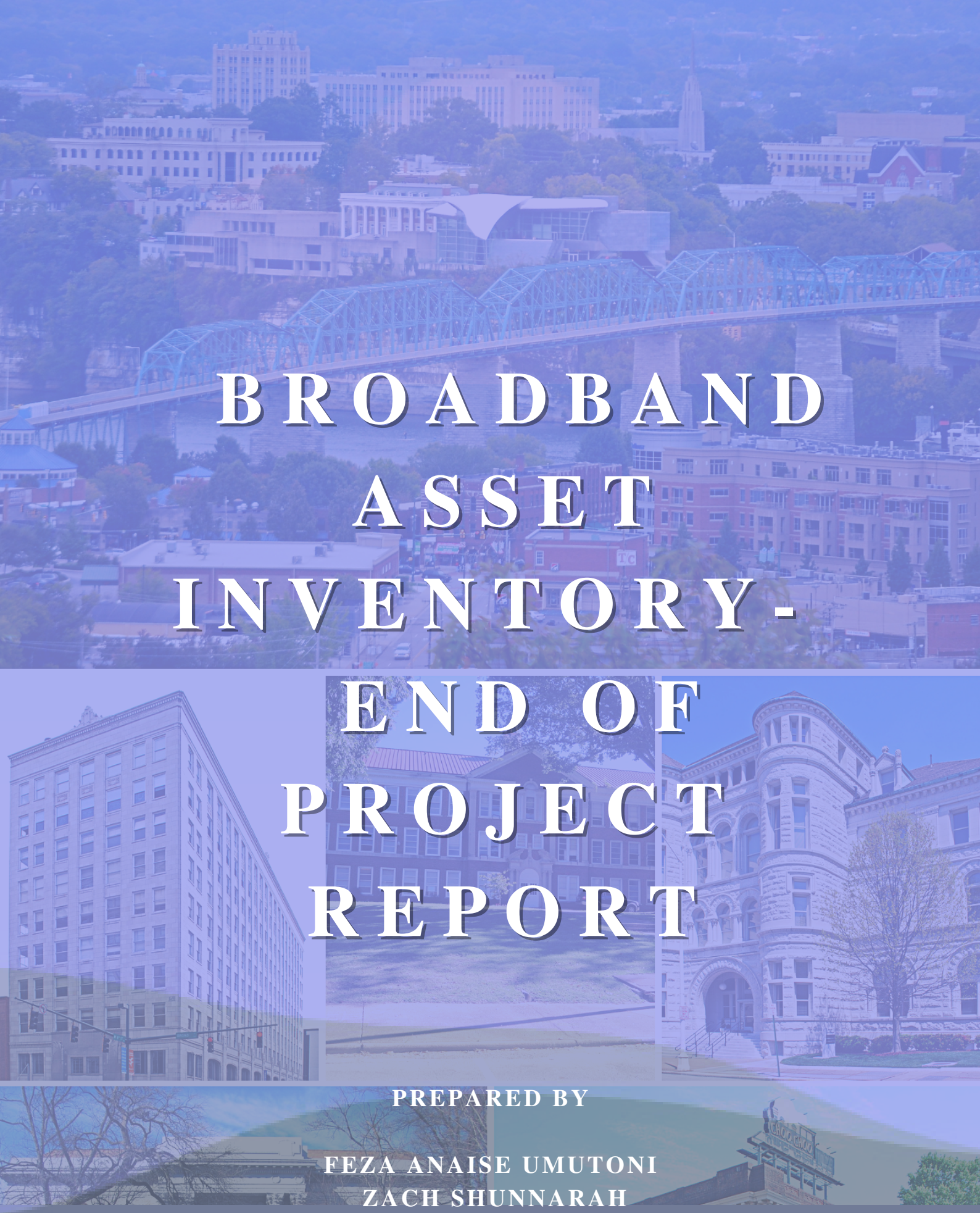

BROADBAND ASSET INVENTORY- END OF PROJECT REPORT

PREPARED BY

FEZA ANAISE UMUTONI
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PROJECT SUMMARY

Due to an insufficient understanding of broadband assets and access in the tristate state region of Tennessee, Georgia and Alabama, Thrive regional partnership collaborated with us sewanee data lab students to create an interactive open source map indicating the available broadband assets in 16 counties in the region and also highlight the disparity in broadband asset and distribution at first glance on the map. With this open source geo spatial application, the necessary intervention to bridge the gap in broadband disparity can be made.

