

BLUE HILL, BROOKSVILLE, DEER ISLE, AND PENOBSCOT  
BROADBAND COMMITTEES

# Joint Status Report and Process Review

January 7, 2022

## Summary

Building on a multi-year effort to improve broadband internet access on the Blue Hill Peninsula (and Deer Isle/Stonington), the towns of Blue Hill, Brooksville, Deer Isle and Penobscot (the Towns) agreed last spring to embark on a joint, structured effort to make broadband access available to every resident and business within those towns.

As we all know, having access to affordable and reliable internet has become essential in today's world, and this has been spotlighted in the most unexpected way as a result of the COVID-19 pandemic. Learning and education, healthcare, remote working, video/game/movie streaming, as well as staying connected with family and friends has been the result of having some form of internet access—whether it is available at home, at the library or in the parking lot of the local store. What we also know is that not everyone has access and this must change. Residents of Blue Hill, Brooksville, Deer Isle, and Penobscot have an opportunity to come together to find a solution that provides broadband internet access for everyone.

To meet this moment, each participating town has established its own Broadband Committee consisting of elected town officials and volunteers from each community to do the work needed to find a solution that works for all.

The Committees are all working together towards the same goals and established a baseline for the broadband internet access we are seeking.

### BROADBAND BASELINE

- **Fiber-based.** Fiber provides a superior (“future-proof”) medium for transmitting data; its capacity is upgradeable by installing new electronics (e.g., more advanced laser technology in coming years).
- **Ubiquitous.** Available to any location (business or residential) currently served by grid-connected electricity and/or wireline telephone.
- **Gigabit Capacity.** Solution must provide gigabit (1,000 megabits per second) connectivity to each location. This is approximately 40x the highest DSL download speeds available on the Peninsula.
- **Symmetrical.** Upload and download speeds are the same, unlike current offerings (e.g., 25Mbps down/3Mbps up for DSL, 100Mbps down/10Mbps up for Spectrum). We need it today and the importance of symmetrical speeds is expected to increase over time.

- **No Data Caps or Throttling.** We are clear that any solution selected does not have any measures included that are intended to limit active users' bandwidth. It will not be acceptable.
- **Modest and Fair Installation Costs.** Any solution accepted must consider all installation cost determinants (e.g., long driveways) and seek to find the best, most cost-effective solution available for all.
- **Collaboration:** Participating towns are well advised to try to work together to increase the scope and scale of the project, making it more attractive to vendors, grant providers, and (if necessary) the financing markets.

## CURRENT STATUS OF TOWN COMMITTEES' WORK

In July 2021, the Towns provided a request for proposal (RFP) to nine firms positioned to provide solutions to towns and rural areas similar to us in scope and scale. Responses were received from six firms in September 2021. Each response brought different options for us to consider ranging from municipal network control and ownership to complete ISP ownership. The Towns indicated that they were willing to consider proposals that envisioned municipal ownership of the network, ISP ownership of the network, and anything in between. Putting this degree of flexibility into the RFP process has allowed the towns to gain valuable information and a wide array of possibilities as to how to proceed.

In addition to our efforts, there is concurrent work being done at the state and federal levels to support Broadband expansion to rural areas and we are doing everything we can to ensure our towns are eligible for any of those solutions.

## NTIA Grant Response Pending

The State of Maine's ConnectMaine Authority teamed with CCI to apply for a competitive grant from the National Telecommunications and Information Agency (NTIA). If awarded, and when combined with funding already committed by CCI and work awarded to them through the FCC's Rural Digital Opportunity Fund (RDOF), CCI would build a network meeting our Broadband Baseline throughout the Blue Hill Peninsula, including Deer Isle and Stonington.

If the grant request is approved, there would be no further action required on the Towns' part—the network would be constructed over the 12-24 months following approval at no cost to the covered towns.

The current expectation (January 2022) is that grant awards will be announced this month, but the decision has already been delayed at least once, so the actual date is uncertain.

