

**The Importance of Public Recreational Spaces in Sustaining and Cultivating Community
in Harrisonburg, Virginia**

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Introduction

Defining Community Resiliency and Potential Systems for Measurement

Community resiliency is a term describing a community's effort to sustain its environmental and economic health, as well as the mental and physical health of its residents. While all of these components of community resiliency are often tackled separately via local campaigning and activism efforts, the environmental, economic, mental, and physical health of a community are largely intertwined as they each have a substantial impact on community health outcomes. Therefore, defining the resiliency level of Harrisonburg City requires the integration of data and information from each of the previously mentioned categories. Combined sets of data will help to best identify the areas in most need of improvement in order to improve communal resilience in Harrisonburg.

Systems of community resilience measurement most often come in the form of a research toolkit that is generalized to fit the needs of a diverse range of communities. These toolkits are made for local authorities or research institutions looking to gain insight about the resilience of a particular community. The toolkits themselves usually provide generalized resident surveys and guidance for data collection. These generalized research guides do assist these authorities and institutions with conducting cost-effective and timely studies on community resilience, however, the toolkits have several flaws to consider. Due to cost and formality in the selected language of the toolkits, the resources they provide are often inaccessible to those within the communities being studied. These barriers affecting the use of the toolkit limits who is able to access the kits themselves and conduct the research projects necessary for gaining an understanding of a community's level of resilience. This lack of access places the power in the hands of these authorities and research institutions, enabling them to determine what components of the research are necessary and what communities will be studied. Such an approach at measuring and researching community resilience can be said to be a factor in further reducing a population's resilience by stripping the community's autonomy. When communities are able to conduct the research and access the project's results, they are better able to communicate the findings with one another and utilize the study to inspire resilience initiatives.

Discussions of Research Relations and Empowerment

In an attempt to avoid reinforcing a reduction in community resilience through this project, an accessible toolkit focused on data empowerment will be created. This toolkit will be presented in the form of an interactive and accessible website that includes infographics for each dataset, resources for taking next steps, and descriptions of research findings. This toolkit will also provide recommendations on next steps for the community of interest, guides on how to conduct a research study, and a resident survey available for distribution.

Background on Harrisonburg, Virginia

Community centers serve an integral role in any community, encouraging community unity via gatherings and events, as well as offering programming to improve the daily lives of its

nearby residents. These programs include anything from financial literacy courses and other educational opportunities to health and recreation opportunities. Sustaining such a center and ensuring that its offerings align with the interests of those it serves is vital for empowering the community and for improving community health outcomes: a goal that the town of Harrisonburg should be highly focused on moving forward.

Before delving further into the specifics regarding the needs, especially as they relate to community health outcomes, of the City of Harrisonburg, using information from a survey study conducted by the National Recreation and Parks Association (NRPA) can provide us with further insights as to what a community center means to those it serves. According to the survey, constituents across the nation desire more from their community centers with 51% of respondents expressing interest in offerings of healthy living classes and 45% of respondents desiring nature-based activities, programs, and classes (*Recreation Centers Play an Important Role in Communities* | *Park Pulse*, n.d.). Improving and expanding offerings in these categories could lead to further use of community centers and improvements in the health of communities themselves, as well as the individuals residing in them. These findings from NRPA's survey suggest that Americans are generally wanting more from their community centers and specifically want these centers to provide more offerings relating to improving health.

However, health and self-care courses, as well as outdoor recreation courses, are not the only factors that can improve community health outcomes. In fact, in order to even provide options within these program topics, community centers must have the necessary funds and recreational resources, from equipment to facilities, to sustain such programming. These funds and facilities are a concern for many residents of Harrisonburg as diverse programming tends to be sparse at locations such as the Lucy Simms Center, a center serving those in Harrisonburg's Northeast Neighborhood. This same area lacks adequate recreational facilities—an issue that is felt by many Harrisonburg residents as the city merely has one swimming pool for the use of all residents. The distribution of these programs and recreational facilities largely dictates what residents are able to access and participate in. Because of the lack of a swimming pool in the Northeast Neighborhood, those belonging to this majority Black-identifying community suffer from the effects of pool poverty, or the lack of access to the recreational opportunities provided by a swimming pool. As this paper further explores the theme of community facilities and programming, the Northeast Neighborhood of Harrisonburg will continue to be highlighted due to the Lucy Simms Center's location and the health and recreation disparities prevalent in that community. Expanding healthy living and nature-based opportunities via the community centers in Harrisonburg could enable the town to make strides toward reducing its social vulnerability.

Beyond recreational opportunity access, there are many aspects that impact a community's opportunity to be healthy. While there are averages for community health based on the entirety of the population of Harrisonburg, there are health disparities that exist within the sectors of a larger community. These disparities are usually due to differences in access to healthcare, socioeconomic averages and statuses, environmental factors, and access to health improvement opportunities. Because of the connection between socioeconomic status,

environmental factors, access to healthcare, and opportunities for health improvement, health disparities tend to exist in historically marginalized communities. These communities generally have a lower average socioeconomic status, limiting their financial and geographic access to healthcare and health improvement opportunities. Historically marginalized communities also tend to feel the effects of climate change much more drastically than other communities (*EPA Report Shows Disproportionate Impacts of Climate Change on Socially Vulnerable Populations in the United States* | US EPA, 2021).

