

HARVARD UNIVERSITY
HARVARD FOREST

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13 July 2016

Mr. Bill Ennen
Last Mile Implementation Liaison
Massachusetts Broadband Institute
75 North Drive Westborough, MA 01581

Re: Urgent need for broadband in Petersham

Mr. Ennen,

Please accept this letter on behalf of Harvard Forest, a department of the Faculty of Arts and Sciences, Harvard University. Harvard Forest, which has operated as Harvard University's main ecological research and educational facility since 1907, is located on 3600 acres primarily in Petersham MA.

The Forest provides a complete base for research in forest, ecosystem and historical ecology and biosphere-atmosphere interactions. Since 1988, when the Forest became a National Science Foundation Long Term Ecological Research (LTER) site, the Forest has seen phenomenal growth in scientists, educators, students, collaborators, research and education programs, and laboratory, computing, archival, teaching, and housing facilities. The Harvard Forest is also the core site for the Northeast domain of the National Ecological Observatory Network (NEON). Forest research is funded by many federal agencies (NSF, DOE, DOD, USDA, NASA) as well as large and small private foundations (Smithsonian Institute, Doris Duke Foundation, etc.).

Harvard Forest serves as the base for a year-round staff of 40 including senior and junior scientists and support staff. We also host thousands of national and international students and researchers for periods of 1 day to 1 year. This includes:

- Local K-12 school groups visiting for a day
- Regional K-12 science teachers coming for ecological training
- University courses visiting from throughout the Northeast
- Mid-career faculty on lengthy research sabbaticals
- Conservation groups including local, state and regional organizations holding multi-day retreats

We have extensive facilities (~105,000 sf) including offices, conference space, library, dining facilities for 40, laboratories, greenhouses, archives, herbarium, dorms and residences to host these diverse groups. University-owned housing includes the three dorms for visiting groups, and 14 residences currently occupied by visiting faculty, graduate students and post-doctoral fellows and their families. In addition, the Environmental Measurement Station (EMS), the oldest continuously operated eddy-flux and micrometeorological tower in North America (established in 1990), is located approximately 1.7 km into the woods from the main campus. Our newest eddy flux tower (2015) is NSF-funded NEON tower.

The Forest is fortunate that, despite this beautiful but rural location, we have been able to obtain and pay for an optical fiber circuit (100 Mbps) that connects the Forest to Harvard University and the Internet. Wired and wireless network access is available in all offices and labs and in some residences. A field wireless network provides high-speed Internet access to major experimental sites across a portion of Forest-owned lands, including the eddy flux towers.

However, we have not been able to extend Internet coverage for two crucial areas.

First, most of our housing for visitors does not have Internet access. Many researchers need access round the clock to conduct their research in an effective manner. Also we have increasingly found that it is a significant drawback if not outright deterrent to researchers' families taking up residence in Petersham. More and more visitors are choosing to stay in outlying towns that provide ready access to affordable high speed bandwidth such as that to be provided by this proposal from the Town. An Internet access solution for the town might complement our existing network infrastructure. For instance, we might have 3-5 faculty on sabbatical coming to work at the Forest in a year. For the past few years, one or more have chosen to rent in Amherst due to the lack of Internet access here.

Second, much of the land owned by the Forest does not have access to hard-wired or wireless access. Thus the research tract closest to the main campus has an extensive wireless network and one major research site has optical fiber going directly to the site. However, about 2000 acres of land in two other major tracts located in central Petersham do not have any access and thus our ability to conduct sophisticated monitoring projects on them is limited.

Sincerely,



Edythe Cherkas Ellin
Director of Administration

Cc: Chip Bull, Chair, Petersham Broadband Committee
Nancy Allen, Chair, Petersham Selectboard