



Article 24

FUNDING FOR TELECOMMUNICATIONS SERVICES

ARTICLE 24. Mr. Whelan moves: that the Town take affirmative action on Article 24 as printed in the Warrant in the sum of \$1,000,000 from borrowing under the provisions of Chapter 44, §7(11) of the Massachusetts General Laws or any other enabling authority.



Article 24

Funding for Telecommunications Services

Purpose

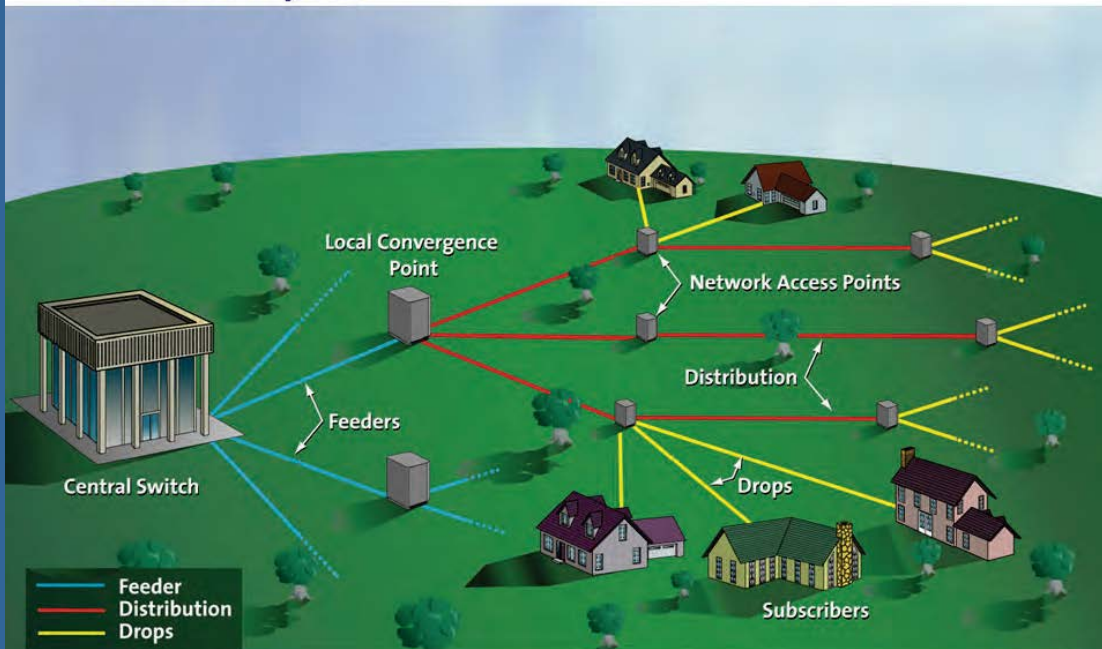
- Authorizes the Town to borrow funds to expand CMLP's high speed Internet Service to business and residential subscribers.
- Those funds are to be repaid through fees charged to users of the service.
- The funds will be used to:
 - Finance expenses to connect new customers to the network
 - Procure equipment and services needed to expand the broadband data service operated by the CMLP.
- Neither tax or electricity revenue is used to repay expenses related to telecommunications operations.

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Funding for Telecommunications Services Background



Generic Layout Gigabit Passive Optical Network



Graphic: Corning Incorporated



CMLP Fiber Optic Network

- Construction completed in 2012
- Included everything except “Drops”
- Supported “Smart Grid” already
- Already has over 800 customers

2013 Art. 48 Funded Startup

- \$1,000,000 was authorized
- Added high capacity connections to the Internet
- Added central switch equipment to handle data traffic
- Financed customer installations

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Funding for Telecommunications Services Service Offering

Since March 2014 CMLP has offered High Speed Internet to business and residential customers.

- **Provided another option where only one existed before**
 - A variety of speeds are available from 25 Mbps to 200 Mbps
 - Top speeds of up to 1 gigabit per second are possible
 - Completed over 800 installation in the first 3 years
- **Increased competition within Concord**
 - Rates compare favorably to other suppliers
 - Voice, Video and other Services can be accessed by customers through the data connection. (e.g. Vonage, Netflix, Hulu, Gmail, etc. details at www.concordma.gov/broadband)



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Funding for Telecommunications Services **Important Policies**

Our customers can expect:

➤ **Privacy**

- We do not collect or share customer data with anyone.