The Northeast Neighborhood of Harrisonburg and the Lucy Simms Center are going to be the central focus of this project. The research will attempt to guide community leaders and organizations on finding ways to better leverage community resources for improved physical and mental health outcomes. The goal of this research is to utilize data trends and context along with resident survey responses to determine if there are best practices to consider when making improvements to the community's recreational and educational center, the Lucy Simms Center, and if these improvements may yield extensive health benefits that counteract the lack of access to adequate healthcare and health improvement opportunities in the community.

The Northeast Neighborhood and the Lucy Simms Continuing Education Center

The Northeast Neighborhood of Harrisonburg is a historically Black community of the city. As reported by the Northeast Neighborhood Association, or NENA, the 1950's-60s was a tumultuous time for the neighborhood in which beautiful buildings and homes were torn down in the name of "urban renewal" (*History - NENA*, n.d.). This "urban renewal" came about after the town of Harrisonburg was awarded federal grants for the redevelopment of its downtown area (*History - NENA*, n.d.). However, more than 60% of the buildings torn down and infrastructure destroyed directly impacted Black residents (*History - NENA*, n.d.).

Because of this widespread destruction, it has long been a goal of the Northeast Neighborhood to focus their efforts on the "beautification and preservation" of their community (*History - NENA*, n.d.). These beautification and preservation efforts include story-telling initiatives such as the Dallard/Newman Museum project, as well as the preservation of important sites such as the Lucy Simms Center for Continuing Education, a historically important building being used as a community center for Harrisonburg Parks and Recreation. While efforts have been made to create historical exhibits in the center, NENA's goal of racial healing may also be better addressed at the Simms Center (*History - NENA*, n.d.).

Focusing on how the community can heal from its past experiences with "urban renewal" and sustain a healthy environment for all to reside in is crucial to building the social strength of the Northeast Neighborhood. Creating this healthy environment necessitates maintaining public safety, infrastructure, and facilities. As previously mentioned, providing adequate recreational facilities and programming through a community center can greatly impact a community's ability to maintain health and spark collective healing. The Simms Center has a prime opportunity to be a hub of healing for the Northeast Neighborhood, however there are a number of barriers preventing it from having the desired impact on its local community including cost of use and

lack of diverse recreational opportunity access. These barriers, along with some improvements to the offerings of the Simms Center, must be addressed and implemented before this community space can fully serve its local residents.

Methods

A New Tool for Measuring Community Resilience

Many of the methods of measuring community resilience rely on providing a government or other local authority with a toolkit in which a survey, user guidance manual, and software is included and ready to be used (Resilience Nexus, n.d.). One particular toolkit entitled the ARC-D outlines its methodology for measuring community resilience via its survey and software: ARC-D researchers claim that prior to the survey, they analyze the context of the community of interest, exploring data related to population, environment (built and natural), marginalized groups, and potential risks (Resilience Nexus, n.d.). The survey designed by ARC-D then tests a community's resilience via risk scenario testing in which survey respondents are confronted with a variety of risk scenarios that have occurred or could likely occur in their community and are tasked with responding with their awareness of the risk situation, motivation to act, and how they may go about activating a community response (Resilience Nexus, n.d.).

This approach by ARC-D provides a comprehensive outlook on a community's current resilience and ability to increase its resilience in the near future. However, there are other methods with which a community's response to risk scenarios may be assessed to provide accurate resilience data. A method commonly used in community studies and in the field of the health humanities is the case study, or a type of research that focuses on the effects of a particular situation or event on a particular group of people. A case study simply provides the facts from a former event and utilizes this information to form conclusions about what may occur in the future. For instance, a case study in this situation may be used to determine how a community may respond to a real-life risk scenario based on its past, documented responses to similar risk scenarios. Like ARC-D, risk scenarios utilized in a case study method should belong to a number of categories, including education, health, economic, environmental, political or social, and other disaster risks (Resilience Nexus, n.d.). Because of this need for examples of responses in a variety of risk categories, a singular case study would not be enough to determine a community's past and future ability for resilience. Instead, utilizing case studies covering each risk category would be integral to providing a comprehensive look at a community's resilience.

In addition to the case study component of a toolkit for assessing community resilience, there is an extensive amount of background data and information research needed to set up an accurate representation of the context of a community within each risk category. There are a number of ways to go about such research, but completing a digital data analysis, literature review, and multiple rhetorical analyses made the most sense for this project.

Digital Data Analysis

Data for recreation, environmental justice, socioeconomic status, and health and well-being were gathered from a select number of public databases and sources. Most of the databases belonged to federal or state authorities and provided generalized data describing the situation in the entirety of Harrisonburg City and the surrounding Rockingham County. The federal and state level databases used include the U.S. PIAAC adult literacy database, the Virginia Environmental Health Hub's water datasets, Environmental Justice Dashboard provided by the CDC, and the CDC's DNPAO Data and Trends by location data. In order to gain a more specific understanding of Harrisonburg's community health trends and outcomes, KFF's health databases, the Virginia Health Opportunity Index, and the Sentara RMH Community Health Needs Assessment document were used.

To present the data in an accessible and interactive way, Canva was used to create infographics and research graphs for the website and for use by the community. Graphics were made both to the specifications of the website formatting, as well as for use on social media platforms.

Literature Review

To provide more context for the data collected from public databases, a small-scale review of relevant and current literature was conducted. Literature was selected through keyword searches and level of source credibility. The articles chosen for the small-scale review included sources describing the impacts of systemic racism of recreation today and the effects of outdoor recreation on community health and well-being. The content from these sources are described in a short summary on the website and will provide further context for why the Simms Center is currently operating as it is and how it may be improved for use by Northeast Neighborhood residents.

