Refresher to inform GovOps amendments to H.360 Broadband bill

On Fri, Apr 30, 2021, 8:31 AM Stephen Whitaker <whitaker.stephen@gmail.com> wrote:
Substantial unresolved policy and sequencing issues require summer study!

We are not ready to begin spending $100M without any plan nor design!

The attached proposal outline is a standards based broadband design approach which could result in a statewide resilient, cost effective design, include the CUDs and plan for rapid fiber builds with the electric utilities.

Fundamentally, this strategy addresses Senator Bray's rational approach for interoperable, resilient fiber design to protect the public investment, anticipate mergers and acquisitions or even bankruptcies, yet keep working.

Both fiber materials and workforce are now constrained, so realistically, no fiber that is not already engineered will be built this calender year.

This leaves us with sufficient time to get a standards based engineered design completed by an expert engineering firm by year end.The requirement and spending authority for this design must be a ended to the bill!

Simultaneously, and while the VTA is getting organized, the unresolved policy and technical issues listed below can be further fleshed out as the committees lacked sufficient time and expertise to resolve.

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Further consideration is warranted in the interim on the following complex issues:

A Broadband-Telecommunications Strategy Task Force (ie. Summer Study) should be convened of legislative leaders, subject matter and policy experts in telecommunications and public interest group participants with these specific and detailed charges:

Examine options, costs and benefits of investing availableup to $50M federal funds in deploying fixed wireless technology at speeds of 25/3 or greater, in areas where fiber builds may not be completed for a year or more, and potential synergies with expanded, Neutral Host, all carriers, mobile wireless coverage.

Explore the costs and benefits of "future-proofing" Vermont's Broadband investments by designing and building to a uniform statewide architecture, a resilient Active Fiber network as contrasted with the costs and potential pitfalls for designing and building GPON passive fiber FTTP networks;

Investigate the use of fiber networks for improving the resilience and capabilities of Enhanced 911, ILEC host-remote isolation vulnerabilities, public safety communications systems - including improvements to and expansion of Land Mobile Radio systems (LMR) and eventual supplement

by broadband dependent public safety applications to 4G/LTE systems as currently envisioned by the federal FirstNet program and Verizon.

Identify the steps necessary and cost estimates for engineering the use of available fiber as the foundation for small cell fixed operations and mobile wireless in areas where cellular coverage is inadequate and where additional large tower cells are not feasible nor cost effective, or cannot provide sufficient coverage.

Consider tax incentives that would encourage fiber owning incumbents to make unused fiber available to competitors on an open access, Fair, Reasonable And Non-Discriminatory (FRAND) basis;

Consider tax incentives which would reduce the property tax burden on fiber owners and thus lead to more affordable broadband rates for the consumer;

Investigate the economies of speed, scale, scope, workforce growth and emergency restoral workforce availability that might be gained by electric distribution utilities being charged with building, owning and maintaining open access fiber along all utility rights of way, financed or paid for with federal funds;

Require that the PUC initiate investigations and rulemakings into resiliency and how Distribution Utilities building fiber would allocate fiber materials and labor expenses - some to Electric ratepayers recognizing the fact that the electric utilities need fiber broadband connectivity to customer locations for Grid management purposes.

Examine the different business models that will most benefit the Public Good when CUDs, acting as internet service providers offer voice and video services (as this is the business model they are competing with) and whether CUD universal service plans must include building 100/100 fiber over 25/3 areas in order to ever achieve economic sustainability.

Examine affordable broadband price structures built on the examples of current pricing from both national service providers (internet, cable, cellular, and ILEC voice) and for Vermont's small scale Internet Service Providers.

Review the contracted engineering firm's statewide, resilient, active fiber design and budget, and investigate the full suite of financing options that may be available, including:

Federal, state, philanthropy, grants and loans
TARP/ARPA The American Rescue Plan Act
NBRC Northern Border Regional Commission
USDA-RUS Rural Utility Service
FCC Federal Communications Commission
Potential October 2021 Biden infrastructure funds
VEDA Loans from the Economic Development Authority
Grants from the Vermont Connectivity Initiative and fund
Subsidies for broadband service and equipment
Telemedicine federal support programs
Distance Education federal support programs

Investigate the potential and strategies for using existing fiber. These assets fall on a spectrum of public control and ownership:

State owned fiber - limited geographically, VTRANS, PSD
Municipally-owned, including CUDs
Non profit organization owned
Owned by regulated utilities Consolidated, GMP, Velco
Owned by unregulated utilities Comcast, Charter, FirstLight, Lumen
Owned by businesses with no state government jurisdiction?

13. Assess strategies for Resiliency planning and the interconnection between networks.

The priority of resilient ring architectures,
Generators and battery backup requirements,
Grid storage benefits of battery backup on all telecom
Emergency restoral plans,
Hardening of the Peering locations,

14. Examine potential benefits of extending current network management capacity deeper into rural areas using compatible equipment to that now in use by Velco and Firstlight, specifically Ciena dense wavelength division multiplexing Reconfigurable Optical Add-Drop Multiplexers (ROADM)

15. Assess the benefits and feasibility of the State of Vermont and CUDs partnering with a neutral host mobile wireless operator to rapidly achieve mobile wireless in-fill coverage of all or most unserved rural areas eliminating dead zones with cellular access, with operating costs shared by all major carriers through roaming agreements.

16. Examine other Tax Incentive alternatives and revenue impacts of:

Telephone Personal Property Tax (TPPT) sunset?
Gross revenues tax
Pole attachment charge
Right of way usage fees
Connection charges
Streaming taxes

17. Examine and make findings on the use and possible overuse of trade secret claims, critical infrastructure designation, nondisclosure agreements by carriers and Communications Union Districts, specifically regarding visible infrastructure, clearly labeled for ownership and fiber strand count, residing in the public Right of Way.