## Recommendation (if No NTIA Grant): Work with CCI

As noted above, the RFP process elicited proposals that reflected a range of municipal control/ownership alternatives for broadband internet access. The Town Committees evaluated these alternatives and have concluded that, while each has its advantages and drawbacks, entering into discussions with CCI about implementing their proposal is the preferred approach. The considerations and rationale for this recommendation are summarized in the body of this report. Primary among these reasons is the committees' view that the CCI proposal offered the most cost-effective solution that met all the criteria outlined in our guidelines for acceptable internet. We were concerned that a municipally owned and operated network would cost substantially more to build, would cause the Towns to bear operating risks, and may be beyond the capacity of relatively small, rural towns to manage over the 20+ year life of the network. In addition, as an incumbent provider of internet and telephone services in our towns, CCI has the advantage of existing pole attachments (a significant cost factor), and a nearly universal customer base due to wired landline phones. Of great significance is the fact that CCI was already awarded a grant under the RDOF program to provide high speed internet (that meets our baseline) to much of the unserved parts of our towns, thus obviating the need to raise funds to build out those areas.

CCI has indicated that they anticipate constructing the network and offering service throughout all four Towns within 12-24 months of receiving funding from the Towns, assuming that is in June 2022. The most significant hurdles to negotiating and entering into a CCI agreement are 1) formalizing the relationship between the four Towns, and 2) implementing a strategy for financing the municipal share of the cost via federal, state, and other grants and, if necessary, municipal debt.

## Financing the Network

As noted above, determining how to finance our share of network build costs is a critical step in bringing broadband internet to the Towns. Substantial federal funds have been committed to support rural broadband. The state's organizational infrastructure to administer these funds, the Maine Connectivity Authority (MCA), is still being developed, so the criteria for allocating these funds using the MCA is not yet established but we know they are committed to creating a long-term, sustainable process to support rural broadband expansion. While we wait for this option to be established, we are working with ConnectMaine in the interim to understand what we need to do to receive federal funding.

## NEXT STEPS FOR EACH TOWN

While we wait for federal and state funding allocation mechanisms to be established, there are several steps each Town can take today in order to be ready to move as quickly as possible once the financing landscape becomes clearer.

### Continue to Engage Residents

While substantial work has been done in each Town to establish which areas are currently unserved or underserved by the current internet providers and to solicit feedback on the local need, there is more work to do. For example, it could be helpful to hold Town resident forum(s), with topics to include:

- the benefits of broadband internet access to both active users and to those who don't subscribe;
- the alternative ownership/control models and the Town Committees' CCI recommendation, and
- the financing alternatives available (or expected to be available) to the Towns.

Another useful activity would be to issue Broadband updates via social media (Facebook), email lists, etc.

### Review and Approve Interlocal Agreement

In order to coordinate and enhance our town contract negotiations with CCI and, more importantly, to demonstrate our collaboration to the state and other grant providers, the Towns need to negotiate an Interlocal Agreement detailing the joint efforts and commitments of the Towns. The goal is to have such an agreement approved by all four Towns before summer.

### Appropriate Broadband Funds

Appropriate \$10,000 from each town to pay for legal, advisory, and other incidental costs to prepare a comprehensive broadband proposal for the Towns to consider and vote on. Provision of broadband services is one of the eligible uses for the American Rescue Plan Act (ARPA) funds received by each Town.

## DETAILED REPORT

The remainder of this report provides more background and detail on:

- the NTIA Grant,
- the RFP Process and Results,
- alternative network control/ownership models and CCI's proposal,
- broadband financing alternatives, and
- proposed next steps.

# Report Detail

## NTIA Grant Application and Status

ConnectMaine, a Maine state authority, applied for a grant from the National Telecommunications and Information Administration (NTIA) in collaboration with CCI to provide broadband access to the entire Blue Hill Peninsula, comprising eight towns. This was part of a larger coordinated application for the state. If the grant is awarded, the Town Committees' goals would be met and the network would meet all of our core criteria at no cost to the Peninsula towns.

ConnectMaine's application was for a \$30 million grant, covering various territories across the state (at present, the total amount to be awarded by the NTIA nationally is \$288 million). Over 230 applications, requesting more than \$2.5 billion, were submitted nationally. ConnectMaine believes it is well positioned in this competition, given its coordinated state effort and responses to NTIA questions.

The original target for announcing the NTIA grants was early fall 2021 but, due to the number of applicants in the program, challenges of coverage maps by existing ISPs and the resulting applicant response requirements, the award date has moved to January 2022.

Ultimately, since NTIA success is not assured, the Town Committees' efforts have been structured to develop alternatives in the event the ConnectMaine/CCI proposal is not awarded an NTIA grant.

## RFP Process and Results

### RFP PROCESS

In June 2021, the Towns retained Mission Broadband, a Bangor-based firm focused on providing advice to municipalities and other communities on their efforts to enhance broadband access. With the assistance of Mission Broadband, the Town Committees issued a Request for Proposal (RFP) to provide a broadband network and related services meeting the [Broadband Baseline](#) identified in the Summary.

