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December 1, 2019

The Honorable Ann Cummings, Chair
Senate Committee on Finance

The Honorable Tim Briglin, Chair
House Committee on Energy and Technology

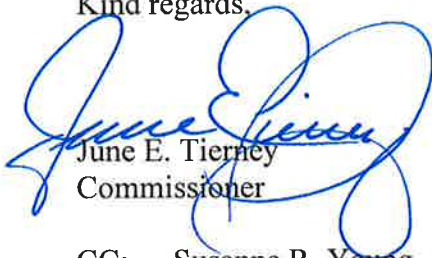
**Re: Report and Recommendation on General Obligation Bonds for Municipal
Communications Plants**

Dear Chair Cummings and Chair Briglin:

At the direction of the Secretary of Administration, I am pleased to submit this report on the use of municipal general obligation bonds to finance capital improvements related to the operation of a communications plant, pursuant to Section 14 of Act 79.

If you have any questions or concerns upon reading this report, please do not hesitate to contact me or Clay Purvis, Director of Telecommunications and Connectivity.

Kind regards,



June E. Tierney
Commissioner

CC: Susanne R. Young, *Secretary, Agency of Administration*
Beth Pearce, *State Treasurer*
Michael Gaughan, *Executive Director and Secretary, Vermont Municipal Bond Bank*



**Report to the Vermont Legislature
Act No. 79, Section 14
An Act Relating to Broadband Deployment Throughout Vermont**

**A Report on the Use of General Obligation Bonds for Improvements
to Municipal Telecommunications Plants**

Submitted to: House Committee on Energy and Technology and the Senate Committee
on Finance

Submitted By: Susanne Young, Secretary of Administration

Prepared By: Clay Purvis, Director for Telecommunications and Connectivity
Department of Public Service

Date: December 1, 2019

I. Introduction

State law currently prohibits municipalities from issuing general obligation bonds to fund capital improvements to municipally run telecommunications networks. Act 79 of 2019 directs the Secretary of Administration to “investigate the use of general obligation bonds by a municipality to finance capital improvements related to the operation of a communications plant.” The legislation directs the Secretary to collaborate with the State Treasurer and the Executive Director of the Vermont Municipal Bond Bank (hereinafter “VMMB”).¹

Since 2008, state law has limited the financing of operations and capital improvements to municipally run telecom plants to revenue bonds paid for out the net proceeds of the communications plant’s operations. This restriction bars communities from using general obligation bonds to support a municipally run broadband network or providing any other tax payer support. The lifting of this restriction was contemplated during the 2019 legislative session but ultimately not adopted. While it can be argued that the prohibition serves a legitimate and compelling financial safeguard, it can also be argued that the prohibition ignores the will of the community and unduly restricts towns from implementing workable broadband models.

As this report summarizes, Federal broadband programs, although well-funded, have failed to target investment where it is actually needed. The state’s programs, especially the Connectivity Initiative, have had better success at targeting funding, but such programs have not had the financial support needed to bring about universal availability of broadband. As a result, state and local policy leaders have looked toward municipal funding models as a solution to the digital divide. Act 79, passed this past year, provided some additional tools for broadband deployment that are now available to municipalities, raising the question whether municipal bonding is necessary to fund new broadband projects. While municipal bonding could provide a powerful tool for funding these projects, this report recommends that it may be wise to allow the new tools created in act 79 to be fully implemented before repealing or modifying the restriction on general obligation bonding. Any changes to the current law should follow successful projects and discourage models that have been shown to fail. Specifically, this report recommends that the state should:

- Adopt a “wait and see” approach with regard to other broadband tools recently established under Act 79, before lifting the bond restriction;
- Establish several Communications Union Districts before lifting the bond restriction; and
- Periodically reevaluate the need for the general obligation bond restriction.

¹ Department staff would like to thank the State Treasurer, Beth Pearce, and her staff; The executive Director of the Vermont Bond Bank, Michael Gaughan; and Paul Giuliani, Esq. for their expertise, advice and contributions to this report.

