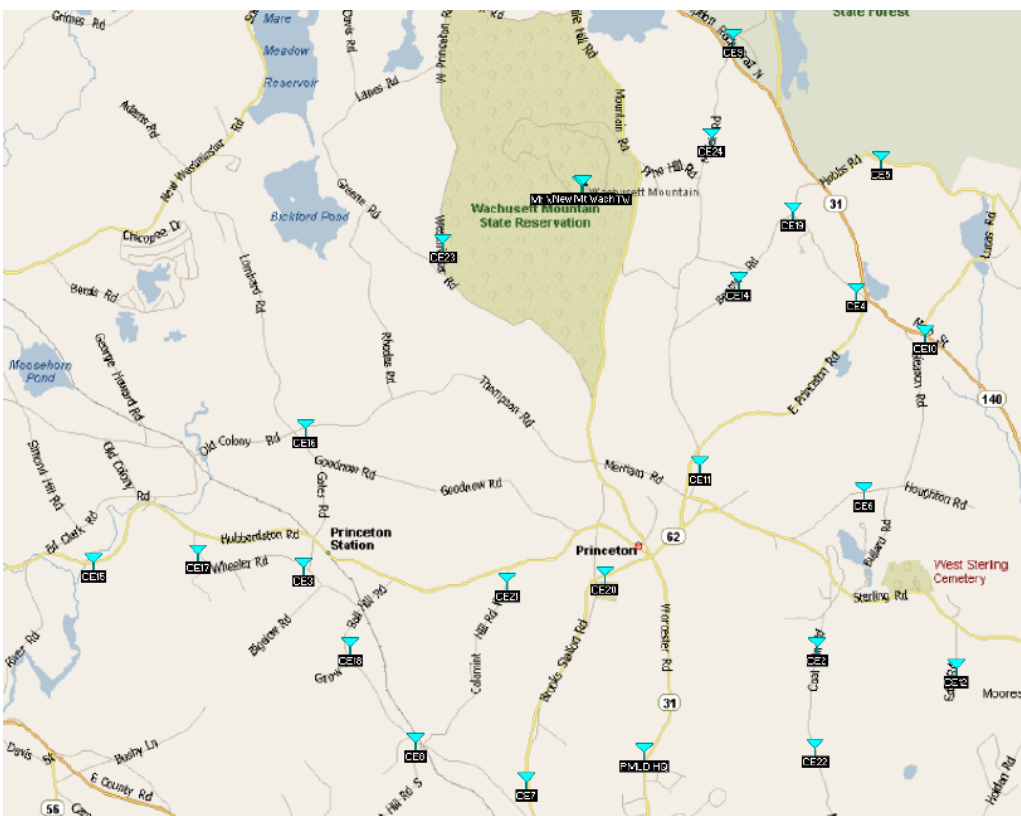


Princeton Municipal Light Department Wireless Internet System

In 2006 the Princeton Municipal Light Department (PMLD) embarked the project of bringing High-Speed Internet to the residents in town. The goal of the system was to provide reliable, secure and cost effective Internet access to the community. The challenge in Princeton was dense foliage with many topology changes and homes that are spread out. PMLD researched solutions and located a vendor who said they could install the network. The network was installed on 24 poles distributed throughout the town that repeat the signal broadcast from the top of Mt. Wachusett. The system was completed in the spring of 2006 and many customers signed up. The customers were quickly added to the system then several problems began to occur and PMLD worked hard with the original integrator to combat the issues. The problems kept getting worse with no end in sight through August of 2007.

Ayacht Technology Solutions (ATS) was contacted in August of 2007 by the PMLD for the purpose of performing a design and configuration review of their existing Alvarion 900 MHz network. ATS performed a survey and design review in September and followed up the initial review with some immediate fixes to alleviate RF issues that were occurring. We Identified several major design and configuration flaws that could have been prevented.



- Self interference was created by the system using the same channels with no GPS synchronization to keep the system synchronized.
- The wrong omni-directional antennas were deployed and the system would have benefited from sector antennas at some sites.
- The system was so popular that many poles were oversubscribed and the original integrator had not done the proper capacity planning at each pole.
- The original integrator recommended and allowed customers to do self installation that resulted in many improper installations and too much RF cable which degraded signal quality significantly.

The Results

ATS has been involved in the PMLD Wireless Internet Service since August of 2007. We were first called upon to review why the network was running so poorly. We identified the problems and made changes to the equipment in order to solve the issues. We also recommended professional home installations to remedy many issues that were caused by improper installations. Another ATS innovation was the development of a custom enclosure to enhance performance by shortening RF cable length and making maintenance/installation easier by moving all equipment outside.

Equipment

- ◆ Alvarion BreezeACCESS 900 MHz Frequency Hopping Spread Spectrum (FHSS) System
- ◆ 90ft Fiber Resin Utility Poles in utility space. No permitting required.
- ◆ ATS Developed enclosure to increase coverage and ease system management.

Contact ATS for more information and a free consultation on your needs!