

Testimony of Leslie E. Nulty: Comments on the Vermont 2014 Telecommunications Plan

Note: Ms. Leslie Nulty served as Project Coordinator for the East Central Vermont Community Fiber-Optic Network project from 2007 – 2013. Built from scratch, mostly with locally-raised debt finance, that network today extends nearly 200 miles in one of Vermont's most sparsely populated regions and provides state-of-the-art Internet and telephone service to almost 800 customers, with a waiting list of over 250.

I. Comment Summary: The Vermont Dept of Public Service's 2014 Telecommunications Plan includes both a long-range "Vision", and more near-term guidelines. The long-range vision is admirable, but unfortunately the Plan has no guidance at all as to how to reach it. Its near-term guidelines, on the other hand, assure that current public policy will hinder, if not completely block, achievement of the long-term "Vision." More disturbing is the Department's apparent retreat from previous core elements of Vermont's telecom policy together. The document also has numerous statements of "fact" which are false, and which the Department is in a position to know as such.

Specifically:

** This plan **could have** reiterated and strengthened Vermont's previous telecom policies. These include: support and advocacy for open access telecom networks, net neutrality, public access cable channels, and municipal or other grass-roots enterprises to fill the gaps left by the private for-profit sector.

Instead this "Plan" questions and undermines those bedrock policies and raises vague, non-defined "concerns." Just one example: the document alleges that "open access" is not adequately defined (p.5-4). Yet open access is a condition adhered to under multi-million dollar grant awards made to Vermont companies by the federal government and VTA. Fairpoint and Sovernet today operate open access telecom transport networks.

** This plan **could have** provided a specific road map to meeting Vermont's telecom needs, for example by using *already authorized* bond authority to create a bond-funded revolving loan account to help finance telecom development in less well served high-cost areas.

Instead this plan is completely silent as to how to meet the financing challenge except for ill-advised advocacy of continue *grant* funding (p.5-10).

** This plan **could have** recognized the pressing need for robust bandwidth and reliability (identified in its own survey). Such capacity is needed **today** by Vermont's rural health care system, by small schools seeking access to greater educational resources, by Vermont's "creative economy" and burgeoning technology sectors.

Instead this plan sets standards for the definition of "broadband" that are so low as to be dysfunctional *today* for any serious business, educational or other economic development applications, vital to the health of Vermont's economy and society (p.5-4).

** This plan *could have* supported increased competition in Vermont's telecom sector by advocating retracting current anti-competitive legislation and regulation and by encouraging diversity in telecom enterprise structures.

Instead this plan is silent on the need for legislative reforms and highly selective in its choice of *regulatory* reform options. For example: there is no mention of the difficulties DPS itself has in enforcing current pole attachment regulations, which delay deployment by and increase the cost of infrastructure for new competitors seeking to enter the market.

Additional specific examples are provided in the more detailed comments below.

In short: This plan is not only a missed opportunity to get Vermont moving forward it is, very simply, **A Great Leap Backward.**

Why has this Administration taken this Great Leap Backwards? Who has put pressure on it for this retreat? We know it was not the citizens of Vermont.

Hopefully this opportunity for public comment will give the Department the time and space to reconsider. If it goes forward with this document, it will be imposing a set of shackles on Vermont's ability to compete effectively with our near neighbors and the rest of the world.

A forward-looking telecommunications infrastructure is essential to the economic development and job and income growth that Vermont sorely needs. Without this now-fundamental infrastructure, sadly, we must contemplate becoming an obsolete backwater. The public deserves, indeed requires, more than lip-service to make that real. The Department and the Administration has an opportunity to make dramatic revisions and alternative prescriptions in this Plan. It needs to embrace that, with the public's interest as its focus.

II. Detailed Comments

In its 2014 Plan (hereafter "the Plan") The Vermont Department of Public Service has put forward a long-term vision for Vermont's telecommunications infrastructure and services. That "Vision" an ambitious "wishlist" intended to bring Vermont closer to its near New England neighbors in the ubiquity and quality of broadband and wireless communications.