One notable feature of the RFP was that it did not specify which entity was to own and control the broadband network and services. The Town Committees did not want to narrow the range of possible ownership structures until more specific information was available relative to each respondent's preferred proposal. (See [Results](#) in this section and [Ownership/Control Models](#).)

The Town Committees followed the processes identified in the RFP with additional clarification of questions developed for specific responders as a part of the review process. Initial potential respondent questions and responses are documented at this site – <https://www.peninsulautility4broadband.org/the-rfp.html>

### RESULTS

Of the nine participants in the pre-bid meeting, six responses were provided to the Towns. The table below identifies the respondents and certain key metrics of their responses.

	CCI	GW	SERTEX	AXIOM	MATRIX	SPECTRUM
Town Ownership	Partial	Y	Y	Y	Y	N
PON	XGS PON	XGS PON	XGS PON	UNK	GPON	EPON
FTTP	Y	Y	Y	Y	Y	N
Symmetrical	Y	Y	Y	Y	Y	N
Ubiquitous (Universal)	Y	Y	Y	Y	Y	N
No Data Caps/Throttle guarantee	Y	Y	Y	Y	Y	TBD
Subscriber Cost (low to high)	1	2	Inc.	Inc.	5	6
Cost (low - high) Short & Long Term	1	2	3/4	3/4	5	6
4- Towns served to the same standard	Y	Y	Y	Y	Y	N

(Acronyms are defined in the Glossary at the end of this report)

As illustrated by the first line of the table, the responses broadly fit into two categories, distinguished by ownership/control of the network and services. GWI, Sertex, Axiom, and Matrix submitted responses that described how they would build and operate a broadband network to be owned and controlled by the Towns (Matrix proposed a

variation on that theme over time); whereas CCI and Spectrum provided proposals in which ownership and control would remain with them.

The cost to the Towns of a network owned and controlled by the Towns was substantially higher than the cost of a network owned (and/or controlled) by an ISP. The Town Committees estimate that, on an “apples to apples” basis, the up-front cost of a municipal network would be approximately \$25 million based on the RFP responses.

A network not controlled by the Towns would cost substantially less to build. CCI’s response indicated that the cost to be borne by the Towns (directly or indirectly) would be approximately \$8.5 million. This reduced cost reflects areas they have already committed to serve with fiber under another federal program, the financial benefit of already having installation rights on utility poles throughout the Towns, and CCI’s own financial commitment to the project. (Spectrum’s proposal did not meet the RFP’s baseline requirements for two of the four Towns, required a long-term commitment from each Town, and did not clearly identify costs to subscribers, so it was not considered sufficiently responsive to the RFP.)

It should be noted that all of the above amounts are before the benefit of any federal, state or other grants or other subsidies available to the Towns. Given the environment described in more detail in the [Broadband Financing/Grant Landscape](#) section, the Town Committees anticipate that these benefits could be very substantial.

We discuss the implications of these different models, which is a critical underpinning of the Town Committees’ recommendation, in the next section.

## Ownership/Control Models

As noted above, there are (broadly) two ownership and control models employed to accelerate the deployment of broadband networks—the ISP ownership model and the municipal/utility model. As will be discussed shortly, CCI’s response anticipated a hybrid of these two models, in which ownership of the assets is shared, but control of the assets and services would largely rest with CCI.

### ISP OWNERSHIP MODEL

This model provides complete control and ownership of the broadband network to the ISP, such as the current presence of CCI (using DSL) and Charter Communications (Spectrum). Neither of these companies has provided ubiquitous service to the Towns because the cost of doing so is deemed incompatible with their profit/investment return requirements.

#### Key Advantages

- **No direct cost to the Towns.** All costs are paid by the private ISP and (they hope) recovered over time via subscriber fees.

#### Key Disadvantages

- **No control over service territory.** The ISPs are free to offer service wherever they wish to (generally densely populated areas where per-subscriber build costs are low) and to leave other (less dense, rural) areas without service. Cost for expansion is then placed on the town or the subscriber without benefit of any subsidy/grant.
- **No control over pricing or quality of service.** Since the networks are privately owned, municipalities have essentially no control over the services offered to their residents.

### MUNICIPAL/UTILITY OWNERSHIP

The municipal/utility ownership model places network ownership in the hands of one or more municipalities or through a non-profit utility controlled by them. This includes the ability to prioritize ubiquitous service, even to locations where the build cost would be unattractive to a for-profit entity.

