Spatial Audit of Charlottesville Parks

PLAN 6020 Methods of Community Research & Engagement

Fall 2018

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1. Spatial Audit of Public Parks: Charlottesville, VA

Charlottesville city parks provide its community members with areas of public space, outdoor recreation, and interactive play. However, the community served is primarily those of able-bodied individuals. This audit aims to identify the environmental and designed barriers of the community with limited mobility, navigating through exclusive playspaces of Charlottesville and the greater Albemarle area. We designed a scorecard to evaluate Charlottesville parks to analyze aspects of playspaces in parks that contribute to, or detract from, inclusivity. We framed this study around the user defined as an individual in a power-chair with low upper-body strength. We additionally defined accessibility and inclusivity as distinct. 'Accessibility' typically means an ability to travel through the space, but does not necessarily indicate a higher level of engagement[1]; 'inclusivity' expresses encouragement of this higher level of engagement with the playspace and each other and an implication that similar play can be achieved across abilities.[2] 'Play' is a "process that is freely chosen, personally directed, and intrinsically motivated,"[3] engaging in spontaneous fun.[4] Play is "a child's first claim [to] their community."[5] With exclusive playspaces, children with limited mobility do not have

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[1] Kaplan, Mara. Accessible vs Inclusive. Playground Professionals. Accessed 1 December 2018. https://www.playgroundprofessionals.com/playground/accessibility/accessible-vs-inclusive112

[2] Kaplan, Mara. Accessible vs Inclusive. Playground Professionals. Accessed 1 December 2018. https://www.playgroundprofessionals.com/playground/accessibility/accessible-vs-inclusive112

[3] "The Playwork Principles." *Play Wales.* March 2015. Accessed December 10, 2018. http://www.playwales.org.uk/login/uploaded/documents/INFORMATION%20SHEETS/The%20Playwork%20Principles%20-%20an%20overview.pdf.

[4] Goltsman, Susan. Outdoor Play Settings: An Inclusive Approach. Universal Design Handbook, ch. 22.

[5] "Every Child has the Right to Play." *Cardiff Council.* April 30 2014. Accessed December 10, 2018. https://www.cardiff.gov.uk/ENG/resident/Leisure-parks-and-culture/Childrens-Play/Strategies-and-policies/Documents/Childrens%20Play%20Strategy.pdf.

equal opportunities for the physical, emotional, social, and cultural growth and creativity associated with play as children without limited mobility.

Through this spatial audit, our results showed that the parks in the City of Charlottesville do not provide the appropriate infrastructure within playspaces to accommodate users with mobility devices. City parks typically met ADA requirements, but as emphasized through interviews with parents and inclusive playground designers, adherence to minimum requirements does not lend itself to inclusivity. The central focus of the spatial audit examined accessible play structures. Additionally, a comprehensive park audit was performed which investigated pathways, additional park amenities, and general park maintenance. While many parks meet ADA standards, overall park scores reveal that Charlottesville parks lack inclusive and accessible play structures. Understanding that independent play is fundamental in childhood development, we chose to prioritize accessible structures that allowed for independent interaction and found that more than half of the parks did not offer any structures that could allow independent play[6]. Three out of the 20 parks studied had one independent structure, seven of the 20 parks had two independent structures, and one park had three independent structures (See Figure 5). Although some parks did have independent play structures, there were other issues present, such as the playspace materiality barring wheelchair access or whether similar play could be achieved while a child with limited

[6] Kenneth R. Ginsburg, MD, MSEd. 2006. "The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds ." *American Academy of Pediatrics* 183.

mobility has access to just one, on-ground structure, while their peers have access to the entire play area.

Since more than half of the city parks do not have structures that could be conducive to independent play, public open space becomes exclusive of users with limited mobility. The recommendations of the report aim to increase awareness and understanding of what a truly inclusive park playspace involves. City parks inadequately serve the limited mobility community and prevent opportunities for children of all abilities to come together and play. This audit aims to define the true accessibility and inclusivity of Charlottesville parks. We believe that an equitable park does not only provide accessible paths, parking lots, and facilities, but also offers a recreational playspace that is inclusive and equitable to all children. Accessibility to a playspace is not sufficient in encouraging play and interaction as it simply provides the route to play. Inclusivity, on the other hand, allows children to similarly experience the same playspace, thus cultivating equitable interactions between children of varying abilities. Inclusivity heightens collective play and allows ability differences to fall away. This important distinction is at the heart of our research, and every effort was made to keep inclusivity our main focus.

2. Definitions

Accessible

> "An accessible playground is one where everyone can get to and through the playground. Accessibility is about travel, movement, and approach or entry."[7]
>
> This means there are no barriers to entry into or navigation through a pathway, ramps lead to elevated surfaces, monkey bars are reachable by wheelchair, and swings have backs and arms to support people who need them.[8]

Accessible Route

> "A continuous unobstructed path connecting all accessible elements and spaces of a building or facility. Inside the boundary of the play area, accessible routes may include platforms, ramps, elevators, lifts. Outside the boundary of the play area, accessible routes may also include parking access aisles, curb ramps, crosswalks at vehicular ways, walks, ramps, and lifts."[9]
>
> A pathway to a play area should ideally be a minimum of 72 inches wide, or 36 inches if combined with a bench or play activity. The running slope slope does not exceed 1:20 and the cross slope does not exceed 1:50.[10]

ADA Compliant

> Follows all rules and regulations as defined by the Americans with Disabilities Act.

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[7] Kaplan, Mara. Accessible vs Inclusive. Playground Professionals. Accessed 1 December 2018. https://www.playgroundprofessionals.com/playground/accessibility/accessible-vs-inclusive112
[8] Kaplan, Mara. Accessible vs Inclusive. Playground Professionals. Accessed 1 December 2018. https://www.playgroundprofessionals.com/playground/accessibility/accessible-vs-inclusive112
[9] U.S. Access Board. Accessible Play Areas: A Summary of Accessibility Guidelines for Play areas. Accessed 1 December 2018. https://www.access-board.gov/attachments/article/1369/play-guide.pdf
[10] Goltsman, Susan. Outdoor Play Settings: An Inclusive Approach. Universal Design Handbook, ch. 22.

Cross Slope

"The slope that is perpendicular to the direction of travel."[11]

Curb Ramps

"A walking surface that has a running slope of greater than 1:20."[12]

Dependent Play Structures

Play components that can be used by individuals with limited mobility only if they have the assistance of another, able-bodied person.

Inclusive

"An inclusive playground is one that has an aim to make it not only accessible, but to encourage and enable children to engage with one another."[13] This means places that have a mix of physical, sensory, and social activities, place comparable types of equipment in the same area to encourage similar play at various ability levels in close proximity, and cluster play components into pods of playspaces to make the area navigable.[14]

Independent Play Structures

Play components that can be used by individuals with limited mobility without the assistance of another, able-bodied person.

Limited Mobility

"A limitation in independent, purposeful physical movement of the body or of one or more extremities."[15]

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[11] U.S. Access Board. Accessible Play Areas: A Summary of Accessibility Guidelines for Play areas. Accessed 1 December 2018. https://www.access-board.gov/attachments/article/1369/play-guide.pdf

[12] U.S. Access Board. Accessible Play Areas: A Summary of Accessibility Guidelines for Play areas. Accessed 1 December 2018. https://www.access-board.gov/attachments/article/1369/play-guide.pdf

[13] Kaplan, Mara. Accessible vs Inclusive. Playground Professionals. Accessed 1 December 2018. https://www.playgroundprofessionals.com/playground/accessibility/accessible-vs-inclusive112

[14] ibid

[15] Wayne, Gil. Impaired Physical Mobility. Nurselabs. Accessed 1 December 2018. https://nurseslabs.com/impaired-physical-mobility/

Park or Playground

The site which has an outdoor area where play spaces containing play components can be found. A park or playground are the general areas whereas play spaces are the specific areas where play components are present.

