

PLAYGROUNDS FOR EVERYONE:  
CREATING AN OUTDOOR PLAY AND EXERCISE EXPERIENCE THAT CATERS TO  
PEOPLE 5 AND UP AND IS WHEELCHAIR ACCESSIBLE

by

TIFFANY WHITE

(Under the Direction of Ronald Sawhill)

ABSTRACT

Children's playgrounds have been around for quite some time, but rarely does a person find components in them which provide for a wide range of age groups and physical abilities. In addition to the typical playground features, enjoying activities such as a walking track, wheelchair accessible play equipment, adult sized fitness equipment and restrooms with changing tables could all make an outdoor play and exercise experience more encompassing for people ages 5 and up. This fusion could be the beginning of inclusive playgrounds which are designed for more than just the typical childhood ages and physical abilities. Considering the mental and physical benefits of outdoor play and exercise, the purpose of this thesis is to showcase the key components which should be included in a playground designed for a broad spectrum of people. To gather information, data from a survey, interview, case studies and literature reviews have been used.

Keywords: accessible play, accessible playgrounds, ADA, Americans with Disabilities Act, landscape architect, outdoor exercise equipment, outdoor gym, playgrounds, playground design, playscapes, wheelchair accessibility



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BS, UNIVERSITY OF WEST GEORGIA, 2007

A Thesis Submitted to the Graduate Faculty of The University of Georgia  
in Partial Fulfillment of the Requirements for the Degree

MASTER OF LANDSCAPE ARCHITECTURE

ATHENS, GEORGIA

2023

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August 2023

## DEDICATION

To my children Kingston and Donovan. Thank you for always enjoying the times that we spend together and when we visit parks, playgrounds and nature centers. I love the joy that you two bring to me when I am able to see you play outside in nature or in any type of playground. Kingston you always inspire me with your creative works and your ability to invent new things. Donovan, your charismatic nature will take you very far in life.

To Javis, thank you for being patient with me while I spent the last 3 years away in Athens, Georgia. It means so much to me that you were open to me pursuing my dream of becoming a Landscape Architect. Your support and encouragement means so much to me. I love you.

## ACKNOWLEDGEMENT

I would like to give sincere thanks to my major professor, Professor Ronald Sawhill.

Professor Sawhill, you have helped me from the beginning of this journey until the very end. There were several steps along the way when I was not sure of the next act to take but you always clarified or at least pointed me in the right direction. For that I

truly want to say thank you.

I would also like to give my sincere thanks to all members of my committee.

Professor Steffens, I have enjoyed working with you as your graduate assistant and now with you as part of my thesis committee. Thank you so much for your support.

Professor Green, thank you for offering your help and guiding me in several ways during the creation of my thesis. I appreciate your support and am glad you were willing to be on my committee. Your surveying insight and experience has been so

helpful and beneficial.

Amanda Frary, thank you for saying yes to me when I asked you to be on my committee. Your special education teaching experience is so valuable and your knowledge is something that would take years to learn. I appreciate you taking the time to participate on my committee and share what your life experience has taught

you in the area of accessibility.

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## CHAPTER 1: INTRODUCTION

### HISTORY OF PLAYGROUNDS

Most people, during their life have enjoyed some type of outdoor play experience as a child, but does this experience as it exists now have limitations? There are school aged children who are not able to participate in most outdoor recreational play and exercise because of physical and or mental disabilities (Playcore® 2016). Similarly, should getting fresh air and physical exercise in a playground space be limited to children? Adults with and without those same types of disabilities are also impacted by a lack of accessible outdoor recreational spaces for them to participate in within public or private spaces (NRPA 2023). This thesis sets out to identify constraints, benefits and opportunities which could turn what most people are familiar with within the typical children's playground into an outdoor play and exercise experience which works for everyone.

Over the last 200 years, playgrounds have evolved. In the 1850's most playgrounds did not exist in a way which they are known today; most dedicated outdoor play spaces for children consisted of sand boxes with otherwise no physical equipment for children to play on at all (Hart 2023). Before the development of city parks which included playgrounds, most children, especially poor children who lived in cities with larger populations, played in the streets which was very dangerous. Around the 1920s, cities began to dedicate what was known as "play streets" for

children to play on. These play streets were roads, streets and alleyways which were dedicated to child play. No cars or automobiles of any kind were allowed on the play streets. The ends of these roads were barricaded with rocks, tires, trash and other large junk items to signify to drivers that driving on that particular road was not allowed.

Oftentimes, even the play street would not remain safe and play friendly for children because people would see the junk material which was used to block off the ends of the roads and then they would continue to use the spaces to pile on more junk. As a result, over time, the play streets often ended up becoming another unsafe place for children to play. No one had yet thought about structured play for children which was in a safe off-the-street environment. Jane Jacobs said “Some things are said so often that nobody thinks of what they mean anymore. For instance, for years we’ve been hearing, ‘take the children off the streets’, off the streets and into where?”. (Jim Epstein 2011, 0:20:00). Although Jane Jacob’s popularity did not come about until the 1960s, her question suggests that there was still a need for safe play areas for children even at that time.

An early known playground from history was located in Manchester, England in the 1800s (Hart 2023). The first playground in the United States on record was built in 1887 in San Francisco at Golden Gate Park (Hart 2023). This playground consisted of slides, swings and a carousel (figure 1). The initial public perception of this playground

was that it was a bit of an odd place, but yet it was still very popular with people as it attracted children and families from all around.



Figure 1: Photo of the first playground in the United States.

In the early 1900s, the promotion of standardized playground equipment was created with the practices of The Playground Association of America. This group was established in 1906. Its goal was to create a standard for the requirements for playground safety and equipment. Many of the early playground structures were very tall and also very dangerous for children. The possibility of falling and having a serious injury was great. With no set standard, developers were able to design and build anything they wanted. For example, the equipment of Hiawatha Playfield in 1912 was built with very high elevation possibilities for children. The tops of the structures

consisted of long poles which children were able to walk, scoot or sit on (see figures 2 and 3). Because this structure was about 20 feet in the air it made this playground structure very dangerous. It was during this era that The Playground Association of America began to create playground regulations so that children could play safely.



Figures 2 and 3: Playground of Hiawatha Playfield in 1912.

In the 1930s and 1940s Carl Sorensen, a Landscape Architect from Denmark proposed that children living in cities should still have natural outlets and play spaces within close reach. He explained that children's play areas should even be designed with natural play items such as tree limbs which children can use to build play structures with and climb on. He explained that children want to climb, fight, hunt and build dens. In a 1935 Danish journal titled *Arkitetkens Manedshaeft*, Sorensen explains,

“Finally, we should probably at some point experiment with what one could call a junk playground. I am thinking in terms of an area, not too small in size, well closed off from its surroundings by thick greenery, where we should gather, for the

amusement of bigger children, all sorts of old scrap that the children from the apartment blocks could be allowed to work with, as the children in the countryside and in the suburbs already have. There could be branches and waste from tree polling and bushes, old cardboard boxes, planks and boards, “dead” cars, old tyres and lots of other things, which would be a joy for healthy boys to use for something. Of course it would look terrible, and of course some kind of order would have to be maintained; but I believe that things would not need to go radically wrong with that sort of situation. If there were really a lot of space, one is tempted to imagine tiny little kindergartens, keeping hens and the like, but it would at all events require an interested adult supervisor...” ([Arkitetkens Manedshaefte, 1935](#))

This type of playground design of Sorensen’s was sort of a mix between the play streets which were found in the United States and the natural environment (PGPedia 2023).