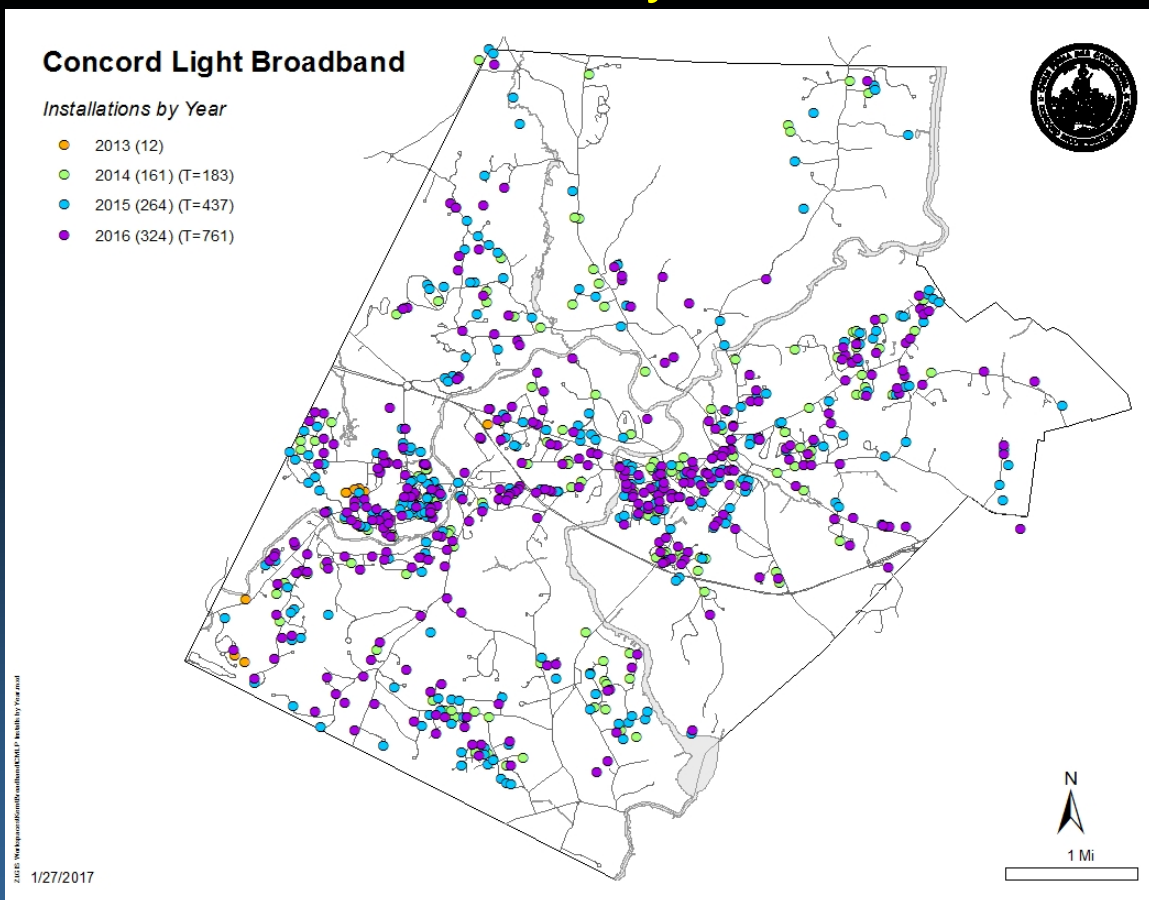
➤ **Net Neutrality**

- All traffic is handled equally.



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Funding for Telecommunications Services Installations by Year

