainfield
WEST HAWLEY ROAD
PUDDING HOLLOW ROAD
MIDDLE ROAD
FORGE HILL ROAD
WEST HILL ROAD
SAVOY ROAD
STETSON ROAD
HALLOCKVILLE ROAD
HELLS KITCHEN ROAD
SOUTH ROAD
MOODY SPRING ROAD
HUNT ROAD
STATE FOREST ROAD
PLAINFIELD ROAD
WATSON ROAD
ASHFIELD
EAST HAWLEY ROAD
EAST ROAD
FORGET ROAD
POND ROAD
BUCKLAND ROAD
FORGETTE ROAD
LABELLE ROAD
DODGE ROAD
LEGEND
MBI CAI
Construction Phase:
1
2
3
4
5
6
7
8
9
10
11

About Westfield Gas & Electric and Whip City Fiber

Westfield Gas & Electric (WGE) /dba Whip City Fiber (WCF) is an Internet Service Provider (ISP) based in Westfield, Massachusetts. The company offers high bandwidth Internet access to its customers.

Westfield Gas & Electric Light Department (WGE), which operates natural gas and electric distribution franchise territories in Westfield, MA since 1899.

The Department serves almost 30,000 accounts with electric and natural gas distribution service over 40 square miles, and has established a reputation for low-cost, reliable, and friendly service. Of its customer base, roughly 20,000 are electric customers and 10,000 are natural gas. This customer base is comprised of 18,000 residences, 1,500 commercial, and 500 industrial customers. WGE has revenues in each of the last 5 years in excess of $75M. WGE has been building and operating commercial networks, internet service, and dark fiber offerings for over 20 years

WGE is a company driven to provide customers with a complete solution to their entire current and future Internet and private network needs. The company's customer base includes all consumers and all businesses in Westfield Massachusetts. WGE has a world-class management team with direct knowledge of the industry, extensive research experience, and unique administration skills.

Initially, fiber optic cable was constructed to benefit the utility by ceasing its reliance on high-priced data circuits purchased by the predecessor to Verizon. As a result, the WGE constructed over 60 miles of backbone fiber in three interlocking rings around the city, connecting utility facilities, all through internal resources.

Once complete in the late 1990’s, the optical system was expanded to sever the City's reliance upon high-priced, low speed data circuits provided by the telephone company. The Department then constructed drops to all municipal facilities including the school system.

Over the next few years, the WGE continued to find value in the installed fiber, through connecting all municipal and school facilities with high speed data networks. Operationally, the Department replaced its Supervisory Control and Data Acquisition (SCADA) communications that connected the Department's remote facilities, providing secure, real-time, high speed communications to key operational assets. Additionally, connecting municipal facilities allowed the City to realized savings through a centralized data center design, rather than previously distributed computing. At this time, WGE provided installation, activation, and network support services to the City. During this time, another market began to present itself to the WGE. Large commercial customers had a need to connect different facilities to each other within Westfield. WGE leveraged its available fiber to provide both managed lite circuits to the Internet and private wide area networks, as well as dark fiber.

WGE benefits from several strategic alliances by receiving very competitive pricing on services, allowing the company to offer competitive pricing on its services to customers.

WGE began constructing and operating Whip City Fiber a residential fiber to the home network in 2015. After successfully researching, designing and constructing a pilot area. This generated very positive response and results WGE has secured financing to extend Whip City Fiber building over 180 miles, to over 15,000 residential and commercial sites by the end of 2018. The subscriber base for combined gas and electric nears 30,000, and we are seeing significant growth in our Whip City Fiber customer base, all while competing against a large incumbent service provider.

In 2017 Whip City Fiber began to project manage engineering, design, pole application, make ready, and construction process in 20 rural communities in Western Massachusetts, placing each on a path to future operation and ownership of state of the art Gigabit Fiber to the Home networks.