

FROM HERE TO BROADBAND ACCESS: THE GEORGIA BROADBAND MAP

NASCIO 2021 State IT Recognition Awards



Carl Vinson
Institute of Government
UNIVERSITY OF GEORGIA



gta
GEORGIA
TECHNOLOGY
AUTHORITY

CATEGORY: Data Management, Analytics, and Visualization

STATE: Georgia

CONTACT: Calvin Rhodes, State CIO
(404) 463-2340
calvin.rhodes@gta.ga.gov

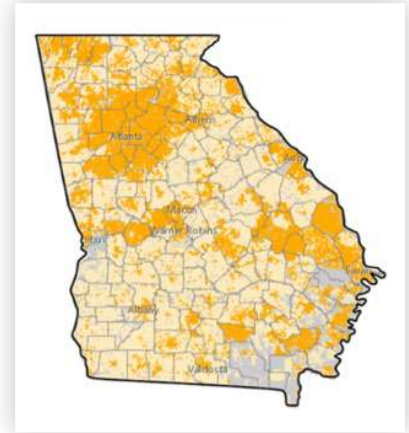
PROJECT INITIATION DATE: May 7, 2018

PROJECT END DATE: June 30, 2020

EXECUTIVE SUMMARY

In Georgia, you don't have to go way out in the country to lose broadband access. Fulton, the state's most populous county, slices right through the heart of Atlanta, and, despite its big-city flavor, it has sections where thousands of residential and business addresses lack broadband access.

Away from urban centers, the likelihood that communities go without access to a broadband connection, of course, increases. For Georgia, the list of challenges in extending broadband's reach mirrors other states', and funding looms large on that list. Even where funding sources are available, channeling those limited resources to communities where they'll have greatest impact can't be assured through any simple math. You first need to know where broadband access is and isn't. And then in areas where it isn't, you need to know who and how many are going without. Georgia set out to build that understanding through its ambitious, if tamely titled, **Georgia Broadband Map project**. When it debuted in June 2020, the map set a new gold standard in broadband access mapping and made Georgia the first state to map availability down to the street-address level.



*Georgia Broadband Map:
Whole-State View*

That means identifying the haves and have-nots for every single residential address and every single business address (combined, more than five million of them) across the state. The Georgia Technology Authority coordinated what proved to be a true big data exercise, accomplished on the strength of public-private partnership. And the new map stands to facilitate a very tangible benefit for more Georgians – the broadband access that today is so enmeshed with economic development, education, healthcare and more.



When it debuted in June 2020, the map set a new gold standard in broadband access mapping and made Georgia the first state to map availability down to the street-address level.

Can a map claim credit for running new fiber to a previously unserved or under-served Georgia community? Can it win grant money or entice investment for broadband projects that had languished on the shelf?

Certainly not all on its own. The new broadband map instead provides reliable information (to be refreshed annually) decision-makers can use to fuel action on broadband expansion; that's municipalities, internet service providers large and small, and electric membership cooperatives (EMCs), coming together with novel approaches to new broadband service.

Is it working? Georgia is seeing encouraging signs. Cities, counties and communities are looking to the map for information that plainly and precisely illustrates their broadband needs. Service providers and investors are looking too to help gauge business prospects. Discussion is better informed. Results (i.e., additional broadband access) are not expected to come all at once nor always in the same packaging. But already several broadband projects have been announced, like one that stands to bring expanded broadband service to as many as 80,000 addresses across 18 middle Georgia counties.



Information matters in this quest for broadband coverage, and the Georgia Broadband Map presents new insights that were previously out of reach. That bodes well for Georgians (10.7 million of them) and businesses operating in the state. After all, each individual and enterprise is a broadband stakeholder.

IDEA

If there was any lingering doubt, the pandemic erased it: Broadband access is plain essential. Essential to today's ways of business, agriculture, government, education, healthcare, communication and more. Essential to what many would consider full participation in today's society, for better or worse.