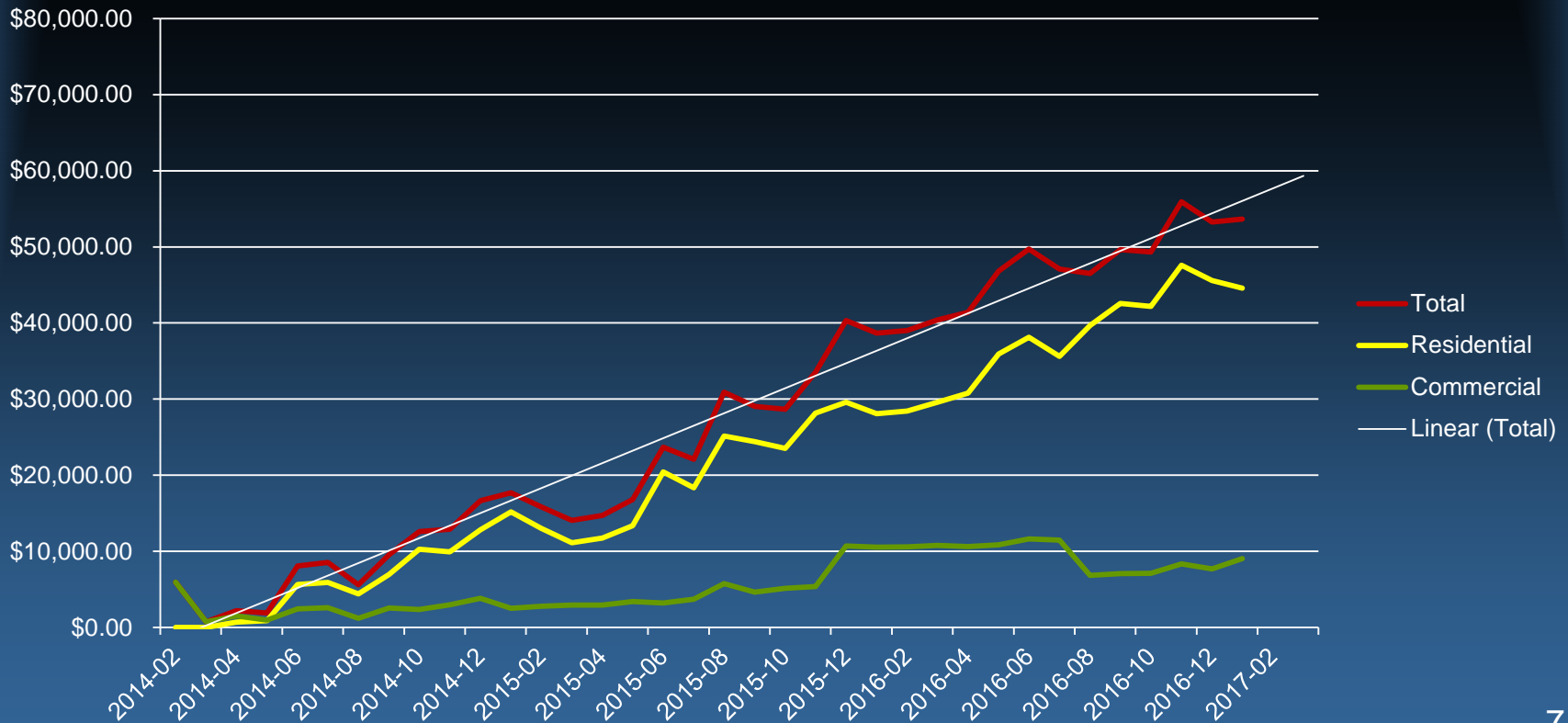




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Funding for Telecommunications Services Broadband Revenue Growth

Internet Service Billing February 2014 to January 2017





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Funding for Telecommunications Services Use of Funds

The 2017 borrowing authorization will enable the growth to continue.

- **Customer Installations:**
 - ✓ \$600,000 finance new customer drops
 - ✓ Each new connection average cost is \$1500 to \$2000
 - ✓ Installations are done in response to customer orders.
 - ✓ By 2020 the installations can be funded by telecommunications revenues
- **Additional Routing Equipment**
 - ✓ Up to \$200,000 is expected to be spent on larger routers and equipment.





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Funding for Telecommunications Services **Broadband Benefits**

- **Economic:**
 - Consumers pay less in communities with municipal options for telecommunications than those that do not.
 - Supports Property Values, Business Activity, Occupancy
- **Supports electric utility operations**
 - Depreciation, Data Collection, Control Operations
- **Supports municipal operations**
 - Data Networks are critical to Town Operations creates the opportunity to have key skills in house
 - Provides cost effective connections for Town buildings



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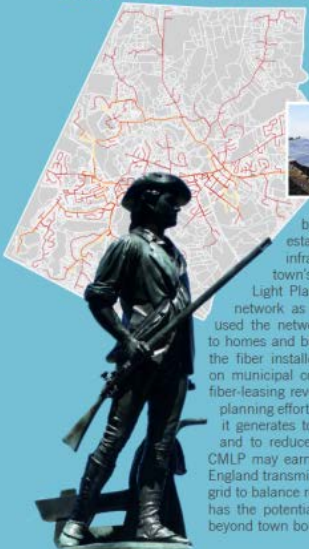
Funding for Telecommunications Services More information

- Concord's History has been documented in a case study
<https://cyber.harvard.edu/publications/2017/MF/Concord>

Case Study February 2017

Citizens Take Charge: Concord, Massachusetts, Builds a Fiber Network

David Talbot
Waide Warner
Susan Crawford
Jacob White



This report describes a multi-year effort by the town of Concord, Massachusetts, to establish a robust and versatile communications infrastructure to better serve its citizens. The town's municipal utility, Concord Municipal Light Plant, or CMLP, built a 100-mile fiber optic network as a backbone for a smart grid, and then used the network to deliver high-speed Internet access to homes and businesses, competing with Comcast. With the fiber installed, the town realized significant savings on municipal communications costs and generated new fiber-leasing revenue. CMLP recently launched a strategic planning effort to use the smart grid network and the data it generates to reduce peak power demand and costs, and to reduce systemwide greenhouse gas emissions. CMLP may earn additional revenue by allowing the New England transmission system to use parts of CMLP's smart grid to balance regional electricity loads. And Concord now has the potential to expand its Internet access business beyond town boundaries, starting in neighboring Acton.

A publication of
the Municipal Fiber Project >|< BERKMAN
KLEIN CENTER
FOR INNOVATION & SOCIETY
AT HARVARD UNIVERSITY



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