BACKGROUND

The Federal Communications Commission defines broadband as “any technology capable of supporting the transfer of data exceeding 200 kbps in at least one direction (upstream or downstream)” (Flamm & Chaudhuri, 2007). Kbps stands for kilobits per second. Verizon also provides information regarding the broadband services available. They state that “broadband provides high-speed internet access via multiple types of technologies including fiber optics, wireless, cable, DSL and satellite” (What is Broadband).

In terms of diversity and overall development, the tri-state region has a legacy of lagging behind in comparison to the rest of the country. Without intervention, this reality is projected to worsen by the year 2055. Hence, we have predicted that through increasing broadband coverage, we are providing a stepping stone for technical and broader economic advancement.

Ultimate Goal:

“Broadband can be built to unite, equitably, and without prejudice. We can make our region a place where both innovation and investment in such infrastructure benefit everyone who lives here, no matter ethnicity, rural or urban, or sector.” (Thrive Regional Partnership, n.d., p. 1)

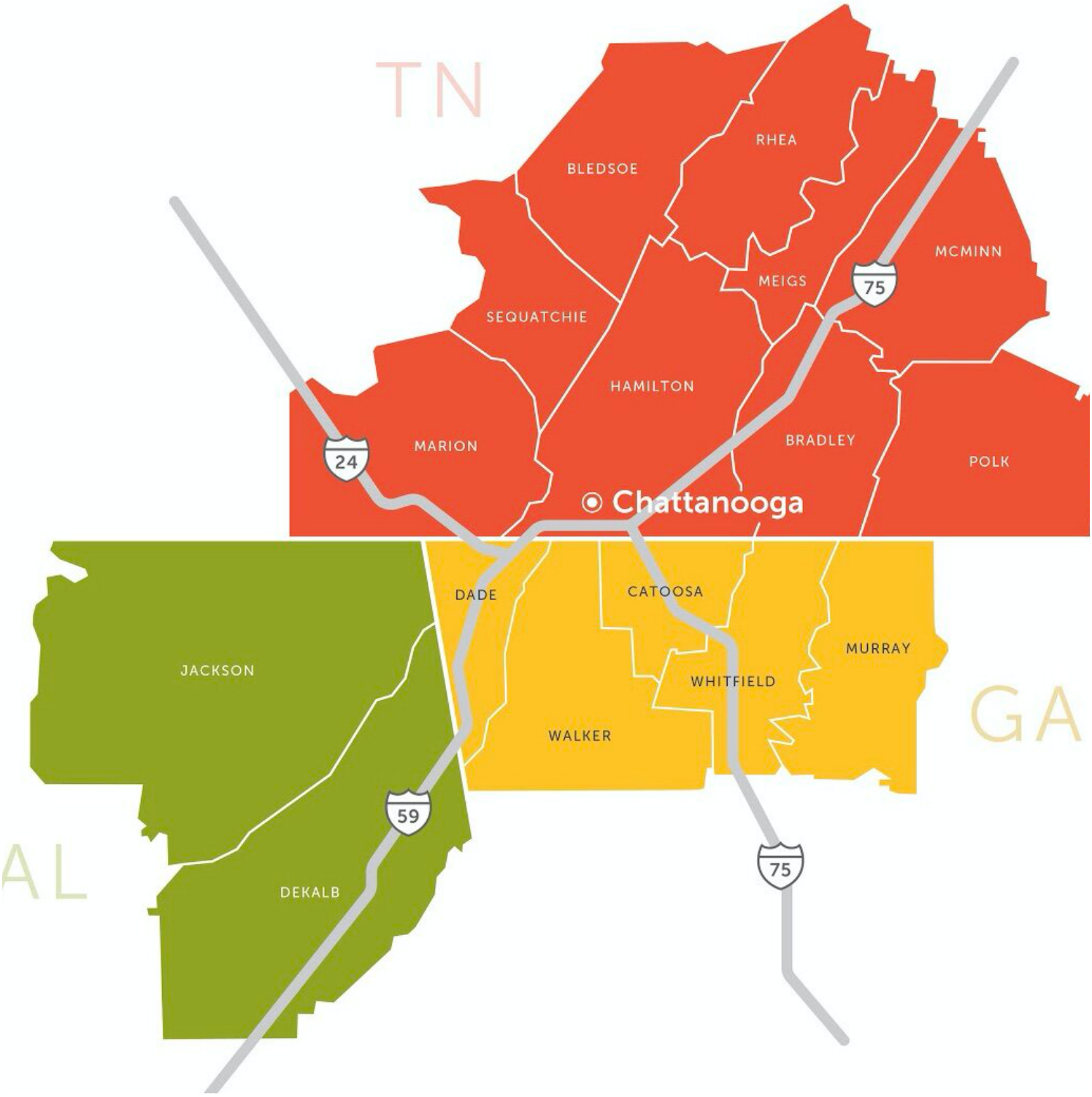
Geoff Millener, Senior programs and operations officer for the Enterprise Center

