VERMONT

State of Vermont
Department of Public Service
112 State Street
Montpelier, VT 05620-2601
http://publicservice.vermont.gov

[phone] 802-828-2811
[fax] 802-828-2342
[tdd] 800-734-8390

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Representative Laura Sibilia
76 Cotton Mill Hill
Brattleboro, VT 05301
lsibilia@leg.state.vt.us

Representative John Gannon
68 Hall Road
Wilmington, VT 05363
JGannon@leg.state.vt.us

Representative Benjamin Jickling
2 Chestnut Street
Randolph, VT 05060
BJickling@leg.state.vt.us

Representative Sandy Haas
360 S. Main Street
Rochester, VT 05767
shaas@leg.state.vt.us

Representative Charles (Chip) Conquest
409 Bible Hill Road
Wells River, VT 05081
cconquest@leg.state.vt.us

Representative Charlie Kimbell
P.O. Box 142
Woodstock, VT 05091
CKimbell@leg.state.vt.us

Representative Peter Conlon
33 West Street
Cornwall, VT 05753
PConlon@leg.state.vt.us

Re: CoverageCo Update

Dear Representatives:

Thank you for your letter of May 22, 2018, seeking information about the status of CoverageCo. Please know that I share your concern for Vermonters who stand to lose cell service – in particular cellular E-911 access – if CoverageCo cannot find a viable business path forward for continuing its operations. Like you, I am very mindful that these fellow Vermonters have come to rely on the basic cell service that CoverageCo has made possible with a significant capital investment by the taxpayers of our State.

The May 22nd letter requests information as to what the plan is for dealing with the CoverageCo situation and for otherwise ensuring cellular service in the communities it serves. At this time, the plan of the Department of Public Service is to support, within reason, CoverageCo's efforts to continue providing service, and, failing that, to limit as best as possible the extent and duration of cell service disruption for Vermonters who have come to rely on the Company's operations.

The Department has been closely monitoring the developments concerning CoverageCo's operational viability following the untimely death in November of 2017 of its founder, Vanu Bose. After a prospective sale of CoverageCo fell through earlier this year in February, the Department was prepared to issue a request for proposal to find a new system operator. Then, in late March, Mr. Richard Biby was appointed to serve as CovergeCo's interim executive, which led the Department to defer issuing the RFP and to instead shift its plan to providing the Company with a reasonable opportunity to regain its footing under Mr. Biby's leadership.

Mr. Biby has been at the helm of CoverageCo now for approximately two months, and, as I understand it, on a part-time basis. During this period, with financial support from Rose Park Advisors, the company's controlling investor, CoverageCo has taken the following steps to put its house in order:

(1) secured an essential roaming agreement with AT&T with assistance from the Administration (CoverageCo had previously thought this agreement was unattainable);

(2) retained Trilogy Networks, Inc., a company with experience in providing turn-around planning for distressed communications companies, as well as back-office systems support (e.g., finance and accounting), technical support, network maintenance services, and intervention with trade creditors to work out debt arrangements;

(3) retained local legal counsel to advise on regulatory matters in Vermont;

(4) engaged with trade creditors to address the state of its accounts;

(5) committed (via Mr. George Woodward, Trilogy's Chief Executive Officer) to providing a business plan for review by late June.

Taken together, these measures suggest that CoverageCo is attempting to make good use of the reasonable opportunity it has been provided to stabilize its operations.

