Due Diligence Is Essential NOW!

It is now imperative to charge a summer study committee to meet with subject matter experts on telecommunications technology, policy, resilience, with public advocacy members being seated on this summer study committee as well. This is similar to the AMO committee that worked last year with members from the AMO/ public access television community and legislators to hear from various stakeholders and witnesses.

The Scope or Charge for this Telecommunications & Broadband summer study committee/task force follows:

IN Summary

1. A Statewide engineered Fiber plan/strategy is immediately required to be prepared concurrently under contract.
2. We're not ready to be spending $100M absent a completed plan, design and strategy
3. A Fiber design of Statewide scope must address interoperability and resilience between and among CUDS and incumbents.
4. This must address Senator Bray's rational approach toward:
    - Design of utility grade interoperable, resilient fiber;
    - To protect the public fiber investments;
    - Anticipate fiber network mergers and acquisitions;
    - Make provisions for bankruptcies and/or CUD failures
    - Networks must keep on working & delivering 911 calls.

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

This beneficially leaves us sufficient time to get a standards based engineered Fiber design completed by an expert engineering firm by year end 2021.

The requirement of, and the spending authority for this design project must be amended into the bill known as H.360. Simultaneously, and while the revived VTA is getting organized, unresolved policy and technical issues listed below can be further fleshed out and precise resolutions with proposals for legislative

changes required as a deliverable, as the other committees of jurisdiction lacked sufficient time and expertise to inquire into or resolve these in recent years.

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The Telecommunications & Broadband Strategy Summer Study Task Force should be convened, composed of diligent and technically proficient legislative leaders, subject matter and policy experts in telecommunications and public interest group participants with the following specific and detailed charges, some of which will be examined in the Scope of a Statewide fiber design contract:

1.Investigate the feasibility, options, costs and benefits of investing up to $50M of available federal funds in deploying affordable fixed wireless (<$25/mo.) sooner to unserved and under-served areas. Deploying Broadband service to any unserved areas at speeds of 25/3 or greater, especially in areas where fiber builds may not be completed for a year or more, may be consistent with fiber and mobile wireless priorities. The inquiry must detail potential synergies with Neutral Host, all carriers, mobile wireless coverage to in-fill dead zones as a public safety priority and fiber backhaul to support future FTTP initiatives.

2. Investigate the costs and benefits of "future-proofing" Vermont's Broadband investments by designing and building to a uniform statewide architecture, possibly using a resilient Active Fiber network architecture as contrasted with potential constraints and management challenges of GPON passive fiber FTTP networks;

3. Investigate the efficiencies for multiple uses of fiber networks for improving the resilience and capabilities of all Enhanced 911 connections, ILEC host-remote isolation vulnerabilities, public safety radio 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 FirstNet, Verizon and T-Mobile first responder broadband service offerings.

4. Identify the necessary steps and cost estimates for engineering the use of any available fiber as the foundation for small cell fixed wireless and mobile wireless in areas where cellular coverage is nonexistent and where additional large tower

cells are not feasible nor cost effective, or simply cannot provide sufficient coverage due to topography.

5. Consider and model the use of tax incentives to encourage fiber owners to make unused fiber available to competitors on an Open Access, Fair, Reasonable And Non-Discriminatory (FRAND) basis;

6. Consider and model possible tax incentives which would reduce the property tax burden on fiber owners to be conditioned on long term affordable broadband rates for the consumer;

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

8. Make a recommendation on the possible need to require that the PUC initiate investigations and rulemaking on Open Access protocols, network resiliency, carrier of last resort obligations and how electric Distribution Utilities building fiber would allocate costs for fiber and labor expenses - a share to Electric ratepayers recognizing the fact that the electric utilities need fiber broadband connectivity to customer locations for Grid management purposes.

9. Examine whether CUD universal service plans should be required to include plans for overbuilding fiber over existing cable "served" 25/3 areas in order to both achieve economic sustainability for CUDs and to achieve statewide availability of 100 Mbps symmetrical broadband service in accordance with statutory goals.

10. Examine broadband price structures across Vermont and current pricing from both national and regional service providers (internet, cable, cellular, and ILEC voice) and for Vermont's small scale Internet Service Providers. Recommend speed, price, subsidy and affordability strategies.

11. Investigate the full suite of funding and 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
- RUS Rural Utility Service Reconnect (USDA)
- EDA Economic Development Administration (Commerce)
- FCC Federal Communications Commission
- Potential October 2021 Biden infrastructure funds
- VEDA Loans - Vermont Economic Development Authority
- Grants from the Vermont Connectivity Initiative and fund
- FCC Subsidies for broadband service and equipment
- Telemedicine federal support programs
- Distance Education federal support programs

12. Investigate the cost and time savings potential and strategies for using existing fiber. These fiber assets fall along a spectrum of public control and ownership:

- State owned fiber - limited geographically, VTRANS, PSD
- Municipally-owned, including CUDs
- Non profit organization owned (NorthLink Northern Enterprise)
- 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,
- Stand-alone mode to respond to international cyber attack

14. Examine potential benefits of extending VELCO'S current resilient rings and 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 (DWDM) Reconfigurable Optical Add-Drop Multiplexers (ROADM)

15. Assess the benefits and feasibility of the State of Vermont and/or 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 use of roaming agreements.

16. Reconcile Tax Incentive alternatives and revenue impacts of:

- Universal Service Fund charge
- 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 and their operating partners, specifically regarding visible infrastructure, clearly labeled for ownership and fiber strand count, all residing in the public Right of Way.

18. Examine legal implications or tradeoffs of CUDs claims of trade secrets exemptions on sovereign immunity and possible implications on exposure for liability among municipal fiber owners where 911 calls were blocked to tragic results.

19. Complete due diligence on proposals to transfer ownership of State owned fiber, including appraisals, revenue forecasts, inventory of contained leases and IRUs, and comprehensive resiliency and restoration plan certifications.

20. Examine the potential of merging the E911 staff or attaching the E911 to the Telecommunications Authority as a strategy to expeditiously enhance resiliency

planning review of CUD and other fiber build proposals, as well as potential consolidation of the two boards. (and possibly others)

That should keep them busy and might even result in informed lawmaking next spring!