Vermont, as the most rural state in the US (measured by the proportion of the population that lives outside metropolitan areas), has a most difficult challenge in that regard, which is recognized by the Plan, to a degree. Virtually all current forms of telecommunications are costly to deploy in low population density areas, and Vermont has the fewest high-density areas of any state in New England or the USA as a whole.

One consequence of this fact is that Vermont will remain *inherently* less attractive for private for-profit telecom investment than otherwise comparable markets. This is a fundamental condition that cannot be changed. Further, as the Plan recognizes, the ample federal funding that Vermont received under the ARRA, will not be available again, and the state has only very limited alternative resources. With these circumstances in mind, one would hope for some exploration of alternative ways to marshal the significant funds required to realize the Plan's

“Vision.” This commentary will offer some suggestions in that regard, after first examining some of the premises underlying the Plan and its recommendations.

A. Underlying Premises

1. Getting an accurate picture of the status quo

- a. The Plan’s Vision for the quality of broadband, let alone its current definition of “high speed broadband” is already obsolete. First, it references “speed” only. But for many important uses (including distance education and health care – vital in a rural environment) latency, jitter and reliability are just as important as speed. But on its own, both the Plan’s 4/1 standard for 2014, its advocacy of that standard as the focus for the Division of Connectivity, as well as its 2017 standard of 10/1 *are inadequate today* for most business applications, and certainly for critical sectors important in Vermont’s economy that need high *upload* bandwidth. These include: software and other technology development; architecture and design (including web-oriented design), remote real-time connectivity for musicians and music teachers, as well as crucial public infrastructure: all levels of education; health care; public safety. In addition, a high percentage of Vermont households support businesses in the home, many of which are part of the “creative economy” envisioned as an important part of Vermont’s future. These artists and musicians, software developers and others, need robust bandwidth to facilitate their relationships with their clients. The 100 Mbps symmetrical goal is worthy but the Plan fails to offer any concrete road map as to how it can be achieved. Indeed, the Plan’s own survey found that for 45% of survey respondents upload speed was at least equal to or more important than download speed (2012 Vermont Telecommunications Survey Report, page 16). Only slightly more (47.3%) thought upload speed more important. Given typical survey margins of error, the two are equal.
- b. The Plan proceeds from a notion that from a consumer’s point of view, the Vermont telecom market is competitive. That may be true in densely-populated Chittenden County but elsewhere a competitive market exists only for Vermonters in the center of towns where both cable modem and DSL are usually available. Outside town centers most Vermonters have access only to poor quality and expensive satellite service and perhaps one other provider. The state has put a great deal of reliance on the wireless canopy (“WOW” service) being built by VTel with federal grants, to provide “broadband” service to otherwise unserved areas. But all industry observers know that wireless has physical and technological limitations as a broadband vehicle, even in favorable terrain, of which Vermont has little.¹

¹ When Verizon attempted to substitute its 4G LTE (Vtel’s WOW platform) for landlines destroyed on Long Island by Hurricane Sandy, the hue and cry from consumers led authorities there to require that it deploy its fiber-optic product, FIOS, instead. Consumers know the difference between the quality and reliability of different types of telecom platforms.

If the state persists in granting equal status to all claimed broadband services, and maintains its current definition of broadband, it will never catch up to the rest of the country or our near neighbors.²

- c. It is not clear that the state has indeed met the goal of having 10 Mbps broadband service “available at most locations by 2013” as claimed on p. iii. While the Plan claims this success, it does not cite data to support it and indeed the data in the table cited in Footnote 2 above, contradict it.
- d. The Plan incorrectly states that Burlington Telecom is the only municipal telecom provider in the state. ECFiber is a municipal entity that, largely because of a different governance structure, has had none of the problems plaguing BT.
- e. The Plan incorrectly states that DSL is “best available broadband option” in rural areas of Vermont (p.1-13). At upwards of 40 Mbps symmetrical (100 Mbps bandwidth available on demand) ECFiber’s fiber-optic service far exceeds DSL as does the fiber-optic service offered by Waitsfield/Champlain Valley Telecom. The DPS’ statement suggests that it’s unaware that a user’s actual experience of DSL varies enormously depending on distance from the switch and the quality of the copper cable. In much of rural Vermont, copper cable has deteriorated to the extent that ordinary telephone service is unreliable. No where does the DPS comment on this particular challenge.