Like other states, Georgia recognizes it has broadband access gaps within its borders, and plenty of people and businesses operating in those gaps. Like other states, Georgia has seen corrective steps progress too slowly. And while communities have remained without high-speed internet access, their need for broadband service has only increased. There's risk too that opportunities, economic and otherwise, have skipped over them.

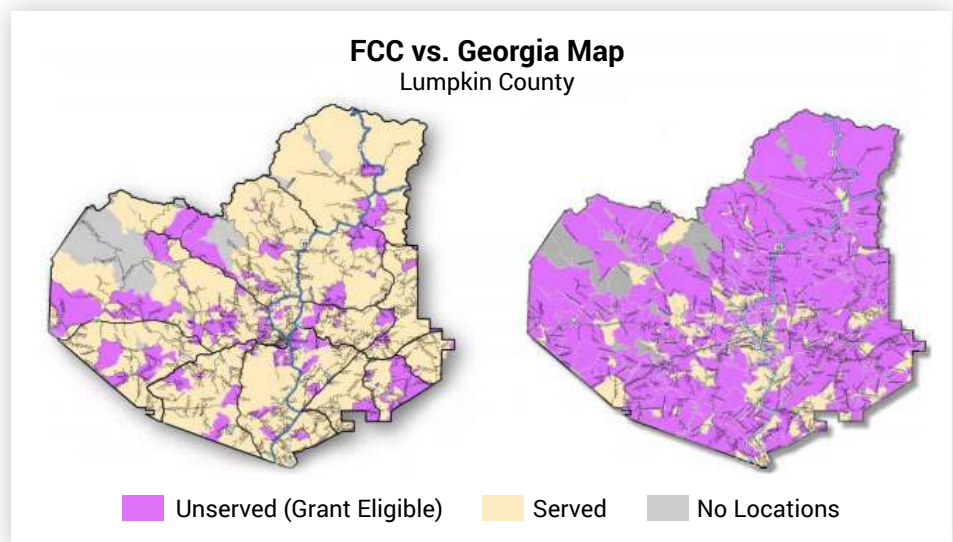


Now, how does a mapping exercise figure into any solution? When you want to get on the internet, you need a network connection, not some snazzy map. Well, in baseball, they say, "Hit 'em where they ain't." There's a slightly twisted lesson in that for tackling broadband access gaps – you need to know where they ain't. And that's where the Georgia Broadband Map project comes in.

By a provision of a 2018 broadband service expansion act, the Georgia legislature directed the Department of Community Affairs, in coordination with the Georgia Technology Authority (GTA), to create a map showing precisely which Georgia communities are served and not served by high-speed internet service. Such information is deemed crucial for mobilizing broadband expansion projects using already-available funding (e.g., federal grant programs), as well as spurring new investment.

Why not just use the well-publicized Federal Communications Commission (FCC) maps that had already been published? The FCC maps show broadband service provision across the states by geographic unit of census blocks. Importantly, FCC maps show a block as served with broadband if even one address in that block has access. And that can overstate areas served.

Georgia wanted more precision. Its map would define a census block as *served* with broadband service if 80 percent or more of the addresses (business and residential) in it have access. If more than 20 percent of addresses lack access, the block is marked as *unserved*. Being able to make that distinction required knowledge of broadband access (or lack of it), address by individual address; Georgia comprises some five million addresses, residential and business combined.



“This innovative map will enable the private sector to better see where Georgians lack access to high-speed internet, improve open-market competition and help providers explore partnerships to address the connectivity needs of our state.” – Georgia Gov. Brian Kemp

IDEA (continued)

When in June 2020 it published its online map showing areas served and unserved by broadband service, down to the address level, Georgia became the first state to accomplish the feat. **The map illustrated a stark truth: Some 507,000 homes and businesses statewide lacked access to high-speed internet service (generally accepted as 25 Mbps download speed and 3 Mbps upload speed minimum).** That's 10 percent of all locations, several percentage points higher than FCC maps had suggested. A lopsided 70 percent of the unserved sat in rural areas. In the continuing discussion of a digital divide, numbers like those couldn't be ignored.