By the mid 1960s playgrounds started to become more popular and mainstream in the United States. The playgrounds at McDonald’s restaurants were actually a significant part of this increase all over the nation. When a new McDonald’s restaurant was built, so was a PlayPlace; and as a result Landscape Architects across the nation were commissioned to design playgrounds within their cities, often due to the inspiration that the PlayPlaces brought to the area.

At the same time the introduction of novelty based play equipment began to be more common. It was not uncommon to go to a playground and see play items in the shapes of metal animals, rocket ships, and similar shapes. However most of these items were not disability friendly.

A leading Landscape Architect of the 1960s and 1970s, Paul Friedburg, began creating playground sites which included a variety of experiences such as; exploration activities, cooperative activities, experimentation, and creative activities. Friedburg

explained that making choices during play was a main component which was needed for the child to enjoy the experience (PGPedia 2023). From that way of thinking Friedburg created playgrounds that included tunnels, mounds, tree houses, paths, slides, swings and more. This approach began to set the tone for what future Landscape Architects would design on playground sites after some of his work was published in places like *Life* magazine. Shortly after, he wrote two books titled, “Play and Interplay” and “Handcrafted Playgrounds; Designs you can build yourself”. These two books helped to shape the direction of playgrounds into formats which look more similar to the playgrounds we see today (PGPedia 2023). These two books focused on incorporating the ideas of the natural environment, education, different ages, commerce, transportation and more ideas into playgrounds (PGPedia 2023).

Ron Mace, a polio victim, who contracted the disease at 9 years of age, lived in a wheelchair for the majority of his life. He went to college and became an Architect and shortly after he began to design for accessibility needs based on what he himself had seen and experienced from his own life. He is well known in the Universal Design movement, a concept which became more popular in the 1970s, in the area of architecture (Center for Disability Rights 2023). Shortly after, Universal Design began to be more considered on playground sites as well. In order for something to meet the requirements of Universal Design it must provide for (1) Equitable use, (2) Flexibility in use, (3) Simple and intuitive, (4) Perceptible information, (5) Tolerance for error, (6) Low

physical effort, and (7) Size and space for approach and use (Center for Disability Rights 2023).

In 1984, an accessible playground opened in Queens, New York called Flushing Meadows Corona Park (NYC Parks 2023). The playground was the first playground in the United States which was designed and made for children who are both able-bodied and disabled. The site included activities which were catered to children who use crutches, canes, walkers, or wheelchairs (NYC Parks 2023). The park's opening set the precedent for inclusive play and designing for more than just able-bodied people (NYC Parks 2023).

In 1990, the ADA became law under the presidency of George H. W. Bush (Playcore 2016, 10). This was monumental in the view of people needing physical accommodations, however accommodating disabilities on playground sites was still not happening as well as it could have been. In 1997, Boundless Playgrounds was created as the first nonprofit intended to raise funds for building universal playgrounds (Playcore 2016, 11). As of now, there are more than 100 Boundless Playground locations in 20 states and in Canada.

In 2010 the Department of Justice adopted the standards for playground accessibility in the 2010 ADA standards for Accessible Design (Playcore 2016, 11). The standards set minimum requirements in the sense of technical requirements. ADA standards specify the requirements needed in public accommodations, commercial



facilities, and government facilities including parks and recreational areas. Even with this set of standards, many playgrounds do not do the best job of including children who require some type of physical accommodation; as a result, there is still a need for inclusive playground spaces that accommodate more than just the traditional able-bodied child.

#### MY EXPERIENCE AS A PARENT AND TEACHER

Although I will be graduating within a few short months with a Masters Degree in Landscape Architecture, in a previous profession I was a public school teacher. I first started teaching during the 2007-2008 school year and my last year of teaching ended just at the start of the pandemic in May of 2020. During that time I was the homeroom teacher of students grades fifth through eighth. I have also substitute taught all grade levels from PK-12th as either a one-day subbing job or a long term substitute. Long term substitute jobs usually lasted a minimum of 6 weeks and were most often needed when a teacher was away from her class on maternity leave or for some type of surgery which would cause them to be away from their students for a couple of months at a time or longer. Those years in the classroom included literally thousands of trips to the school playground for recess.

While teaching, I have served students with a variety of abilities, ages and sizes. I have seen students who could do whatever they wanted on the playground, but also I

have seen students who could not fully participate in or on playground equipment very much at all. Typically, a child who cannot fully participate might play on a paved area with friends or in the grass, but most or all of the stationary equipment did not work for a child who is in a wheelchair. Repeatedly, seeing situations like this during recess is part of what has sparked my interest in this research. Creating a play space where people are not excluded because of their mobility would be an ideal situation.

My interest in a space like this does not stop at the physical accessibility level, it also includes creating a space where adults can also have an exercise space along with children who are exercising and playing nearby. As a parent of two boys I have taken my children to the playground more times than I can count and I usually end up sitting on a bench in the area scrolling on my phone, reading, or eating a snack while they play because the playground is only designed with child play in mind. Meanwhile, I have not always been able to go to the gym after school, work hours, or on weekends when school is out because most exercise facilities do not offer childcare. Being able to workout while having my children with me would make getting in a full workout while having to also watch young children much easier. In the same playground space, having adult sized outdoor exercise equipment which a parent or caretaker can use while also watching their children play is a win for everyone and would create a playground space that allows more people to be able to participate.

As a result, this research and design explores the core key elements needed to create an outdoor play and exercise space where children and adults can play and exercise in close proximity including people who are in wheelchairs. Unlike most traditional playgrounds, this will create a space where parents, caretakers and wheelchair users can also benefit. A collection of case studies from playgrounds with useful features along with a survey, interviews and literature reviews have been used to hone in on the elements and characteristics necessary for an “everyone” recreational space. The findings of this thesis are organized to better guide a landscape architect or designer in the direction of inclusive playground design for ages 5 and up and wheelchair users.

## PROBLEM STATEMENT

No matter where you are in the world, there are some universal truths about people and these are 1) children love and need to play outside, 2) adults benefit from getting outdoor exercise, and 3) there are both children and adults who have physical and/or mental disabilities which may cause the typical outdoor playground to be too challenging for them to participate in (CDC 2023).

People may be unaware of or fail to consider the challenges that people who have disabilities (physical or mental) deal with on a daily basis. Perhaps, having these disabilities causes people to not go to or participate in various activities such as

playgrounds, public parks, shopping malls, theaters and similar type places and attractions. When a person who weighs, for example 150 pounds, needs to be changed by a caretaker on a flat surface or changing table, they are likely to avoid going to places where that option is unavailable. When a person who is in a wheelchair wants to participate on playground equipment, but cannot because there is no way to get their wheelchair onto the equipment without the assistance from a larger person who can transfer them, they are less likely to participate in an activity they would otherwise think appears to be fun, because the act of actually getting onto the equipment is too much of a challenge. (Landscape Structures 2020) Similarly, adults can also participate in and enjoy a playground or outdoor exercise equipment while watching after their young children play. Incorporating all of the commonly known features of a playground along with features which will allow all members of society to be able to participate in an outdoor play and exercise would help to override the challenges which discourage people from enjoying the benefits of a fun outdoor experience.

The benefits of exercise for people as a whole are well known (WHO 2023), but limitations as previously described may make it challenging for that exercise to happen. If a parent is unable to go to the gym because childcare is not available, then that person may not remain consistent with a vigorous exercise routine. Similarly, if a person cannot physically get onto equipment because of some type of physical limitation, then they also may not remain consistent with needed exercise.