Play

"For centuries, thoughtful observers have recognized play as integral to childhood life."[16] Play is fun and joyful. It shapes our brains, opening us up to new possibilities and making us more adaptable to new situations. It helps children to develop their physical, mental, and social skills.[17]

Playspace

"The portion of the site containing play components designed and constructed for children."[18] Also known as a *play area*. See *play component.*

Play Component

"An element intended to generate specific opportunities for play, socialization, or learning. Play components may be manufactured or natural, and may be stand alone or part of a composite play structure."[19]

Running Slope

"The slope that is parallel to the direction of travel."[20]

[16] Goltsman, Susan. Outdoor Play Settings: An Inclusive Approach. Universal Design Handbook, ch. 22.
[17] Goltsman, Susan. Outdoor Play Settings: An Inclusive Approach. Universal Design Handbook, ch. 22.
[18] U.S. Access Board. Accessible Play Areas: A Summary of Accessibility Guidelines for Play areas. Accessed 1 December 2018. https://www.access-board.gov/attachments/article/1369/play-guide.pdf
[19] U.S. Access Board. Accessible Play Areas: A Summary of Accessibility Guidelines for Play areas. Accessed 1 December 2018. https://www.access-board.gov/attachments/article/1369/play-guide.pdf
[20] U.S. Access Board. Accessible Play Areas: A Summary of Accessibility Guidelines for Play areas. Accessed 1 December 2018. https://www.access-board.gov/attachments/article/1369/play-guide.pdf

3. Introduction

As a public good of the community, parks should be inclusive spaces where citizens of all physical abilities should be welcomed and feel they belong. Parks are a common space for the public to enjoy, especially for parents and children, and serve to increase quality of life by encouraging health, outdoor recreation, and social interaction. This is currently not the case for all communities in the City of Charlottesville. Recognizing this exclusiveness, this spatial audit of Charlottesville city parks was conducted in partnership with Bennett's Village. Bennett's Village is a community-based organization that is working towards creating an all-abilities playspace in Charlottesville to address the current lack of a truly inclusive playspace. As an evaluation for Bennett's Village, the study of Charlottesville parks aims to examine a sample of playspaces.

a. Background

Bennett's Village was created through two mothers' shared experiences and challenges of spaces that stood as barriers for their children with limited mobility. Bennett's passing in February 2018 sparked a vision to construct an inclusive playspace that will commemorate Bennett's love of play and create a space for equitable and inclusive play for all children in Charlottesville. As they progress towards achieving their vision of constructing an all-abilities playspace in Charlottesville, Bennett's Village is actively calling attention to the lack of inclusive playspaces within the city, emphasizing that accessibility does not necessarily implicate inclusivity. In response, the City of Charlottesville has agreed to maintain the all-abilities park, provided that funding for construction comes from another source. As the organization undergoes fundraising, it is necessary to consider inclusive park features and design for their future playspace,

especially as current city parks do not offer a variety of play experiences for users of all abilities.

b. Project goals

The spatial audit was conducted in Charlottesville parks in order to expose strengths and gaps in existing playspaces. Specifically, the aim is to reveal this area's need for inclusive and accessible spaces for play in which children of all abilities can have fun together. Charlottesville and the surrounding Albemarle County presently have neighborhoods that are underserved by the lack of all-abilities playspaces. The population of people under the age of 18 with a disability reaches more than 6 percent in the Rugby and Venable neighborhoods, about 5 percent in the Fifeville and Ridge Street neighborhoods, and ranges between 1 and 3 percent throughout the rest of the city (Figure 1).

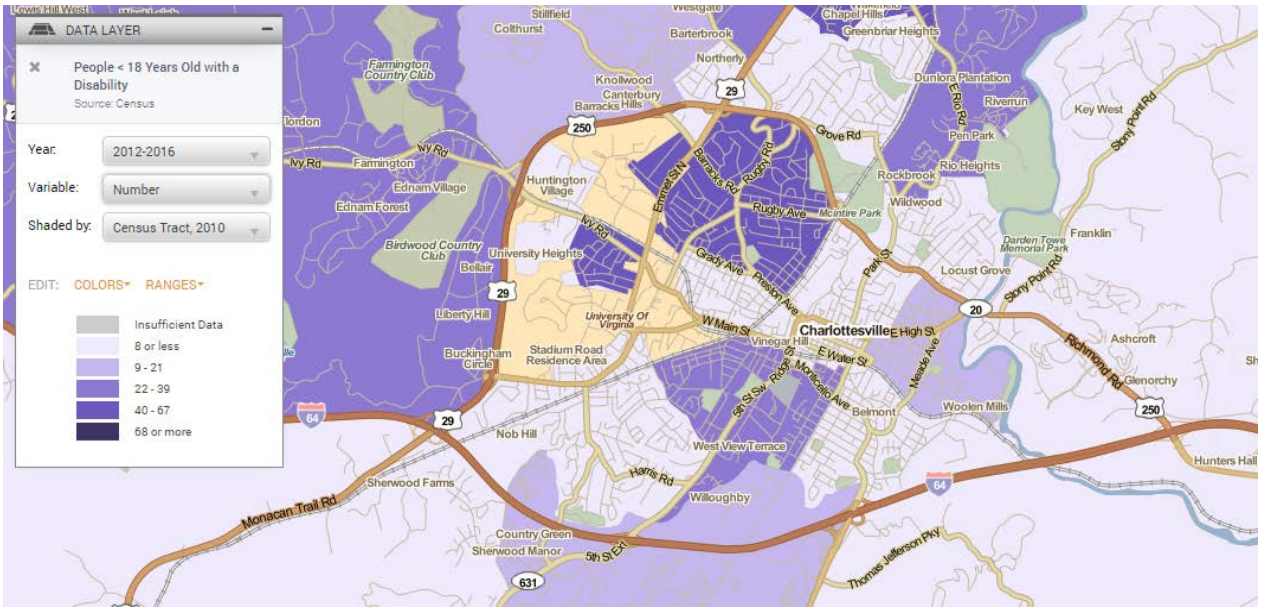


Figure 1: People < 18 Years Old with a Disability (Number)[21]

This indicates in some Charlottesville neighborhoods, there are upwards of 70 children with limited mobility that do not have the same public amenities to foster developmental growth as children without limited mobility. Moreover, the University of Virginia's Hospital system serves a large number of children with limited mobility who would also greatly benefit from inclusive playspaces. Presently, city parks allow for accessibility to an area, but are extremely limited in providing play and recreation for a variety of abilities. We hope that this study provides valuable data about the inclusivity of Charlottesville parks for the city and Bennett's Village.

c. Inclusive Park Design

The understanding of inclusive park design informed our approach as the desire of the Bennett's Village project to create an inclusive park that is designed for all users

[21] People < 18 Years Old with a Disability, 2012-2016. Social Explorer, (based on data from U.S. Census Bureau; accessed December 11 2018).

to experience. An “accessible” park can be entered by all, but an “inclusive” park can be *enjoyed* by all. As Susan Goltsman explains in the Universal Design Handbook, “a quality play and learning environment is more than just a collection of play equipment. The entire site, with all its elements - from vegetation to storage - can become a play and learning resource for children with and without disabilities.”[22] Interviews with inclusivity designers, studying similar audits in the US, and conducting our own research about inclusive design provided a necessary lens through which we were able to analyze Charlottesville parks.

[22] Goltsman, Susan. Outdoor Play Settings: An Inclusive Approach. Universal Design Handbook, ch. 22.

4. Methods

In performing a spatial audit we conducted personal interviews, expert interviews, case study analysis, scorecard adaptation, site observation, and informal participant observation. These methods enabled our team to conduct well-informed research grounded in best-practice principles and expert knowledge. As the project continues beyond our scope of work, we anticipate utilization of focus groups, crowdsourcing, and survey administration.

a. Framing the Project Scope

Our team met with Kara McClurken at the beginning of the project in order to understand the Bennett's Village project goals. Her desire was that our team conduct an audit of Charlottesville area play and recreational spaces, assessing each space's inclusivity/accessibility for the benefit of children with mobility challenges and autism/spectrum disorders. Ultimately, we stated our research question as, "What is the current state of inclusivity and accessibility of public parks in the City of Charlottesville?" This question addresses the existing positive, negative, and absent features in city parks. The project analyzed city zoned parks in Charlottesville, created an accessibility and inclusivity scorecard, analyzed and rated determined spaces using the scorecard, and visually represented the findings on a coded GIS map.