The map itself proved compelling too. Quickly, Georgia started fielding questions. Nearly a dozen states inquired, including Pennsylvania and Maine where similar mapping projects have since taken shape. The Congressional Budget Office requested mapping guidance to support its analysis that informs Congressional budget considerations. Members of the mapping team have been called on to address NASCIO-sponsored events. And within Georgia, state agencies including the departments of Education and Transportation, as well as local government entities, have sought input.

If the map could make a difference in getting the wheels rolling, or rolling faster, on broadband service expansion, it's the kind of impetus needed not just in Georgia, but nationwide. Broadband expansion/improvement makes the top 10 list in NASCIO CIO survey findings (number 4 in the latest survey) for good reason. It's a widespread concern. It wins high visibility with constituents. It claims close association with economic development. It has legislators and governors feverishly seeking solutions, and it's a tough nut to crack. Georgia's map and its mapping approach could help break the shell. It could open paths not just to precise, accurate mapping of access, but also to new kinds of public-private partnerships to expand broadband service.

IMPLEMENTATION

How do you pull off a bit of mapping magic like Georgia envisioned? To oversimplify, you gather information on every single business and residential address. You convince internet service providers operating in-state to deliver information on where they're providing broadband service. You then overlay the location data against the service data and display it in an easy-to-understand, interactive online map. Done.



More specifically, you set up an approach that brings together the state agencies, the local governments and the service providers in the broadband picture. You designate funding (\$1M by the Georgia legislature) for map creation. You implement a set of complementary broadband expansion measures. (The 2018 legislation, the Georgia Broadband Deployment Initiative, stipulated mapping and 12 other related steps.) You set a target for the map's introduction (June 2020), and you assign somebody responsibility for making it happen. Oh yeah, and you make provision for renewing the map annually.

IMPLEMENTATION (continued)

Responsibility fell to the Georgia Department of Community Affairs. They delegated mapping duties to the Georgia Technology Authority, and GTA engaged an invaluable partner in the Carl Vinson Institute of Government at the University of Georgia. It was the Institute of Government that performed the real hocus pocus.

For location data, the Institute of Government leaned on commercially available information (Digital Map Products datasets), supplemented by county tax appraiser parcel data, United States Postal Service address data, Microsoft building rooftop data and electricity meter location information. Integrating all of those datasets produced the most accurate, complete location information possible, right down to the latitude and longitude coordinates associated with each residential and business address in the state. The technical team describes it as a “parcel-level shapefile” approach. It came together in the form of a master address file.

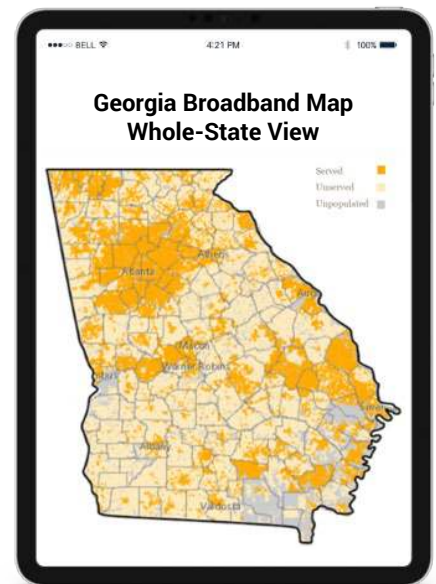
High-speed internet service provision data held its own challenges. That involved coordinating input from 44 internet service providers active across Georgia – input they weren’t in any habit of delivering nor inclined to divulge without promise of preserving its privacy. With considerable technical assistance, coaching and cajoling in the first year, service provision data flowed in from the providers. It was checked against the state’s master address file, returned to providers for correction and confirmation, and then compiled.