Children typically fall into the category of being the easiest of the aforementioned groups to keep exercised and in shape. This is helpful because the developmental years of children are crucial to the overall development of the mature adult. It is during these years that a child learns how to properly move their body, develop social norms, sensory maturity and other prerequisite skills to become an adult.

Research continues to demonstrate the importance of play across the interconnected domains of child development; physical, social-emotional, sensory, cognitive, and communication. Children, and indeed all individuals regardless of age, need to be able to be active, exercise self-determination, engage in social interactions, learn and understand, and experience an appropriate sensory environment to enhance their overall quality of life. (Playcore 2016, 3)

By intentional design, inviting children and adults, including those who are both physically and/or cognitively disabled, will allow for the inclusion which makes a playground for everyone. Learning to be in the presence of people who are different from each other, and encouraging cooperation makes for a beautiful experience. If both able-bodied people as well as disabled people can become friends while playing together it helps to create relationships and an understanding of people who are less judgemental of others' differences and more accepting and understanding. When people with different backgrounds and life situations are in close proximity to each other on a regular basis, it begins to open people's eyes about how people who are different from them live:

Addressing diversity in outdoor play environments demonstrates how a community respects and values all forms of inherent differences we possess as individuals. These differences might be obvious or invisible, slight or profound, and include age, race, gender, ethnicity, culture, socioeconomic status, or ability. (Playcore 2016, 5)

After considering all of these things, it leaves us with the question: How can playground designers better integrate the able-bodied and wheelchair users ages 5 and up?

## RESEARCH QUESTIONS, AND OBJECTIVE

This thesis aims to explore various options which could make a playground site more inclusive. Demographics indicate there are significant numbers of children and adults who are not getting the proper amount of physical activity that they need to maintain a healthy lifestyle (WHO 2023). Creating a space which is outdoors and works for a majority of people's physical benefit will help bring people together and will allow people to grow as a community. The four main research questions which this thesis answers are listed below.

- How should Landscape Architects design playgrounds which integrate children ages 5 and up, adults and wheelchair users?
- What playground features are most accommodating and preferred on playgrounds?

- What types of outdoor exercise equipment or features would adults be able to use on a playground?
- What features are needed on playgrounds to make them accessible for people in wheelchairs?

The objective of this thesis is to bring together all of these crucial questions and elements in a way which makes an overall site design that is inclusive for the majority of people.

## LIMITATIONS

As with many things in life, there are limitations with this research design. Some of those limitations include but are not limited to time constraints, quality of data collection, availability of survey participants, and more.

Time constraints are a limiting factor which can almost always arise when conducting any type of research. While conducting the various parts of this research, things which were not always expected came up which limited the amount of time to conduct any interview or survey. Taking time to be CITI trained and to clarify IRB requirements with multiple submissions to the IRB helped to fine tune the results of this research, but at the same time it also caused more time to be taken away from the act of non survey and interview based research like analyzing case studies.

Another limiting factor in the development of this thesis is the fact that knowledge of the accessibility needs for people who are in wheelchairs was very limited by the researcher. Reading about the needs or checking accommodations which have been clarified and specified by the ADA is still very different from having the life experience of being in a wheelchair. As a result, accessibility needs were a large area to learn about for the creation of this work.

Another limiting factor in this research is that there are other physical limitations besides the use of a wheelchair that a person could live with daily which is not being addressed in this thesis. This thesis only focuses on accommodations which are needed for a person in a wheelchair and may or may not be beneficial to other physical disability needs. To accommodate a larger variety of needs, subsequent research would be required. Similarly, a person who is able-bodied, but has cognitive limitations may or may not benefit from this thesis if their cognitive state causes a need for specific accommodations, as a result, subsequent research may be needed for this category of user.

The final limitation is the age range of 5 and up which was selected for this thesis. In order to properly research the less documented areas of outdoor adult recreation and recreational wheelchair needs, the choice to limit the focus of children's ages to those who are 5 and up was made because a significant amount of research already exists on the ages below 5 years of age.



## CHAPTER 2: BACKGROUND RESEARCH

### RESEARCH METHOD

For this thesis four separate research methods were chosen to provide a strong structured evidence-based results. The use of a survey, interview, literature reviews, and five case studies were undertaken for the creation of this work.

The survey was created to recruit input from the public at large. Survey participation was eligible for adults, children with the parents' consent, adults with a disability, and caretakers of adults with a disability taking the survey on the disabled adults' behalf. A total of 202 responses were collected using this survey.

Two interviews were conducted to gather first-hand knowledge from people who know the needs of wheelchair users while on a playground site. Those interviewed included a 10-year-old girl who uses a wheelchair on a daily basis as well as a 4th grade special education teacher who assists students with various mobility needs on a playground site on a regular basis.

For the formal literature reviews, sources were identified pertaining to important parts of playground design. The three parts of the playground design focused on include; typical child-focused playground structures, adult exercise experiences and wheelchair accommodations. Five important literature pieces which were reviewed are titled: “Design Trends Of Children’s Playgrounds in Modern Urban Environment” by Y A Petrova and O A Sysoeva, “Where are tweens active in school

playgrounds? A hot-spot analysis using GPS, accelerometer, and GIS data” by Thea Toft Amholt, Jeanette Fich Jespersen, Morten Zacho, Anna Timperio and Jasper Schipperijn, “Park characteristics preferred for adolescent park visitation and physical activity: A choice-based conjoint analysis using manipulated photographs” by Linde Van Hecke, Ariane Ghekiere, Jelle Van Cauwenberg, Jenny Veitch, Ilse De Bourdeaudhuij, Delfien Van Dyck, Peter Clarys, Nico Van De Weghe and Benedicte Deforche for the typical playground structure portion. “Guidance about age-friendly outdoor exercise equipment and associated strategies to maximize usability for older people”, by Pazit Levinger, Maya Panisset, Helen Parker, Frances Batchelor, Marian Tye, Keith D. Hill was used for the adult exercise experience portion, and for the wheelchair accommodations “To help Children With Disabilities, Design By Types of Activities Not Types of Equipment” by Keith Christensen, MLA and Jill Morgan, Ph.D was the source of choice. These sources all make great points and hone in on noteworthy features, elements, and thought patterns which when combined help create an environment that is well developed with the participant in mind.

The fourth and final research method of choice was the use of several case studies. The case studies each model specific elements which would be included on a playground site which caters to everyone. One case study is focused on outdoor exercise equipment while another focuses on wheelchair accessibility for children. There are several other case studies in addition to these two and all of them showcase

key elements which are great to study when designing a new site with desirable features.

## SURVEY

For the creation of the survey used in this research, a Google Form was used. The form contained a total of 22 questions which asked the participant about various aspects of themselves as well as preferences that they would like to see on a playground. The questions were chosen after the brainstorming of questions by the researcher, the major professor and another assisting professor who works in the Recreation and Tourism department of his school. The beginning of the form includes the researcher's statement which clarifies the guidelines that the participant is asked to consider while completing the survey. The guidelines include clarifications about the study procedure and time commitment, risks and discomfort, benefits, confidentiality of records, participant rights, internet data collection, and withdrawal from the research study. Details of the survey results and analysis are clarified in the images of the blank survey questions that can be found in Appendix A and the data analysis chapter 6 of this thesis. Graphic displays of participant responses, data percentages, and popular choice preferences are also found in the data analysis chapter.

To recruit people to take the survey, the recruitment flyer, which is shown in figure 4, was shown to people who were at public parks in the Savannah, GA area. Those parks included Forsyth Park, Hull Park and Daffin Park. The survey was conducted during February–April of 2023. People who were targeted while at the park were people who were watching children on the playground, sunbathing, inside a dog park or just in the park and appeared not to be too occupied. The flyer was also shared on social media along with a direct link in the text of the post which allowed participants to complete the survey via that link. The last method of recruitment was emailing the survey information to people requesting their participation.