Rhetorical Analysis

A rhetorical analysis seeks to assess an article or other content's effectiveness in terms of the rhetoric of the written material, or the language and tone used, and who the intended audience of the material is according to the author. In order to begin the rhetorical analysis, content related to Harrisonburg, Harrisonburg parks and recreation, and the Lucy Simms Center were searched via Google. The first sites to be shown in the Google search that had content related to Harrisonburg parks and recreation or the Lucy Simms Center specifically were selected and analyzed. These searches yielded very few informationally accurate sites, so there were only a total of two websites utilized in the rhetorical analysis. These websites included: harrisonburgva.org and virginia.org.

When analyzing the website articles' content, the author and intended audience were determined and recorded. Any notes or comments on the language used were also recorded. Then, the Flesch Reading Ease scale and the Flesch-Kincaid Grade Level scale were used to provide quantifiable data on the readability and accessibility of the written content. The Flesch Reading Ease scale is a measurement used to determine the readability of written material by

using sentence length, measured by the number of words per sentence, and word length, measured by the number of characters per word (*Flesch Reading Ease and the Flesch Kincaid Grade Level – Readable*, n.d.). The scale measures the readability score of content on a scale from 1-100 where 100 is easy to read and 1 is very difficult to read. The Flesch Reading Ease numeric scale and associated readability category and written description can be seen in *Table I*. While the Flesch Reading Ease scale and the Flesch-Kincaid Grade Level scale are closely linked, they are slightly different measurements. The Flesch-Kincaid Grade Level determines the readability of content by providing an estimate of what education level is required for the reader to comprehend and easily access the material (*Flesch Reading Ease and the Flesch Kincaid Grade Level – Readable*, n.d.). The Flesch-Kincaid Grade Level scale is based on sentence length, or words per sentence, and syllables per word. The Flesch-Kincaid Grade Level, its associated written description, and the percentage of adults who can read at each grade level can be seen in *Table II*.

Table I.

Flesch Reading Ease Score	Readability Level/ Category	Estimated Reading Grade
0-30	Very Difficult	College graduate
30-40	Difficult	13 th to 16 th grade
50-60	Fairly difficult	10 th to 12 th grade
60-70	Standard	8 th or 9 th grader
70-80	Fairly easy	7 th grader
80-90	Easy	6 th grader
90-100	Very Easy	5 th grader

Table II.

Flesch Grade Level					
Estimated school grade completed	Level	Average number of words / sentence	Average number of syllables / word	Score	Percentage of adults who can read at this level
4th	Very easy	8 or fewer	1.23 or fewer	90-100	93
5th	Easy	11	1.31	80-90	91
6th	Fairly easy	14	1.39	70-80	88
7th or 8th	Standard	17	1.47	60-70	83
Some high school	Fairly hard	21	1.55	50-60	54
High school or some college	Hard	25	1.67	30-50	33
College	Very hard	29 or more	1.92 or more	0-30	4.5

Results and Deliverables

Data Collection and Analysis

Data was collected for the following categories: access to healthcare and general health data, environmental data, socioeconomic data, and recreation or health improvement opportunity data. The key data points for each category are included below.

Access to Healthcare and General Health Data

- Those identifying as Hispanic in Harrisonburg are **133%** more likely to die of a cardiovascular disease than their White counterparts (*Adults Who Report Fair or Poor Health Status by Race/Ethnicity*, n.d.)
- Black or African American-identifying residents of Harrisonburg are **160%** more likely to die of preventable or avoidable causes of death than White residents of Harrisonburg (*Adults Who Report Fair or Poor Health Status by Race/Ethnicity*, n.d.)
- Hispanic residents of Harrisonburg are **163%** more likely to die of preventable or avoidable causes of death than White residents of Harrisonburg (*Adults Who Report Fair or Poor Health Status by Race/Ethnicity*, n.d.)
- **14.4%** of Virginia adults report having fair or poor health status (**17.9%** of Black adult residents of VA and **14.6%** of Hispanic residents report having fair or poor health status) (*Adults Who Report Fair or Poor Health Status by Race/Ethnicity*, n.d.)
- **33.9%** of respondents indicated that having providers of gender/race/ethnicity that represent the community population is an area of concern in healthcare; **18.6%** of respondents indicate that discrimination against minority/marginalized groups is an area of concern in healthcare (Sentara RMH Medical Center, 2021)
- **89.8%** of respondents said Behavioral/Mental Health Needs are an area of concern for themselves and their community (Sentara RMH Medical Center, 2021)
- Only **38.4%** of professional active physicians in the state of Virginia identify as female (*Adults Reporting Unmet Need for Mental Health Treatment in the Past Year Because of Cost*, n.d.)
- In the state of Virginia, **6.3%** of adults report not seeing a doctor in the past 12 months because of cost-associated barriers (**7.4%** of Black residents and **12.8%** of Hispanic residents) (*Adults Reporting Unmet Need for Mental Health Treatment in the Past Year Because of Cost*, n.d.)
- In the state of Virginia, **11.9%** of adults report not having a personal doctor or healthcare providers (**26.7%** of Hispanic residents) (*Adults Reporting Unmet Need for Mental Health Treatment in the Past Year Because of Cost*, n.d.)
- **40.7%** of Virginia adult residents report unmet needs for mental health treatment due to cost-associated barriers (**39.7%** for the U.S.) (*Adults Reporting Unmet Need for Mental Health Treatment in the Past Year Because of Cost*, n.d.)
- **69.0%** of Virginia adult residents with mild mental illness in the past year did not receive treatment (*Adults Reporting Unmet Need for Mental Health Treatment in the Past Year Because of Cost*, n.d.)
- **75%** of Harrisonburg City residents have a “**Very Low**” to “**Low**” opportunity score in the Segregation Indicator (*Counties – Virginia Health Opportunity Index*, n.d.)