2. The Plan’s orientation is heavily weighted in favor of the narrow interests of incumbent providers who (despite heavy public funding in some cases) have failed to deliver the quality of service required by a modern telecommunications system. Indeed, certain statements appear to have been written by the industry, as they parrot lobbying arguments being made by organizations such as the Koch Brothers-funded American Legislative Exchange Council elsewhere in the country (see <http://www.alec.org/model-legislation/six-principles-for-communications-and-technology/>). Specifically, on page vii and viii:

- a. Item 4 “cable line extension rule” – also discussed on p. 5-12. The DPS recommends “reconsideration” of the current rule that requires a cable company seeking to extend its line to bear a portion of the cost. The proposed criterion is whether it “maximizes the number of consumers who can receive service.” Clearly, this is a proposal designed to transfer the expense of private capital investment from well-financed profitable companies to potential consumers (who probably do not have the funds to support this level of capital expenditure). Any such infrastructure, funded by consumers, will become the private property of private for-profit entities, who will earn a return on investment funded by their customers! This is not a reasonable way to improve the state’s infrastructure.

² According to the Plan’s Table 10, p.2-13, Vermont broadband users have the lowest or second lowest downstream speeds in New England.

- b. Item 7 “potential negative outcomes of state and municipalities directly competing with private firms.” This is peculiar language for a document that purports to advocate increased competition. In fact, in Vermont, the non-municipal for-profit telecom sector has received the overwhelming majority of public grants and low cost loans. Public funding for municipals has been non-existent in the case Burlington Telecom, and a fraction of the total in the case of ECFiber. The Plan could have asked for an examination of the potential *positive* outcomes of state and municipalities competing with private firms, but it chose not to do so.
- c. With respect to the Vermont Connectivity Fund, the DPS is not willing to “examine” the current law that prohibits use of funds for projects that “are ...competitive overbuilds of existing wired telecommunications services.” 30V.S.A § 7517(j). (p.viii) This statute enables funding of wireless overbuilds but not the kind of overbuild that would in fact enable achievement of the 100Mbps symmetrical goal, which can only be achieved by deployment of fiber-optic infrastructure. In its own activities, DPS has in fact permitted wired overbuilds of existing wired telecommunications services, when it determined that Fairpoint was eligible for state grants to overbuild areas already served and in the construction process by ECFiber.
- d. Also with respect to the Vermont Connectivity Fund, the existing statute requires the Department to give priority to the lowest cost bidder and relegates other factors such as data transfer rates, “set” costs to consumers, to secondary status. There is an inherent contradiction between “lowest cost” and adequate technology, yet the Plan does not call for any reconsideration of this part of the statute. Despite these contradictions, the Plan recommends the Connectivity Fund as a major source of funding for deployment of fiber-optic infrastructure (p.1-23).
- e. As explained in paragraph 1(c) above, the DPS’ adoption of bandwidth objectives that maintain a 1 Mbps upload qualification for state support is grossly obsolete.

3. In the Plan’s discussion of the role of cable modem service, the DPS states “coaxial cable facilities currently provide the fastest broadband Internet in the state.” (p.1-27). This statement is patently false. BT’s service offerings far exceed cable modem, as does ECFiber’s, particularly if upload speeds are given the emphasis they deserve and must have, if a proper evaluation is to be made of the adequacy of current and planned telecom infrastructure.

