



SUBMISSION FORM

All submission forms must include the following information. Separate submission forms must be turned in for each eligible program. **Deadline: July 1, 2021.** Please include this submission form with the electronic entry. If you do not receive an email confirming receipt of your entry within 3 days of submission, please contact [Gage Harter](#).

PROGRAM INFORMATION

County: Montgomery County

Program Title: WOW Carts

Program Category: Community and Economic Development

CONTACT INFORMATION

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Title: Assistant County Administrator

Signature: 

Executive Summary | WOW Carts

While Montgomery County continues to take steps toward providing a permanent broadband solution for unserved and underserved citizens, the COVID-19 pandemic greatly exasperated the need for reliable high-speed internet access, particularly for children participating in remote learning. To provide an immediate solution for school-aged children lacking sufficient internet access, Montgomery County started the Wireless on Wheels (WOW) initiative using the Coronavirus Aid, Relief, and Economic Security Act funding.

The County purchased 20 solar panel-equipped carts that emit free wireless hotspots, which were positioned throughout Montgomery County at easily accessible locations such as fire stations and churches. Locations were chosen based on the unserved and underserved areas determined in a recent broadband study. The hotspots for the majority of the carts are powered through Verizon, while five carts placed in more remote areas of the County are serviced by HughesNet via an additional satellite dish.

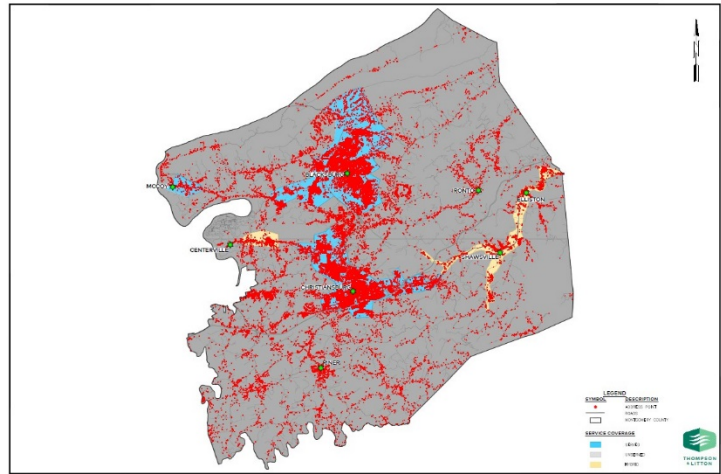
Brief Overview

As a result of the COVID-19 pandemic, many people began attending school and working remotely. To do this, they needed access to the internet. While a recent study in Montgomery County identified areas that are currently unserved and underserved by broadband, a plan to implement broadband in these areas is still being developed.

In response to the need, the Montgomery County Board of Supervisors approved the purchase of 20 Wireless On Wheels (WOW) carts. The WOW carts are self-sufficient, solar powered broadband hotspots. These units are able to assist the more rural areas of the County in need of sufficient broadband service while a comprehensive broadband strategy is being developed.

Award Submission

While Montgomery County has been working with local private partners to address areas that are unserved and underserved by broadband, something had to be done in short order to address the immediate needs of citizens who lived



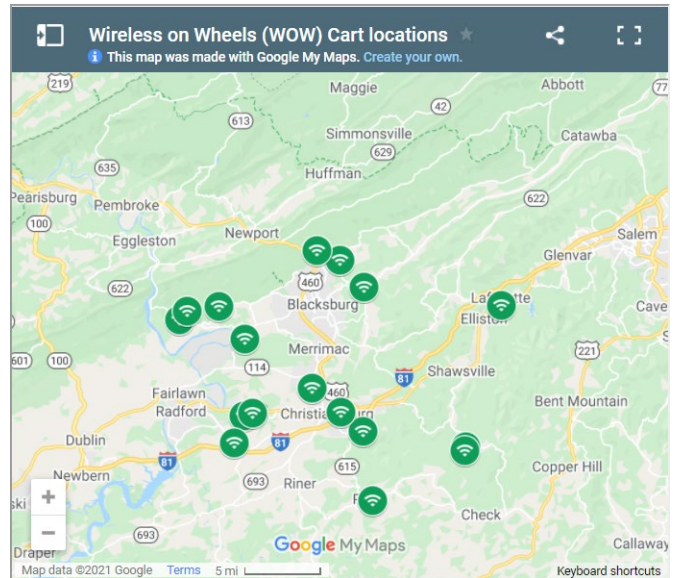
in rural areas of the County and needed internet access to go to school and work remotely during the COVID-19 pandemic. The answer came in the form of solar-powered carts with battery storage and a WiFi router, or Wireless on Wheels (WOW) carts.

