

the monitor

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Is Affordable Broadband Within Reach?

We are living in an increasingly connected and data-heavy universe with a growing expectation of ever faster internet service and availability. Residents need service for homework, telecommuting, entertainment, recreation, business, and even agricultural operations. However, it is difficult to get adequate service to some areas and a pure market solution has failed rural residents of Fauquier at this point.

The FCC defines broadband speeds as 25 mbps or more, but many places in the County cannot access broadband speeds that fast. Some places can only get service through expensive satellite, which ranges between 1-4 mbps. An alternative solution is needed, but county subsidies and investments should be thoughtfully considered, and the impact of permanent infrastructure on scenic and historic viewsheds should be weighed during siting.

Fauquier County has been trying to figure out ways to improve broadband service county-wide. After the planned

partnership with Freedom Telecom Services (FTS) Inc. to build a more robust fiber optic network here fell through, the County decided to pursue another option that would provide enhanced broadband by incentivizing tower construction in underserved parts of the County.

Since deciding to go forward with this alternative, the Board of Supervisors has approved agreements with Calvert Crossland LLC. The Calvert Crossland LLC agreements provide cash incentives for tower construction in six of the seven underserved areas (orange circles on map). The cash incentives are modest: \$30,000 per tower per year for five years, or until the tower is occupied by one of the four carriers: AT&T, Verizon, T-Mobile, or Sprint. The PATH Foundation will be funding \$90,000 per year through its Broadband Capital Improvement Program, covering half of the cost to the County if six towers are built.

These incentives may improve cellular coverage and

see Broadband page 2

Walker Drive Development Are Marshall and the Plains Next?

Marshall and the Plains should brace for disruptive housing and retail projects mimicking Haymarket if the 31-acre Walker Drive retail and housing development goes forward in Warrenton, conservationist Bill Semple told the Monitor.

“If Walker Drive happens, the developers will have succeeded in creating an essentially commercial development in what is now a wonderfully landscaped, pedestrian, bike friendly and

bucolic community,” Semple said. “If this can happen in Warrenton, developers will be encouraged to become more aggressive in seeking changes to zoning anywhere in Fauquier County.”

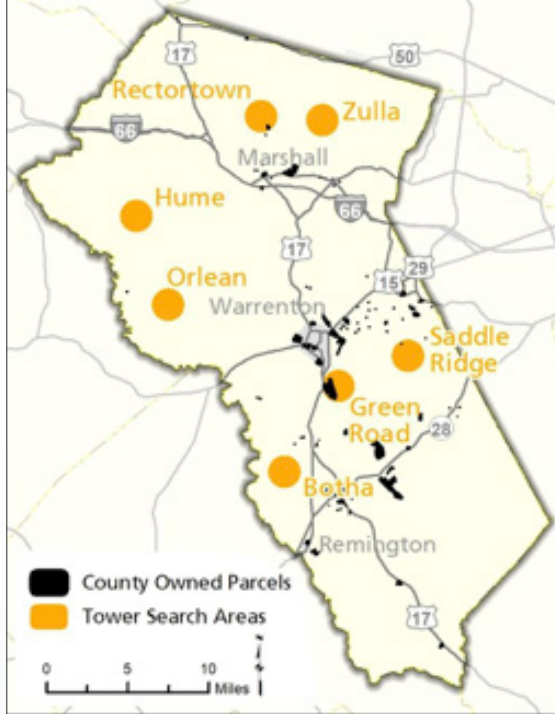
Semple has been in the forefront of the legal challenge to Walker Drive, which began more than a year ago. A resident of Old Town overlooking the project, Semple pursued the case pro se with six other plaintiffs. Fauquier Circuit Court Judge Jeffrey Parker, in an

Aug. 20 ruling, denied Semple standing but allowed the remaining plaintiffs — who live along Walker Drive — opportunity to file an amended complaint based on these primary allegations:

- 1) Traffic. The development will lead to some 11,750 new automobile trips daily, accounting for significant delays in accessing or leaving homes, additional traffic noise and light glare.

see Walker Drive page 3





Broadband from page 1

mobile broadband for some but are unlikely to provide home broadband service desired throughout rural Fauquier. There are currently around 70 communication towers in the Town of Warrenton and the county, numerous antennas, small community fiber optic networks, and Comcast cable in populous areas like Warrenton and New Baltimore.