Analyzed Parks

b. Identifying Spaces

With the goals of the Bennett's Village project in mind, the next task was to identify recreational spaces Charlottesville. Kara advised that we consider places including movie theaters, museums, libraries, recreational spaces (e.g. orchards and wineries), places with children's programming such as gyms, dance programs, and camps, and primarily the parks and playgrounds in Charlottesville. Based on the time constraints in a given semester, we narrowed down and honed in on these spaces. Ultimately, we determined the scope of work to include public parks within and owned by the City of Charlottesville. The city zoned parks were identified using data available on the Charlottesville city website and Google Maps. The parks we identified to assess

are as follows: Washington Park, McIntire Park, Greenbrier Park, Greenleaf Park, Schenk's Greenway, Meadowcreek Gardens, Pen Park, McGuffey Park, Market Street Park, Northeast Park, Davis Field, Starr Hill, Longwood Park, Forest Hills Park, Tonsler Park, Quarry Park, Rives Park, Jordan Park, Azalea Park, and Riverview Park. (a detailed description of each park has been included in Appendix A).

c. Site Observation of Parks

Each group of two team members was responsible for auditing approximately six to seven parks in the city of Charlottesville. The park visit process was relatively straightforward and involved compiling field notes denoting experiential data, quantifying the quality of the park according to the categories on the scorecard, and taking photos of both inclusive and problematic areas. Field notes enabled each group to comment on areas that were not covered explicitly by the scorecard. These items included "fun" factor of play spaces, type of material utilized in the play space and on sidewalks, and specific maintenance issues within the park.

d. Developing & Adapting the Scorecard

In order to assess each park space, we took steps towards creating the criteria we would use to audit the accessibility and inclusivity of the park. Some possible questions and considerations that Kara proposed were as follows: ramps and elevators, proximity to bus routes, whether or not children in wheelchairs are allowed, seating options and height of tables, activities that can be reached by child in a wheelchair, toileting spaces with adequate turning radius for wheelchair, place for child needing to be changed, gender neutrality and space for aide and wheelchair. We developed a

scorecard to ensure that a uniform and replicable metric would be applied to each audited park. The scorecard includes aspects of inclusivity and accessibility, with the "playspace/play components" category being particularly important for the former. We consulted with Kara regarding our initial draft and upon receiving her feedback, we were then able to improve the draft and tailored the criteria to address issues encountered by children with limited mobility. The revised scorecard was reviewed with an expert inclusivity designer to receive a second round of feedback. The final version of the scorecard was established after this round of reviews and edits. (Appendix)

e. Developing a Rating System

To appropriately analyze and compare each park, we devised a consistent and appropriately weighted rating system. Each category on our scorecard was weighted so that aspects of parks that were most essential to inclusive play held greater value. The ratings allow for data to reflect a range of levels of inclusivity, from least inclusive to most inclusive. Utilizing individual category scores, we calculated a percentage to reflect the accessibility/inclusivity level of each park and then translated this to a letter grade.

f. Representing Data

We desired to share audit data in a user-friendly format, so we created a "park report" that consolidated each park's numerical score, letter grade, strengths, challenges, and images on a single page. Additionally, numerical scores were translated onto maps that represented the overall park score, play component score, and parking score, which can be found later in the report.

The scorecard set up the framework so that our group gathered data about entrances, parking, amenities, facilities, play spaces, and other programmed spaces within the park. Each group filled out one scorecard per park. Photos were taken at the park to catalogue both problematic and successful aspects of the park. These photos are utilized in the report and could also be made available to the Parks and Recreation department so that parents with mobility impaired children can visualize the play spaces before bringing their child to the playground.

g. Case Study of Inclusive Park Design: ARCpark, Richmond, VA

An inclusive park is one that is designed for all users to experience in similar play. The closest, inclusive park from Charlottesville is ARCpark located in Richmond. ARCpark of Richmond is successful in that it is inclusive of people with limited mobility and other users. The beauty of the park is that it is fun, usable, and an exceptional place for children of all ages, mobility, and abilities. The three playspaces present at ARCpark and equipment are designed in order to support the development of creativity and cooperation, combined as part of a comprehensive multipurpose play environment. The design lends itself to be exciting and attractive for adults and children alike, all while supporting the needs of people of all abilities.[23]

ARCpark receives a perfect score of 100% based on the criteria on our scorecard of accessibility and inclusivity of parks for users with limited mobility. The park is situated conveniently at an accessible bus stop, so ideally even those without a car could visit the park. The parking lot has four designated ADA-compliant spaces with

[23] Goltsman, Susan. Outdoor Play Settings: An Inclusive Approach. Universal Design Handbook, ch. 22.

curb ramps placed at the adjacent curb, with plenty of other parking spots in close proximity to the entrance. The ramped entrance is fully accessible and at a low slope-grade for ease of access in a wheelchair. The gate opens with the push of a button that is at wheelchair-height, with accessible walkways all throughout the park. The restroom amenities includes a family restroom with an adult-sized changing table and ample turning room for a wheelchair. There are also spacious individual restrooms and gender-distinct rooms. Other facilities include a charging station for electric wheelchairs. There are several distinct clusters of play spaces that are attractive to all ages for play. The ramped treehouse even offers children with limited mobility the opportunity to play on a vertical play space, an element of play that children enjoy.

ARCpark: playspaces are ramped and wheelchair-accessible

ARCpark: multi-sensory walls with panels for touching, hearing, and looking

ARCpark: wheelchair-accessible treehouse, playhouse, stage & musical instruments
All feature poured-rubber safety surfaces

The ground material is a poured-rubber safety surface and there are swings of all varieties for users with varying needs. Additional programmed spaces within the park include water troughs and gardens, a greenhouse, a multi-purpose playing court, a shaded pavilion and picnic tables, and accessible fitness equipment. The entire park is well maintained and enclosed for safety.

ARCpark: water troughs, gardens, and greenhouse; all are wheelchair-accessible

5. Results and Analysis: Scorecard Data

We assessed each park through the lens of our designated user, surveying the playgrounds in each park in order to assess the number of inclusive, fun, and accessible components present at each site. We have chosen to highlight findings from the categories of parking, park features, playspace components and playspace accessible routes/paths. These categories were chosen due to their impact on accessibility to and inclusivity of existing playspaces.

a. Parking

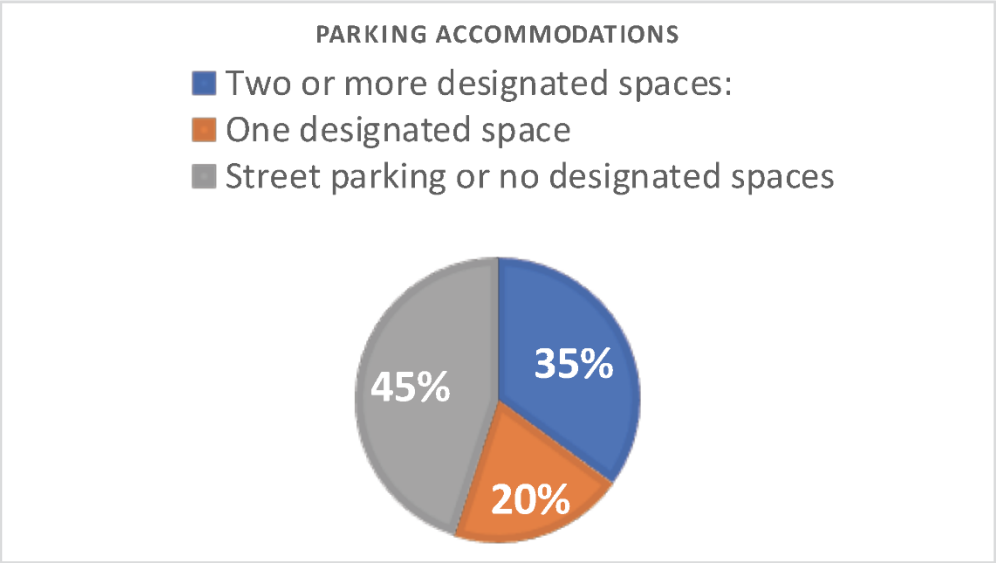


Figure 2: Parking Accommodations

The criteria we utilized in conducting parking analysis held parks at a higher standard than the minimum ADA requirements. We analyzed the number of designated spaces as well as their proximity to sidewalks, paths, and curb ramps. Poorly designated and maintained parking spaces and sidewalks can act as barriers to the access of a park or playground. Scorecard data showed that half of all parks in

Charlottesville do not have appropriate curb ramps located within the direct vicinity of the designated parking spots. Forty-five percent of parks had street parking which is very difficult to maneuver with a wheelchair or did not contain designated spaces. Without accessible parking, families face immediate challenges upon arrival at a park. This factor is a major deterrent that prohibits inclusive and equitable play for children with limited mobility.