CLIENT

In our instance specifically, we are working with THRIVE Regional partnership, and it is vital to understand their achievements. They have been successful in raising awareness for this cause, as well as jumpstarting efforts to provide access. In order to build on this, we must follow their core values of stewardship, relationship-building, inclusiveness, results-oriented, and quality (Thrive). By using these values, THRIVE is helping those people in the Tri-state area, specifically some of the "600,000+ Tennesseans who have no access to a wired connection capable of 25 MBPS," which is the required broadband access speed ("Broadband by the Numbers," n.d.). Our ultimate goal, as stated by Geoff Millener, senior programs and operations officer for the Enterprise Center, is as follows: "Broadband can be built to unite, equitably, and without prejudice. We can make our region a place where both innovation and investment in such infrastructure benefit everyone who lives here, no matter ethnicity, rural or urban, or sector" (Thrive Regional Partnership, n.d., p. 1).

This broadband asset inventory is a small part of the larger project of Regional broadband alliance, which is one of their main project that is focusing on increasing broadband equity and digital literacy in the tristate region.

AREA OF IMPACT



Throughout the summer, our team gained valuable experience. Not only did we gain a better understanding of broadband and its accessibility, but we also honed in on our networking and consulting skills. Specifically focusing on the lack of broadband access in the tri-state region, we were surprised at the lack of access in rural areas. In fact, the FCC reports that more people have broadband than what is actually the case. This is alarming, and only adds to the lack of awareness around this issue. We as a group were happy that we could work with a corporation to help raise awareness for this issue, and work towards a solution for this vital matter.

DATA DESCRIPTION

Our data was compiled through client contact, partner contact, and google search. Our data contains assets for the sixteen counties in the tri-state region of Tennessee, Alabama, and Georgia that will be displayed in a geo-spatial web application.

1st Asset Inventory: Libraries. This database included the name of the library, as well as the location on the map. When the marker is clicked, specific broadband services appeared. These services include but are not limited to whether the library has wifi, computer classes, and printing.