One or more firms with relevant expertise are generally contracted to design, build, maintain and provide broadband internet services over the network. In theory, the municipal utility could choose to employ its own maintenance, customer service, billing,

etc. staff, but we are not aware of any municipal operations in Northern New England—all of the precedents contract with third parties for these services.

The municipal ownership model has been employed by the Downeast Broadband Utility (Baileyville/Calais), Cranberry Isles, Aroostook County, Matinicus Isle and Isleboro, and other towns appear to be pursuing this model (Katahdin region, Brooklin/Sedgwick, and some Midcoast towns).

Many of these municipal/utility networks are structured as “open access” networks, in which the network infrastructure is available to any ISP that wishes to provide service over the network, with an “anchor tenant” ISP at the outset. While the open access model has been successfully used elsewhere in the country, the Town Committees are not aware of any rural Northern New England markets in which there is meaningful competitive activity.

### Key Advantages

- **Full control** of service offerings, subscriber pricing, and customer service (or, in the case of “open access” networks, the prospect of competition to keep prices low and quality high).
- **More straightforward financing proposition**, since the entire network is owned and controlled by a single entity.

### Key Disadvantages

- **Substantially higher up-front cost**, corresponding to full ownership and the disadvantages of lacking a) an existing network presence in the area, b) large-scale component purchasing activity, and c) many other “scale economies” benefitting existing providers (such as CCI and Charter/Spectrum).
- **Requires network construction, operation, and marketing expertise.** Even if virtually all functions are provided by contracted third parties, negotiating robust contracts to obtain these services requires, at a minimum, sufficient expertise to know what to negotiate for.
- **Municipal owners take full operating risk**—particularly of lower-than-expected subscriber “take rate,” but also of unexpected construction or operating costs.

### THE CCI MODEL

In its response to the Towns’ RFP, CCI proposed a hybrid model. This section describes CCI’s model in general (where it has already been utilized) and specifically how CCI proposes to implement its model on the Blue Hill Peninsula.

## Outline of the Core Model

The “CCI Model” provides that CCI build a ubiquitous, fiber optic network capable of symmetrical gigabit speeds (i.e., a network consistent with the [Broadband Baseline](#)), with certain network elements owned by the Towns and others owned by CCI.

- **Municipal network assets.** The cost of the core backbone network (generally the portion running along public and private roads) and related electronics would be paid for and owned by the Towns.
- **CCI network assets.** The connections from the backbone network to actual customer premises and the optical equipment at the customer’s premise (the “drops”) would be paid for and owned by CCI.
- **Network access agreement.** CCI would pay the towns a “network operation fee” for the exclusive right to use the Towns’ backbone network for 20 years. This fee would be equal to the Towns’ cost of financing their cost of building the backbone network.
- **End user fee.** Subscribers to internet service would be assessed a monthly surcharge, in an amount negotiated between the Towns and CCI, to offset CCI’s cost of making the network operation fee payments.
- **Bond Coverage (network operation fee).** There is precedent for this model. CCI has contracted similar builds in New Hampshire and in Eastbrook and Long Island, Maine. Under this structure, CCI takes all of the risk that the subscriber “take rate” is lower than expected. And the municipalities are assured that their debt service costs will be fully covered as long as CCI does not default on its contract obligations.
- **Fiber service branding and customer service.** CCI is seeking to distinguish its fiber-based service offerings from its legacy telephone and DSL internet services. They have advised us that they have done/are doing the following:
  - **Branding.** CCI has established a new brand “[Fidium Fiber](#)” for its fiber services. Similar to Verizon’s “Verizon Fios” fiber brand.
  - **Increased transparency.** CCI is simplifying access to the services and capabilities of the new brand.
  - **Customer Service.** CCI has established a new customer service infrastructure and staff—separate from their existing support for telephone and DSL—to offer customer and technical support specific to Fidium Fiber customers.

