

Website Accessibility Assessment for Forsyth County Public Library

Introduction

Forsyth County Public Library (FCPL) is a public library system located in Winston-Salem, North Carolina. The library system serves a diverse population of approximately 382,000 residents across Forsyth County (United States Census Bureau, 2023). The library provides community resources to children and adults of all ages and diverse backgrounds, offering collections, programs, and digital services. The system operates multiple branch locations throughout the county to serve urban, suburban, and rural communities.

The purpose of this report is to assess the digital accessibility of the FCPL website (forsyth.cc/library/) and recommend improvements to accommodate community members with disabilities, limited English proficiency, and age-related accessibility needs. Digital accessibility refers to the practice of designing websites and digital content so that people with disabilities, language barriers, or varying levels of digital literacy can use them effectively. According to the Web Content Accessibility Guidelines (WCAG), accessible websites should be perceivable, operable, understandable, and robust for all users (W3C, 2023).

The goal of this assignment is to learn more about Forsyth County's service area in terms of various demographic characteristics including age, disability rates, and language diversity, and to identify opportunities for the library to improve digital accessibility. I recommend that FCPL managers prioritize website accessibility improvements, including Spanish language support, WCAG compliance, and simplified navigation features. This recommendation is based on evidence from the GIS mapping tool PolicyMap, which reveals substantial populations with accessibility needs throughout the county.

Methods

The primary GIS mapping tool I used to collect demographic data was PolicyMap. The tool allows users to create thematic maps, analyze demographic patterns, and generate custom reports for specific geographic areas.

I began my research by searching for Forsyth County, North Carolina in PolicyMap. I used the Demographics menu to examine various population characteristics relevant to website accessibility, including:

- People with Disabilities, filtered by disability type (vision, hearing, cognitive, ambulatory)
- Age distribution, with specific focus on population 65 and over
- Language spoken at home, including Spanish and other non-English languages

- Racial and ethnic composition

For each demographic variable, I created maps showing distribution by census tract or zip code. I also generated comparison data across multiple years (2019-2030) to identify trends and projected growth. PolicyMap allowed me to visualize geographic patterns and identify which areas of the county had the highest concentrations of populations with specific accessibility needs.

An important limitation of this methodology is that PolicyMap data has a time lag. Some statistics are from 2019-2023, while others include 2025 estimates and 2030 projections based on census modeling. Additionally, disability data is self-reported and may undercount populations who do not identify as having a disability despite experiencing functional limitations.

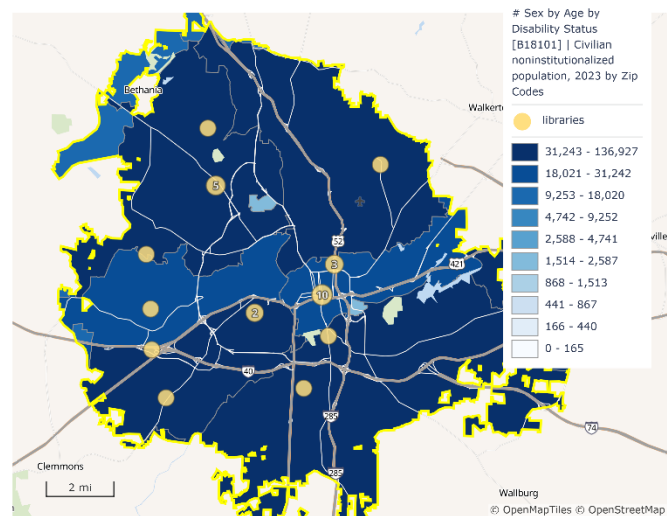
I also conducted a preliminary review of the FCPL website to identify existing accessibility features and gaps. This review was observational rather than a formal audit, focusing on visible elements such as language options, navigation structure, and text sizing capabilities.