b. Park Features

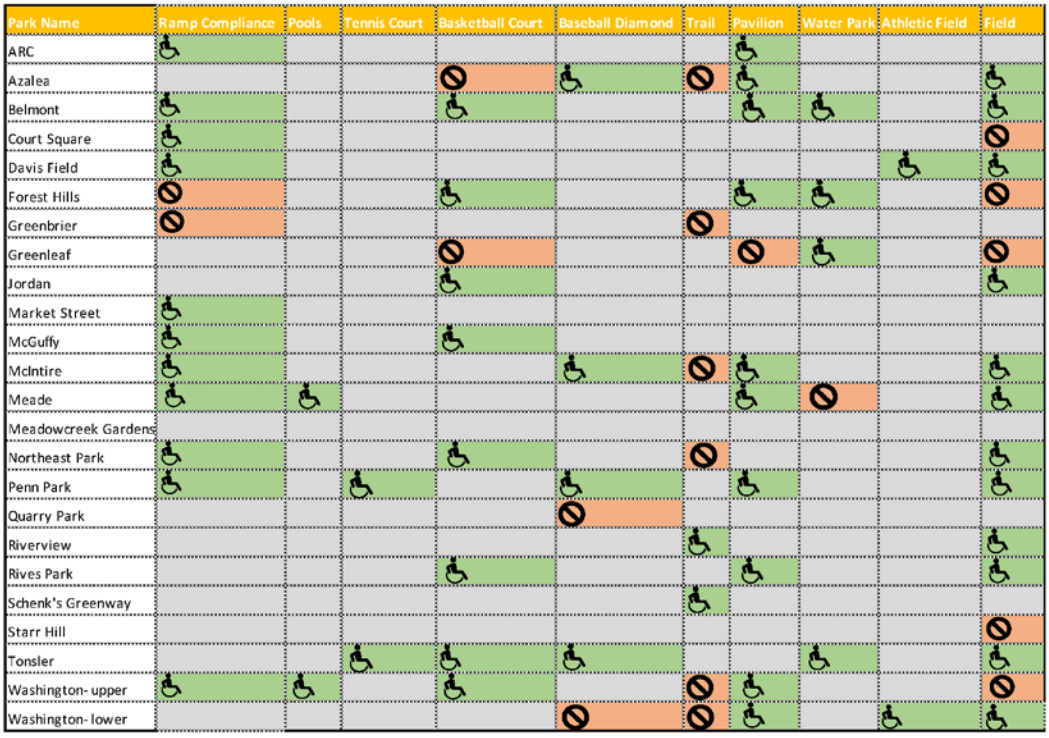


Figure 4: Park Features

Parks in Charlottesville offer a variety of structures and features beyond a playground or trail system. Of the existing features at each park, 28% (18/64) of features are inaccessible to our defined user. 75% of trails are inaccessible, thus limiting the ability of our user to enjoy time in nature. We found that pavilions,

basketball courts, and athletic fields are accessible and can provide spaces for children of all abilities to play together.

c. Playspace Components:

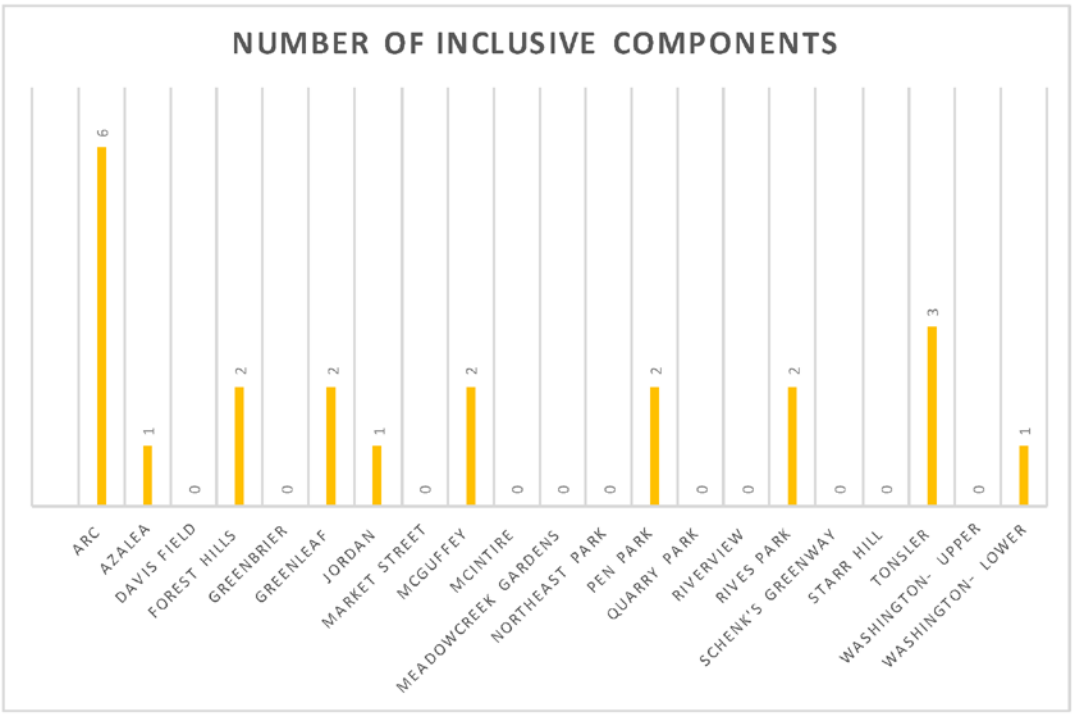


Figure 5: Number of Inclusive Play Components

Upon analysis, 55% (11/20) of the parks did not contain any inclusive or accessible play structures for a user with limited mobility, 15% (3/20) contained only one structure, and 20% (4/20) contained two structures. Tonsler Park contained the maximum amount of inclusive play components found in a single park with a total of three, giving it a score of 50%. It is notable, too, that none of these parks have inclusive vertical play structures with ramped access similar to the ones at ARCpark in Richmond.

d. Playspace Path/Route Accessibility:

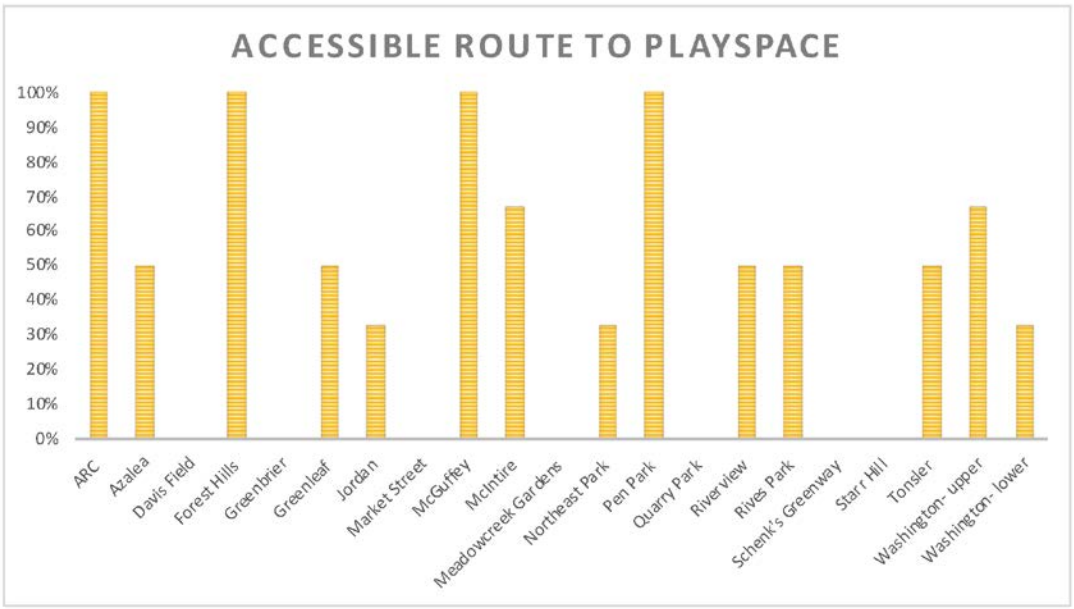


Figure 6: Accessibility to Playspaces

Of the twenty parks audited, four parks had a perfect accessibility score, two parks received a 66%, five parks received a 50%, three parks received a 33%, and five parks received a zero. This category must be considered alongside the prior category of inclusive playspace components. If routes to playspaces are not accessible, the components of a playspace cannot be fully utilized.

e. Final Scores

According to our grading system, parks scoring between 90-100 received an “A”, 80-89 received a “B”, 70-79% a “C” and all parks scoring below 70% received an “F”. The highest scoring park in Charlottesville is Pen Park with a cumulative score of 79%. Pen Park and Forest Hills Park scored a “C” and all others received an “F”. This is indicative of a major lack of inclusivity in Charlottesville parks. Although many parks adhere to ADA standards, few parks have inclusive structures that enable children of all abilities to play and have fun collectively.