Socioeconomic Information

- **24.9%** of Harrisonburg residents live below the poverty line (Sentara RMH Medical Center, 2021)
- **60%** of Harrisonburg population's and **40%** of Rockingham county's population live paycheck to paycheck (Sentara RMH Medical Center, 2021)
- **67.8%** of respondents said Social/Economic Needs are an area of concern for themselves and their community (Sentara RMH Medical Center, 2021)
- **60%** of Harrisonburg City residents have a **"Very Low"** to **"Low"** opportunity to score on the economic opportunity profile (*Counties – Virginia Health Opportunity Index*, n.d.)
- **70%** of Harrisonburg City residents have a **"Very Low"** to **"Low"** opportunity to score on the employment accessibility indicator (*Counties – Virginia Health Opportunity Index*, n.d.)
- **66%** of Harrisonburg City residents have a **"Very Low"** to **"Low"** opportunity to score on the income inequality indicator (*Counties – Virginia Health Opportunity Index*, n.d.)
- **65%** of Harrisonburg City residents have a **"Very Low"** to **"Low"** opportunity to score on the consumer opportunity profile (*Counties – Virginia Health Opportunity Index*, n.d.)
- **66%** of Harrisonburg City residents have a **"Very Low"** opportunity to score on the material deprivation indicator (*Counties – Virginia Health Opportunity Index*, n.d.)
- **63%** of Harrisonburg City residents have a **"Very Low"** to **"Low"** opportunity to score on the food accessibility indicator (*Counties – Virginia Health Opportunity Index*, n.d.)

Environmental Information

- **16%** of Harrisonburg City residents have a **"Very Low"** to **"Low"** opportunity to access healthy air quality (*Counties – Virginia Health Opportunity Index*, n.d.)
- **61%** of Harrisonburg City residents have a **"Low"** to **"Average"** opportunity to access walkable districts in the city (*Counties – Virginia Health Opportunity Index*, n.d.)
- **81%** of Virginia rivers and streams contain bacteria or microbes that makes the water inaccessible for recreational use (*Water Datasets*, n.d.)
- **47.2%** of Virginia rivers and streams are considered suboptimal for supporting aquatic life (*Water Datasets*, n.d.)

Health Improvement Opportunities (Recreation Data)

- Less than **1/3rd** of Harrisonburg residents live within 0.5 miles of a public park (Sentara RMH Medical Center, 2021)
- **10.2%** of Harrisonburg residents 18 or older have been diagnosed with asthma which is higher than the state average of 8.8% and national average of 9% (Sentara RMH Medical Center, 2021)
- **47.5%** of respondents said Health Equity and Disparities are an area of concern for themselves and their community (Sentara RMH Medical Center, 2021)
- **70%** of Virginia residents live further than 0.5 miles from a public park (*DNPAO Data, Trends and Maps: Explore by Location | CDC*, n.d.)

- Nearly **1/4th** of Harrisonburg and Rockingham County residents characterize themselves as being physically inactive according to KFF (*Adults Who Report Fair or Poor Health Status by Race/Ethnicity*, n.d.)
- **85%** of Harrisonburg City residents have access to exercise opportunities (*DNPAO Data, Trends and Maps: Explore by Location* | CDC, n.d.)
- **24.2%** of Harrisonburg City residents characterize themselves as physically inactive (*DNPAO Data, Trends and Maps: Explore by Location* | CDC, n.d.)

Data Infographics

In order to present the key data points from the data collection and analysis in an accessible manner, the relevant information was organized into multiple infographics for use on the website and social media. Each infographic is in the document linked below.

https://www.canva.com/design/DAFm-SXbyuk/3QKwvcMvisfE1yUeSabHJw/edit?utm_content=DAFm-SXbyuk&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton

Literature Review

According to research by the Department of Parks, Recreation, and Tourism Management at North Carolina State University (NCSU), interacting with outdoor spaces improves overall community health and well-being ratings (Larson et al., 2021). Larson et al.'s (2021) study emphasizes the importance of access to recreational facilities and opportunities with its conclusion that increased time in outdoor settings encourages healthy habits beneficial for the physical and mental health of communities. Public outdoor spaces inspire active lifestyles as well as promote improvements in cognitive function, attention and focus, and emotional well-being (Larson et al., 2021). In addition, the study indicated that spending time in outdoor spaces, such as public parks, also reduces feelings of stress (Larson et al., 2021). While communities of all backgrounds benefit from spending time outdoors, NCSU's study claims that nature-based experiences have a particularly strong influence over the well-being of BIPOC (Black, Indigenous, People of Color) communities (Larson et al., 2021).

While this study provides hopeful findings about the benefits of outdoor recreation, there are several factors that influence a community's ability to take advantage of these benefits. These factors include access to outdoor recreational facilities and resources, community socioeconomic status, environmental factors, and the history of these spaces. Often, these factors negatively impact the ability for BIPOC communities to access adequate recreational opportunities. This disproportionate access to recreation opportunity is known as the adventure gap.