The Montgomery County Board of Supervisors approved the purchase of 20 WOW carts using Coronavirus Aid, Relief, and Economic Security (CARES) Act funding. The County partnered with a private company, Gigabeam, to purchase and install the carts in the areas identified



by a broadband study as being in most need of internet access.

The 20 solar panel-equipped carts that emit free wireless hotspots, which were positioned throughout Montgomery County at easily accessible locations such as fire stations and churches. Locations were chosen based on the unserved and underserved areas determined in a recent broadband study. The hotspots for the majority of the carts are powered through



Verizon, while five carts placed in more remote areas of the County are serviced by HughesNet via an additional satellite dish.

Carts Powered via Verizon:

1. Fieldstone – 300 Fieldstone Lane, Blacksburg
2. County Convenience Site – 751 Merrimac Road, Blacksburg
3. Riner Rescue Squad – 4171 Riner Road, Riner
4. Longshop-McCoy Fire Station – McCoy Road, Blacksburg
5. County Convenience Site – 200 Coal Bank Hollow Road, Blacksburg
6. County Convenience Site – 4680 Prices Fork Road, Blacksburg
7. Gateway Baptist Church – 2196 Harding Road, Blacksburg
8. New Pentecostal Church – 2120 Branch Street
9. Elliston Fire Department – 5001 Enterprise Drive, Elliston
10. Blacksburg Estates Mobile Home Park – 301 Givens Lane, Blacksburg
11. Slussers Chapel Church – 1531 Mount Taber Road, Blacksburg
12. Plum Creek Park – 1515 Hornsby Road, Christiansburg
13. Motor Mile Park – 2306 Tyler Road, Radford
14. Montgomery County Government Center – 755 Roanoke Street, Christiansburg
15. Former Rowe Furniture Building – 415 Cambria Street, Christiansburg

Carts Powered via HughesNet Satellite:

16. Abundant Life Fellowship Church – 4491 Old Pike Road, Pilot

17. Crockett Springs Church – 2080 Crockett Springs Road, Shawsville
18. Shawsville Rescue Squad – 6620 Roanoke Road, Shawsville
19. Halls United Methodist Church – 4302 North Fork Road, Elliston
20. Lafayette United Methodist Church, 5310 Walthall Street, Lafayette

The construction cost of the WOW cart trailers was \$80,000. The 15 carts powered by Verizon cost \$480 per cart annually (\$7,200) total. For the five carts powered by Hughes Net satellites, the cost was approximately \$23,850 for hardware and installation, as well as a one-year contract for maintenance. This was partially paid by CARES Act funding, and the remainder was paid for by the county's Economic Development Office.

Since the deployment of the carts, the Economic Development staff has been making regular trips out about once per month to check on each location and make sure the carts are still receiving a signal and have not been moved or physically altered. We have also kept a close eye on the usage reports we have gotten back from the service providers that show the total data usage for each cart in gigabytes. If a cart is listed as having no data usage on those reports, it is a good indication to us that the cart is not in an optimal place to help the public and could probably be moved to a better location.

On average, our data usage reports have shown that the most used WOW carts are the ones placed at the Montgomery County Government Center, the County convenience site on Merrimac Road, Gateway Baptist Church in Blacksburg, and the former Rowe Furniture building near the Christiansburg Rec Center.