## Application to the Blue Hill Peninsula

- **The CCI Model described above is essentially a financing model.** It moves a substantial portion of the network build cost from being an up-front commitment of CCI's capital (if it were to build and own the entire network itself) to one that is funded with lower-cost municipal credit.
- **Lower overall costs.** CCI's network costs are expected to be substantially lower than an independent build.
  - **Construction cost.** Whereas a “new build” municipal network serving the Towns is likely to cost ~\$25 million, the network proposed by CCI would cost closer to \$10 million (of which the Towns share would be \$8.5 million). This is a function of several factors, including:
    - **RDOF territory excluded.** CCI is already committed (with separate federal RDOF subsidies) to construct gigabit fiber network connectivity in certain areas of each of the four Towns and the Towns would not be required to pay for the network assets serving those RDOF locations;
    - **Existing pole access.** As an existing provider with telephone network infrastructure located on utility poles throughout the Towns, they can lash new fiber cables to their existing lines, substantially reducing their up-front costs, the time to construct the network, and future pole access charges paid to the owner of each pole (generally, Versant); and
    - **Central office and backhaul.** Other aspects of the infrastructure required for any broadband network (such as a “central office” or “head end” to house network electronics and provide a connection to the rest of the worldwide internet (“backhaul”)) are already in place, servicing CCI's legacy telephone, DSL, and fiber-based services.
  - **Ongoing network costs.** As noted above, CCI has a cost advantage over a new-build network because it already has, and pays for, access to virtually every utility pole in the Towns.

## Key Advantages

- **Substantially lower cost to the Towns.** Compared to the cost of constructing an independent municipal network (cost: ~\$25 million), the CCI proposal would

require a maximum of \$8.5 million from the Towns. We expect that this amount would be further reduced by federal and state broadband grants and subsidies.

- **Designed to be paid for by CCI and subscribers, not taxpayers.** Assuming CCI performs under its contract, all Town costs would be paid by CCI and/or via the subscriber “end user fee”—none would be paid by municipal taxpayers.
- **CCI manages all aspects of the process**—design, construction, operation. Since CCI is the largest incumbent provider of communications services in the four Towns, the Town Committees assess that CCI has the expertise to design, build and operate the broadband network, whereas the availability of similar expertise within the Towns is far less likely and would require the hiring of expensive expertise.
- **CCI takes all operational and “take rate” risk.** Even after construction, there are substantial risks to a broadband build-out. In particular, the ultimate number of subscribers, the prices they’re willing to pay, and the costs of providing the service over time are all unknown and subject to risk. In the municipal ownership model, some of these risks can be managed via contracts with third parties, but many will ultimately remain.

### Key Disadvantages and Risks

- **No direct control of services or pricing.** Based on the precedent CCI contract the Town Committees have reviewed, the Towns would have very little control over the nature or quality of services provided to subscribers or of the prices for those services. There are some broad safeguards built into the contract, but we expect that the Towns (perhaps in coordination with ConnectMaine) would seek further assurances that services and pricing would remain competitive.
- **Additional surcharge for subscribing customers.** Subscribing customers would be subject to the “end user fee,” which is a premium over what subscribers in more densely populated areas would pay for the same services. This reflects the higher cost to provide services in our area. We hope that the amount of this surcharge will be reduced through the benefit of federal and state rural broadband support programs. It should also be noted that CCI currently participates in the Emergency Broadband Benefit (EBB) program, which subsidizes internet access charges for households that meet financial eligibility requirements.
- **Financing reliant on CCI credit risk.** Although a contract between the Towns and CCI would be structured such that the Towns’ financing costs are fully covered by payments from CCI, there is a remaining risk to the Towns in the event of a CCI bankruptcy or other default. The Town Committees are

investigating strategies for mitigating this risk and establishing what the Towns alternatives might be if that were to occur.

- **No financing support/grant precedents for the CCI model.** To date, ConnectMaine has not been, to our knowledge, asked to subsidize a municipality's participating in a CCI model network build. Doing so for the first time will require extra coordination with the state authorities; the Town Committees have already begun that process. There is much support at the federal and state level for joint public-private partnerships because of their ability to accelerate broadband buildout while involving all relevant stakeholders.

## Broadband Financing/Grant Landscape

There are significant disparities in the availability and speed of internet access between dense, urban areas and rural ones. This is largely driven by the fact that the network build and operational costs are lower on a per-potential-subscriber basis in dense areas, so the returns on investment are highest in those areas. These higher returns have attracted substantial private (and some public) investment in network assets and services.

Even before the COVID-19 pandemic, legislators at both the federal and state level recognized this disparity as being problematic and have established a variety of programs, such as the RDOF and NTIA grant programs already mentioned in this report.

Since the pandemic, the effort to expand and accelerate the availability of broadband internet services in rural (and other un- and underserved) areas has received heightened attention and action.