Figure 4: Survey Recruitment Flyer

## INTERVIEW

In an effort to have the most thorough research possible, interviewing was another research method which was used to better understand the needs of accommodating wheelchairs on playgrounds and to find out what was wanted in general. While visiting the same parks and recreational areas during the same months in search of survey participants, people were also asked if they wanted to complete a 10 to 15 minute interview with the researcher. The people who were approached were shown the following recruitment flyer and if they were willing to have an interview their next step would have been to scan the interview QR code and fill out the corresponding digital consent form. Then they would have an interview in person with the researcher.

However, most people who were asked if they wanted to participate in a survey and/or an interview chose to complete the survey only. Interviews are a great choice if a person is interested in sharing candid details in a verbal way with the researcher. For example if a person was not very good with technology it would allow them to be able to voice their opinion in a way that they were more comfortable. Although much effort was made to recruit people by asking them in parks, emailing, and sharing information about it on social media, there were only 2 people who chose to interview about the topic. The recruitment flyer which people were shown in an attempt to get interview participation is shown in figure 5.

Details of the interview are reported in chapter 6.



Figure 5: Interview Recruitment Flyer

## CASE STUDIES

The purpose of a case study is to gain in-depth knowledge of a preexisting example of a similar situation which could bring about key insights and understanding that allows a future situation to benefit from (Western Sydney University 2016). Below are five separate case studies which all contain positive features which are found at public park sites. These five case studies focus on either adult sized recreational exercise equipment, wheelchair accessible playground structures, accessible swing and zipline equipment, outdoor musical instruments or other similar features which could benefit users in an all inclusive playground space.

### Garfield Fitness Park (Santa Ana, California)

The Garfield Fitness Park located in Santa Ana, California is a tenth of an acre in size with a rounded area of .10 acres. The park highlights several outdoor exercise equipment pieces from the manufacturer Greenfields Outdoor Fitness. The park features nine of Greenfield's outdoor exercise equipment pieces including the 3-person static combo, 2-person accessible lat pull, 2-person vertical press, 2-person cross country ski, 2-person accessible chest press, 4-person leg press, 4-person pendulum abs and dips station, 2-person back and arms combo and the 4-person lower body combo, all of which can be seen in figures 6 and 7. Three of those pieces

(the 2-person accessible vertical press, the 2-person accessible chest press, and the 2-person accessible lat pull) all accommodate wheelchairs comfortably.

An axonometric view of the park can be found in figure 6 that shows the general perimeter of the site. The equipment pieces have been labeled and can be matched to the equipment close ups which can be found in figures 9-44.

A second image of the site can be found as a perspective view in figure 7. This image gives an on foot view of the park and also labels most of the equipment pieces in correspondence with the figure 9-36 close up images.



Figure 6: An axonometric view of Garfield Park facing west.





Figure 7: A perspective view of the Garfield Fitness Park located in Santa Ana, California.

A: 4-person lower body combo

B: 2-person cross country ski

C: 2-person accessible vertical press

D: 2-person accessible chest press

E: 3-person static combo

F: 4-person pendulum abs and dips station

G: 2-person back and arms combo

H: 2-person accessible lat pull

I: 4-person leg press

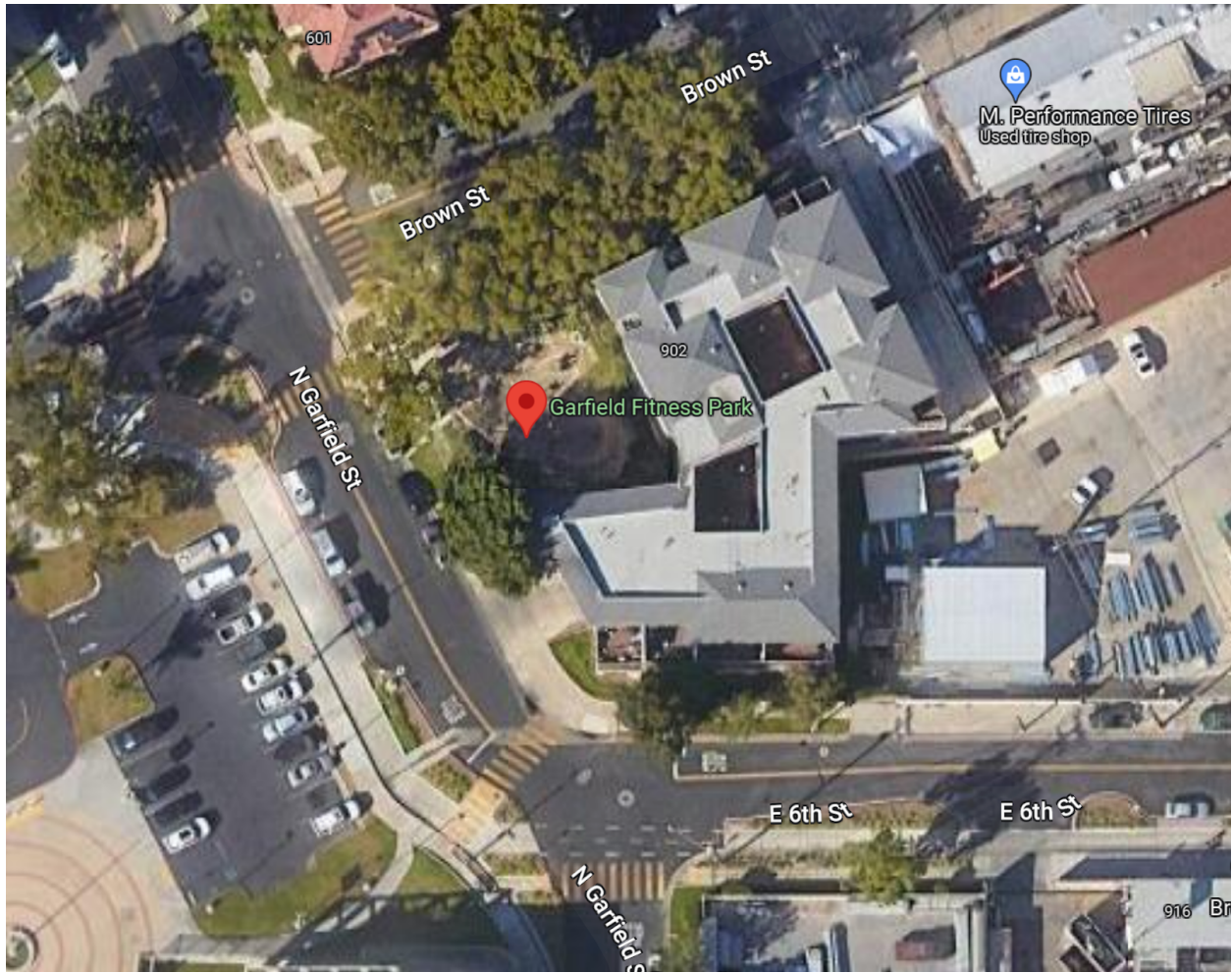


Figure 8: Aerial view of Garfield Fitness Park at a scale of 1 inch = 50 feet.

An aerial image of Garfield Fitness Park (figure 8) is showing its entire site at a scale of 1"=50'. The park opened on May 20, 2014. The City of Santa Ana allows persons aged 13 and over to use the equipment without supervision (City of Santa Ana, 2014, 0:37). However, children under that age still use the space, but with adult supervision (City of Santa Ana, 2014, 3:16). The park is located right next to a school. The students of the school visit the park during the day for recess as a place for recreation and leisure. Across the street from the park is a housing project. The park

also serves as a key element to that community in the fact that it allows those residents to have a creative outdoor exercise space which is free, closeby, and convenient to use.