II. Background

Vermont and the Digital Divide

Rural broadband deployment is a topic of national discussion, and one of major concern to Vermont. Rural states, such as Vermont lack ubiquitous coverage of broadband services that meet the Federal Communications Commission's ("FCC") definition of broadband.² About 74% of Vermont's addresses are covered with broadband service meeting this definition. Most of the remaining 26% addresses have access to a functional broadband connection but one that does not meet the FCC's definition. About 6% of the state's addresses lack a broadband connection of at least 4/1 Mbps, or the bare minimum of what is considered a functional connection today. This lack of advanced telecommunications services is most acutely felt in rural communities, while urban and suburban communities, including village centers, have multiple high-speed broadband services available.

Both State and federal initiatives have tried to close the "digital divide" between urban and rural communities. Between 2009-2015, it is estimated that federal programs directed a combined \$201 Million into broadband networks in Vermont. These awards included USDA loans and grants to Vermont Telephone Company totaling \$116 million, a National Telecommunications and Information Administration grant of \$35 million to build middle mile fiber throughout the state, and a nearly \$50 million grant through the FCC's Connect America Fund to expand DSL service in rural, "high cost" exchanges.³ Vermont also funded several broadband programs, including capital appropriations to the Vermont Telecommunications Authority totaling \$12 million, which was largely used to build middle mile fiber and a wireless project. While many of these projects produced some economic development benefits the state, it is hard, if not impossible, to determine how many previously unserved locations now have broadband as a result of these projects. In fact, many of these projects involved competitive overbuilds of existing broadband networks to the disadvantage of unserved and underserved populations. Worse, because these federal programs were rolled out in an uncoordinated way, and without the use of good broadband availability data, many of these projects overbuilt each other.

At the same time, Vermont communities were looking inward for solutions to their lack of broadband. Towns in the Upper Valley banded together to form the East Central Vermont Telecommunications District ("ECFiber"). A law passed in 2015 gave these towns a legally recognizable status, with the creation of Communications Union Districts ("CUDs"). ECFiber represents the state's most encouraging example of municipal broadband. ECFiber built its initial network largely without the support of its partnering municipal government. Instead, it received investments from private members of the community. Today, ECFiber relies heavily on revenue bonds to support its growth. With ECFiber's success, other towns have sought to replicate the CUD model.

In 2014, the State implemented the Connectivity Initiative. The Connectivity Initiative takes advantage of better broadband mapping to target investment where it is needed and limits

² The FCC Defines "Advanced Telecommunications Services" as a broadband connection of at least 25/3 Mbps.

³ The CAF II award was made in 2015 but will be reimbursed through 2021.

the use of public money to fund areas that already have good broadband. The Connectivity Initiative is designed to fund the construction of “last mile” broadband deployments. This program has helped provide accountability to in-state public broadband investments and was a model developed from a program in Massachusetts. Nevertheless, the amount of funding necessary to bring about universal availability of broadband services meeting the state’s goal of 100/100 mega-bits per second (Mbps) far exceeds the program’s current funding levels.

In 2019, Act 79 established several new programs and tools to help expand broadband. The Act created the Broadband Innovation Grant, which provides funding to entities looking to plan their own broadband projects. The Act also created a broadband loan program within the Vermont Economic Development Authority (“VEDA”). This program authorizes loans of up to \$4 million and could cover up to 90% of a total project cost. Act 79 also increased funding for the Connectivity Initiative. These new programs will give community-oriented organizations new tools to address the problem. Federal programs through the United States USDA and the FCC are still focused on the issue in Vermont. Nevertheless, financing for public broadband infrastructure is limited.

Limitations on the Use of Tax Revenue Support

Vermont law stipulates that “a municipality’s operation of any communications plant shall be supported solely by the revenues derived from the operation of such communications plant, except that portion which is used for its own municipal purposes.”⁴ The law also limits the financing of any capital improvements related to a municipally operated communications plant to revenue-backed bonds “paid from the net revenues derived from the operation of the communications plant.” This provision bars municipalities from using general obligation bonds to finance operations of or capital improvements related to the operation of a communications plant.⁵ Lastly, the law prohibits losses from the operation of a communications plant from being borne by the municipality’s taxpayers.⁶

The rationale for the prohibition appears to be supported by concerns for the nature of the broadband problem and the substantial risk municipal broadband networks pose to the municipality. To a lesser extent the State’s moral obligation is also at risk in the event that a municipality defaults on its obligations. Instead of encouraging municipalities to take on general obligation debt to address their own broadband connectivity gaps, the State has historically