It further bears noting that this year's budget bill included a provision that would authorize the Department to use up to $100,000 from the Connectivity Fund to defray the E-911 geolocation fees of a service provider such as CoverageCo (See H.924, Section E.233.2). The express intent of this legislation is to authorize "short-term emergency funding to any provider who has a lease agreement with the State to operate a mobile wireless network comprising microcell equipment owned by the State" so as to "support the health and safety needs of the general public by maintaining critical microcell wireless E-911 service in rural areas of the State that would otherwise be without such service ...." The Administration supports this piece of the budget and is not seeking to change it during the special session, which is focused on the one remaining issue where there is not yet agreement, namely, how to provide more educational opportunities for Vermont's children while simultaneously providing property tax relief for Vermonters at a time when significant unexpected revenue is available. Given that Section E.233.2, if enacted, could serve to mitigate a portion of CoverageCo's financial difficulties, and that the Company has agreed to provide a business plan by the end of this month, the Department is awaiting both the end of the special session and the delivery of the plan before conclusively assessing the Company's prospects in the near future for success or failure in meeting its contractual obligations to the State.

In light of all these circumstances, the Department has exercised restraint with respect to its contractual remedies vis-a-vis CoverageCo and in determining whether to issue an RFP seeking a successor vendor. To this point in time, such restraint has appeared advisable to best protect the public interest in preserving the availability of cell service in CoverageCo's area of operations, given that the State made a capital investment of several million dollars in its partnership with CoverageCo between 2013 and early 2017.

Furthermore, as you perhaps are aware, on May 23rd Consolidated Communications suspended its backhaul DSL service to all CoverageCo sites for non-payment of a past due debt in excess of $100,000. On May 26th, CoverageCo petitioned the Public Utility Commission (the "PUC") for a temporary restraining order that would require Consolidated to reconnect the backhaul service. On May 29th, the PUC convened a hearing and heard testimony that CoverageCo has accrued the debt over 14 months and that to date the parties have not been able to reach a repayment agreement. The PUC did not issue a ruling at the end of the hearing, but rather set a schedule for briefing legal arguments. The PUC also indicated a preference for a settlement to restore service to CoverageCo. Absent a settlement, the PUC intends to rule promptly on the TRO request after final briefs are filed Tuesday, June 5th.

The May 22nd letter further enquires as to which CoverageCo sites are operational. The answer to this question is very fluid. To keep the public informed, the Department posts all reliable information it receives on its website as soon as it becomes available. Certainly, last week's suspension of Consolidated's DSL backhaul service has had a negative effect on CoverageCo's operations, but at this time the Department has no clear information on precisely how many sites remain active or have been affected by Consolidated's action. On multiple occasions over the last several months, the Department has contacted CoverageCo to determine which sites remain active but has only sporadically received limited information. During a conference call on May 25th, CoverageCo explained that there have been difficulties in obtaining network information and other business data from Vanu Inc., but that the company expects its visibility into network conditions to improve now that a transfer of network data and operations is in progress from Vanu, Inc. to Trilogy. On the May 29th call, Mr. Biby provided some data to update the Department as to the system's operational sites. The Department is still reviewing and analyzing this data.

Absent clear and consistent data reporting from CoverageCo, the Department's means of monitoring whether sites are operational is to inspect each site individually. Just prior to the DSL shut-down, Department staff went into the field and inspected 148 state-owned sites. Of these sites, only 29 were operational.

The May 22nd letter seeks to understand the Department's intended future use of certain capital funds that were legislatively re-appropriated in the 2018 session for the "VTA wireless network" (See H.923 Sec. 16c(a)(1)). These capital funds could be used to provide the financial resources necessary to deploy the radios remaining in inventory for the CoverageCo system or to fund alternatives that could achieve a similar level of cell service. The first step is for the Department will determine what CoverageCo's prospects are for success in meeting its contractual obligations to the State. That process is underway, subject to a timeframe that will be determined by the resolution of the as-yet undetermined outcomes described in this letter. Should the Department conclude that CoverageCo does not have the resources and the know-how to constantly keep the network operational, the Department will issue a request for proposal seeking a new network operator. The H.923 capital appropriation would then be used to attract an alternative operator. This second step in the process would begin once the Department has made a final assessment as to the future of its contractual relationship with CoverageCo.