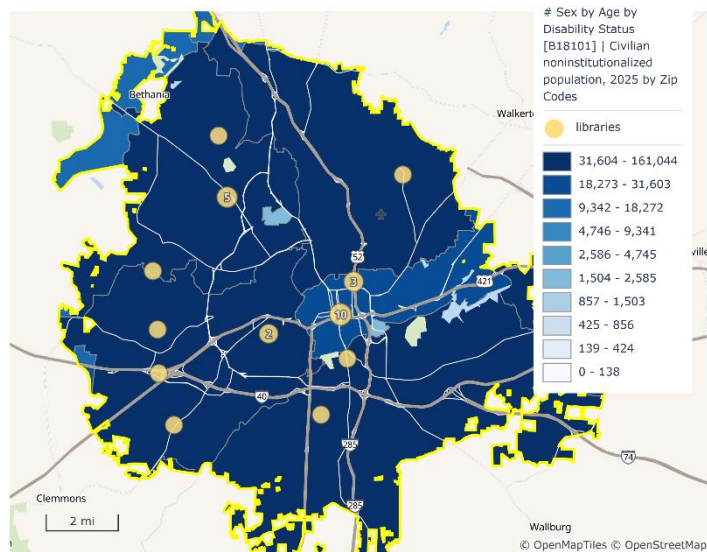
Results

Disability Population

In PolicyMap, I examined the Demographics menu option, People with Disabilities, and analyzed total disability rates across all ages for Forsyth County. This data allowed me to identify the percentage and total count of people with disabilities between 2023-2030. I found that the estimated percentage of people with disabilities in Forsyth County ranges from **11% to 18.59%+ across different census tracts** (2019-2023 data).

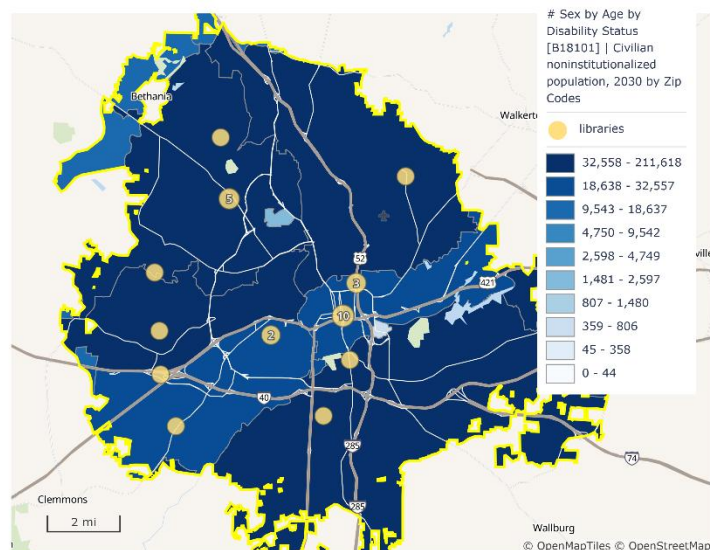
The raw population counts are even more striking. In 2023, approximately **136,927 county residents** had disabilities. By 2025, this number is





estimated to reach **161,044 people**. Most significantly, by 2030, projections indicate **211,618 residents with disabilities**, representing a **54% increase from 2023 to 2030**.

Unlike other demographic variables I analyzed, disability rates showed a remarkably uniform distribution across the county. Nearly all census tracts displayed elevated disability counts, with very few areas showing low rates. This geographic pattern suggests that disability is not concentrated in specific neighborhoods but rather affects residents throughout urban, suburban, and rural areas of Forsyth County in a similar way.