⁴ 24 V.S.A. § 1913 (b)

⁵ “Communications plant” shall mean any and all parts of any communications system owned by the municipality, whether using wires, cables, fiber optics, wireless, other technologies, or a combination thereof, and used for the purpose of transporting or storing information, in whatever forms, directions, and media, together with any... improvements thereto hereafter constructed or acquired, and all other facilities, equipment, and appurtenances necessary or appropriate to such system. However, the term “communications plant” and any regulatory implications or any restrictions under this chapter regarding either “communications plant” or “communications service” shall not apply to facilities or portions of any communications facilities intended for use by, and solely used by, the municipality and the municipality’s own officers and employees in the operation of municipal departments or systems of which such communications are merely an ancillary component. 24 V.S.A. § 1911 (2)

⁶ 24 V.S.A. §1913(e).

addressed the lack of broadband through state-wide programs such as the Vermont Telecommunications Authority and later through the Connectivity Initiative.

On the other hand, some municipalities struggle with the consequences of inadequate broadband and they believe that the law unduly restricts their ability to finance a workable solution. The Town of Brattleboro for example asserts that the decision to use general obligation bonds should be a local decision. Brattleboro argues that its select board and the voting public “ha[ve] the ability to carefully consider the implications of a bond vote and will arrive at the right answer for [their] community after a period of informed debate.”⁷ Because a law such as §1913 can be viewed as not respecting the will of the community, the necessity for, and efficacy of, the §1913 prohibition should be reconsidered on an ongoing basis.

III. Challenges of Broadband Deployment

The Competitive Nature of Broadband

The rationale for the prohibition is often supported by the competitive nature of the broadband industry. General obligation bonds are typically used to finance parks, schools, and other public necessities that, despite their contribution to a community’s quality of life, do not generate much or any direct revenue to offset the expenses. Projects completed with general obligation bonds are most often capital improvements that have discrete price tags and timelines to which municipalities and contracted entities can reasonably adhere, barring extenuating circumstances. Although the taxpayers must shoulder the debt service for capital improvements made with general obligation bonds, they can typically count on the timely completion of the project and will be able to enjoy a new bridge, school, or park during the period in which the debt is to be repaid. Such benefits would usually not exist but for the public investment. The principal differences between broadband and other municipal functions are that private industry competes with the government in the provision of telecommunications services where it is profitable, thus eroding the business case for success in the areas that the municipality may want to target. Moreover, broadband is not universally adopted, leading to variability in utilization or underutilization of the investment.

Broadband Requires Significant ongoing Capital and Operational Resources

Broadband networks have very little in common with discrete capital improvement projects like parks, schools, and bridges. Rather they should be viewed as a municipal service with a need for significant ongoing support. A town may purchase new poles, new fiber, land, and buildings to support the development of the network. Those costs are discrete and relatively predictable. After purchasing fixed cost inputs, the municipality must begin submitting pole applications to pole owners (if they do not own the poles), developing and maintaining rights of way (if they purchased new rights of way), making drops at all planned service locations, splicing fiber, purchasing backhaul, and in some cases setting up organizational infrastructure to become a functional internet service provider, all of these costs are ongoing. If all staff that support the network’s operation are municipal employees, then the municipality must budget for

⁷ Ltr. of the Brattleboro Selectboard to Secretary Young, Re: General Obligation Bonds, Communications Plant, October 28, 2019

their salaries, pensions, and benefits.⁸ For this reason accurate revenue modeling is required so that municipal decision makers know what the long term implications are for the tax paying public.

Long term debt like general obligation bonds is typically used to pay for capital expenditures, not for operating expenses. A report from the National Conferences of State Legislatures found that, “it is extremely rare for a state government to borrow long-term funds to cover operating expenses.”⁹ While municipalities have different rules governing their fiscal practices, the practice of issuing long-term debt to cover the operating expenses of a network whose construction was funded by debt is risky at best and harmful at worst.