### FEDERAL

In addition to some pre-existing programs (including RDOF and NTIA), there have been two notable pieces of federal legislation providing funds to expand broadband:

- The **American Rescue Plan Act of 2021** (ARPA) provided funds to Maine municipalities, counties, and the state itself that could be spent on a limited range of activities. Expansion and provision of broadband services was one of the eligible uses, and a variety of Maine towns and counties have expressed a willingness to use these funds for broadband. Although the overall size of the ARPA payments was large, the amounts available to municipalities (such as the Towns) is nowhere near the amounts required to build a broadband network. The funds are only sufficient to plan for and, perhaps, design such a network (if entirely used for broadband and not for other eligible uses of the ARPA funds). Nonetheless, there are ARPA funds at the state level that could support broadband infrastructure construction.
- The **Infrastructure Investment and Jobs Act** (IIJA) provides \$65 billion nationally to support broadband internet access, according to a [Pew summary report](#). Of this amount, \$42.5 billion will be allocated to states to support broadband deployment and digital equity. Maine will receive at least \$128 million and up to a total of approximately \$400 million over the next few years if federal legislative action/approval is successful. The total cost to provide broadband internet access throughout Maine is estimated to be on the order of \$1.5 billion, so this program alone will not solve the broadband access problem.

## STATE

As noted above, many of the new programs (the ARPA and the IJJA) allocate funds for state and local entities to administer (subject to federal rules) to support rural broadband network construction.

In order to coordinate and enhance Maine’s broadband access services, the state established the ConnectMaine Authority with two staff and a seven-member board. In 2021 the Maine Connectivity Authority (MCA) was established that has a board with wide-ranging capabilities and, ultimately, a larger staff. These two Authorities will be charged with determining how to allocate the new federal funding amongst individual projects within the state. We understand that MCA is working closely and is in lock step with ConnectMaine and, in the immediate term, ConnectMaine may administer ARPA funding for broadband.

The Maine Connectivity Authority will likely have the greater role in allocating the newly approved federal funds. However, that entity is still getting organized—the MCA board of directors was sworn in by Governor Mills in July 20, 2021; the President, Andrew Butcher was formally nominated by the Governor Mills in December 2021 and was approved by the State Legislature in January 2022. MCA will submit their application and plans for ARPA funding by December 27, 2021. The MCA is working to establish itself as a fully functioning state authority from the ground up and will work to determine how it will allocate the federal funds—which projects to support, the form of such support (grant, loan, guarantee), the process for applying for MCA support, evaluation/decision criteria, etc.

We have been informed that their full standup may take until summer or fall 2022. At that time, the MCA will be in a position to make significant commitments to specific projects. This is a key threshold—the federal programs offer, potentially, a substantial subsidy to offset the higher cost of building broadband networks in rural areas, so the Town Committees believe, at this time, that it makes sense to synchronize our activities with the likely MCA timetable.

## LOCAL CONTRIBUTIONS/PRECEDENTS

Most programs (the NTIA and RDOF programs are notable exceptions) anticipate some “local contribution” to support the provision of broadband infrastructure. This local contribution has taken several forms to date:

### General Obligation Bonds/Loans

General obligation municipal bonds and loans are backed by the (property) taxing authority of the issuing municipality. These have been used by several Maine towns to

provide their local contribution component of broadband network financing (Baileyville/Calais, Eastbrook (approved, but not ultimately required because of lower than anticipated CCI costs), and Islesboro are examples).

The Towns could very likely raise all required contribution through issuance of general obligations. However, this is our lowest priority alternative, since it exposes the Towns' taxpayers to the greatest risk, and disadvantages our residents versus others whose broadband services will be subsidized by federal and state authorities.

## Revenue Bonds

### *Generally*

Revenue bonds issued by a municipal entity are backed only to the extent of an identified stream of revenues. Typically, these are issued after a project (such as a broadband network) has demonstrated a consistent and stable cash flow track record for three or more years. They are attractive in the sense that they isolate municipal taxpayers from the operational risks of the project, and we understand they have been used in several Northern New England (mostly Vermont) broadband projects.

The disadvantage to revenue bonds is that they generally require a period of demonstrated operating performance before they can be issued. Therefore, other, initial financing is required to start the build and the operation; this financing can be refinanced with a revenue bond. Most of the projects of which we are aware have addressed this issue by constructing their networks on an extended schedule—an initial, small-scale build is completed, and services commenced, then is refinanced with revenue bonds (based on that initial performance), and a portion of the new proceeds is used to extend the network to additional customers.