Regrettably, the Plan also conflates video services with cable modem infrastructure (see Table 8 in which Burlington Telecom is included as a “cable “ company, even though it delivers video via FTTP.) The Plan states that “broadening the reach of cable access will be important to the future of the system. “ (p.1-27). It is not at all clear why that should be the case, when nationwide, coaxial deployment is retreating and fiber-optic deployment is increasing. The report itself states that Vermont cable subscribership peaked in 2009 (p.2-10). Why should Vermont’s future be harnessed to last generation technology?

4. The Plan gives short shrift to the potential for municipal telecom development in Vermont, although for much of the state that is the only way to reach its 100 Mbps symmetrical goal. It specifically fails to recognize that ECFiber is a) a municipality and b) delivers upwards of 40 Mbps symmetrical bandwidth (100 Mbps and more on individual request) with low latency and jitter. As such, its network rivals the service quality of BT's fiber-to-premises deployment and far exceeds in quality those of many other Vermont providers. Further, it has achieved this with relatively small financial support from public sources and in one of the most rural, sparsely populated areas of Vermont (average density of 12 per mile).

With respect to municipal efforts, the Plan makes no specific recommendations except to advocate that the state "refrain from funding municipal and state market activity where that activity will have the net effect of reducing competition" (p.5-10). No comment is made about funding private-secotr activity where that – as it has in the past – might have the result of reducing competition. Of equal concern is that this statement ignores the fundamental economics and geography that require a successful rural deployment to include or pass through some sections of central towns where incumbents may be offering service. It is a poorly veiled attempt to perpetuate the narrow definition of "unserved" areas which in recent grant awards resulted in the design of grant-eligible areas that were untenable from a technical and economic viewpoint – and often based on faulty "service availability" data provided by incumbents.

5. Pole Attachment Rules. While Vermont has a relatively "liberal" regime with respect to the rights of new providers to attach to existing poles, the specifics of the process are burdensome and weakly enforced. Pole owners have too much time to forestall prompt deployment by others seeking to attach to their poles, and there is no effective mechanism to assure that paid-for "make ready" work is done at all or done in a timely fashion. While the Department has rules and penalties for non-compliance on paper, it evidently lacks the human and other resources for assuring compliance. Since improvement of Vermont's telecommunications infrastructure will require increasing deployment of fiber-optic cable on poles, the Department would be well advised to flag the need for improvement in this regulatory area but there is no mention of this issue in the plan.

B. Some other ways of looking to the future

1. What technologies will be required to reach 100 Mbps symmetrical service by 2024, as the Plan states as a public policy objective? Right now, and for the foreseeable future, there is only one, fiber-to-the-user. To achieve 100 Mbps using ADSL would cost substantially more than FTTH. The State needs to make this commitment, rather than relying on technologies that cannot deliver the connectivity this plan seeks to achieve.
2. What is the cost of deployment in Vermont's rural areas? Incumbent for-profit dividend-paying companies have publicly stated their costs as \$65,000 per mile. ECFiber has actually deployed FTTH at \$30,000 per mile, including an initial average of 6 customer connections. In those areas where ECFiber was able to use the VTA-built Orange County Fiber Connector, that cost was reduced by about 25%, to around \$23,000. Those savings could have been greater, had the route chosen been better optimized.
3. The Vermont Telecom Authority's deployment of the Orange County Fiber Connector (OCFC) – which made available fiber-optic capacity owned by the state

but leased to others for connection to final customers – is a proven model of a public-private partnership that can be replicated in other areas. A credible telecom plan should examine this model and the opportunities for using it to achieve the fiber deployment anticipated in the DPS' "Vision."

4. Other than the OCFC, all of the State of Vermont's financial support to telecom deployment has been in the form of grants. This forgoes the potential leverage to be gained from a revolving loan fund that could finance a great deal more infrastructure than grants alone. The Vermont Connectivity Fund could be structured thusly, rather than as a pool of funds for grants.