Once built, a broadband network has no guaranteed revenue. Revenues are dependent on quality of service, price, marketing, customer service, and competitive alternatives. All the qualities of a network that contribute to its revenue-generating capacity are non-discrete in nature. If municipalities are to use general obligation bonds, they should ideally be used to purchase and install discrete, fixed cost capital improvements. As with roads and bridges, fiber and poles are expensive and generate little or no direct revenue to offset their capital expense.

The introduction of new competition can further erode the business case for municipally run broadband networks. Incumbent providers will already be present in the most profitable neighborhoods. The low-profit, low-density areas in most need of broadband upgrades are often ignored by incumbents. Municipal projects seeking to assist these disadvantaged areas will find it difficult to support network operations when faced with competition in the high-profit locations. This scenario puts the municipal telecom company at a significant competitive disadvantage and limits its ability to recoup costs. More problematic is the fact that municipalities lack the human and other resources to compete effectively without substantial investments in staff and resources.

The useful life of technology is another consideration. Technological advances in broadband technology means that the useful life of some components of a system may not last as long as the debt obligation. The need to make improvements could outpace the ability of the municipal operator to keep up using general obligation bonding.

Broadband Expansion is a Regional Issue

One point to consider is the fact that broadband networks and their many gaps do not align with town boundaries. Throughout the state there are long, winding roads that weave between areas served by broadband. These gaps do not align with town boundaries and generally overlap multiple municipal districts. Encouraging individual municipalities to utilize general obligation bonds to build and operate networks solely within their jurisdictional boundaries prevents regional solutions to the problem and fosters equity gaps between towns in the same region.

⁸ As it pertains to costs, broadband networks may have the most in common with municipal roads, which require both significant capital and operational funding. In most towns the need for continuous maintenance necessitates a highway department with dedicated staff.

⁹ National Conference of State Legislatures, “State Balanced Budget Requirements,” 1999
<http://www.ncsl.org/research/fiscal-policy/state-balanced-budget-requirements.aspx>

IV. Financial Considerations

Credit concerns of borrowers and start-up risk

Risk of default is a concern. Municipal telecom projects often receive approval with the understanding that they will generate some amount of revenue. But because telecommunications is a competitive business, the risk to the municipality cannot be understated. Municipalities must make accurate models depicting with reasonable assurance the take-rates, revenues, and expenses of the telecom venture. Failure to do so risks financial failure of the project.

With the risk of project failure also comes the risk of default. If revenues are less than projected and do not cover the operating costs, the project is at risk of failure. In this scenario, the town is left to choose between defaulting on the obligation and burdening the tax-payers with increased taxes or cuts to other vital municipal services.¹⁰ The municipality risks having tax receipts diverted from schools and highway projects to pay the debt service with no countervailing benefit. A default would increase borrowing costs for all future debt financed projects. To date, no Vermont town has defaulted on a bond payment.¹¹

Ratings agencies traditionally do not rate many broadband projects and have no pre-determined stance on the matter. The City of Rock Falls, Illinois for example used unlimited ad valorem tax bonds to fund the installation and operation of broadband service in their city. In doing so, the city sought the opinion of Standard and Poor's (hereinafter "S&P") for an objective financial outlook.

S&P wrote the following:

"The city is investing in the broadband system because of a lack of broadband service and infrastructure in the area. However, advances in the telecom technology and competitive pressures from new entrants to the local market could erode the city's projected customer base. Should the pressures increase, the projected revenue from the system could taper off, leading to a reliance on the other pledged tax revenue to support the bonds. Potentially, and in the most severe scenario, this could pressure the city's financial operations and ability to support the debt and jeopardize the status of the broadband system before the bonds mature in 20 years."

In addition to detailing the enterprise risk inherent to entering the broadband market, S&P detailed Rock Falls' management capacity, budgetary performance, economy, geography, and institutional framework. In fact, the majority of S&P's six-page, two-year outlook focused on Rock Falls' other debts, revenues, and pension obligations. The fact that S & P wrote more about

¹⁰ See section "State Moral Obligation" for detail on municipal issuance and risks.