Cart Location	Town	Cart #	December	January	February	March	April	May
Sandstone Market	Christiansburg	1	4.534 GB	11.295 GB	1.663 GB	1.342 GB	4.648 GB	2.984 GB
*Fieldstone (new location 5/21)	Blacksburg							
County Convenience Site - Merrimac	Blacksburg	2	4.712 GB	14.293 GB	30.018 GB	12.779 GB	12.653 GB	8.771 GB
Riner Rescue Squad	Riner	3	3.570 GB	.010 GB	1.036 GB			
Longshop-McCoy Fire Station	Blacksburg	4	7.831 GB		7.209 GB	12.471 GB	9.819 GB	8.133 GB
County Convenience Site - Coal Bank Hollow	Blacksburg	5						11.130 GB
County Convenience Site - Prices Fork	Blacksburg	6	2.036 GB	3.641 GB	5.203 GB	.704 GB	.170 GB	.014 GB
Gateway Baptist Church	Blacksburg	7	13.062 GB	7.926 GB	16.039 GB	12.526 GB	15.127 GB	12.591 GB
New Pentecostal Church	Blacksburg	8	1.516 GB	.475 GB	.004 GB	1.281 GB	.286 GB	29.939 GB
Elliston Fire Department	Elliston	9	.611 GB	.633 GB	5.368 GB	7.650 GB	6.558 GB	4.840 GB
Former Shawsville Elementary School	Shawsville	10	42.640 GB	15.358 GB				.099 GB
*Blacksburg Estates (new location 6/21)	Blacksburg							
Slussers Chapel Church	Blacksburg	11	.082 GB	1.004 GB	.297 GB	.719 GB	2.989 GB	10.562 GB
Plum Creek Park	Christiansburg	12		5.773 GB	2.804 GB	1.039 GB	.685 GB	.966 GB
Motor Mile Park	Radford	13	1.627 GB	13.706 GB	4.430 GB	9.503 GB	1.567 GB	1.972 GB
Mont Co Government Center	Christiansburg	14	31.045 GB	12.611 GB	18.458 GB	16.980 GB	24.616 GB	32.690 GB
Former Rowe Furniture Building	Christiansburg	15	48.191 GB	94.801 GB	44.989 GB	21.129 GB	10.338 GB	6.851 GB

However, when looking at data usage, it is also important to keep in mind that that does not reflect the actual number of people using each cart, but rather the amount of data that is being used. If, for example, one person is using one of the hotspots to upload very large files, that data usage amount could skyrocket. Transversely, a large number of people could be using one cart, but only for tasks that use a very small amount of data, and that would not be reflected in the reports. It is also worth noting that the main intent for the carts was to assist children with little to no internet access while doing virtual schooling, and in that time, Montgomery County Public Schools has returned to fairly normal in-person scheduling.

While these carts are ultimately a very short-term solution to the County's broadband access issues, they have been well-received in the community. Particularly for the carts that

were placed at churches, there was enthusiastic support from the parishioners who helped the county get set up on the properties, and we have heard from many citizens whose children have used the hotspots to upload schoolwork. The carts were also featured by the *Roanoke Times* in August, and by WDBJ7 in both September and October.

Montgomery County internet possibility: wireless on wheels?

Roanoke Times, August 2, 2020, by Yann Ranaivo

Montgomery County officials hope to craft some kind of plan later this year for providing broadband to residents who still have little to no access to high-speed internet. But county leaders say that, at least in the meantime, some service can be offered to school-age children who during the COVID-19 pandemic have become increasingly dependent on the internet for learning.

https://roanoke.com/news/montgomery-county-internet-possibility-wireless-on-wheels/article_cd578f58-674e-5290-836d-eacc37d4a854.html

Montgomery County broadband access to expand this week

WDBJ, September 28, 2020, by Jen Cardone

Montgomery County is getting ready to ramp up its broadband this week as the need for internet access continues. The county plans to take out 20 hotspots later this week to get easier access for people with little or no internet connection.

<https://www.wdbj7.com/2020/09/29/montgomery-county-broadband-access-to-expand-this-week/>

Montgomery County begins installation of ‘WOW Carts’, internet hotspots

WDBJ, October 5, 2020, by Jen Cardone

Montgomery County has taken its first step to expand broadband access to people who have little or no ability to connect. Nestled on the front lawn of the Longshop McCoy Fire and Rescue department sits a new WIFI hotspot.

<https://www.wdbj7.com/2020/10/06/montgomery-county-begins-installation-of-wow-carts-internet-hotspots/>