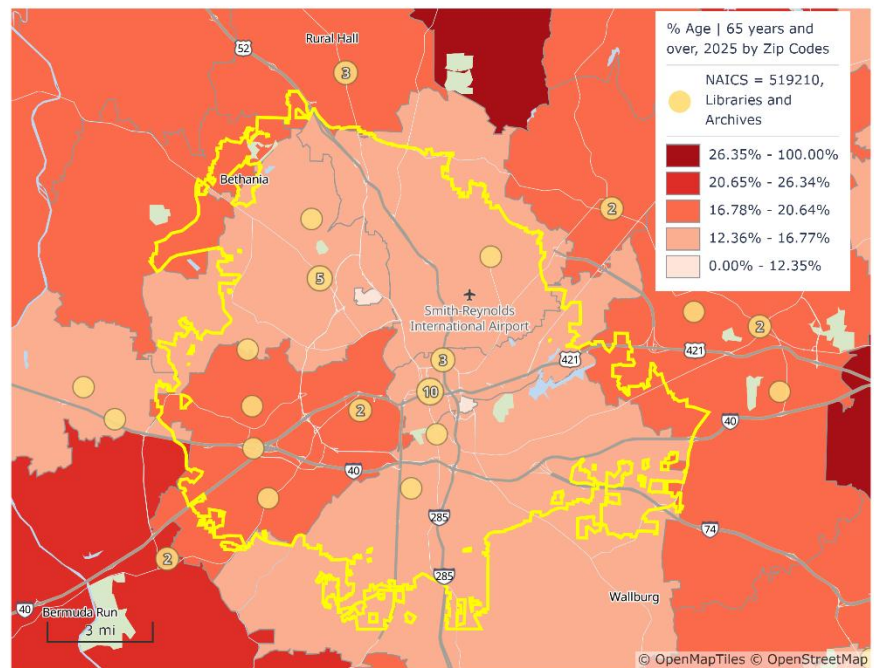
The projected growth in the disabled population (from approximately 137,000 to 212,000 residents over seven years) indicates that website accessibility is not merely a current need but an urgent future imperative. As this population grows by more than 50%, the library's digital services must be prepared to accommodate substantially increased demand for accessible features.

Age Distribution

Age is an important variable in website accessibility research because older adults often face age-related vision decline, mobility challenges, and varying levels of comfort with digital technology. In PolicyMap, I examined age distribution data with specific focus on residents age 65 and over.

I found that certain areas of Forsyth County have exceptionally high concentrations of senior citizens. Specifically, the **Rural Hall area in northern Forsyth County** shows senior populations ranging from **26.35% or higher** for residents in certain zip codes. Similarly, **Bermuda Run in the southwestern part of the county** displays very high senior concentrations (dark red on the map), with some areas exceeding 26% of the population age 65+.

These patterns reveal that certain communities served by the Forsyth County library system have predominantly senior populations. For library branches serving high-senior areas, website accessibility features such as text resizing, high contrast modes, and simplified navigation are essential to serve the local population effectively. These communities may also benefit from in-person technology assistance programs and large-print materials to complement digital services.



Age Map of Winston Salem (Over 65)