¹¹ The only example of a municipal telecom in Vermont that can be considered a failure is Burlington Telecom ("BT"), a municipally run broadband and TV provider. This project struggled to compete against the private sector and its revenues could not cover lease payments to a private lender. The City used \$17 million of its own fund balance to pay the lender, which, it was later ruled, was a violation of the City's certificate of public good. Despite its characterization as a municipal failure, BT is privately owned today and successfully sells fiber-based TV and broadband services. Although often cited as an example of a municipal telecom failure, there are other municipal telecom successes in Vermont. The unique facts of BT should separate it from the general inquiry of whether towns should be able to finance telecom projects. Therefore, BT is not a focus of this report and this report does not rely on the BT story in support of its final recommendation.

the municipality's other functions than about the broadband project in question should serve as an indicator that ratings agencies view broadband network development as a risk to core municipal functions. Nevertheless, broadband, which is becoming increasingly important to effective participation in civic life, could be seen now as becoming a core municipal function that meets a fundamental need that would otherwise go unmet.

Even if broadband is a core function that local government undertakes even where it is not profitable, the costs can be significant and have significant ramifications for a municipality's financial standing. Critics of municipal broadband draw support from the mixed results experienced by community funded projects around the country. A 2017 financial assessment conducted by the Center for Technology, Innovation and Competition at the University of Pennsylvania School of Law found that 11 of 20 projects assessed were cash flow negative during the assessment period.¹² Five projects had an estimated repayment period of 100 years, two projects were pegged at over 60 years, and only two were slated to break even.¹³

Despite the risks mentioned above, there are some nearby success stories. In 2011, the Town of Leverett, Massachusetts (population 1876 per 2010 census) established a Municipal Light Plant (LMLP) in anticipation of a future high-speed fiber internet system. In 2012, voters in Leverett approved \$3.6 million in general obligation bonds to fund the construction of a fiber-to-the-home network. The 20-year bond measure raised property taxes by an estimated 6%¹⁴. Construction was completed in the summer of 2015 and the network, known as "LeverettNet," now provides symmetrical 1 Gbps connectivity to 667 subscribers out of 813 households¹⁵. LeverettNet is owned by the Town of Leverett and operated under the authority of the LMLP, which contracts with third parties for maintenance, internet service provider, and network operator functions. Planning for the network began in 2008, when Massachusetts created the Massachusetts Broadband Institute ("MBI") and set aside \$40 million in state bond funds to bring broadband service to all residents and businesses in Massachusetts.

The Town of Leverett received \$40,000 from the MBI for initial network design in 2011. Less than a full year later, the Town issued a general obligation bond to build a town-wide fiber network that would provide "last-mile" connections via the middle-mile network owned by the MBI.

Perhaps the single greatest selling point of LeverettNet was the fact that the town's residents only had internet access through dial-up and satellite prior to the network's construction (with the exception of a handful of homes served by DSL). Despite the advantages inherent to building a network in a town with no alternatives, the model employed by the Town of Leverett represents an efficient use of state assistance, general obligation debt, and a public-private partnership.

¹² Yoo & Pfenninger, *Municipal Fiber in the United States: an empirical Assessment of Financial Performance*, Center for Technology, Innovation, and Competition, May 2017 at 23.

¹³ It should be noted that many of the projects under review in this study still exist and are in operation. The analysis failed to account for externalities outside the study period.

¹⁴ *Leverett Approves Broadband Network*, Muninetworks.org: <https://muninetworks.org/content/leverett-massachusetts-approves-broadband-funding>

¹⁵ Leverett Municipal Light Plant Annual Report 2016, <https://lmlp.leverettnet.net/2017/03/07/leverett-municipal-light-plant-annual-report-calendar-year-2016/>

According to the Massachusetts Broadband Institute, the state intended this co-investment model wherein public bonds fund the long-lived infrastructure (fiber, poles, towers, etc.), private partners fund additional infrastructure and provide service, and private partners may leverage additional federal funds to assist the projects¹⁶. The State's middle-mile network ensures a regional approach that can provide greater economies of scale as more towns connect.