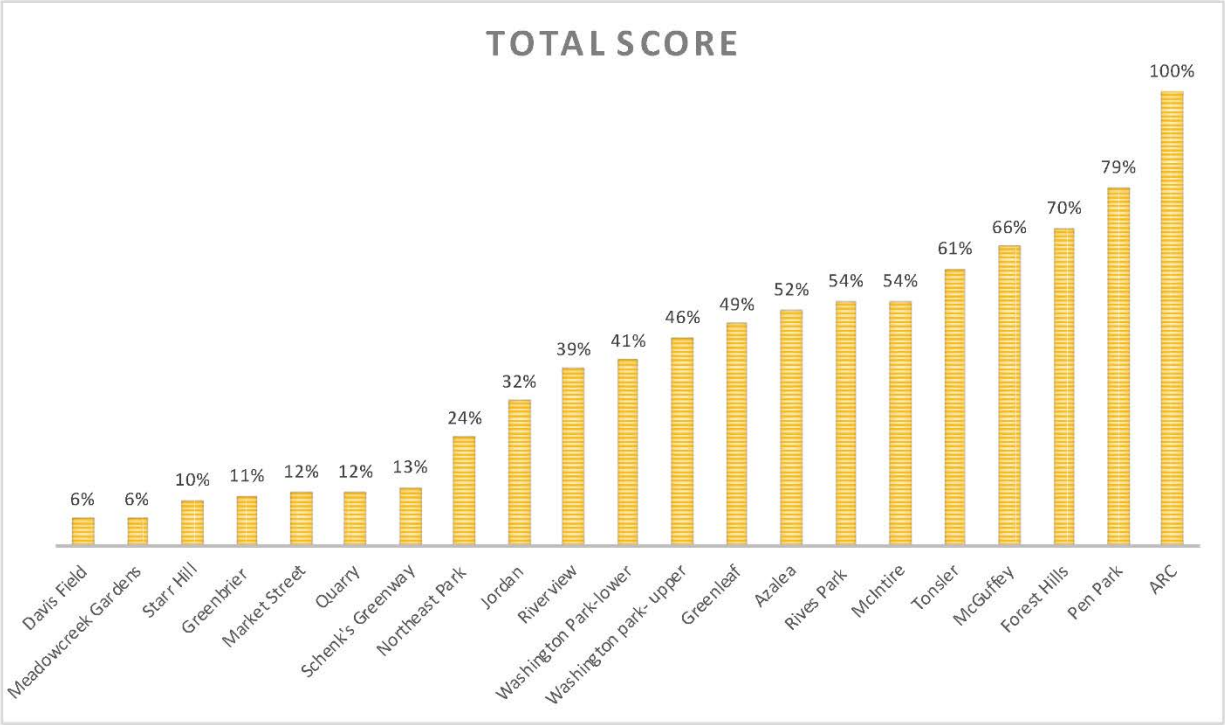


Figure 7: Total Park Scores

f. GIS Analyses

Figure 8: Overall Park Score:

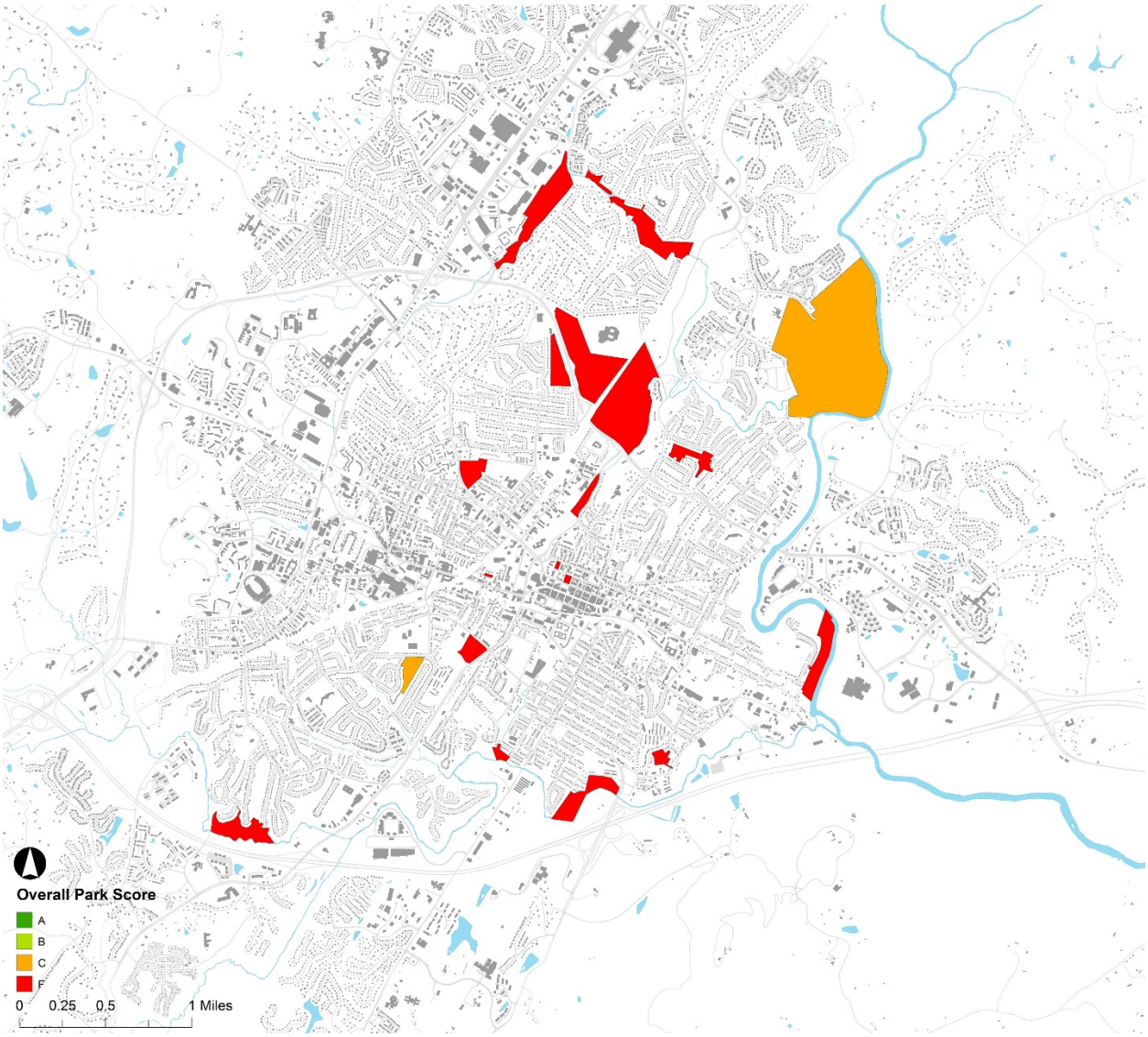


Figure 9: Park Accessibility Score: Quality of ADA parking

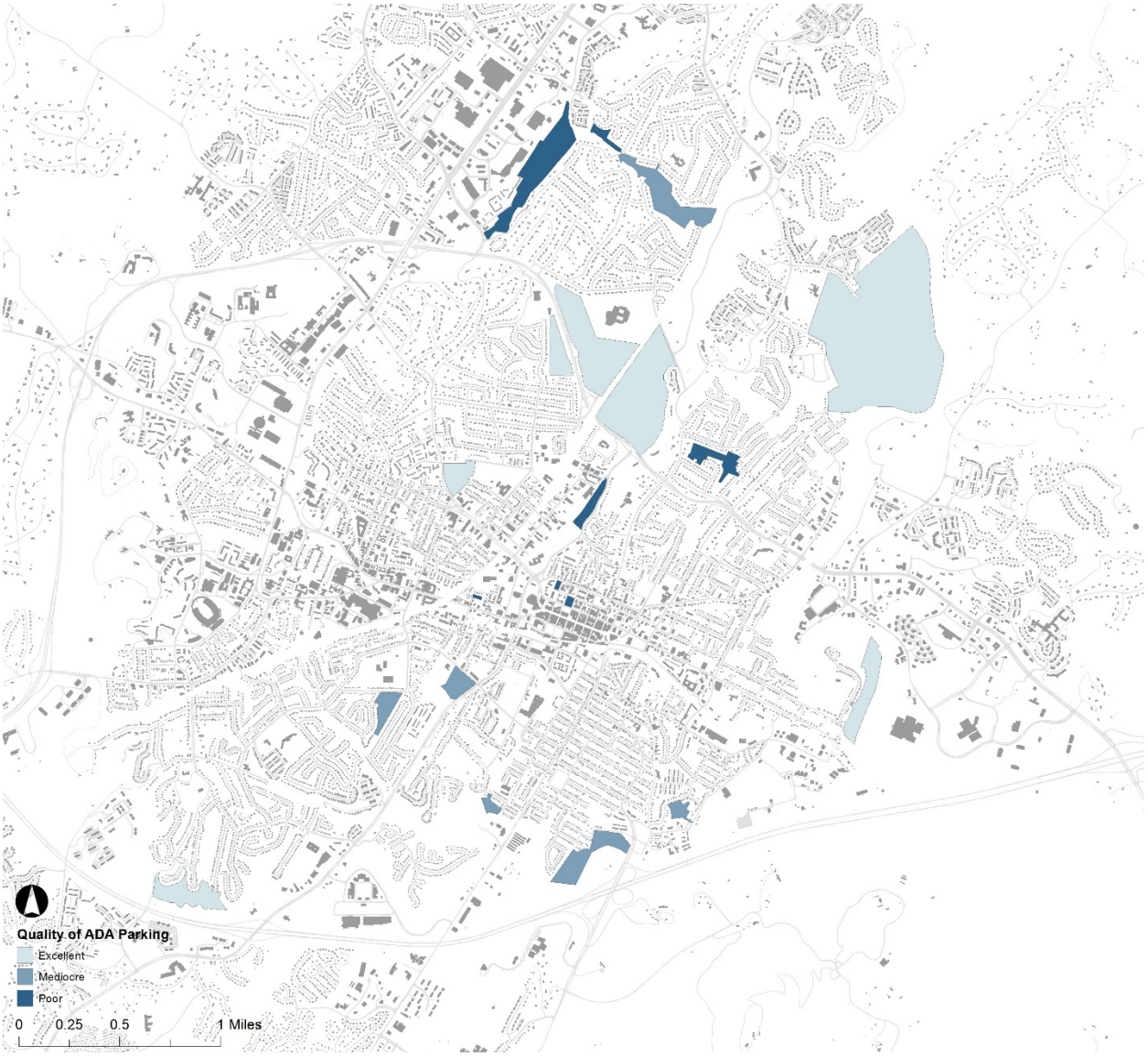


Figure 10: Play Structure Score: Number of Accessible Play Components

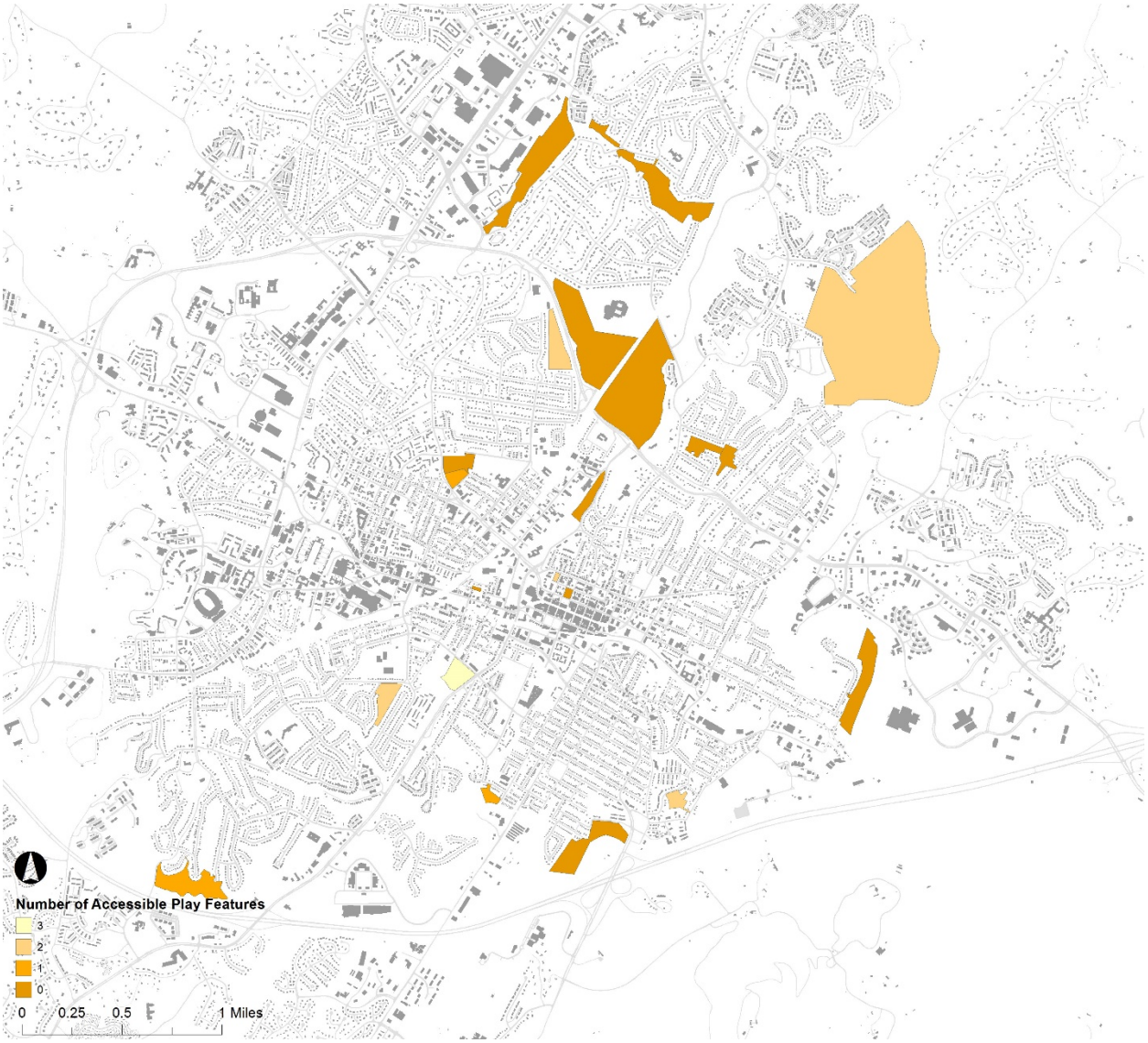
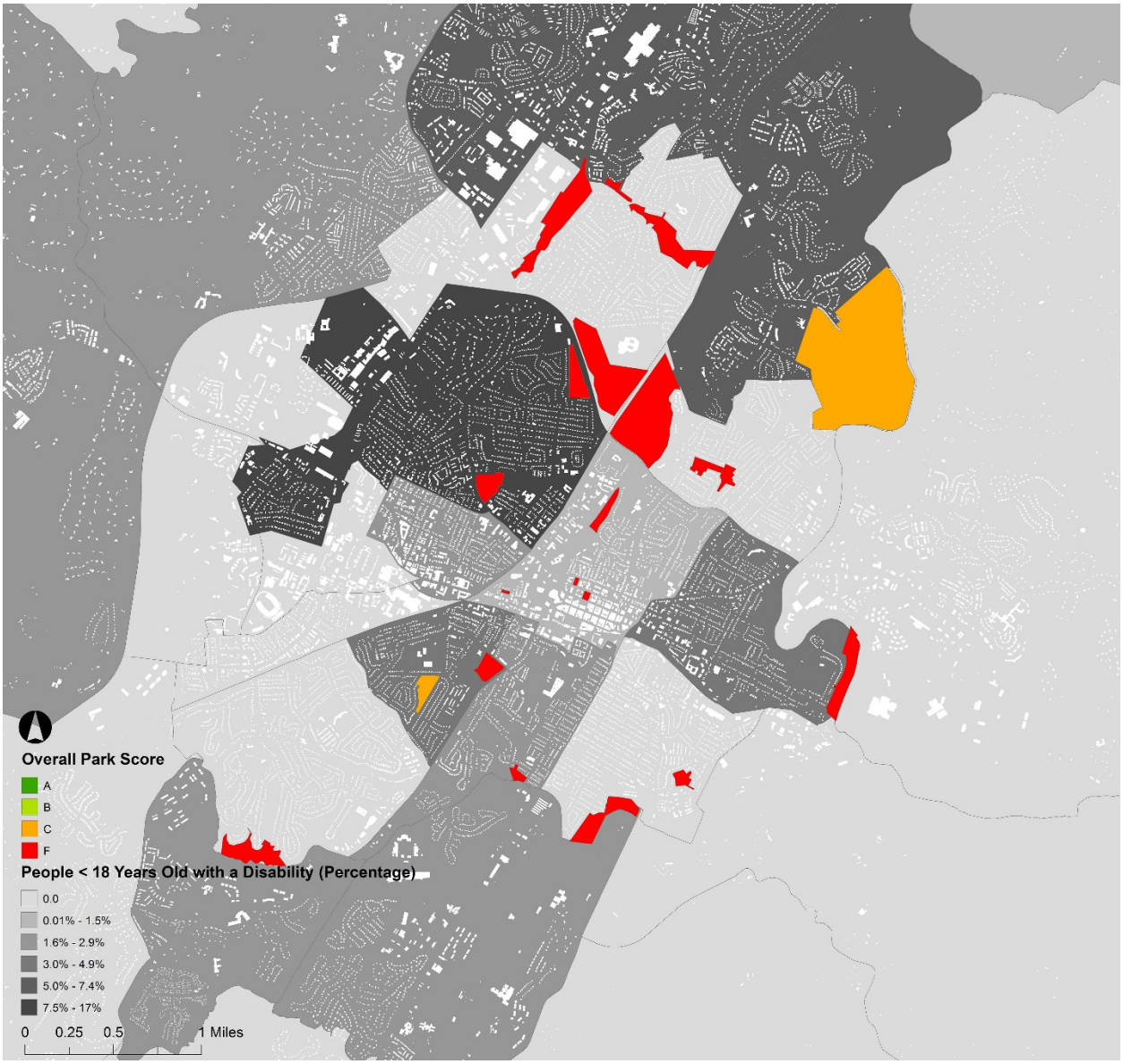