From the Town Committees' perspective, this generic revenue bond strategy is not attractive. We have a strong preference for a strategy that provides assurance of a ubiquitous build, not a near-term build to "easy" (dense) locations with only the prospect of eventually expanding the network reach to address more customers. In addition, there are few identifiable "easy" locations in our Towns, which are largely rural.

### *In the CCI Model Context*

The Town Committees have also begun to explore whether revenue bond issuance could be used in conjunction with the CCI Model. Instead of financing against a risky, but diverse stream of customer cash flows (as in the typical revenue bond model), a CCI Model revenue bond would finance against the stream of network access payments contractually due from a single payer (CCI). This has the advantage that CCI's credit is already well-established. And it replaces operational risk (lower than expected take rates or higher than expected costs) with CCI credit risk. On the other hand, there is a loss of diversity—the bondholders are taking concentrated CCI risk.

If a CCI Model revenue bond can be made to work, it could be an attractive alternative for the Towns. It could, in theory, provide a substantial proportion of the required financing for a ubiquitous broadband network with no risk (for the proportion thus financed) to the Towns' taxpayers.

### Private Investment

Some precedent projects have been funded, in part, by private funds—donated or invested at sub-market returns. While it is conceivable that local residents (or others) might be willing to support the project in this way, we are not assuming that this will be the case.

It may be worth noting that the \$8.5 million cost of the CCI build, reduced by (say) 50% through grants and then allocated to each of the four Towns according to a formula based on cost to build, could result in an outlay on the order of \$1 million per Town.

### IN SUM

While there are many moving parts and uncertainties, it is clear that:

- The Towns should seek to maximize access to available grant funds or similar programs to reduce the local borrowing requirement. Doing so would, under the CCI Model, reduce the surcharges borne by local subscribers and/or eliminate the Towns' exposure to CCI credit risk.
- To the extent municipal borrowings are required, revenue bonds would be the preferred vehicle, since they insulate taxpayers from the risk of being responsible for servicing the debt in the event the operating results fall short of expectations or, under the CCI Model, the unlikely event that CCI defaults on its contractual obligation to pay the network operation fee as agreed.

### TOWN COMMITTEES' RECOMMENDATION

Having evaluated the above considerations, the Town Committees have concluded that both ownership/control models are likely viable for our purposes. However, given the specific feedback we received in the RFP responses, we have also determined that we have a preference for pursuing the second, "public-private partnership" model—if we can come to a suitable agreement with CCI.

The key considerations underpinning this preference are the following:

- Substantially lower construction cost
- Local contribution borne by subscribers, not taxpayers
- Straightforward Town governance/oversight
- No operational/management required
- Insulated from operating risk (take rate, costs)
- Accelerated timing—could be operational in 2023
- Lower cost to construct and shorter construction timeline
- Cost to construct to new premises borne by CCI

## WHAT WOULD CHANGE THE TOWN COMMITTEES' RECOMMENDATION?

This report is intended as an interim status update and, therefore, the ultimate recommendation as to ownership model and our preferred counterparty is subject, in theory, to change in the future in particular due the following possibilities:

- Availability of financing that provides control without significant investment or risk for the Towns' taxpayers. A package of grants, private donations, etc. that would entirely circumvent any need for taxpayer funds, under any scenario, would have to be evaluated carefully with the ultimate cost to the subscriber a key consideration.
- Availability of sufficient management and governance expertise, availability to ensure that the “utility” owning and controlling the network can be successfully operated and maintained over the life of the investment and support for the Utility model from town governments that are part of the 4-Town effort.
- Inability to negotiate a contract with CCI that provides adequate protections against the Towns' lack of direct control—over service quality and pricing, for example.

The Town Committees are skeptical that the first two hurdles can be surmounted, and are optimistic that the third will not be relevant given CCI's existing arrangements, under similar circumstances, with other towns in Maine and New Hampshire.

## Next Steps

Although the timeline is largely dependent on how rapidly the state's MCA gears up its operations and programs and how flexible ConnectMaine is in the interim, the Town Committees have identified four action steps that it recommends be pursued in the near term:

- **Investigate the appropriate, specific legal structure** to reflect the Towns' cooperative effort. This could take the form of:
  - A coordinated, but legally independent, effort by each of the four Towns;
  - Formation of a non-profit entity, jointly owned by the Towns, to promote broadband access in the four Towns; or
  - Formation of a public utility district, jointly owned by the Towns, to promote broadband access and issue non-recourse (revenue bond-type) financing to support the effort.

