

FirstNet Requires An Integrated Telecommunications Plan

By Stephen Whitaker

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As I understand it at present, AT&T has a similar but different cellular 'footprint' in Vermont, than does Verizon, with limited geographic coverage, as does VTel. Verizon's and VTel's coverage also have many dead zones but may still be better than AT&T. All three carriers deliver Long Term Evolution (LTE) technology which FirstNet requires.

AT&T and the Public Safety Broadband Network Commission (PSBNC) have been operating in the shadows as regards Vermont's telecommunications planning statutes as set forth in 30 VSA 202c and 202d. This unfortunate situation has devolved due to a demonstrated and chronic lack of capacity at the Department of Public Service, the statutory lead agency for telecom planning, and due to the Department of Public Safety providing administrative support to the PSBNC created in 2013 by Executive Order. The Single Point of Contact (SPOC) for Vermont, who now also chairs the PSBNC, has operated in a manner designed to keep the entire FirstNet process internal to the Department of Public Safety and close to their vests, i.e. not transparent and not collaborative. This is unfortunately consistent with the national FirstNet strategy.

There is a fundamental incompatibility between FirstNet's current trajectory and our statutory telecommunications planning requirements. This needs to end today. Vermont's statutes require the development and sharing of the draft telecommunications plans, public hearings, surveys, a final draft plan, more public hearings and even a joint hearing of Senate Finance and House Energy and Technology Committees. **This is the law in Vermont for telecommunications planning . (30 VSA 202d)**

The secretive AT&T / FirstNet process has violated almost every aspect of this statute and the SPOC claims the state FirstNet plans to also be secret and exempt from public disclosure as does FirstNet with the national FirstNet / AT&T contract. The lack of access to the national AT&T / FirstNet contract fundamentally precludes the completion of any credible Independent Expert Review, as is also required by Vermont statute. This claimed blanket FOIA exemption is the subject of a pending federal FOIA lawsuit with a hearing and preliminary decision expected in December.

The Independent Review (IR) produced recently by Tim LaFaver of the Coeur Group falls far short of the statutory requirements as to technology architecture, privacy, etc, and must be disregarded. The untested claims of proprietary content in the state plan portal gave rise to the Administration withholding the IR from public disclosure due to its having referenced portal contents. The absurdity of this game of whack-a-mole with secrets when we are evaluating life and death communications seems to have no end absent legislative action.

The IR based its recommendation for an op-in decision on the potential for \$175M+ financial risks of extraordinary penalties which, on further scrutiny, turned out to be little more than threats which have since been back-pedaled by FirstNet's CEO Michael Poth before Congress.

Similarly, Vermont Treasurer Beth Pearce's opt-in recommendation was also based upon the threats of the same penalties potentially impacting Vermont's credit bond rating. These threats made in a FirstNet draft document do not form any basis for sound decision making and do not hold up under scrutiny.

AT&T / FirstNet have repeatedly reneged on prior "Public Safety Grade" assurances for towers and backup power, on wireless coverage assurances, on Band 14 roll-out schedules and now AT&T is working to undermine hard won Net Neutrality rules approved by the FCC under the prior Chairman Tom Wheeler, as well as pushing for massive corporate tax cuts at the expense of the middle class and deficits. This points to how far afield we have strayed from sound policy and why we should now vote with our pocket book.

What opportunities would result from an Opt-Out decision for Vermont which could be significant enough to warrant disregarding the PSBNC, IR and Treasurer's recommendations and to invoke the Joint Fiscal Committee's prerogative to affirmatively opt-out or to preclude an opt-in decision being made by default or no action by the Governor prior to December 28th?

To begin with, an integrated Telecommunications Plan prepared by a reputable consulting / engineering firm would incorporate many economies of both scale and scope by integrating FirstNet plans with Vermont's NG911 system and its network transport requirements, telemedicine, NG-VIT, jobs creation, economic development and broadband goals and objectives. And we would finally compile an inventory of Vermont telecommunications infrastructure owned and maintained (or not!) by all regulated utilities and visibly residing in the public's Right Of Way, (RoW) and thus not subject to exaggerated trade secret claims. This inventory is long overdue and is a fundamental prerequisite to effective telecommunications planning going forward. Wireless coverage mapping and a strategic broadband plan were not delivered to the E&T committee last January by the PSD despite the statutory requirements for same.

VTel, as a possible FirstNet RAN LTE infrastructure partner, brings us an advantage for a Vermont Band 14 spectrum deployment in both speed to go-live and reduced costs to deploy the higher power, longer reach Band 14 spectrum. This is due to their owning the neighboring blocks of spectrum which is similar to the advantage that AT&T holds over much of the rest of the country, but notably not in Vermont.

VTel has invested in, and installed an LTE core with greater speed and capacity, an "Unparalleled CORE" by some estimations, as well as geographically diverse fiber routes, possibly providing for greater resilience than any other carrier in Vermont. VTel has fiber circuits from Vermont to Albany, NYC to Montreal and Boston which may also surpass others' capacity and resilience for 'protected routes' connecting Vermont to international networks.

VTel has notable marketing, staffing and public relations deficits that will not be easy to overcome, but then again, AT&T has its own reputation for malignant disinterest in upgrading wireless coverage or filling gaps in their served territory in response to customer requests. Vermont has no legal recourse under an Opt-In should AT&T take our \$25M in NTIA funds and our valuable Band 14 spectrum and then fail to deliver the FirstNet goods at all or on time.

A public/private partnership between the State of Vermont and a vendor/integrator should be pursued in the context of the aforementioned planning process with Rivada / Macquerie or a similarly capable, and BONDABLE, team such that VTel's substantial investment in both public and private funds and infrastructure is put to good use without the FirstNet initiative being dogged by past performance issues. Growing FirstNet, wireless broadband and Fiber-To-The-Premises (FTTP) initiatives across Vermont will both create and sustain an estimated 600 well-paying, technically skilled jobs at a minimum and nurture the growth of our economy.

