Massachusetts Broadband

Institute

Call for Solutions

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AccessPlus Communications Inc.

Overview: AccessPlus Communications in Western Massachusetts

AccessPlus Communications, Inc. is a wireless based telecommunications access company which provides wireless engineering, installation and on-going maintenance to cities, towns and institutions.

AccessPlus Communications has been providing wireless networks and expertise to Berkshire County towns and other organizations for many years. Our experience includes:

- The founders of AccessPlus designed and built the Berkshire Connect wireless network. This network extends from Springfield to Pittsfield and North Adams. This network uses "carrier class" licensed microwave over distances approaching 30 miles.
- AccessPlus designed, implemented and currently maintains a wireless network for a town in the Berkshires
- AccessPlus designed, implemented and currently maintains a wireless network for a College in the Berkshires.
- AccessPlus designed, implemented and currently maintains a wireless network for a City school system in the Berkshires
- AccessPlus designed and implemented a wireless network for Berkshire Health System in Pittsfield and Great Barrington, MA.
- AccessPlus has provided significant wireless engineering consulting support to Berkshire Connect for their efforts to address Internet Access to underserved communities in Western Massachusetts.
- AccessPlus currently operates fiber optic route which passes through Franklin and Berkshire counties. Our fiber route carries over 1Gbps of data from the Berkshires to the Internet Services providers in Springfield.

Network Elements

In order to construct a robust broadband network, the following elements are required:

1. Backhaul access to the Internet
2. Local Distribution
3. Service Provider(s)
4. Customer support

Backhaul Access: In Western Massachusetts, the closest point-of-presence for "non-ILEC" Internet and telephone switched services are in Springfield and Albany, NY. Therefore all backhaul routes should ultimately reach back to one of these locations. Backhaul can be achieved using fiber optic routes and high speed wireless links. To

properly support future expansion, licensed microwave is recommended for any major route wireless links.

AccessPlus Communications currently operates a Western Massachusetts backhaul network which consists of fiber and wireless routes. Figure 1 shows the current layout of the AccessPlus network (includes some partner routes). All of the Berkshire Connect traffic currently rides on the AccessPlus fiber network.

The major elements of the original Berskshire Connect microwave network are still operational and can could be used to distribute Internet access to all towns that are not on the major fiber route.

Examples of this distribution would be a fiber node in Florida that could feed a wireless location which in turn would feed Internet to Rowe, Monroe, Heath, Hawley, and Savoy. Another example would be a feed from the Washington tower location which would provide access to Peru, Windsor and Becket.

It came be seen that this approach would result in the ability to provide significant bandwidth to each town. When coupling these routes with State funded fiber construction and the use of CLEC status to obtain Verizon assets, a robust, scalable network could be built.

Local Distribution: Local distribution refers to the local network that must be built to connect the Internet egress point in the town to all of the town's residents and facilities. This local network could use copper wires, wireless links or fiber-to-the-premises (FTTP). As FTTP is currently cost prohibitive, wireless links and/or copper wires must be used.

AccessPlus proposes that the local distribution network must be a hybrid of DSL (using the Verizon copper) and wireless links (to regions that cannot be served by the DSL). DSL can be implemented by collocating at the nearest Verzion remote terminal and installing a DSL multiplexer (DSLAM) near the Verzion terminal. Additional, distribution can be aided by State funded fiber in the town (as outlined in the Connect Sub-regional study).

Wireless distribution can be accomplished using a number of different technologies. The technologies chosen must be specific to the bandwidth required, density of users and geographic terrain. AccessPlus has extensive experience designing and installing virtually all wireless technologies from 154Mhz to 80Ghz.

Service Provider: Service Providers refer to companies that will provide Internet bandwidth to the region as well as other services such as VOIP and IPTV. AccessPlus does not intend to provide these services. We prefer to design, build and maintain the networks that carrier these services to the end user.

Customer Support: Customer support could be defined as both the support required to ensure a high quality connection to the service provider and the support required from the actual service provider related to the services provided. AccessPlus would provide the connection support while the service providers would provide the services support.