The fitness park was created at the request of the community. Many people who lived there told the city that they wanted to see an open space for their children so that they could play safely outdoors. Before the park, there was no safe space for children to be outside at all without being in the street and in the way of moving traffic. The people also pointed out a need for health and fitness and as a result the choice was made to have to space fulfill both requests.

Some noteworthy features of Garfield Park are its use of a variety of Greenfields fitness equipment and the layout and planning of the site is very well done given the fact that it has contained 9 outdoor exercise equipment pieces and in a relatively small space. The space is also attractive and it is easy to get to and use all pieces of equipment. A close up of the equipment found in the park and a highlight of the muscles of the body which each targets are as follows.

## 4-Person Lower Body Combo



Figures 9-10: 4-Person Lower Body Combo image and targeted muscles of the body



Figures 11-12: 4-Person Lower Body Combo use and spatial requirements

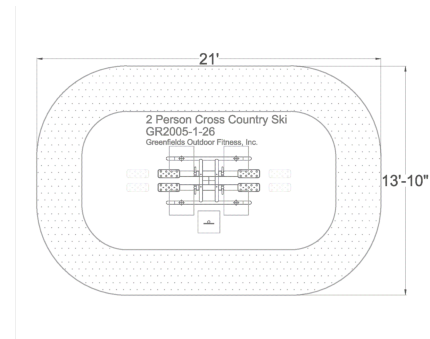
The 4-Person Lower Body Combo helps to strengthen the core, chest, shoulders, triceps, glutes, obliques and legs. It can accommodate up to 4 people at a time and Greenfield's recommends that it is positioned on a site which has the clearance of a 16'-9" by 16'-8" rectangular space on center.



## 2-Person Cross Country Ski



Figures 13-14: 2-Person Cross Country Ski image and targeted muscles of the body



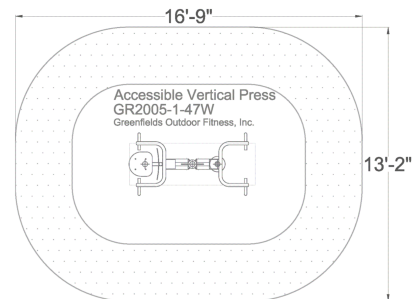
Figures 15-16: 2-Person Cross Country Ski use and spatial requirements

The 2-Person Cross Country Ski helps to strengthen the leg muscles and will provide a cardiovascular workout. It can accommodate up to 2 people at a time and Greenfield's recommends that it is positioned on a site which has the clearance of a 21' by 13'10" rectangular space on center.

## 2-Person Accessible Vertical Press



Figures 17-18: 2-Person Accessible Vertical Press image and targeted muscles of the body



Figures 19-20: 2-Person Accessible Vertical Press use and spatial requirements

The 2-Person Accessible Vertical Press helps to strengthen the arm muscles and shoulders. It can accommodate up to 2 people at a time and Greenfield's recommends that it is positioned on a site which has the clearance of a 16'-9" by 13'-2" rectangular space on center.

## 2-Person Accessible Chest Press



Figures 21-22: 2-Person Accessible Chest Press image and targeted muscles of the body



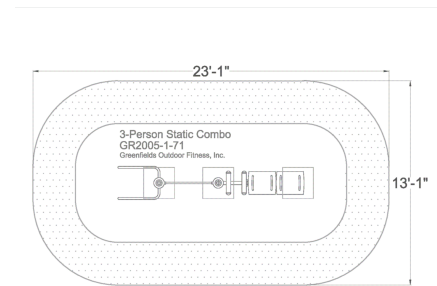
Figures 23-24: 2-Person Accessible Chest Press use and spatial requirements

The 2-Person Accessible Chest Press helps to strengthen the triceps, forearms, upper and mid body, shoulders and chest. It can accommodate up to 2 people at a time and Greenfield's recommends that it is positioned on a site which has the clearance of a 16'-9" by 13'-2" rectangular space on center.

### 3-Person Static Combo



Figures 25-26: 3-Person Static Combo image and targeted muscles of the body



Figures 27-28: 3-Person Static Combo use and spatial requirements

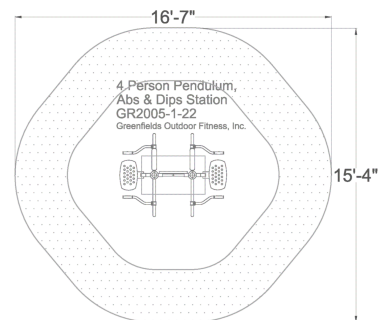
The 3-Person Static Combo helps to strengthen shoulders, biceps, core and upper back. It can accommodate up to 3 people at a time and Greenfield's recommends that it is positioned on a site which has the clearance of a 23'-1" by 13'-1" rectangular space on center.



### 4-Person Pendulum, Abs and Dips



Figures 29-30: 4-Person Pendulum, Abs and Dips image and targeted muscles of the body



Figures 31-32: 4-Person Pendulum, Abs and Dips use and spatial requirements

The 4-Person Pendulum, Abs and Dips helps to strengthen biceps, forearms, upper body, lower back and abdominals. It can accommodate up to 4 people at a time and Greenfield's recommends that it is positioned on a site which has the clearance of a 16'-7" by 15'-4" rectangular space on center.

## 2-Person Back and Arms Combo



Figures 33-34: 2-Person Back and Arms Combo image and targeted muscles of the body



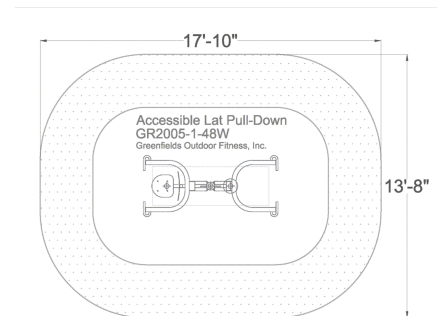
Figures 35-36: 2-Person Back and Arms Combo use and spatial requirements

The 2-Person Back and Arms Combo helps to strengthen chest, biceps, triceps and back. It can accommodate up to 2 people at a time and Greenfield's recommends that it is positioned on a site which has the clearance of a 17'-11" by 14'-4" rectangular space on center.

## 2-Person Accessible Lat Pull Down



Figures 37-38: 2-Person Accessible Lat Pull Down image and targeted muscles of the body



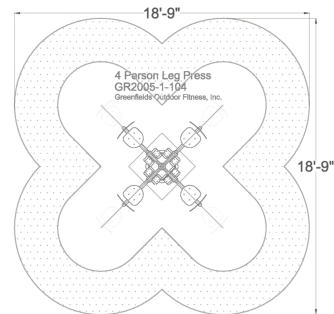
Figures 39-40: 2-Person Accessible Lat Pull Down use and spatial requirements

The 2-Person Accessible Lat Pull Down helps to strengthen the core, upper back, shoulders and biceps. It can accommodate up to 2 people at a time and Greenfield's recommends that it is positioned on a site which has the clearance of a 17'-10" by 13'-8" rectangular space on center.

## 4-Person Leg Press



Figures 41-42: 4-Person Leg Press image and targeted muscles of the body



Figures 43-44: 4-Person Leg Press use and spatial requirements

The 4-Person Leg Press helps to strengthen legs, quads, calves and abdominals. It can accommodate up to 4 people at a time and Greenfield's recommends that it is positioned on a site which has the clearance of a 18'-9" by 18'-9" square space on center.