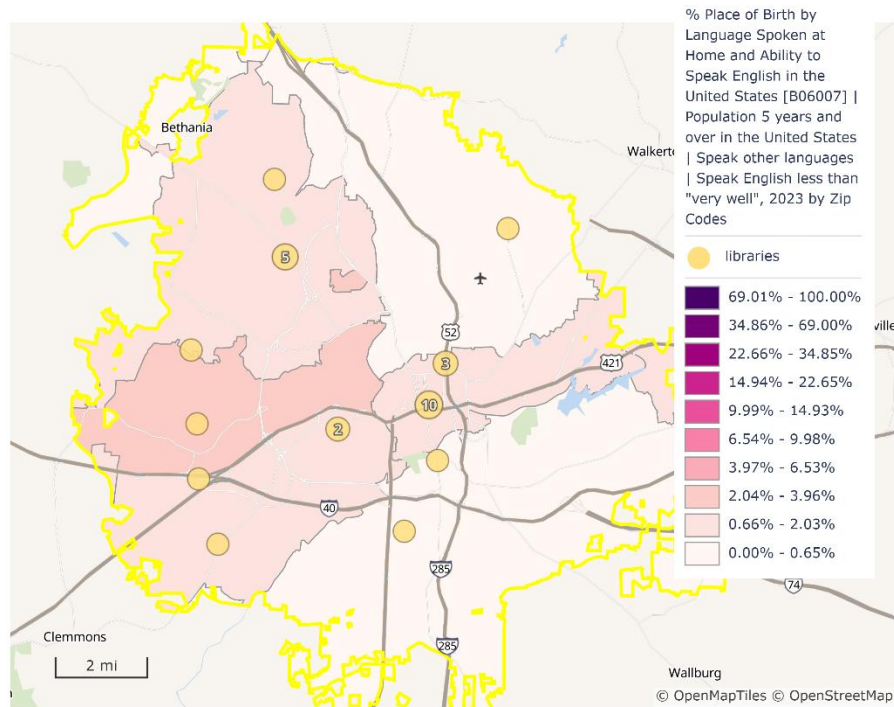
Language Diversity

Another important variable in my research was language spoken at home and limited English proficiency. I used PolicyMap to analyze the distribution of Spanish speakers and other non-English language communities in Forsyth County.

The results showed a clear geographic concentration pattern. The **southeastern portion of Winston-Salem and the Wallburg area** have the highest density of Spanish speakers, with raw counts ranging from **37,409 to 86,682 Spanish-speaking residents** in the highest-concentration zip codes. Urban core areas of Winston-Salem show moderate concentrations of 19,298-37,408 Spanish speakers.

I also examined non-Spanish language groups to determine if the library should consider multilingual support beyond Spanish. The data showed that other non-English languages are present at much lower percentages, typically 0-7% across census tracts. This finding suggests that Spanish is overwhelmingly the dominant non-English language in Forsyth County.

Based on this data, I would recommend that when FCPL implements multilingual website features, the priority should be Spanish translation. With tens of thousands of Spanish-speaking residents concentrated in specific areas of the county, Spanish language support for key website functions such as catalog search, account management, program registration, and hours and locations would significantly improve accessibility for a substantial and geographically identifiable population.



Overlapping Accessibility Needs

A critical finding from my geographic analysis is that different accessibility needs cluster in different areas of the county, creating overlapping or intersectional vulnerabilities in certain communities.

This geographic diversity of accessibility needs means that the library cannot optimize the website for a single population. Instead, the website must employ universal design principles that simultaneously address multiple, distinct barriers. A single-language, complex website with poor accessibility compliance will inevitably exclude large segments of the community.

Discussion

The methodology and findings in my report relate to several key concepts from library and information science literature on accessibility, universal design, and geographic information systems in library assessment.

First, my use of GIS mapping tools to identify service gaps aligns with the approach described by Bishop and Mandel in their 2010 article "Utilizing Geographic Information

Systems (GIS) in Library Planning." They argue that GIS allows libraries to "display data related to library service and identify various disparities across service areas" (Bishop & Mandel, 2010, p. 165). This directly parallels my research, where PolicyMap allowed me to visualize the geographic distribution of populations with accessibility needs and identify which areas of Forsyth County would benefit most from specific interventions.

Second, my findings on the projected 54% growth in the disabled population from 2023 to 2030 highlight the importance of proactive accessibility planning rather than reactive accommodation. As Jaeger and Xie note in their 2009 book "Developing Online Community Services for an Underserved Population," libraries have an obligation to anticipate and prepare for demographic changes in their service areas. The dramatic projected increase in Forsyth County's disabled population suggests that accessibility improvements implemented today will serve an even larger proportion of residents within the next five to ten years.

Finally, my recommendation to prioritize Spanish language support is supported by research on multilingual library services. Guerena and Erazo, in their 2000 article "Latinos and Librarianship," emphasize that language barriers are often the most significant obstacle preventing Spanish-speaking communities from accessing library services. They argue that even basic translation of key website functions can dramatically improve accessibility for non-English speakers (Guerena & Erazo, 2000). Spanish is the overwhelmingly dominant non-English language in Forsyth County (with other languages present at only 0-7%) suggests that Spanish translation should be the clear priority for initial multilingual implementation.

Recommendations

Based on my demographic findings and preliminary website assessment, I recommend that FCPL managers prioritize the following website accessibility improvements:

Priority 1: Conduct Formal Accessibility Audit (0-3 months)

Engage accessibility specialists to conduct a comprehensive WCAG compliance audit of the forsyth.cc/library/ website. This audit should include automated scanning (using tools such as WAVE or DevTools), manual testing with screen readers (JAWS, NVDA), keyboard-only navigation testing, and color contrast analysis. The audit will provide a prioritized list of accessibility barriers to address.