For all types of recreation, significant barriers lie in the way of BIPOC populations taking full advantage of these public recreational spaces. For Black Americans in particular, systemic racism, history of exclusion in these spaces, and the COVID-19 pandemic have greatly limited their access to recreation. An enduring history of systemic racism has resulted in many Black Americans being subject to criminalization in the form of surveillance, suspicion, and

harassment from other park or public area visitors (Ebbs, 2020). Joel Pannell, the associate director of the Sierra Club, warns Americans that “the outdoors and public lands suffer from the same systemic racism that the rest of our society does” as long as these public lands remain “stubborn bastions of self-segregation” (Ebbs, 2020). These negative associations with public lands and recreational spaces has resulted in a lack of generational access to diverse recreational opportunities. In a study by Lee & Scott (2016) of North Carolina State University, residents of the majority Black community of Cedar Hill, Texas were asked for reasons as to why their public parks were underutilized. When questioned about the lack of use of public parks by Black residents, one interviewee claimed that the barriers to these spaces are less likely to be related to cost and affordability and more closely related to a lack of exposure to these spaces (Lee & Scott, 2016). The interviewee continued, acknowledging that certain recreational activities, such as swimming, are not common childhood experiences for many Black people; instead, the interviewee acknowledges that “we had a basketball court, football field. That’s what we had... You did what you have to do” (Lee & Scott, 2016). Other responses in Lee & Scott’s (2016) study yielded a similar sentiment about the lack of generational exposure, confirming that the historical inaccessibility of recreational spaces has resulted in common preconceptions about recreation within Black culture. As indicated by interviewees, these preconceptions include the ideas that Black people don’t participate in activities or sports involving swimming pools or other exclusive recreational spaces (Lee & Scott, 2016). This lack of park use became even more prevalent following the COVID-19 pandemic as illustrated by surveys conducted by North Carolina State University’s Park, Recreation, and Tourism Management research department. These surveys revealed that BIPOC respondents in Raleigh and Charlotte, North Carolina were less likely than White respondents to indicate that their park usage increased during the pandemic (Larson et al., 2021). In addition, surveys found that public park visitation increased most during the pandemic for past visitors, who identified predominantly as White, and declines for BIPOC individuals following 2020 (Larson et al., 2021).

Rhetorical Analysis

After a Google search for information regarding the Lucy Simms Center, two websites were selected for the rhetorical analysis. There were multiple articles selected from harrisonburgva.org including an article about the Lucy Simms Center, Ralph Sampson Park, as well as summer activities for residents of Harrisonburg. The Lucy Simms Center article lacked much content as it merely listed logistical information such as the center’s hours, available facilities, and contact information (*Lucy F. Simms Continuing Education Center*, 2023). However, the content on the page was rated at a reading ease of 15.8 on the Flesch Reading Ease scale and a Flesch-Kincaid Grade Level of 18.0. This reading level and reading ease score are at the college graduate reading level and only 4.5% of adults nationally are capable of reading at such a level (*Table II*). In addition, 66.6% of the sentences included in the article are written in passive voice (*Table II*). On the list of the city’s recreational facilities on harrisonburgva.org, the content is scored as a 43.9 on the Flesch Reading Ease, which is considered “difficult” (*Flesch*

Reading Ease and the Flesch Kincaid Grade Level – Readable, n.d.). The article is written at a 12.2 Flesch-Kincaid Grade Level which only 33% of adults nationally can reliably read. Harrisonburgva.org’s article on Ralph Sampson Park fairs better as the reading ease score is considered 46.5 and the Flesch-Kincaid Grade Level is reported as 11.0. 54% of adults nationally can read at the 11th grade level used in this article (*Table II*).

The Summer Activities document for the 2023 season in Harrisonburg is written at about an 8th-9th grade level according to the Flesch-Kincaid Grade Level scale, which means that it can be read by 54% of adults nationally (*Table II*). While these readability statistics indicate that the content can be understood by the majority of the public, there are a number of document errors limiting accessibility. There were a total of 116 objects or images missing written descriptions or captions, limiting accessibility for those with visual or cognitive impairments. In addition, there were over 1,000 instances of hard-to-read text contrast, meaning the text is difficult to read due to issues with font sizing or text color. These instances of hard-to-read text contrasts limit the accessibility of the documents and its contents for those with visual disabilities.

The article of the Simms center on virginia.org was scored at a 24.4 on the Flesch Reading Ease scale and considered to be written at a 16.1 grade reading level. Only 4.5% of adults nationally can read and comprehend this content as it is considered “very hard” to read (*Table II*). Despite its lack of readability, the website article includes inclusive language and extensive information on the history of the center. The content on this article provides more background information on the center than the harrisonburgva.org article on the facility.

These rhetorical analysis results are especially important when considering that literacy and numeracy rates for Harrisonburg City is below the Virginia state average and below the national average (U.S. PIAAC, n.d.). In addition, more than 1/10th of Harrisonburg’s residents within the age range of 16-74 have an educational level lower than a completion of high school (U.S. PIAAC, n.d.).

Limitations of the Study

There are a number of limitations of this research study to consider including the limited availability of databases for each category of data, lack of accessible neighborhood-specific data, and an under-representative sample for the resident survey. The majority of the data included on the website and in the research report come from a few public databases owned and operated by government agencies. Much of the data used for this project was collected via research initiatives at the federal and state level, resulting in a lack of community-centered data. While many of the measured indicators were localized to Harrisonburg City and Rockingham County, there was little to no accessible data for specific communities within the municipality. This lack of localized data for each category resulted in a generalization of the current situation for Harrisonburg City residents in terms of health, recreation, socioeconomic status, and environmental justice rather than enabling specific data for the Northeast Neighborhood.