From a longer-term perspective, it bears noting that as of November 2017, VTel Wireless, Inc. has begun offering wireless voice service and provides access to emergency services to both VTel customers and non-initialized customers. Also, the advent in due course of FirstNet, a federal program designed to bring first responders broadband service in the field, will further expand commercial cell coverage in Vermont, including in many of the areas served by CoverageCo today, though not in all of them. Another development of note is the recent announcement from the Federal Communications Commission (the "FCC") that it will make available nationwide certain funding for rural wireless 4G/LTE deployment through its Mobility Fund Phase II program. Specifically, the FCC will award $4.3 billion to qualifying wireless carriers through an auction process over a ten-year period for areas that are currently not covered by 4G/LTE. Vermont has geographic areas that are eligible for this funding. The Department will be working to support interested carriers in pursuing this funding.

Finally, the May 22nd letter asks whether the Department has received a plan regarding the future operations of the CoverageCo network from "Vanu Inc., Richard Biby, CoverageCo, Rose Park Advisors, or Stephen Whitaker." I have attached copies of documents in this vein that the Department has received to date from Mr. Biby (in his capacity as CoverageCo's interim CEO), "Attachment A" and Mr. Whitaker, "Attachment B". The Department has received no such documents from Vanu Inc. or Rose Park Advisors. Again, the Department is expecting to receive a viable business plan from CoverageCo by the end of June, as promised by Mr. Woodward, Trilogy's CEO.

In closing, please know the Department is very concerned that the adverse impacts of CoverageCo's present difficulties are affecting fellow Vermonters who have waited very long for reliable cell service to reach them. I offer you my firm assurances that the Department will spare no effort in finding a reasonable and sustainable path forward in bringing reliable cell service to these affected Vermonters, as well as to others in our state who have yet to enjoy the benefit of this means of communication. Patience and sound policy vetting will be needed, though, to guard against repeating the setbacks and disappointing aspects of the CoverageCo that Vermonters are now experiencing.

I hope this response is informative and helpful to you. I appreciate the opportunity to address your questions and would invite you to contact me should you have any remaining concerns.

Kind regards.

June E. Tierney
Commissioner

(2) Attachments
"Creating a Sustainable Path to 911 and Cell Service Expansion," from Richard Biby
"Where to from Here? CoverageCo or No Coverage?" from Stephen Whitaker

Cc: Jason Gibbs, Chief of Staff
Representative Mitzi Johnson, Speaker of the House
Luke Martland, Director and Chief Counsel, Legislative Council

Creating a Sustainable Path to 911 and Cell Service Expansion

The Vision: CoverageCo is a company solving the challenge of rural cell phone coverage in Vermont, bringing cell service and 911 calling access to thousands of Vermonters. CoverageCo hopes to continue this rollout to significant areas of the state still without cell or 911 coverage.

The Technology:

- Small cell service devices, called "base stations," mounted on poles or buildings
- Requires only access to broadband and the same amount of energy as a 100 watt light bulb
- Generally, delivers a half mile radius of cell service, depending on terrain, and height of the transmitting / receiving antennas above ground level.
- Is the most energy efficient option on the market (which means it would be economically very difficult for any other carrier to provide a similar service)
- Provides cells service and 911 calling in locations not covered by large service providers, for all GSM and CDMA phones, regardless of if a carrier has a roaming relationship with CoverageCo or not; all compatible 911 calls are routed.
- Doesn't require the building of expensive, massive towers
- Earns revenue from traditional cell service providers only when one of their customers uses the CoverageCo network
- 157 units have been installed to date.
- Units cover a total of 370 square miles where there was no coverage before
- There were **1215 completed calls to E911** made through the CoverageCo network in the State of Vermont over the last 12-month period from March 1, 2017 thru February 28, 2018.

CoverageCo locations provide complete voice, texting and data service to T-Mobile, Sprint customers, and voice-only service to Verizon and US Cellular customers. CoverageCo has just signed a data roaming agreement with US Cellular. Verizon customers with non-CDMA phones and data cards can receive texting and data services.