Figure 11: People < 18 Years Old with a Disability (Percentage) and overall park score



6. Recommendations for the City of Charlottesville

Through an overall review of site conditions and available assets in Charlottesville's major public parks, we have found that largely, there are very few park offerings for children with mobility impairments to readily enjoy. There is a great need for adaptations to existing parks, either by means of increased maintenance or infrastructure changes, depending on the site. Our recommendations are baseline suggestions which are informed by our site visits, shared knowledge of ADA and ABA standards and case study research. We hope that the offered recommendations, park report and accompanying scorecard serve the City well in what we feel is a common goal for us all: providing a safe and enjoyable Charlottesville park experience to children and adults of all abilities and ages. Action to this end will help inspire other park providers throughout the region, creating the potential for our city to set itself apart as a state leader in inclusivity and accessibility.

We acknowledge that there are a great variety of opportunities for the youth of our region to play and enjoy Charlottesville's park accommodations at present, and we feel that these public amenities are one of the city's strongest assets to promote the prosperity of local citizens and their children. The lens of inclusivity should be used when designing new features or implementing meaningful policy changes in city parks, thus making existing assets available to children of virtually every mobility or visibility limitation. Children should not feel that they are bound by their limitation, but that Charlottesville parks are a reprieve from the normal. Our city's parks can provide an

exciting place to play alongside peers and interact with engaging park features. Charlottesville's planning and policy leaders have the opportunity to make this dream come to fruition for these children and their parents.

For many of Charlottesville's parks, low-budget changes to items such as leveling sidewalk transitions, changing playground surface coverings and the addition of accessible and wheelchair-oriented play structures would serve to provide the initial step toward more involved on-site infrastructure adaptations. Installing mid-scale design elements such as accessible playground equipment, new pathways and ramps should be promoted in park sites where they will have the greatest net benefit for mobility-limited users. Greater site planning and community engagement at the largest scale of accessible park design should be reserved, if only initially, for one or two "showcase parks" which embody new elements of accessible design and infrastructure. The concentration of both funding and stakeholder effort to one or two particular sites will provide a greater opportunity to achieve a fully inclusive park in Charlottesville similar to ARCpark in Richmond.

As a team, we have agreed that Forest Hills Park and Pen Park would provide the ideal locations to implement the strongest interventions in inclusive design. An accessible public park in Charlottesville could be adapted to existing land and infrastructure, as a means to save on finances and time while engaging with a broad range of regional human capital. Implementing these heightened design standards at Forest Hills Park would play off of its central location and existing amenities to allow for easy access by a greater population of residents and a more readily facilitated

adaptation of the site's features. Pen Park, on the other hand, while not as centrally located, provides a large amount of flat, open space, and plentiful parking, making this a viable location for the ground-up development of a new inclusive playspace.

If these adaptations are conducted through a heightened level of community engagement with innovative stakeholders, Forest Hills Park, Pen Park, or any site chosen by the City will prove to benefit children with mobility challenges and autism/spectrum disorders as well as their parents who wish to have a play place that promotes meaningful and lifelong learning. A park of this nature is essential to the vitality and richness of our City, and we feel that both existing park offerings and passionate stakeholders are available to help facilitate the implementation of this innovative Charlottesville amenity.

7. Limitations

This study was limited in scope in that it focused on publicly owned parks within the City of Charlottesville and their accessibility and inclusivity to children with a specific type of disability. Moreover, the scorecard criteria and grading system was developed in partnership with a limited number of stakeholders. We consulted Kara McClurken as well as a locally licensed landscape architect who focuses on accessibility considerations in their work in the development of the scorecard, but it would have been preferable for this criteria to also be assessed by parents who have children with limited mobility. Additional insight from children themselves through focus groups or interviews would have been valuable as well. We believe that this input would have refined the park scores, but not greatly shifted them, and we feel, as do our reviewers, that this the fairest and most-informed park assessment we could share with you. We hope that this report is helpful in promoting inclusivity in the public realm. In addition, unforeseen circumstances prohibited the inclusion of five parks including Bailey, Belmont, Court Square, Fifeville and Meade Park.

8. Recommendations for Further Research

As mentioned above, this study was limited in scope in that it only focused on publicly owned parks within the City of Charlottesville and their accessibility and inclusivity to children with a specific type of disability. Applying the same methodology to the 12 parks within Albemarle County would be greatly beneficial. Research should also be done on spaces outside of parks in order to get a comprehensive understanding of the area's child recreation facilities. This should include movie theaters, malls, bowling alleys, indoor playgrounds, craft-making centers, indoor gyms, museums, zoos, mini-golf courses, laser-tag facilities, and any other locations where children play. Different criteria and scorecards would need to be developed for these spaces. Moreover, further studies should be done to analyze the inclusivity of these spaces for children with a full range of disabilities, including physical, sensory, and developmental.

One way to potentially facilitate this vast amount of research would be through crowd-sourcing. For example, researchers could set up a series of surveys through a service such as Survey 123 through ArcGIS that parents could access online in order to submit information about the inclusivity of different spaces. The benefit of this strategy is that it would be tapping into the knowledge and lived experience of the individuals who have the best understanding of what makes a space useable for children with disabilities. This could also be achieved by mining already existing and available online data through websites such as Google, Yelp, or Foursquare or through social media or web forums. Information from discussions on these and other online platforms regarding the inclusivity of local spaces can be compiled and catalogued. For instance, researchers could read through all of the online reviews regarding a bowling alley and

pull out any relevant information ranging from the availability of ADA parking to whether a parent's child with a disability had a good experience. Thus, quantitative methods would need to be utilized in order to get a more complete understanding of the inclusivity of local child recreation spaces.

9. Conclusion

While we acknowledge that there are a great variety of opportunities for the youth of our region to play and enjoy Charlottesville's parks, currently, there is an obvious lack of inclusive and accessible playspaces in the area. We feel that public amenities are one of the strongest assets in promoting the prosperity of local citizens and their children. Utilizing a lens of inclusive park design is imperative to the social, psychological, and physical well-being of all children. Children with limited mobility should not feel excluded or isolated from others; rather, they deserve to play alongside their peers and engage their imagination. We hope that the Bennett's Village Project and the city of Charlottesville can work together to provide such an opportunity for children in the region.

Appendix:

Scorecard totals:

a. Parking

Park Name	Number of designated spaces	Curb Ramps	Grade of lot	Distance to Ramp/ Path
ARC	2	1	1	1
Azalea	2	1	1	1
Davis Field	0	0	0	0
Forest Hills	1	0	1	1
Greenbrier	0	1	1	0
Greenleaf	2	1	0	1
Jordan	0	1	1	0
Market Street	0	0	0	0
McGuffey	0	0	0	0
McIntire	2	1	1	1
Meadowcreek Gardens	0	0	1	0
Northeast Park	0	0	0	0
Pen Park	2	1	1	1
Quarry Park	1	0	0	1
Riverview	2	1	1	1
Rives Park	1	1	0	1
Schenk's Greenway	0	0	0	0
Starr Hill	0	0	0	0
Tonsler	1	0	1	1
Washington- upper	2	1	1	0
Washington- lower	2	1	1	1

b. Pathways

Park Name	Grade of sloped walkway	Ramp/path condition	Path Materiality
ARC	1	1	2
Azalea	1	1	2
Davis Field	0	1	0
Forest Hills	1	0	2
Greenbrier	0	1	2
Greenleaf	1	1	2
Jordan	0	1	2
Market Street	1	1	2
McGuffey	1	2	2
McIntire	1	1	2
Meadowcreek Gardens	1	0	0
Northeast Park	1	1	1
Pen Park	1	1	2
Quarry Park	0	1	1
Riverview	1	1	2
Rives Park	0	1	2
Schenk's Greenway	1	1	2
Starr Hill	0	1	2
Tonsler	1	1	2
Washington- upper	1	0	1
Washington- lower	1	1	2