### Dream Park (Fort Worth, Texas)

Dream Park, found in figure 45, is a park which is located in Fort Worth, Texas that spans an area of 1.3 acres. It is a playground for children of all abilities. The site is located across a 57,000 square foot green space which is located inside of the larger encompassing Trinity Park. The park was created after three Fort Worth moms felt it should come into fruition in their area due to the lack of facilities like it for families with children with disabilities. The space features several slides, a swing set, a ninja course, several child-sized tree and bird houses, climbing structures, a Double ZIPKrooz<sup>®</sup> Assisted zipline, an Oodle<sup>®</sup> Swing, a We-saw<sup>™</sup>, a winding path all throughout along with more. Of those features, the Oodle<sup>®</sup> Swing, the Double ZIPKrooz<sup>®</sup> Assisted zipline and low sloped pathways help to accommodate the playground experience for children with a disability.



Figure 45: Entrance of Dream Park located in Fort Worth, Texas.





Figure 46: Aerial view of Dream Park at a scale of 1 inch = 50 feet.

An aerial image of Dream Park (figure 46) is showing its entire site at a scale of 1"=50'. One noteworthy feature of Dream Park is its zipline (J) because it is not often found on playgrounds. However the ZIPKrooz<sup>®</sup> Assisted zipline (figures 47 and 48) and the Oodle<sup>®</sup> Swing (K) and accessible swings (L) all require the transfer process to accommodate a child who cannot stand or walk on their own. The advantages of the ZIPKrooz<sup>®</sup> Assisted zipline are the slightly reclined seat which allows people who may

not have full upper body control to be able to recline within the device along with the harness which ensures the rider will not fall out of it while in motion.



Figures 47 and 48: Images of the zip line found at Dream Park. Image of the harness swing.

The Oodle® Swing (figure 49) is a great alternative swing which allows most to swing regardless of their balance ability. The swing can be used by both able-bodied and disabled children. The seat contains two rubber bumpers and it also has a transfer point from wheelchair or walker to the swing.



Figure 49: The Oodle® Swing by Landscape Structures.



The park's 2 accessible swings (figure 50) allow those who need it to be able to swing in a reclined position with a harness securing them into place.



Figure 50: Dream Park's accessible swings

Although it's great to have these three features on the site, the requirement of the transfer may make utilizing these particular pieces of equipment physically laborious for any caretaker. In terms of disabilities, the transfer process means that the caretaker will physically have to lift a child or adult out of their current device (for example a wheelchair or walker), and manually put them inside of the new equipment or device. A person or child being cared for may be larger than the caretaker or may be too heavy for them to lift easily and as a result transferring is not an option



especially when the swing or harness which they need to be lifted into requires them to be lifted at a higher elevation height than the seat that they are currently in. Transfers like this can sometimes be physically impossible for a caretaker. Also, because this park is located near the Ronald McDonald Hospital which provides medical care for children specifically, having less transfer-required-equipment could make this site even more desirable for its many visitors who may also not be feeling well. The inclusion of the existing features on the site are great for a smaller child, but for a medium or large child they may not be practical.

### Possibility Playground (Port Washington, Wisconsin)

Possibility Playground (figures 51 and 52) located in Port Washington, Wisconsin is designed for children of all abilities. The park designers sought out to accommodate children with developmental, cognitive, and physical disabilities as well as children without any disabilities on its 1.3 acre site. The space overlooks Lake Michigan. When originally developed the playground was built entirely out of donated labor, money and materials. Even now as the playground is being updated, there are several items which can be sponsored individually by anyone who is interested. Possibility Playground was the inspiration for the Dream Park in Fort Worth, Texas after a Texan mother visited Possibility Playground during a family vacation.



Figures 51 and 52: Possibility Playground, showing the wide width and gradual slope of the ramp.



Figure 53: Aerial view of Possibility Playground at a scale of 1 inch – 50 feet.

The main noteworthy takeaway with this site is the wide ramp (figures 51 and 52) which allows wheelchair users to actually roll onto the main play structures and feel more included in the play house spaces.

### Coquille Park Playground (Madisonville, Louisiana)

Coquille Park Playground (figures 54 and 55) found in Madisonville, Louisiana is a very unique space which incorporates several play activities that anyone could love. The park is located on a 46,000 acre site, but the playground area in reference is on a portion which is approximately half an acre. The park is made up of 4 playgrounds that include sand play areas, musical instruments, a splash pad and even duck feed vending which allows anyone to purchase a portioned amount of duck food so that they can feed the ducks while on site. The park is adjacent to a fenced in pond so ducks are a local attraction. Much of the playground's ground cover is a material called No Fault Bonded Mulch, which is great to help assist in falls that a child or any other person might have.

The following two images of the park show an axonometric view of the site's main play area which includes, an elevated play ship, swing, main walking paths, several pavilions along with a second perspective image of the park's music alley.





Figure 54: An axonometric view of Coquille Park Playground

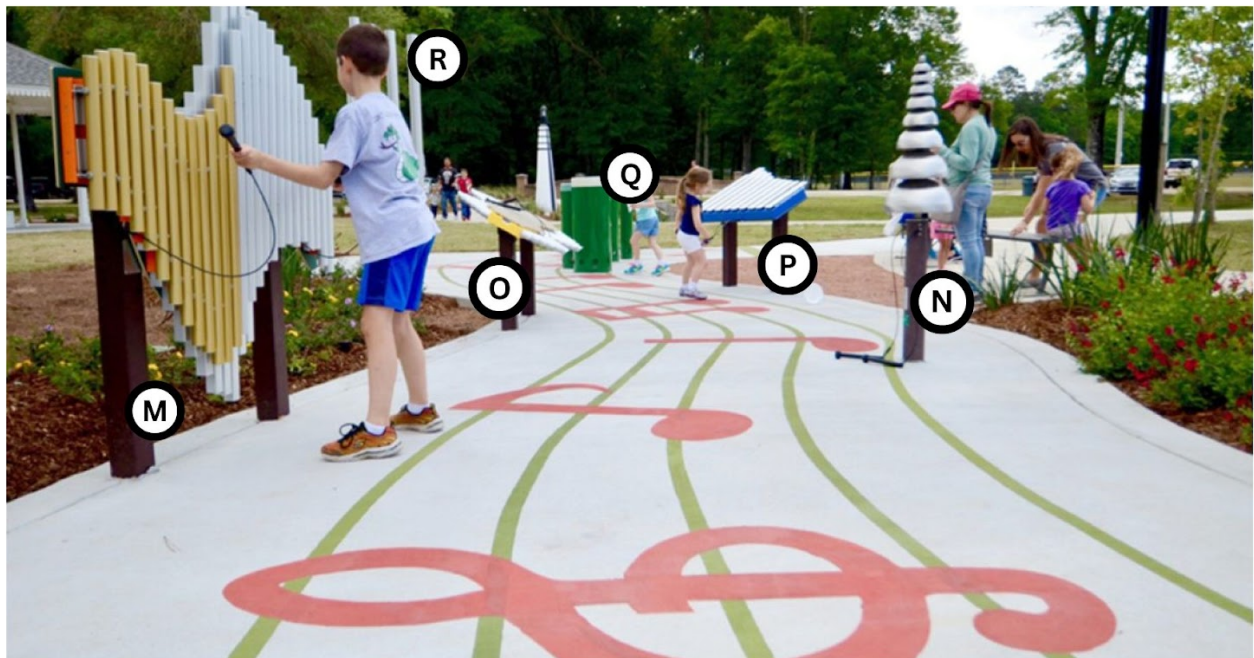


Figure 55: A perspective view of Coquille Park Playground with its Harmony Music notes display alley.