To date, AT&T has chosen not to allow their customers to use the CoverageCo service in the state of Vermont.

CoverageCo did roam with AT&T in support of the hurricane relief effort in Puerto Rico and US Virgin Islands in the wake of Hurricane Maria in late 2017. The results from our hurricane relief were:

462,827 SMS text messages

140,076 voice calls

269,195 voice minutes

54,551.276MB aggregated data roaming services

Mobile virtual network operators (MVNOs) like TracFone, Republic, AARP, etc. generally cannot utilize the CoverageCo network due to their arrangements with their host carriers (as they are often reselling for the larger companies such as Sprint, Verizon, AT&T, etc.).

The Problem: CoverageCo's revenue model and device placement strategy was originally based on national averages for cell phone use while driving. However, Vermonters use the phone on the road at much lower rate than national average. The result is that the current average revenue per installation is $56/month/site, and because current operational costs are $135/month/site, this has led to a $79/month/site deficit.

Addressing the Problem:

- Locations with even a little population density are viable for CoverageCo's model of small cell service - Small villages like Wilmington can benefit from cell service and provide a volume of activity to make the network viable in those locations, even with the high fixed costs of pole attachments.
- Important institutions, like hospitals, schools and colleges, still have no cell service and need it - These important state assets are hampered by the lack of cell service, sometimes creating dangerous scenarios. Yet, through various federal programs, most have robust backhaul in house that provide more than enough connectivity for small cell service. Grace Cottage Hospital was more than happy to install a device and the resulting call volume made the operation financially viable. Similar deployments at Sterling College and even the state park in Barnard yielded similar strong revenue results and user satisfaction.
- Vermont business and homeowners appear to be happy to host sites in order to have cell service - In classic Vermont fashion, CoverageCo discovered this year that individuals and business were more than happy to have a CoverageCo antenna installed on their building, plug the device into an outlet and connect to their existing backhaul. The end result was service for a neighborhood with low operating costs that allows for viable deployments in more rural areas.
- "Daisy Chain" technology works to potentially further reduce costs and leverage better backhaul.
- 3 Steps to a Sustainable Path Forward:
  - Use the Vermont Universal Service Fund to reimburse the monthly E911 cost for *any* network provider enabling outdoor 911 calling in a location without current coverage
  - Work with Green Mountain Power to propose a tariff that would no longer require a unique meter for each and every micro cell, a change that would cut the energy cost in half and save ratepayers money as well
  - Use new models for placement of units to target stationary cell phone usage rather than usage in transit

Monthly Site Operational Costs: CoverageCo was able to negotiate the contract rate for 911 service down from $50 to $28 per site per month for current 2G service, starting July 1. The current itemized monthly operational costs versus the target monthly operational costs are:

	Current	Target
Backhaul	$53	$53
Power	$30	$15
Pole Attachment	$2	$2
E911	$50	$0
Total	**$135**	**$70**

As a form of an even more sustainable business model, CoverageCo has 10 sites installed where the host, usually a business/property owner provides the power and backhaul service, which leaves the only site operational expense as the E911 fees. An example of this can be found at Coburn's General Store in South Strafford, VT.

Benefits from the Sustainable Path Forward:

- Continue to greatly increase needed 911 coverage
- Economic development benefits that come from making more locations attractive for businesses
- Avoid construction of massive, controversial towers
- Increased revenue back to the Universal Service Fund resulting from more cell usage
- Increased cell coverage across the state by **an additional 957 square miles**

911 Costs to the State:

-Current cost of 2G 911 service for 157 sites at $50/mo. is $7,850/month; and the future Cost of 2G 911 service for all 357 planned sites at $28/mo. would only be an additional $2,146 per month for a total of $9,996/month.
- Annual cost of 2G 911 service, once all 357 sites are running, would be **(9,996 X 12)** = **$119,952**

Changes are needed regardless of the provider:

The funding of 911 service is necessary not just for the CoverageCo project to succeed, but for any hope of getting 911 cell service from any provider to these more remote parts of the state in the near future. That's why the reimbursement policy should be available to any provider willing to take on this challenge.