In terms of the resident survey, the results have not been posted as a part of this report due to the lack of responses gained over the collection period. Due to limited time and resources to distribute the survey, only a handful of Northeast Neighborhood residents have accessed the survey and submitted responses. Because of the low number of survey respondents, the survey's results do not currently accurately represent the thoughts and behaviors of its intended sample population. In order to mitigate the risks posed by posting inadequate survey results, the survey collection period will be extended and its findings will be reported after a sufficient number of respondents have submitted their completed questionnaire.

Future Directions and Recommendations

In the future, more localized data should be identified and included in a similar data-based study to go along with generalized data for a region. This will provide future studies with more accurate depictions of the topic of research in a population of interest. In addition, studies seeking to distribute similar resident surveys should prepare an extended period of time designated as the data collection period in order to gather a significant number of responses. Survey distribution should also be tailored to the demographic of the sample population and their available resources. While providing numerous methods of responding to a survey may prove to be more challenging for analyzing its results, researchers may be able to gain respondents who usually lack access to community-based research through these additional approaches.

In addition to the localized health-related data, there should be studies conducted in and around Harrisonburg regarding the trends of park usage by different populations of Harrisonburg and Rockingham county residents. Such a study could provide more conclusive information as to why these particular spaces, such as the Lucy Simms Center, are largely underutilized by Harrisonburg's BIPOC population. This study could also add to the growing body of literature focused on the barriers reinforcing the adventure gap throughout the United States.

Until such data-driven studies and searches can be completed, there are a few recommendations based on this research that could provide immediate improvements to the health and well-being of Harrisonburg residents, particularly those living in the city's Northeast Neighborhood. Mitigating the toll of barriers to recreational opportunities, especially at the Lucy Simms Center, could begin to assist the neighborhood in improving health outcomes. Reducing barriers to this center begins with improving accessibility in terms of cost, transportation, and physical methods of getting to and using the space. For more information on how to increase a building's or space's accessibility, see the guidelines provided by the American with Disabilities Act (*ADA Standards for Accessible Design*, n.d.). For financial barriers, the Harrisonburg Parks and Recreation department should consider the cost of a membership, of renting out spaces, and of the programs offered at the Simms Center to ensure that all of these offerings are affordable for the residents of the Northeast Neighborhood, not just for the average Harrisonburg resident. These changes could improve access for Northeast Neighborhood residents to the Simms Center and promote the center as a strong and well-utilized community gathering space.

Due to the low to average opportunity to access healthy air quality and walkable infrastructure in the city of Harrisonburg, environmental justice must become a prominent focus of the city. In addition, the lack of river and stream water safe for recreational use greatly limits opportunities for nature experiences and outdoor recreation. In order to understand the extent to which Harrisonburg is affected by environmental justice inequities, there must be further research conducted. This future research should focus on environmental justice factors in specific neighborhoods of Harrisonburg, allowing for area-specific data that may be more beneficial to Harrisonburg's many communities. Despite a lack of community-specific data for environmental factors in the Northeast Neighborhood, the current literature surrounding good environmental practices and its positive effects on community health outcomes should be heavily considered. According to a number of studies, improving infrastructure to properly handle natural occurrences, such as heavy rainfall or other environmental events, is a step toward ensuring better community health outcomes (Wen, M. et al., 2013). In fact, any infrastructure that increases a community's environmental sustainability does have the potential to positively influence community health by limiting the amount of pollution. According to the Office of Energy Efficiency and Renewable Energy, solar energy has the ability to prevent up to \$167 billion in national health and environmental damages (*The Environmental and Public Health Benefits of Achieving High Penetration of Solar Energy in the United States*, 2016). For these reasons, alternatives to fossil fuels should be utilized in as many community spaces as possible, especially in the Northeast Neighborhood, in order to limit negative community health outcomes associated with pollution. Implementing solar on community buildings such as the Simms Center may inspire further community environmental action and prompt discussions of how environmental factors may be manipulated to improve community health and well-being.

To begin to reduce the effects of recreational racism, the city must allow this center and other public spaces in the neighborhood to be reclaimed by the community's BIPOC population. The methods of reclaiming these spaces is largely up to the BIPOC community itself, however, there are a number of actions that can be taken to kickstart such an initiative. These actions include improving representation in recreational leagues, courses, and spaces, adding BIPOC-specific recreational events and opportunities, and acknowledging historical transgressions in the Northeast Neighborhood, among others. Many more ideas for how to reclaim these spaces may be gathered via a community survey or interviews in a future study. In the meantime, the city should invest in diverse recreational facilities to expand their recreational options in its historically marginalized communities. Expanding recreational facilities, such as by putting in a pool rather than a small splash pad, may also lead to improved community health outcomes, particularly for Harrisonburg's Black residents.

In order to advertise these new offerings and changes within the community, accessible language must be used. All website articles and information meant for the public should be written at reading levels lower than the 12th grade reading level. Best practice would be to drop the reading levels even lower, potentially to the average reading level for Harrisonburg residents.

Contrast rating and written captions for images and objects should also be considered and become standard practice for all content created for mass distribution to the public.