Land Mobile Radio (LMR) with its key features of direct, peer to peer communications, also known as 'direct mode', as well as Mission Critical Push-To-Talk and one-to-many group communications, features which are not now available with LTE cellular technology, will continue to be needed across Vermont into the foreseeable future. LMR in Vermont is similarly hampered by coverage gaps and reliability issues including dead zones, hardening, no generators at tower locations, accidentally dismantled live antennas and the need for additional repeaters, etc. There is presently no state planning for resolution of LMR deficits or hardening in Vermont. The \$13M investment in 'Lifeline' was never brought to fruition by VCOMM/DPS.

In effect, we need to be crafting two telecommunications plans in the coming months: An opt-out LTE plan for a massive ten year public/private investment in LTE coverage to support FirstNet and other wireless broadband and fiber initiatives over the next decade; and two, an LMR plan to complete and harden the existing first responder radio coverage across Vermont, anticipating that this investment will overlap and backstop public safety communications for at least the next decade. During the 25 year time frame of the FirstNet contract, these two plans will need to merge so that as we move into the 2020's and beyond, we will have a reliable and up-to-date communications system for our first responders. Both of these plans must be grounded on a comprehensive and independently verified propagation study of LTE and LMR radio coverage and gaps.

Vermont will require hundreds, if not one thousand additional 80 to 140 foot mono-poles, cell towers or microcells to provide blanket, border to border LTE coverage for FirstNet and other broadband services and to complete 911 access availability. Siting new towers is difficult and expensive, especially in the absence of a commonly accepted shared vision of a public safety benefit with linkage to economic development, telemedicine and education. This is where we continue to pay the penalty of prior failed Telecom plan efforts.

The costs of hardening a tower from Grade 2 to Grade 3 is substantial. A single public safety grade tower alone might cost upwards of \$200k. Vermont statutes require that efforts be made to share towers and fiber among competing carriers and state uses. The definition of "Public Safety Grade" needs also to be considered in the context of a fundamental tradeoff in real economic terms with increased geographic coverage. We can do both over time using dedicated FirstNet subscriber revenues and transparent accounting.

In the opt-out scenario, Vermont would be eligible for \$25M in FirstNet RAN build grants from the NTIA, precision choices and tradeoffs would need to be made to determine how much of that money should be invested and how soon, in tower hardening, versus how much should be invested in expanding coverage of existing dead zones.

Hardening to public safety grade standards as tradeoffs against increased coverage should be made only in the context of a complete strategic plan to soon achieve both the upgraded reliability and resiliency standards and increased coverage on a realistic timeline.

Which entity, be it government or a commercial partner, in an opt-out scenario, would be responsible for building and maintaining hundreds of new cell sites and backhaul infrastructure, when liability implications are factored in?

If a less than "public safety grade" standard is adopted, in the interim, in favor of greater coverage, would the private carrier/partner be liable for any tragedy resulting from interrupted cell service, or would the State as the public partner, invoke sovereign immunity?

Were an opt-out plan to be written, incorporating existing towers, new microcells on power poles, new shared cell towers, backup generators, electric service meters, transfer switches, backhaul protected ring architectures, in effect an incremental approach to a statewide complete public safety grade, border-to-border coverage, with an strategic upgrade path to 5G technologies, Vermont will need to identify both a market for, and financing in excess of \$100M to \$200M or more in the next decade.

Who will own, plan, finance, build, regulate and govern this high performance wireless and fiber infrastructure, which some would say is essential to our economic development strategy? This is the fundamental question now before us. Planning, accountability, transparency are key.

Any proper and informed choice of a carrier / partner for FirstNet deployment in Vermont requires that we reestablish a level of regulatory oversight and control which has been long neglected in Vermont. This will not be easy. This has not been done with AT&T at all.

FirstNet is now forcing Vermont's legislature and executive branch leaders to address these question sooner rather than later. It is now quite possible that we'll get it right this time.

For a financing perspective, it is important to recognize that Comcast is siphoning nearly \$100M out of Vermont annually just for Internet service, not including television package revenues. FairPoint, recently acquired by Consolidated Communications Holdings Inc. may be extracting a similar amount annually from the Vermont economy. Sovernet, along with FirstLight have now been acquired by Oak Hill Capital Partners and may no longer be exempt from open access fiber requirements under BTOP funding as the business case is demonstrably different under the new ownership. This necessitates renewed regulatory gumption and oversight by legislative leaders and a new Telecommunications Governing Council.

The strategy that is soon to be adopted to build out Vermont's FirstNet public safety broadband network coverage and FTTP will necessitate that we address the fundamental question of whether the necessary middle mile fiber investments will ever be made by private sector investor owned corporations, or whether a VTA-like publicly owned middle mile dark fiber infrastructure is again necessary to reduce costs and to encourage the building of complementary private sector or Communications Union District infrastructure investments. The VTA enabling legislation was moth-balled, not repealed.

The repeatedly ignored and fast approaching statutory goal in 30 VSA 202c of fiber speed connections to every E911 address in Vermont by the year 2024, without any semblance of a plan yet devised by the Department of Public Service as to how to accomplish this goal, requires that we carefully consider how the instant FirstNet decision can support or help to realize more of the many "*collateral benefits*" than the erratic path chosen thus far.

We need to constructively utilize the next six months to develop long overdue and integrated planning processes as well as a new governance structure for telecommunications and effective legislative oversight. This must begin with a decision to Opt-Out of FirstNet's AT&T plan by the Governor and /or Joint Fiscal Committee.

Stephen Whitaker
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