Where To From Here?
CoverageCo or No Coverage?

Vermont's microcell network, initiated by the Vermont Telecommunications Authority, represents a leading edge experiment testing the question of whether the common, large 'Tower on the Hill' based wireless cell service can be cost effectively supplemented with lower power, shorter range microcells to fill the gaps and provide cell service more economically, with near ubiquitous coverage in Vermont's hard to serve villages and valley byways. These challenges are both an iconic feature of Vermont's landscape and yet very problematic (from a telecommunications radio propagation perspective).

If the microcell experiment fails, due to mismanagement, economics or poor planning, Vermont will be condemned to an ever increasing network of mountaintop cell towers lurking over the valley floors, closer and closer together, each tower loaded with multiple carriers' 'barnacles' of antenna elements attaching at different heights. And as those load bearing structural limits are pushed, a second or third tower will likely appear on those same hills.

In addition to the ever increasing visual insult, not unlike the threat posed by advertising billboards which were banned in prior years, we know that the $200k+ costs of erecting each new tower, and the year-long permitting delays will continue to be a deterrent to the construction of towers, and thus many narrow roads and deep valleys, travel routes, farms and home sites for a large number of Vermont residents, first responders and visitors will remain void of cellular coverage and thus in greater danger than is necessary.

CoverageCo 1.0 did not generate sufficient operating revenue nor did it attract one essential roaming agreement with AT&T to allow for its sustained operation. CoverageCo now proposes to improve on what should be referred to as CoverageCo 2.0 with modifications to increase cell coverage area using fewer taller poles, decrease or off-load some expenses such as e911 geolocation costs, and increase revenues. These improvements will potentially allow for uninterrupted operation of the existing network and the improved service will be the key to expanding microcell coverage to more of Vermont's cellular 'dead zones' around recreation areas, along highways and in our more rural communities.

Decreasing costs

The next generation of 4G/LTE microcell technology should be mounted on a fewer number of taller, 60' roadside poles which will, as a result, have longer range than the current antenna locations and equipment used in CoverageCo 1.0. This will decrease the required number of microcells in an area and the associated operating costs.

The potential to engineer an expanded network of microcell transmitters will also be the basis for negotiation of reduced rates from backhaul providers, E-911 geolocation fees and electric utilities.

In each case, a growing network of microcells will provide necessary revenues without significant increases in the system's marginal costs. Preliminary discussion with a number of CoverageCo's creditors responsible for providing these supporting services has already opened the door for longer term agreements.

Increasing revenues

CoverageCo 2.0 plans to set out on a path toward providing 4G/LTE service and incrementally replace the 2G service provided by CoverageCo 1.0. CoverageCo Inc. recognizes that the 2G service does not adhere to plans of major cellular carriers yet the nearly 400 2G radios already owned by the State can continue to provide basic emergency calling coverage for 911 access as well as limited data and text services. Their installed locations can migrate over time to areas where high data speeds or throughput is not required.

However, the path for 4G/LTE upgrades will, as a prerequisite, require the availability of fiber optic cable for backhaul and therefor will also improve data transmission revenues. Providing cellular customers with more reliable voice coverage and higher data speeds is the primary market factor driving tower based cellular providers.

Crafting roaming agreements with the state's designated microcell operator, CoverageCo serving low traffic areas based upon the public safety imperative is a very cost effective strategy for increasing cell coverage without waiting indefinitely or relying on large carriers making uneconomical investments in new mountaintop towers. Including the consideration of the public safety of ubiquitous cellphone coverage aligns directly with the goals already in statute as Vermont's telecommunications policy of 30 VSA 202c, which should serve to support negotiations with cell providers to require those companies to both support and contribute through roaming agreements where their tower systems do not provide cell service.