c. Features

Patk Name	Ramp	Pools	Tennis Cou	Basketball Court	Baseball Diamond	Trail	Pavilion	Water Park	Athletic Field	Field
ARC		1	-	-	-	-		1	-	-
Azalea	-	-	-		0	1	0	1	-	1
Davis Field	-	-	-	-	-	-	-	-	1	1
Forest Hills		0	-		1	-		1	1	0
Greenbrier		0	-	-	-		0	-	-	-
Greenleaf	-	-	-		0	-		0	1	0
Jordan	-	-	-		1	-	-	-	-	1
Market Street		1	-	-	-	-	-	-	-	-
McGuffey		1	-		1	-	-	-	-	-
McIntire		1	-	-		1	0	1	-	1
Meadowcreek Gardens	-	-	-	-	-	0	-	-	-	-
Northeast Park		1	-		1		0	-	-	1
Pen Park		1		1		1		1	-	1
Quarry Park	-	-	-	-		0	-	-	-	-
Riverview	-	-	-	-	-		1	-	-	1
Rives Park	-	-	-		1	-		1	-	1
Schenk's Greenway	-	-	-	-	-		1	-	-	-
Starr Hill	-	-	-	-	-	-	-	-	-	0
Tonsler	-	-		1	1	1	-		1	1
Washington- upper		1	1		1		0	1	-	1
Washington- lower	-	-	-	-		0	0	1		1

d. Play Structure Route/ Inclusive components

Park Names	Accessible Route	Materiality	Boundary to Playspace	Independent Play Components
ARC	2	2	2	6
Azalea	2	0	1	1
Davis Field	0	0	0	0
Forest Hills	2	2	2	2
Greenbrier	0	0	0	0
Greenleaf	2	0	1	2
Jordan	1	0	1	1
Market Street	0	0	0	0
McGuffey	2	2	2	2
McIntire	2	0	2	0
Meadowcreek Gardens	0	0	0	0
Northeast Park	1	0	1	0
Pen Park	2	2	2	2
Quarry Park	0	0	0	0
Riverview	2	0	1	0
Rives Park	2	0	1	2
Schenk's Greenway	0	0	0	0
Starr Hill	0	0	0	0
Tonsler	2	0	1	3
Washington- upper	2	0	2	0
Washington- lower	1	0	1	1

e. Park Facilities:

Park Name:	Water Fountains	Bathrooms	Tables
ARC	1	2	1
Azalea	1	1	1
Davis Field	0	0	0
Forest Hills	1	2	1
Greenbrier	0	0	0
Greenleaf	0	2	0
Jordan	0	0	0
Market Street	0	0	0
McGuffey	1	0	1
McIntire	1	2	0
Meadowcreek Gardens	0	0	0
Northeast Park	0	0	0
Pen Park	1	2	1
Quarry Park	0	0	0
Riverview	0	0	0
Rives Park	1	1	0
Schenk's Greenway	0	0	0
Starr Hill	0	0	0
Tonsler	0	2	0
Washington- upper	0	2	0
Washington- lower	0	1	0

f. Maintenance table:

Park Name:	Quality of Maintenance
ARC	2
Azalea	2
Davis Field	0
Forest Hills	2
Greenbrier	1
Greenleaf	1
Jordan	1
Market Street	1
McGuffey	2
McIntire	2
Meadowcreek Gardens	1
Northeast Park	1
Pen Park	2
Quarry Park	2
Riverview	1
Rives Park	2
Schenk's Greenway	2
Starr Hill	2
Tonsler	2
Washington- upper	1
Washington- lower	1

g. Scorecard

SPATIAL AUDIT SCORECARD				
PARK: GROUP:	SCORE	OUT OF	CRITERIA	NOTES
PARKING				
Designated ADA spaces			0 points = No ADA spaces present 1 point = ADA spaces present but issues with grade of space and/or maintenance 2 points = ADA spaces present with no significant issues	
ADA curb-cut ramps			0 points = Not present or present w/ issues of grade, configuration, etc. 1 point = Present w/ no significant issues	
Grade of lot (within accessible path)			0 points = Grade appears to be too steep 1 point = Grade appears to be sufficient	
Access aisle			0 point = Not present or not adjacent to access aisle 1 point = Present and adjacent to access aisle	
PARKING TOTAL:				
			OUT OF:	
PATHWAYS				
Grade of sloped walkway			0 points = Slope appears to be steeper than ADA requirements 1 point = Slope appears to comply with ADA requirements	
Ramp/path condition			0 points = Current conditions prohibit accessibility 1 points = Current conditions allow maximum accessibility	
Path			0 points = Loose (mulch, sand, other) 1 point = Semi-Firm (dirt or grass) 2 points = Firm (compacted aggregate, paved)	
RAMPS/PATHWAYS TOTAL:				
			OUT OF:	
ADDITIONAL STRUCTURES/ FEATURES				
Ramp compliance (if required for movement through site)			0 points = Not present or present w/ issues of grade, configuration, etc. 1 point = Present with no significant issues	
Pools			0 points = Not present or present, not accessible 1 point = Present and accessible	
Water playspace			0 points = Not present or present, not accessible 1 point = Present and accessible	
Tennis court			0 points = Not present or present, not accessible 1 point = Present and accessible	
Basketball court			0 points = Not present or present, not accessible 1 point = Present and accessible	

Baseball diamond			0 points = Not present or present, not accessible	
			1 point = Present and accessible	
Pavilion			0 points = Not present or present, not accessible	
			1 point = Present and accessible	
Athletic field			0 points = Not present or present, not accessible	
			1 point= Present and accessible	
Field			0 points = Not present or present, not accessible	
			1 point = Present and accessible	
Trail			0 points = Not present or present, not accessible	
			1 point = Present and accessible	
ADDITIONAL STRUCTURES TOTAL:				
			OUT OF:	
ACCESSIBILITY TO PLAYSPACES (3x)				
Accessible route			0 point = No accessible route	
			1 point = Steep route or incomplete path	
			2 points = Relatively flat, firm, stable, and slip resistant	
Playspace			0 points = Loose (mulch, rubber, pea stones)	
			1 point = Semi-firm (bare dirt, compacted aggregate)	
			2 points = Firm (PIP rubber, asphalt, concrete)	
Boundary			0 point = Not possible to access	
			1 point = Barrier, but possible to access	
			2 points = Playspace on grade with path	
ACCESSIBILITY TO PLAYSPACES TOTAL:				
			OUT OF:	
WEIGHTED SCORE:				
			OUT OF:	
PLAY STRUCTURES (3x)				
Independent (requiring little/ no aid from other) and dependent (requiring assistance of other for use) accessible play structures			0 points = 0 independent structures, dependent structures present (users unable to access without assistance)	
			1 point = 1 independent structure, dependent structures present (users need significant assistance)	
			2 points = 2 independent structures, dependent structures present (users need significant assistance)	
			3 points = 3 independent structures, dependent structures present (users need significant assistance)	
			4 points = 4 independent structures, dependent structures present (users need minimal assistance)	
			5 points = 5 independent structures, dependent structures present (users need minimal assistance)	
			6 points = 6+ independent structures, dependent structures present (users can access equipment independently)	
PLAY STRUCTURES TOTAL:				
			OUT OF:	
WEIGHTED SCORE:				
			OUT OF:	

FACILITIES/AMENITIES				
Accessible water fountains			0 points = Not present or present but not ADA-compliant	
			1 point = Present, ADA-compliant	
Accessible bathrooms			0 points = No bathrooms or present, not complaint	
			1 point = Present, ADA-compliant	
			2 points = Present, ADA-compliant, has additional accommodating floor space	
Accessible tables			0 points = No tables, or present, not compliant	
			1 point = Present, ADA-compliant	
FACILITIES/AMENITIES TOTAL:				
			OUT OF:	
MAINTENANCE				
Quality of maintenance			0 points = Maintenance issues severely impact ADA accessibility	
			1 point = Issues limit full ADA accessibility	
			2 points = Issues do not impact ADA accessibility	
			(Issues may include drainage accumulated on pathways, plant overgrowth blocking pathways, potholes, for a score that reflects how the total of those problems impacts the ability of all users to access the park)	
MAINTENANCE TOTAL:				
			OUF OF:	
SCORECARD TOTAL:				
			OUT OF:	
			PERCENTAGE:	

h. Supplemental park descriptions report available