State Moral Obligation

General obligation bonds have the full faith and credit of the issuing municipal entity. If the municipality participates in the Vermont Municipal Bond Bank (VMBB) to issue its general obligation debt, it has the moral obligation of the state behind it. In the event the municipality did not pay off debt service, the VMBB could have a shortfall in funds needed to pay its bonds, in which case the Governor would be notified and would submit a request for funds to the General Assembly to replenish the VMBB debt service reserve fund.¹⁷ To date, the VMBB has not had to use this moral obligation. The current general obligation debt has very little risk involved and the VMBB reviews the financial condition of all municipalities wishing to participate in a particular bond issue. The risk profile of bonds for telecommunication bonds is higher and could increase the risk of a moral obligation call, effectively using state taxpayer dollars to fill the gap. This should be considered in any effort to relax bond restrictions.

Bonds may be Taxable

Although a minor point, it is worth considering the "private use" nature of broadband networks. Bonds whose revenues support "private activities" such as business or retail customers are taxable.¹⁸

V. Recommendations

This report recommends a "wait and see" approach to any decision to relax restrictions on municipal bonding for telecommunications infrastructure. In 2019, the State provided several new tools for broadband expansion. In addition, there are efforts state-wide to form new CUDs. Once these districts are established towns and the new broadband programs are utilized, it may be valuable to reassess the need for additional funding at the town level. But given the risks of using such a tool to the exclusion of other state and federal programs, this report recommends that the state exercises caution as it thinks about relaxing bond restrictions.

In 2019, Vermont enacted several programs, including the VEDA Broadband Loan program. This program is supported in part by State dollars and its moral obligation, and VEDA acts as a conduit for that funding by issuing loans for broadband projects. VEDA reviews applications for approval, providing an extra layer of administrative review for the feasibility of a given project. The VEDA Broadband Loan Program has the potential to provide the same type of support to municipal broadband projects without the same level of exposure to risk as general obligations bonds to individual municipalities.

¹⁶ Massachusetts Broadband Institute: <https://broadband.masstech.org/about-mbi/state-and-federal-legislation>

¹⁷ The General Assembly by statute may take actions but practically would be obligated to make funds available or take corrective actions. 24 V.S.A. § 4675

¹⁸ Taxable bonds are more expensive as they do not make use of the tax exemption. This would add to the cost of the telecommunications project.

The legislation also provided greater clarity on ways that municipalities could use revenue bonds to support broadband. Following a New Hampshire law, towns may now partner with a private entity to expand private broadband networks.¹⁹ While this mechanism relies on revenue bonds, it is a model that the at least one New Hampshire town has been able to utilize.

Lastly, Act 79 provides much needed planning money, allowing municipalities and other organizations to plan new broadband systems, through the Broadband Innovation Grant Fund. This planning money fixes a bottleneck problem that prevented Vermont organizations from tapping federal grant money. Before Vermont authorizes the use of general obligation bonding for broadband, it would be wise to evaluate the effectiveness of these programs over the next three years.

The State law authorizing CUDs addresses the regional aspect of the broadband expansion problem, by enabling towns to work together. The law provides a mechanism by which these towns can issue and sell revenue bonds. The formation of a CUD protects individual towns from the credit risks associated with a failing project as the district is considered its own municipal organization. Forming a CUD also allows the entity to draw on the human capital of several towns, such as lawyers, technologists, financiers and other skilled people who can join a CUD board and contribute to its success. Before the state considers lifting the restrictions on municipal bonding, the state should first encourage the establishment of a few CUDs. After such time, the state should periodically reevaluate whether the restriction still makes sense. As modeled by ECFiber, CUDs can establish themselves without the use of general obligation bonding and can be quite successful with revenue bonds, grants, and private loans.

Nevertheless, this report recognizes that the prohibition places severe limitations on the ability of municipalities to provide a necessary service for their residents. Limiting the debate to simple financial and economic considerations fails to account for the social, cultural, and quality of life improvements that municipalities are often trying to achieve with municipally funded broadband. Therefore, this report recommends that the Legislature and Executive branch may want to consider monitoring the effectiveness of new broadband tools and reexamine this question periodically. Once several CUDs are established and the effectiveness of the tools provided in Act 79 can be evaluated, the prohibition in §1913 should be reexamined to determine whether such a powerful restriction should be lifted. Before any changes to the law are made, there should be an evaluation of models that have succeeded. It may be prudent to craft legislation that follows in the footsteps of these successes and discourage the types of projects that have proven detrimental to the municipalities that undertook them.

¹⁹ 24 V.S.A. § 1913(f).