Six new towers in rural areas may improve mobile broadband for a few residents in those areas, but it is necessary to think about the quality of service that mobile broadband provides, the cost per month and impact on scenic and historic resources in sensitive areas.

Based on a recent Piedmont Environmental Council survey of the broadband challenges and needs in Fauquier County, residents are concerned about broadband coverage all over the county, well beyond the identified sites the county has agreed to subsidize. Some rural residents have found solutions to their broadband challenges through small local WISPs, but many have not. The value of Fauquier's scenic and historic resources remains important to those who live here. Residents are seeking broadband solutions that respect scenic and historic resources that so many have worked to protect.

The barriers to broadband are:

- 1) low population density over large areas; and
- 2) mountainous terrain and forest canopy.

By way of background, broadband is a high speed connection to the internet as opposed to a slow, narrowband connection like dial-up. There are fixed broadband options (such as fiber, cable, DSL, and satellite), mobile broadband options (such as a smartphone or mobile hotspot), and fixed wireless broadband or WISPs (such as Blaze, NOVA Wireless, OmniPoint, and High Mountain Farm Broadband) that connect two fixed locations with a radio or other wireless link. Customer considerations usually include availability of different services, cost, speeds and data limits, latency (aka lag), and installation or sign-up costs.

Counting Heads

Living in the country and enjoying a rural lifestyle are among the reasons residents like Fauquier, but the resulting low-density population makes the area an unattractive market for broadband providers. Limited infrastructure is built because of the modest potential return on investment. However, ironically, that limited infrastructure can quickly get overbooked because as faster speeds become available for things like streaming video, usage goes up and becomes more data-intensive. The result is that the capacity of new towers is likely to get maxed out during peak usage times (e.g., Friday evenings), resulting in decreased speeds and lag.

Fiber optic and cable providers like Comcast have limited networks covering

urban areas like the Town of Warrenton and New Baltimore. Large companies that offer DSL options, like Verizon, have little interest in maintaining infrastructure and expanding their network in rural areas of Fauquier County. Towers providing mobile broadband and cellular have focused on coverage of major roadways and more densely populated areas, as you can see in the map showing all the towers in the Fauquier County. Many of the towers in rural areas have not been upgraded to provide 4G service to meet home Internet needs. Consequently, rural residents are left with service that is either of poor quality or extremely expensive.

For rural communities, the enhancement of mobile broadband technology is likely a hindrance to better service rather than a benefit. As technology improves from 3G to 4G, and then possibly to 5G, the signal strength of the towers decreases. The estimated range of 5G service is practically just a couple of city blocks, which means that it is unlikely Fauquier will see 5G available beyond Warrenton anytime soon. Investments from large companies like Verizon and AT&T will likely go into building up 5G networks in urban centers rather than providing basic coverage of rural areas with few potential subscribers.

Terrain Matters

Fauquier County is geographically diverse, with flat areas south of Route 28, hilly areas between Route 28 and Route 29, and mountainous terrain north of Route 29.

Although satellite technology may be used anywhere, fixed wireless and mobile broadband are affected by forest cover and topography. Fixed wireless must have a clear line of sight between the transmitting antenna and the receiving antenna. The forest canopy can make it difficult for some homes to find a good location for a receiving antenna.

Mobile broadband towers are also affected by topography and forest cover. However, there does not necessarily need to be a clear line of sight between your device and the tower.

Laying fiber in rural areas can be expensive, especially in rocky terrain. However, small fiber and cable networks have been laid in some rural communities in Fauquier via collaboration between a homeowners association and town government. Fiber can also be strung on utility lines, and research is underway into alternative ways of building networks, such as integrating fiber into roadways.

And the Answer Is?

First, Fauquier County needs to define success by establishing clear goals for coverage, upload and download speeds, cost per month, cost for installation/sign-up, data limits and cost per gigabyte, latency, and time-of-day demand. There is no quick fix. Some technologies, such as mobile broadband and DSL, are not good long-term solutions for rural areas if the goal is to provide home broadband service to all of Fauquier. Investment in a variety of site-appropriate improvements in fiber, cable, fixed wireless, and mobile broadband will be needed.

