

Appomattox County Public Schools After School Wireless Connection Program

“Many students in rural areas do not have internet access at home. Rural area schools are challenged to address technology needs at the home in order to level the playing field and insure rural students have the same learning opportunities as urban students”

- Brette Arbogast, Director of Technology, Appomattox County Public Schools

Problem: Over half of the student population does not have internet access at home.

The Appomattox County Public Schools conducted a survey in December 2014 to determine the student population’s internet connectivity. The results showed that 59% of students do not have internet access at home, excluding mobile wireless. In addition to affecting homework assignments and digital learning opportunities, the school system has begun issuing iPads to students but due to the fact that not all students can access the internet after school, and in order to avoid inequities in learning they are not permitted to take the devices home.

Solution: Provide county-owned free wireless internet access afterhours.

Appomattox County Public Schools planned and began building a fiber network connecting schools and county offices. County Administration and the school system teamed up and merged their information technology services with the school technology staff supporting all county technology needs. County Administration and the school system together executed a memorandum of understanding for the technology services, eliminating duplication of effort, combining resources and leveraging assets. The school’s network is separated from the county’s network through implementation of virtual local area network configurations. The school system in partnership with the county, has established a phased county wide initiative to provide students with free wireless access after school.

Phase One: Technology staff will strategically place wireless access points in fiber connected areas providing secured wireless access to students through the use of the previously established BYOD program. Access will be filtered as the wireless network is providing access to the existing secured school network. The county will integrate existing authentication to allow the student’s credentials to work negating the need for another monitored system.

Quick View of Appomattox, VA

333.49 sq. miles in the Piedmont area of Central Virginia

Population 15,255

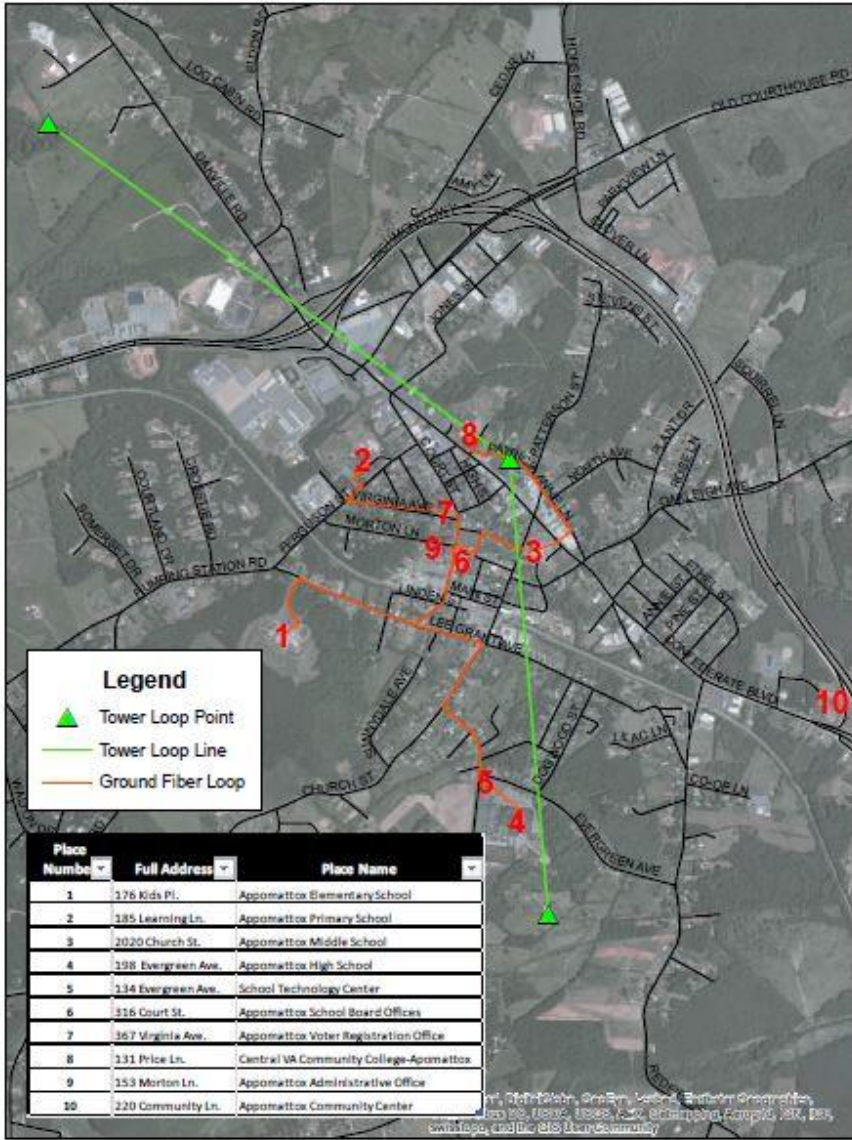
2200 students in the public school system

About 49% of students are receiving free or reduced lunch

The school system is receiving 70% e-rate discount

59% of students do not have internet access at home

A portion of this project will cover Section Eight housing; approximately 40 apartments.



Phase Two: The County will open up the wireless network to broadcast the network identification (SSID) and monitor the usage after schools hours. The broadcasting of the network will make it easier for students to locate the wireless network. The wireless network will still have a filtering default. If the students wish to have more open internet access they will need to sign on with their school credentials.

Phase Three: The County will complete the final four build-outs of fiber to connect all schools and eliminate the use of the e-rated wide-area-network (WAN) connections. By owning the WAN fiber the county eliminates any confusion of the e-rate discounted lease. Since 2010 the county has begun the elimination of the leased WAN by replacing legs of the WAN with county owned fiber which is providing a network upgraded to 10Gigabit bandwidth. This final phase may take two years to complete.

Phase Four: The County will add five more access points throughout the county based off the county/school fiber runs. This phase will deploy two main fixed wireless access points on the towers to extend coverage to other parts of the county. The fixed wireless (tower) portion of the wireless network will be completed through a formal request for proposals.

Conclusion: An uncommon partnership to achieve a common goal.

By partnering with the county administration, the school system will be able to provide internet connectivity to students, many of whom would otherwise be without internet access after school hours. In addition to expanding the iPad program, the school system will be able to utilize other internet-based education programs to insure their students have the same opportunities as students in less rural areas.

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