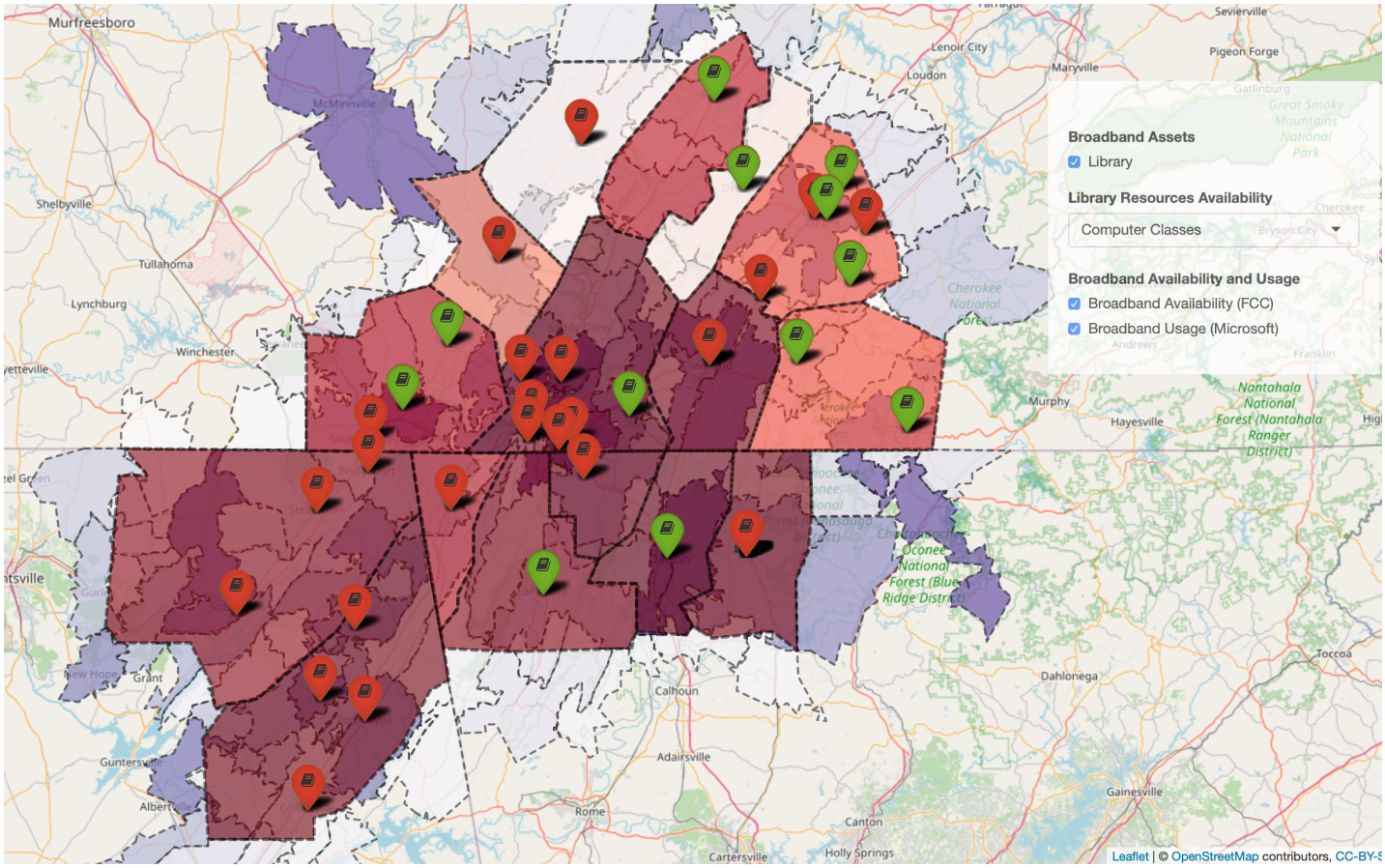
2nd Asset Inventory: ISP (internet service providers). In each of the counties, the internet service providers were listed for each zip code. The providers were listed separately depending on whether they were residential or mobile. The residential isp's were specifically listed depending on the type of connection. The mobile providers were categorized into whether they had four basic types of providers: AT&T Wireless, T-Mobile, Verizon Wireless, and Xfinity Mobile.

County boundaries and zip code boundaries were created using polygonal shape-files sourced from the tigris package.

PRODUCT/OUTCOME

The geoweb application is an interactive map highlighting different assets within the tri-state region. When a marker is clicked on the map, the map will zoom in on the asset and provide the viewer with various information, including but not limited to the name, address, and broadband information. Examples of broadband information include whether the asset has internet access and/or internet source lending, as well as different internet service providers within the area.

GEO-SPATIAL WEB-APP



We believed this end product would be a good fit to highlight the problem surrounding lack of broadband access because it not only shows where people can access broadband if needed, but it also depicts areas in which there is less access to broadband. This can be analyzed and used in the future to continue developing this project and address broadband inconsistencies.