“A lot of residents were unable to get internet access at home. In order for kids to do homework, they would have to pack them in the car and head to town and use the Chick-fil-A or Starbucks lobby.”

– Georgia Senator Steve Gooch (District 51, north Georgia – Lumpkin Co.)

With all data in hand, the Institute of Government used the latest mapping tools to create the views of broadband access in Georgia that today appear on the [Georgia Broadband Deployment Initiative website](#). There are three views. One shows the whole of Georgia, with color coding indicating areas served or unserved by broadband, as well as scattered regions where there are simply no locations to be served. A second view makes this information available by county of interest. And a third interactive map allows a side-by-side comparison of the served-unserved mix as reflected by the FCC map versus the Georgia map. In all three, it is *access* to broadband service that’s depicted and not *subscription* to broadband.

In an encouraging indicator for the annual renewals of the map, the state’s broadband providers continue to submit updates as requested. Also, infrequent petitions from providers over the picture presented by the maps suggest consensus on map accuracy. These data handling processes are part of broader governance implemented by an inter-agency team comprised of the Department of Community Affairs and GTA, as well as the Department of Economic Development, the State Properties Commission, and the Georgia Department of Transportation. This group formulated overall project management and communication structures. Outreach to broadband stakeholders has capitalized on workshops and webinars, as well as partnerships with the Georgia Municipal Association and Association County Commissioners of Georgia – two key voices in the Georgia local government community.



IMPACT

Imagine you're announcing plans to introduce new broadband service for a previously unserved area of Georgia. You want a splash, a reason for excitement and press coverage. Who do you place at the podium? Senior leaders from the provider, likely. Elected officials – the highest profile folks you can persuade. A local chamber spokesperson too. They'll talk about investment in the community, benefits to citizens and businesses and schools, and the promise of a brighter economic future for the area. While the Georgia Broadband Map may not be center stage, it is exactly the sort of backstage player that probably should be credited as a motivator and mobilizer.

That behind-the-scenes influence promotes broadband service expansion in several ways, all enabled by the Georgia map's more precise tracking of broadband service access:

- Better-informed decision-making on broadband investment in the public *and* private sectors
- More accurate cost modeling for buildout of broadband service and infrastructure
- Stronger grant applications for broadband projects
- Fuller capitalizing on available funding and its most efficient use
- Sturdy bridges to collaboration between government and broadband providers
- And perhaps, higher prioritization of broadband projects among public officials



There are reasons to think the map is exerting influence. Expansion projects are gaining traction. Near the Alabama border, the west Georgia counties of Heard, Haralson and Carroll look forward to an expansion of fiber-to-the-home service reaching an additional 10,000 homes and 30,000 Georgians. The north Georgia counties of Cherokee, Dawson, Lumpkin and Pickens anticipate a project that will bring 250 miles of fiber, extending access to 6,000 customers. Three sizeable projects announced in the first few months of 2021 promise broadband service expansion in some 20 middle Georgia counties combined. These efforts stand to extend high-speed (fiber) internet service to 12,000, 22,000 and 80,000 homes and businesses per project. The investments are impressive – many tens of millions of dollars for even the mid-sized expansions. In all cases, the service expansions are partnerships between broadband service providers and electric membership cooperatives (EMCs).

“The solution to broadband in the state of Georgia is not a rifle-shot, one-size-fits-all solution. It is a patchwork that involves many different providers working in partnership to address the needs in various parts of the state.” – Georgia Department of Community Affairs Commissioner Christopher Nunn