This effort will require retention of capable municipal and municipal bond counsel to help the Towns assess the feasibility, advantages and disadvantages of each alternative.

- **Work closely with the MCA and ConnectMaine** as they organize their programs for deploying the recently approved federal funds (and residual state broadband funds) so we can optimize the Towns' broadband strategy to best fit the grant/financing requirements.
- **Engage Residents.** Information sessions, town meetings, and ultimately, a vote on essential agreements and funding.
- **Seek Town approval to formalize the relationship between the four Towns**—granting Select Boards the authority (within certain parameters) to execute an interlocal agreement amongst the Towns and undertake other preparatory steps.
- **Appropriate a modest amount of additional funds** to pay the costs of further investigation and refinement of the broadband execution and financing plan.

It is understood that subsequent approval by the legislative bodies of each Town would be required before any significant contractual or financing commitments would be made. If the project proceeds as we hope, the Towns would seek such approvals after the amount of grant funds available and the specific structure of the proposed financing has been determined.

## Glossary/Index of Terms

<b>ARPA</b>	The American Rescue Plan Act of 2021
<b>Backhaul</b>	Portion of the network comprises the intermediate links between the core network, or backbone network, and the small subnetworks at the edge of the network.
<b>Broadband</b>	Minimum download/upload capacities to provide an acceptable user experience for Internet-based services. The current definition from the FCC is 25Mbps (download)/3Mbps (upload), although a bipartisan group of U.S. Senators is now proposing 100Mbps/100Mbps as the new broadband standard.
<b>CCI</b>	Consolidated Communications, the local telephone provider in the Towns.
<b>Central Office</b>	A building in which a communications provider aggregates and exchanges data with the telecommunications/Internet system.
<b>ConnectMaine</b>	Connect Maine Authority—a Maine state entity organized to facilitate universal availability of broadband service and to increase the “take rate” or adoption to equal or greater than the national average.
<b>Download</b>	The receipt of information from the Internet to a device (such as a computer, tablet, phone, etc. As opposed to “upload.”
<b>DSL</b>	Digital Subscriber Line, a data transmission technology that uses the same wires as regular telephone lines, using special equipment provided for the purpose.
<b>EBB</b>	Emergency Broadband Benefit, a federal program which subsidizes internet access charges for households that meet financial eligibility requirements.
<b>EPON</b>	Ethernet PON. The initial standard for Ethernet-based PON's which supports 1 Gbps downstream and upstream when aggregated across all subscribers sharing a connection to the service provider. Now considered mostly obsolete.
<b>Fiber</b>	Fiber optic cable uses light as the medium for the transmission of information and has virtually no distance limits. Thin glass fibers are bound inside a larger protective cable.
<b>Gpbs</b>	Gigabits per second is a unit of measure (i.e., unit of data transfer). It is a rate equal to 1,000 megabits per second (Mbps).

<b>GPON</b>	Gigabit PON. A PON that supports 2.5 Gbps downstream and 1.25 Gbps upstream when aggregated across all subscribers sharing a connection to the service provider.
<b>Internet</b>	The global system of interconnected computer networks that connects devices worldwide.
<b>IJA</b>	Infrastructure Investment and Jobs Act of 2021
<b>ISP</b>	Internet Service Provider
<b>Mbps</b>	Megabits per second is a unit of measure (i.e., unit of data transfer). It is a rate equal to 1,000 kilobits per second.
<b>MCA</b>	Maine Connectivity Authority
<b>NTIA</b>	National Telecommunications and Information Agency
<b>PON</b>	Passive Optical Network. A passive optical network allows a single fiber from the service provider to serve multiple end users through the use of unpowered (passive) optical splitters. This is less expensive to install and maintain than having a dedicated line to each end user.
<b>Open Access</b>	An arrangement in which one network is open to any ISP seeking to offer services over that network. Separates network ownership from the provision of services.
<b>RDOF</b>	Rural Digital Opportunity Fund
<b>RFP</b>	Request for Proposal
<b>Spectrum</b>	Brand name for Charter Communications' cable, telephone and internet service; available in portions of two of the four Towns.
<b>Take Rate</b>	The percentage of actual subscribers to a service vs. the total number of possible subscribers.
<b>Upload</b>	The transmission of information from a device to the Internet for delivery to another computer, network, Web site, etc.
<b>XGS-PON</b>	Ten Gigabit Symmetrical PON. An Ethernet PON that supports 10 Gbps downstream and upstream when aggregated across all subscribers sharing a connection to the service provider.