In addition to roaming revenues, the state will need to assess the value of and make a reasonable estimate for the amount of subsidy required for providing cell coverage in areas where low traffic volumes do not justify the maintenance of cellular radios and antennas. This is not a unique situation as similar solutions have been crafted for providing basic governmental services in rural areas for other purposes and the economic development and public safety value of a comprehensive cellular coverage system will need to be incorporated in the consideration of those subsidies.

The long term plan is to provide 4G/LTE service (with an eye toward 5G services). CoverageCo, through its private equity backer Rose Park Advisers, has arranged for bridge financing and initiated negotiations with all current utility creditors to reduce arrears and maintain CoverageCo's existing network of 160 sites for the next 3-6 months.

The success of this strategy will require the redefining of a partnership where all of those with a vested interest in the Vermont microcell investment as well as the economic success of the CoverageCo system are aware of the multitude of potential benefits of developing the long range plan, the financing and through effective partnership skills.

During this interim planning window granted by the State and by those partners, CoverageCo proposes to provide to investors and the state more details on not only the plans for continued operation but some alternatives for design and financing for the expansion of the network, including 4G/LTE upgrades made incrementally as fiber backhaul becomes available. A statewide propagation study and GIS fiber mapping remains as a fundamentally necessary task in order to accomplish both a refined microcell placement design and to estimate backhaul costs and fiber build priorities.

To provide a necessary message of support by the General Assembly for sustaining the microcell approach, the State of Vermont must initiate its own steps for mandating that a responsible and cooperative agency initiate steps toward assisting with regulatory reform, cooperative implementation of plans, cost reduction strategy and revenue.

The longer term plan should be developed over the next several months that will identify a proposed build-out schedule for an expanded system, a proposed schedule for installing some or all or most of the remaining state owned Vanu 2G radios, incrementally upgrading the existing 2G equipment by replacement 4G/LTE equipment and the identification of those portions of the network that do not now and may never have adequate cell usage to meet break-even point, thus meriting long term financial support.

As noted above, providing cellular coverage for many of Vermont's underserved areas will be a slow, costly and near impossible endeavor using only mountain-top cell towers. A carefully designed strategy of carefully placed microcells, generating increased revenue in some locations in order to subsidize those locations which may never break even is precisely what is needed at this critical juncture. A well-oiled partnership with a state agency both able and willing to bring forth the "good offices of the State" to assure the necessary roaming agreements, rural dark fiber, regulatory reform and detailed vision to implement these share goals will be essential to a successful restructuring of the Vermont microcell effort.

CoverageCo is offering an alternative that provides Vermonters, the public safety community and our tourist visitors with cell coverage in all of the former dead zones, complementing the tower coverage. In addition, the expansion of microcell service will serve to expand and strengthen the deep fiber backbone in the state by providing an immediate driver for priority fiber builds, with the use of microcell transmitters lighting up what is often otherwise simply dark fiber and installing new fiber where none yet exists.

Building the deep fiber backbone to serve the 4G/LTE microcells will also allow create incentives for a more rapid development of expanded community broadband internet service in the same isolated parts of the state that also have long suffered from both a lack of cellular coverage and high speed broadband.

Just as with any existing monopoly public service, low volume 2G 'safety-net' microcell coverage will need to have an identified and sustainable financial model. The public protection - public safety value and Vermont's statutory goal of having ubiquitous wireless coverage along all of Vermont's highways and in our communities needs to be weighed against the risks and the inherent gaps resulting from a purely market-driven approach for providing expanded cell service.

The fundamentally unappealing scenario of larger numbers of cell towers encroaching on Vermont's ridge lines and vistas all across the state will only be accelerated if each of the large cell service providers continues to deem it necessary to, rather than co-locate, develop their own towers, backhaul, backup power systems and continue to not cooperate in the use of shared resources, towers and an open access model such as the publicly owned, privately operated, wholesale wireless carrier model represented by the state's microcell investment currently operated by CoverageCo.

Stephen Whitaker

2018.04.23