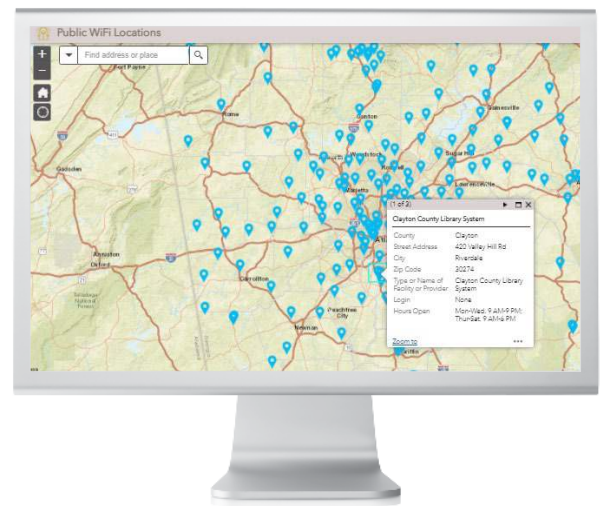
Hard-won state funds for Georgia broadband expansion have materialized – \$20M in fiscal year 2020 (ended June 30, 2020) and another \$10M in FY 2021 and subsequent years. Some Georgia communities are providing financial support too. Added to some sizeable federal grant pools (e.g., FCC and U.S. Department of Agriculture programs, and the CARES Act), this public money not only deepens ready resources, but may also encourage further private sector investment. Federal grants factored into the west Georgia expansion and at least one of the middle Georgia projects.

IMPACT (continued)



Even before broadband service expansion projects gained their current momentum, the Georgia map showed its utility. As the pandemic took hold of daily life in early 2020 and schools switched to virtual learning, too many Georgia students found themselves coping, best they could, without broadband access at home. The University of Georgia Institute of Government estimated that as many as 110,000 students faced that dilemma. Using data collected through the broadband map project, a special-purpose map was published on the Department of Community Affairs' broadband website. It showed locations statewide where students could find free public Wi-Fi access. That service often would be outside then-closed public buildings (e.g., libraries, schools), with people connecting from cars parked near those facilities.

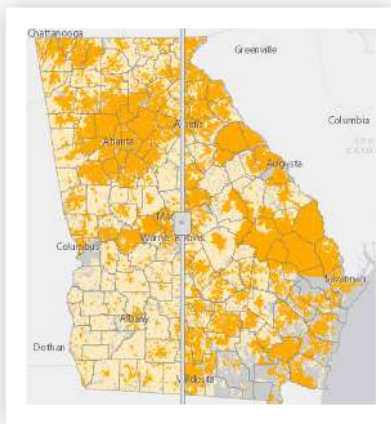
If a parking lot classroom sounds like a jerry-rigged solution, consider that it provided a much-needed option to students, parents of students, and the state's school systems suddenly immersed in online learning. In mountainous north Georgia, Fannin County School System, for example, strategized using the public Wi-Fi map. The data helped them plan how to most effectively extend internet access to its students through a mix of personal hotspots, Wi-Fi access from school busses and in school parking areas, and AT&T WiFiRanger units (think Wi-Fi from an RV parked at an apartment community).



Public Wi-Fi Locations Map

“This pandemic highlighted many challenges for communities outside metro Atlanta, but none more so than the critical need for high-speed internet access for better health care and educational outcomes, for job opportunities, and something as simple as keeping in touch with loved ones.”

– Georgia Gov. Brian Kemp (State of the State address, 2021)



Georgia Broadband Map: FCC View vs. Georgia View – The map to the left of the swipe bar presents Georgia-collected data and the map to the right presents FCC June 2019 data. On the broadband website, the bar can be swiped to visualize either dataset.

Fannin and other under-served areas can draw confidence from Georgia's commitment of about a half million dollars annually to keep its broadband map up-to-date, a winning investment on behalf of Georgians. And mapmakers at the University of Georgia Institute of Government envision a time when the exercise will no longer be needed. A day when broadband access covers the state, with high-speed internet service available in Fulton County in southwest Atlanta, all the way to the farming communities of southwest Georgia. As UGA researcher Eric McRae put it, “Long term I'm sure we'll be worked out of a job as far as [mapmaking] goes, but there's plenty of other work to be done.”