References

- ADA Standards for Accessible Design*. (n.d.). ADA.gov. Retrieved July 20, 2023, from <https://www.ada.gov/law-and-regs/design-standards/>
- Adults Reporting Unmet Need for Mental Health Treatment in the Past Year Because of Cost*. (n.d.). KFF. Retrieved July 18, 2023, from <https://www.kff.org/other/state-indicator/adults-reporting-unmet-need-for-mental-health-treatment-in-the-past-year-because-of-cost/?currentTimeframe=0&selectedRows=%7B%22wrapups%22:%7B%22united-states%22:%7B%7D%7D,%22states%22:%7B%22virginia%22:%7B%7D%7D%7D%7D&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>
- Adults Who Report Fair or Poor Health Status by Race/Ethnicity*. (n.d.). KFF. Retrieved July 18, 2023, from <https://www.kff.org/other/state-indicator/percent-of-adults-reporting-fair-or-poor-health-status-by-raceethnicity/?currentTimeframe=0&selectedRows=%7B%22states%22:%7B%22virginia%22:%7B%7D%7D%7D%7D&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>
- Counties – Virginia Health Opportunity Index*. (n.d.). Virginia Department of Health. Retrieved July 18, 2023, from <https://apps.vdh.virginia.gov/omhhe/hoi/dashboards/counties>
- DNPAO Data, Trends and Maps: Explore by Location | CDC*. (n.d.). National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP). Retrieved July 18, 2023, from https://nccd.cdc.gov/dnpao_dtm/rdPage.aspx?rdReport=DNPAO_DTM.ExploreByLocation&rdRequestForwarding=Form
- Ebbs, S. (2020, July 1). *America's national parks face existential crisis over race*. ABC News. Retrieved July 20, 2023, from

<https://abcnews.go.com/Politics/americas-national-parks-face-existential-crisis-race/story?id=71528972>

The Environmental and Public Health Benefits of Achieving High Penetration of Solar Energy in the United States. (2016, May 13). Department of Energy. Retrieved July 26, 2023, from <https://www.energy.gov/eere/solar/articles/environmental-and-public-health-benefits-achieving-high-penetration-solar>

Environmental Justice Dashboard | Tracking | NCEH | CDC. (n.d.). National Environmental Public Health Tracking Network. Retrieved July 18, 2023, from <https://ephtracking.cdc.gov/Applications/ejdashboard/>

EPA Report Shows Disproportionate Impacts of Climate Change on Socially Vulnerable Populations in the United States | US EPA. (2021, September 2). EPA. Retrieved July 26, 2023, from <https://www.epa.gov/newsreleases/epa-report-shows-disproportionate-impacts-climate-change-socially-vulnerable>

Flesch Reading Ease and the Flesch Kincaid Grade Level – Readable. (n.d.). Readable. Retrieved July 19, 2023, from <https://readable.com/readability/flesch-reading-ease-flesch-kincaid-grade-level/>

History - NENA. (n.d.). Northeast Neighborhood Association. Retrieved July 17, 2023, from <http://nenava.org/history.html>

Larson, L. R., Oh, J. I., Beam, W., Olgetree, S. S., Bocarro, J. N., Lee, K. J., Casper, J., Stevenson, K. T., Hipp, J. A., Mullenbach, L. E., Carusona, M., Wells, M., & Zhang, Z. (2021). Urban Park use during the COVID-19 pandemic: Are socially vulnerable

communities disproportionately impacted? *Frontiers in Sustainable Cities*, 3.

<https://doi.org/10.3389/frsc.2021.710243>

Lee, K. J., & Scott, D. (2016). Bourdieu and African Americans' park visitation: The case of cedar hill state park in Texas. *Leisure Sciences*.

<https://doi.org/10.1080/01490400.2015.1127188>

Lucy F. Simms Continuing Education Center. (2023, June 9). City of Harrisonburg. Retrieved July 19, 2023, from <https://www.harrisonburgva.gov/simms-center>

The Lucy F. Sims Continuing Education Center. (n.d.). Virginia.org. Retrieved July 19, 2023, from <https://www.virginia.org/listing/the-lucy-f-sims-continuing-education-center/5637/>

Recreation Centers Play an Important Role in Communities | Park Pulse. (n.d.). National Recreation and Park Association. Retrieved July 20, 2023, from <https://www.nrpa.org/publications-research/Park-Pulse/park-pulse-survey-recreation-centers-role-in-communities/>

Resilience Nexus. (n.d.). *ARC-D Toolkit*. Resilience Nexus – Our work in Honduras | Where We Are | GOAL Global. Retrieved July 19, 2023, from <https://resiliencenexus.org/>

Sentara RMH Medical Center. (2021). Community Health Needs Assessment 2021.

<https://www.sentara.com/Assets/Pdf/About-Us/Community-Health-Needs-Assessments/2021-SRMH-Community-Health-Needs-Assessment.pdf>

U.S. PIAAC. (n.d.). *U.S. Skills Map: State and County Indicators of Adult Literacy and Numeracy*. PIAAC Skills Map. Retrieved July 19, 2023, from <https://nces.ed.gov/surveys/piaac/skillsmap/>

Water Datasets. (n.d.). Virginia Environmental Data Hub. Retrieved July 18, 2023, from <https://geohub-vadeq.hub.arcgis.com/pages/c1ad79b7b58844f9b468f19c3907cac2>

Wen, M., Zhang, X., Harris, C., Holt, J., & Croft, J. (2013). *Spatial Disparities in the Distribution of Parks and Green Spaces in the USA*. *Annals of Behavioral Medicine*, 45, 18–27. <https://doi.org/10.1007/s12160-012-9426-x>