INTERVIEWS

We interviewed five community members to get their views on broadband accessibility, namely: the president and CEO of Enterprise Center, Debra Socia; Executive Director of Rhea Economic and Tourism council, John Bamber; the President and CEO of Mountain Lakes Chamber of Commerce, Rick Roden; Public Relations Director of Walker County GA, Joe Legge; and the CEO of Thrive, Bridgett Massengill. We asked interviewees a series of questions on the challenges they and their constituents face, the contribution of broadband and digital competence in both causing and solving those challenges, as well as what has been and/or can be the role of both locals and officials in addressing those issues. A lack of digital devices and literacy, internet providers being private market driven, presence of state laws limiting expansion of broadband, and a lack of clear understanding of the exact locations underserved were the common challenges referred to by majority of interviewees. Featured below are a couple of quotes collected during the interview process .

“We really don’t have a good idea of the problem itself which is why we need to find a place and sit down and look for guidance” (Anonymous)

“There is no business or industry that doesn’t need broadband” (Rick Roden)

“Change state laws and engage locals to solve local problems” (Debra Socia)

“Broadband is seen as a luxury and not as a necessity, it will be helpful if it was treated as a utility just like electricity or water” (Joe Legge)

“Thrive has helped Dayton to find its identity." (John Bamber)

“We need to be thinking on a regional level on how we are solving these problems” (Debra Socia)

“Without broadband you will be up the creek without a paddle”(Rick Roden)

“Because broadband is as important if not more so as the road with drive on” (Bridgett Massengill)

"The truth is, it’s difficult to get a grasp on the internet struggles of a rural community. Lack of access is generally due to one of two things: geographical (infrastructure) limitations, or socioeconomic struggles. We hope to be able to leverage resources so that neither of these continue to be a barrier to broadband access into the future." (John Bamber)

TEAM

FEZA ANAISE UMUTONI

FEZA: Personally, as an international student from Rwanda, "a third-world country", broadband disparity is somewhat the norm. However, I never thought it could also be a problem in a "first-world" country like the United States, until I worked on this project. Being part of a solution to a relatable problem in a foreign country has been an absolute learning process and a case study for me. Therefore, I hope that someday I can use this project as a reference to solve broadband disparity in my home country.

ZACH: Growing up in Birmingham. I did not realize the severity of this issue, especially in the northern counties of Alabama. Broadband is vitally important in almost every aspect of one's life, and the ultimate goal should be to have equitable access to broadband regardless of location.

ZACH SHUNNARAH

PRAVESH AGARWAL

I've worked as a web consultant for over a year now. But this summer, I experienced work as a data consultant through this project. It was a different approach to problem solving that I will carry forward in my future endeavors.

In this information age, internet is a necessity and inequitable internet access feeds into many other inequalities prevailing in the society such as education, work, social services...

KIND REGARDS

The Sewanee Datalab Institute has provided a great experience for our team, and we would like to thank everyone who made this program possible. We would also like to give a special thanks to the following people:

Sewanee DataLab

Mr. Rayid Ghani - Carnegie Mellon University Professor
Dr. Jim Peterman - Director of Sewanee Civic Engagement
Dr. Matthew Rudd - Sewanee Math Professor
Dr. Joe Brew - Cofounder Hyfe and DataBrew
Mr. Ben Brew - Cofounder DataBrew
Dr. Eric Keen - Sewanee Environmental Studies Professor

Client: Thrive Regional Broadband Alliance

Shannon Millsaps - Director of Operations
Rhett Bentley - Director of Communications
Geoff Millener - Senior Program and Operations Officer (The Enterprise Center)

External Links:

Github Wiki:

Home · sewaneedata/broadband Wiki (github.com)

Geoweb Application:

BAI Map (shinyapps.io)

Interview Summary:

broadband/Interview Summary.pdf at main · sewaneedata/broadband (github.com)

Thrive Website:

Regional Broadband Alliance — Thrive Regional Partnership

Research Sources:

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Thrive Regional Partnership. (n.d.). Regional Broadband Alliance. https://www.thriveregionalpartnership.org/projects/regional-broadband-alliance