Justification: With 136,000+ current residents with disabilities (growing to 211,000+ by 2030), WCAG compliance is essential. Nearly 1 in 5 county residents has a disability that may affect their ability to use a non-accessible website.

Priority 2: Implement Spanish Language Support (3-6 months)

Develop Spanish-language versions of key website pages, including the homepage, catalog search, hours and locations, account login, and program registration. Implement

a visible language toggle in the website header. Ensure that translated content is professionally translated rather than machine-translated to maintain accuracy.

Justification: With 37,000-86,000 Spanish speakers concentrated in southeastern Winston-Salem and Wallburg, the current English-only website creates a complete access barrier for tens of thousands of residents. Spanish is the dominant non-English language by a wide margin (other languages present at only 0-7%).

Priority 3: Address Critical WCAG Compliance Issues (6-12 months)

Based on accessibility audit findings, systematically remediate high-priority barriers. Common issues to address typically include: missing alternative text for images, insufficient color contrast ratios, missing form labels and error messages, keyboard navigation barriers, and improper heading structure. Implement automated accessibility testing in the website development workflow to prevent new barriers from being introduced.

Justification: WCAG compliance is essential for the 136,000+ residents with disabilities, and is increasingly required by law (Americans with Disabilities Act, Section 508).

Priority 4: Enhanced Senior-Friendly Features (12-18 months)

Implement user-controlled text resizing (beyond browser defaults), high-contrast mode toggle, simplified "senior mode" navigation option with larger buttons and reduced visual complexity, and clear visual focus indicators for all interactive elements. Consider developing tutorial videos demonstrating how to use key website features.

Justification: Areas like Rural Hall and Bermuda Run have senior populations ranging from 26%+, indicating that age-appropriate digital interfaces are critical for serving these communities in the present and near future.

Priority 5: Complementary In-Person Services (Ongoing)

While digital accessibility improvements are essential, recognize that some populations will always prefer or require in-person assistance. Expand bilingual staff availability at branches serving high Spanish-speaking areas. Offer technology assistance programs specifically targeting seniors. Develop outreach partnerships with disability organizations. Promote large-print and audiobook collections to complement digital services.

Justification: Digital accessibility and in-person services should work together, not as alternatives. Some community members will benefit from both.

Conclusion

This assignment gave me the opportunity to learn more about Forsyth County's service area in terms of various demographic characteristics including age, disability rates, and

language diversity. Based on the valuable information provided from PolicyMap, I have identified substantial and growing accessibility needs throughout the county.

The data reveals that FCPL serves a diverse community with significant accessibility challenges. Nearly 1 in 5 residents has a disability (11-18.59%+), with this population projected to grow from 137,000 to 212,000 by 2030—a 54% increase. Tens of thousands of Spanish-speaking residents are concentrated in southeastern Winston-Salem and Wallburg. Large senior populations in the Rural Hall and Bermuda Run areas (26-100% of residents) face age-related accessibility barriers. Some areas experience overlapping vulnerabilities, with residents facing multiple simultaneous barriers.

The current FCPL website is English-only with no visible accessibility compliance features, creating systematic exclusion for substantial portions of the community. Website accessibility is not merely a technical checkbox—it represents the library's fundamental commitment to equitable access for all residents, regardless of age, language, or ability.

I recommend that library managers prioritize website accessibility improvements in the following order: (1) formal WCAG accessibility audit, (2) Spanish language support for key pages, (3) remediation of critical accessibility barriers, (4) senior-friendly navigation features, and (5) complementary in-person services. These improvements will ensure that digital library services truly serve all members of the Forsyth County community.

The projected 54% growth in the disabled population by 2030 means that accessibility improvements implemented today will serve an even larger proportion of residents in the near future. This demographic trajectory makes website accessibility not just a current need but an urgent strategic imperative for the library system.

I hope that the demographic evidence presented in this report will support Forsyth County Public Library's efforts to improve digital accessibility and better serve all community members.

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