Figure 56: Aerial view of Coquille Park at a scale of 1 inch = 50 feet.

The relevant highlight of this park which will be focused on here is the musical alleyway which is filled with a lively assortment of stationary outdoor musical instruments. The instruments are lined up along a waving pathway which is painted with a large pink and green treble clef that contains music notes along its path. Those instruments are 6 stationary Freenotes Harmony Park musical instruments for anyone to play with as they stroll along. The six instruments include: Swirl, Pagoda Bells,



Imbarimba, Yantzee, Tuned Drums, and Contrabass Chimes which are all pictured in the following images. All of the musical instruments are accessible for anyone on foot as well as in a wheelchair allowing this portion of the park to be accessible for a wide range of people. These instruments allow users who cannot mount a play component for whatever reason to be able to have a ground level play item which can be played with without the use of a ramp or transfer system.

(M)

Swirl



(N)

Pagoda Bells

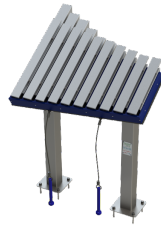


(O)

Imbarimba



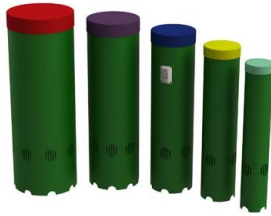
P



Yantzee



Q



Tuned Drums



R



Contrabass Chimes



Figures 57-68: Freenotes Harmony Park Musical Instruments



### Barnett Park (Orange County, Florida)

Barnett Park (figure 69 and 73) located in Orange County Florida is a very large recreational space with an encompassing area of 159 acres. The park includes a splash pad, adult sports and fitness including a fitness center membership, pickleball, a public boat ramp access, a practice golf facility with driving, putting, and chipping areas, two softball fields, a meeting space with a kitchen area and more. The adult targeted Functional Fitness Ring by Greenfield's can also be found at this location. The Functional Fitness Ring (figures 71 and 72) is an all encompassing structure which can be placed directly on most sites. Its pieces can be assembled in place making it a quick addition which could make any playground an instant attraction for adults. The ring can be placed on a site which has the clearance of a 37'-3" by 36'-7" rectangular space.



Figure 69: Barnett Park's public gym equipment.

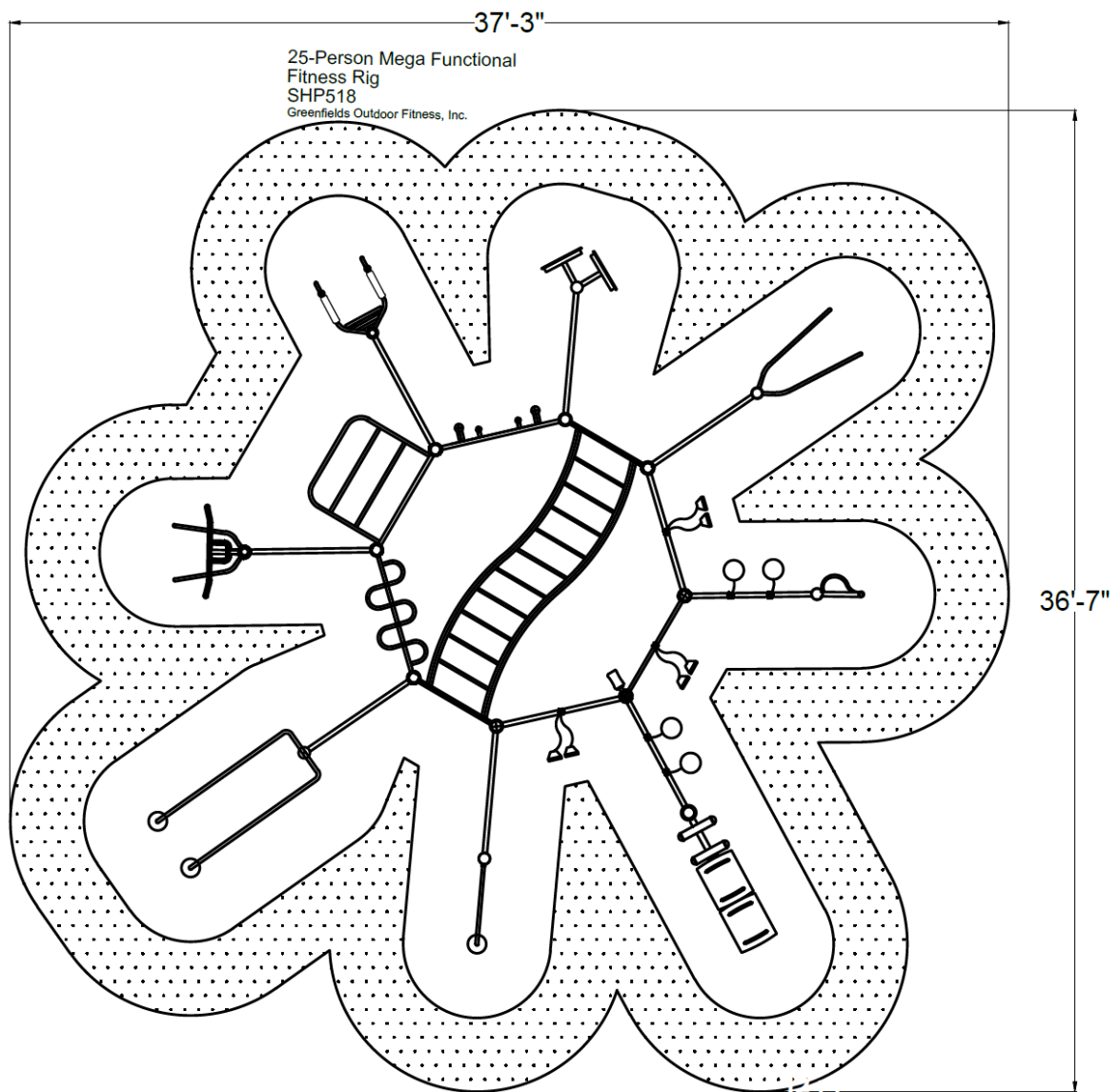


Figure 70: Spatial requirements for Greenfield's Functional Fitness Ring

### Functional Fitness Ring



Figures 71 and 72: Greenfield's Functional Fitness Ring



Figure 73: Aerial view of Barnett Fitness Park at a scale of 1 inch = 50 feet.

Greenfields Outdoor Fitness® designs are all encompassing in the fact that they cater to both people who are in wheelchairs as well as regular standing adults. Their

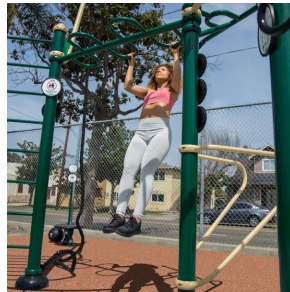
equipment and products can be purchased in both packages and individually by piece. Most of their equipment can be adjusted for various fitness levels, and it is designed to focus on exercising various parts of the body. Greenfields also offers customization for the color, size and dimensions of the individual space in which an outdoor fitness system is being requested.