Summary

AccessPlus Communications has the infrastructure and technical capability to bring Internet bandwidth to every town in western Massachusetts. Once Internet is available, each town will require a unique network design to allow the Internet bandwidth to reach every resident and business. These town network designs must draw on all available resources and technologies including fiber optics, wireless, and existing copper.

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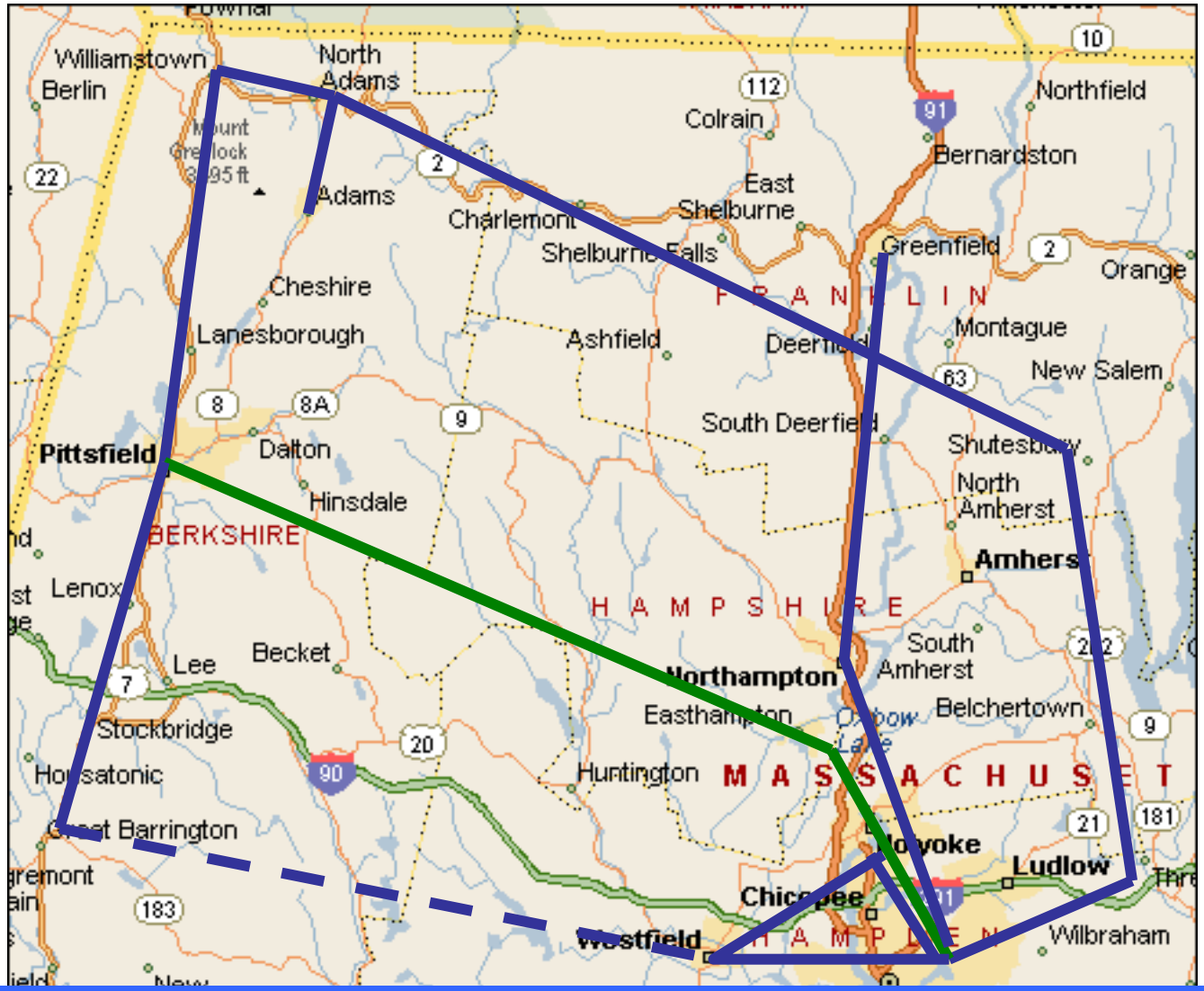

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