Glossary

Word or Term	Definition	Source
Access to Care Indicator	Whether community members have access to a primary care physician and the means to pay for care. It includes the proportion of uninsured residents and the number of physicians within 30 miles of the community	https://apps.vdh.virginia.gov/omh/he/hoi/what-is-the-hoi/definitions
Affordability Indicator	The proportion of a community's income spent on housing and transportation. This indicates how much income remains for other priorities, including food, health care and social activities	https://apps.vdh.virginia.gov/omh/he/hoi/what-is-the-hoi/definitions
Air Quality Indicator	Includes EPA measures of pollution, including on-road, non-road and nonpoint pollution, and EPA measures of neurological, cancer and respiration risk	https://apps.vdh.virginia.gov/omh/he/hoi/what-is-the-hoi/definitions
Climate Justice	recognizes the disproportionate impacts of climate change on low-income communities and communities of color around the world, the people and places least responsible for the problem.	https://centerclimatejustice.universityofcalifornia.edu/what-is-climate-justice/
Community Environmental Profile	measure of the natural, built and social environment of a community. It includes the following indicators: Air Quality Indicator, Population Churning Indicator, Population Density Indicator, and Walkability Indicator	https://apps.vdh.virginia.gov/omh/he/hoi/what-is-the-hoi/definitions
Consumer Opportunity Profile	a measure of the consumer resources available within a community. It includes the following indicators: Affordability Indicator, Education Indicator, Food Accessibility Indicator, and Material Deprivation Indicator	https://apps.vdh.virginia.gov/omh/he/hoi/what-is-the-hoi/definitions

		-is-the-hoi/definitions
Economic Opportunity Profile	is a measure of the economic opportunities available within a community. It includes the following indicators: Employment Accessibility Indicator, Income Inequality Indicator, and Job Participation Indicator	https://apps.vdh.virginia.gov/omh-he/hoi/what-is-the-hoi/definitions
Education Indicator	The average number of years of schooling among adults in the community. It can range from zero (those with no formal schooling) to 20 (those with a doctorate/professional degree)	https://apps.vdh.virginia.gov/omh-he/hoi/what-is-the-hoi/definitions
Employment Accessibility Indicator	A measure of the number of jobs accessible to members of the community. Accessibility is determined by distance: close jobs are more accessible than jobs farther away	https://apps.vdh.virginia.gov/omh-he/hoi/what-is-the-hoi/definitions
Environmental Justice	the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys: the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work	https://www.epa.gov/environmentaljustice
Food Accessibility Indicator	A measure of access to food by low income people within a community. It measures the proportion of the low income community that has a large grocery store within 1 mile in urban areas or 10 miles in rural areas	https://apps.vdh.virginia.gov/omh-he/hoi/what-is-the-hoi/definitions
Green Gentrification	refers to processes started by the implementation of an environmental planning agenda related to green spaces that lead to the exclusion and displacement of politically disenfranchised residents	https://www.bcnuej.org/green-gentrification/
Greenwashing	the act or practice of making a product, policy, activity, etc. appear to be more environmentally friendly or less environmentally damaging than it really is	https://www.merriam-webster.com/dictionary/greenwashing
Income Inequality	The Gini Index, a common measure of income inequality, measures whether the income earned within a community is distributed broadly or concentrated	https://apps.vdh.virginia.gov/omh-he/hoi/what-is-the-hoi/definitions

Indicator	within the hands of a small number of households.	a.gov/omh he/hoi/what -is-the-hoi/ definitions
Job Participation Indicator	The percentage of individuals 16-64 years of age active in the civilian labor force. It includes both those currently working and those seeking work	https://apps .vdh.virgini a.gov/omh he/hoi/what -is-the-hoi/ definitions
Material Deprivation Indicator	Based on the Townsend Material Deprivation Index, it examines the private material resources available to households in a community. 4 indicators makeup Townsend: overcrowding, unemployment, % of persons with no vehicle or car, and % of people who rent	https://apps .vdh.virgini a.gov/omh he/hoi/what -is-the-hoi/ definitions
Population Churning Indicator	The amount of population turnover within a community. It measure the rate at which people both move into a community and move out of a community	https://apps .vdh.virgini a.gov/omh he/hoi/what -is-the-hoi/ definitions
Population Density Indicator	A measure of population density that takes into account the density levels most people in the community experience.	https://apps .vdh.virgini a.gov/omh he/hoi/what -is-the-hoi/ definitions
Segregation Indicator	A measure of whether and how much people of different racial and ethnic backgrounds live together in diverse communities. It includes measures of both community diversity and the distance between communities with different racial or ethnic profiles	https://apps .vdh.virgini a.gov/omh he/hoi/what -is-the-hoi/ definitions
Virginia Health Opportunity Index	a group of indicators that provide broad insight into the overall opportunity Virginians have to live long and healthy lives based on the Social Determinants of Health	https://apps .vdh.virgini a.gov/omh he/hoi/what -is-the-hoi/ definitions
Walkability Indicator	A measure of how walkable a community is based on residential and employment density, land use (destination) diversity, street connectivity and public transit accessibility	https://apps .vdh.virgini a.gov/omh he/hoi/what -is-the-hoi/ definitions

		definitions
Wellness Disparity Profile	a measure of the disparate access to health services within a community. It includes the following indicators: Access to Care Indicator and Segregation Indicator	https://apps.vdh.virginia.gov/omh-he/hoi/what-is-the-hoi/definitions