	Availability	Reliability	Speeds and Data Limits	Latency/Lag
Fiber	Very Limited	High	Very Fast	No
Cable	Limited	High	Fast	No
Fixed Wireless	Somewhat Limited	Moderate	Varies Widely (Slow – Fast)	Occasionally
Mobile Broadband	Somewhat Limited	Moderate	Varies Widely (Slow – Fast)	During High Usage
DSL	Limited	Moderate	Varies (Slow – Moderate)	During High Usage
Satellite	Anywhere	Low	Slow	Yes

Chart is based on data available and anecdotal feedback about service options in Fauquier County. The purpose is allow for easy comparison of the different internet service options available.

There may be communities, such as our villages and service districts, that could be served by fiber networks or expansions to the Comcast system, with the right coordination. Investments into new equipment and small antenna towers by local fixed wireless providers could be incentivized to help provide coverage to small clusters of rural

communities with small repeater antennas to send the signal to residences that may be located behind hills. Large towers located in areas of minimal impact to scenic and historic resources may be useful for covering rural areas with flat terrain.
The solution will unfold as data demands increase and technology changes. The

county needs to reevaluate on a regular basis its next steps and the effectiveness of previous decisions. There isn't a simple answer to this complex issue, but that doesn't mean that there is no answer. Fauquier County should embrace options that don't blanket our pastoral and historic views with telecommunication towers. 🇺🇸

Walker Drive from page 1

2) Safety. The site entrance located immediately across from the plaintiffs expands the intersection and makes it inherently dangerous. Warrenton Town Council never considered whether the location was appropriate.
The amended complaint is due Sept. 10. Should Judge Parker rule against the Walker Drive development opponents, Semple said that ruling likely would be appealed to the Virginia Supreme Court. "That would be a costly undertaking," said Semple, referring to attorneys' fees. "The Town and the developers have retained expert legal counsel. Plaintiffs would need to do the same."
Those behind the legal challenge to Walker Drive have established a limited liability company, Fauquier Conservation Partners LLC, to accept financial contributions. For more information, call Bill Semple at (540) 347-4378 or email fauquierconservationpartners@gmail.com.
Walker Drive has been controversial from the beginning. The Warrenton Planning Commission,

in February 2017, following extensive review, voted 6-1 to deny the development.
Two months later, after a boisterous hearing in which 24 town residents spoke against the project, Warrenton Town Council voted 6-1 to approve plans for 76 apartments, 40 condominiums, high-turnover restaurants, offices, retail and maybe a movie theater and bowling alley. Opponents charged that the town ignored its own rules and state law in allowing a development that would be a Gainesville clone and drain business from merchants in Old Town and along Broadview Avenue.
The sole councilman who voted to deny the Walker Drive development, Sean Pollster, was resoundingly reelected to a second, four-year term in May. Sunny Reynolds, the foremost council advocate for Walker Drive, was decisively defeated for reelection.
"If this development is allowed in Warrenton, then residents in Marshall and The Plains and elsewhere better watch out. Imagine another Gainesville in your home town. Who wants that?" said Semple. 🇺🇸



Multiply this vehicle by 11,750 to equal the impact of the proposed Walker Drive development.

Ken Alm Elected to CFFC Board

Former Fauquier Planning Commission member Ken Alm has joined the board of directors of Citizens for Fauquier County.

Alm is a former Air Force fighter pilot, test pilot and airline pilot. A Chicago native, he holds masters degrees in clinical psychology and strategic planning, and served two years on the Town of Warrenton Planning Commission and 10 years on the Fauquier Planning Commission.

“We are delighted to have Ken Alm join the board,” said CFFC President Les Cheek. “We welcome his good judgment and expertise.”



PLEASE JOIN US.

Be a part of the only organization dedicated to preserving the rural, agricultural character of Fauquier County. CFFC tracks every land use zoning or special exception proposal before the Planning Commission with our exclusive, monthly Land Use Report. The CFFC also covers historical preservation, transportation and the environment. Please visit citizensforfauquier.org for a better understanding of how you may become involved.

Citizens for Fauquier County, a 501(c)(3) tax-deductible organization, needs your support to address the constant challenges from developers who cheerfully would sell out Fauquier's history to make a profit. Please visit citizensforfauquier.org and join today.