The ring, when purchased uncustomized, includes nineteen different exercises and can accommodate twenty-five people at one time. The exercises on the ring include; (1) Rope Climb (2) Ring Rows(x2) (3) High Rings (4) S-Shape Ladder (5) S-Shape Pull-Ups (6) Lat Pull-Ups (7) Ball Target (8) Incline Ladder (9) Pull-Ups (x5) (10) Captain's Chair (11) Parallel Bars (12) Dips (13) Flag Pole (14) Battle Rope (15) Cannonball Pull-Ups (16) Suspension Trainers (x3) (17) Split Squats (18) Sit-Ups and (19) Swedish Ladder. A person can get a full body workout on the park's ring because it targets all muscles of the body. Adding this fitness ring or a structure similar to it would make any traditional park or playground more adult friendly. The ring allows for multiple participants simultaneously which mimics the child play experience on child-scaled play structures that could happen within feet of this structure. This would truly merge and allow the various age groups to be able to play and exercise on the same site. Workout exercises and capabilities are demonstrated in the following images (figures 74-94).

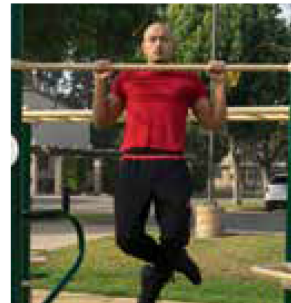
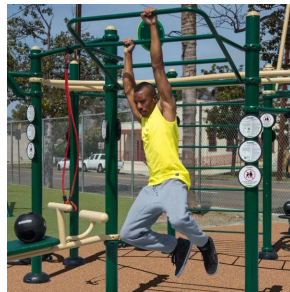




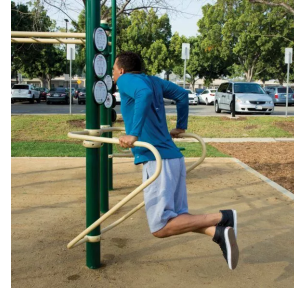
Figures 74-76: Functional Fitness Ring's Rope Climb, Ring Rows, High Rings



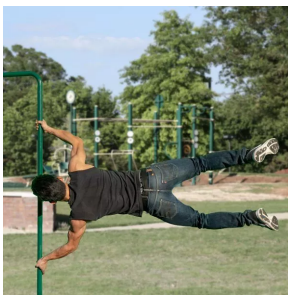
Figures 77-79: Functional Fitness Ring's S-Shape Ladder, S-Shape Pull-Ups, Lat Pull-Ups



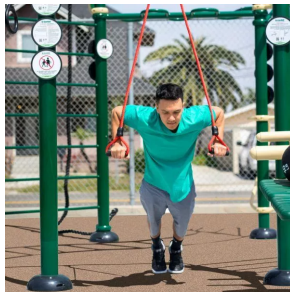
Figures 80-82: Functional Fitness Ring's Ball Target, Incline Ladder, Pull-Ups



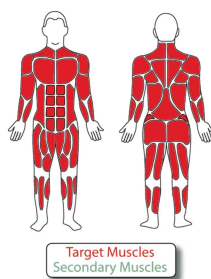
Figures 83-85: Functional Fitness Ring's Captain's Chair, Parallel Bars, Dips



Figures 86-88: Functional Fitness Ring's Flag Pole, Battle Rope, Cannonball Pull-Ups



Figures 89-91: Functional Fitness Ring's Suspension Trainers, Split Squats, Sit-Ups



Figures 92-94: Functional Fitness Ring's Swedish Ladder, targeted muscles and active use

## CHAPTER SUMMARY

The previously mentioned case studies are examples of recreational outdoor parks and equipment which include a variety of components catering to different audiences. Incorporating the previously highlighted features from each case in a playground which is designed for everyone could serve as a basis for a playground for all.



## CHAPTER 3: CHILDREN'S PLAYGROUNDS

### CHAPTER OVERVIEW

Children's playgrounds are the most common form of outdoor play around. This chapter outlines the specific play environments which are ideal for youth which are characterized as children ages 5-11, tweens which are characterized as children ages 9-12, and adolescents which are characterized as children ages 12-16. This chapter sets out to deliver research in the form of literature reviews which have been conducted over the 3 different age groupings.

The youth focused literature review comes from Y A Petrova and O A Sysoeva's "Design Trends of Children's Playgrounds in Modern Urban Environment". This paper focuses on meeting the needs which young children have on a playground in order to develop healthy physical habits as well as social skills into adulthood.

The tween focused literature review comes from Thea Toft Amholt et al. 's "Where are tweens active in school playgrounds? A hot-spot analysis using GPS, accelerometer, and GIS data". This paper is the result of several Danish researchers who strapped hundreds of tweens with GPS and accelerometer devices to their bodies for 5 consecutive days to map out the most used places on a playground.

The adolescent focused literature review comes from Linde Van Hecke's "Park characteristics preferred for adolescent park visitation and physical activity". This research asked adolescents their park preferences after viewing photoshopped images.

## YOUTH

### LITERATURE REVIEW: DESIGN TRENDS OF CHILDREN'S PLAYGROUNDS IN MODERN URBAN ENVIRONMENT

Y A Petrova and O A Sysoeva, the authors of the literature piece “Design Trends of Children's Playgrounds In Modern Urban Environment”, stress the importance of play during the childhood years. The writers explain that in order for a person to become a healthy and well-balanced adult they must have had a substantial amount of play with peers without an excessive amount of correction from adults during that play time in their childhood. It is important that a child learns to manage social interactions and gains a sense of following rules, directions and structure from children who are also developing those same skills. With continuous and routine play during the early years, a child learns how to be a well-adjusted adult and continue on with social norms into adulthood (Petrova et al. 2018).

The writers explain that children have several needs on the playground site which include the following; the need for active play, the need for imagination and fantasy encouragement, the need for research and invention of routes, the need for individual places to hide or relax, the need for searching, finding, hunting, gathering and collecting natural elements (Petrova et al. 2018).

According to the article, the modern design trends of playscapes for children can be summarized in the following bullet points:

- Take into account the opinions of professionals in the public such as Landscape Architects and designers, parents, counselors, teachers, psychologists and children
- Address safety considerations
- Provide accessibility for multiple types of disabilities
- Consider various age groups
- Consider environmental characteristics of the local geographic region. For example, designs in the hills of a mountain may be different than in a flat desert area.
- Provide a variety of landscape diversity, and multi-purpose elements
- Incorporate universal playing elements
- Create a space which allows children the a chance to explore and experiment
- Make visually attractive to children
- Incorporate the feeling of safety (which may be different than actually being safe)
- Design to be used all year during different weather types
- Consider parents who are not on the playground, but are chaperoning their child(ren)

Using the various elements which are listed above one could create a modern playground for youth which considers the factors that are commonly seen in a typical

playground in The United States today. At times there are playgrounds built with specific focuses or themes in mind that have not been mentioned above, however those cases would be looked at with a more individualized view and they typically have a specific goal.

## TWEENS

### LITERATURE REVIEW: WHERE ARE TWEENS ACTIVE IN SCHOOL PLAYGROUNDS? A HOT-SPOT ANALYSIS USING GPS, ACCELEROMETER, AND GIS DATA

Children all over the world nowadays are not getting as much physical activity as they should (WHO 2023). A lot of that has to do with the fact that wireless electronics have taken over the playing world for many children. However, in an effort to better accommodate the physical needs and physical play interests of children, Thea Toft Amholt along with several other researchers in Denmark conducted an experiment using GPS and accelerometer data to verify what types of outdoor play tweens (children aged 9-12) like to play with the most while outside.

The experiment was conducted on 376 children aged 9-12 and included having each child monitored with a GPS and accelerometer devices which allowed researchers to see where they went while on site from the GPS, as well as how fast they were moving around in each of those positions from the accelerometer (Amholt et al. 2022).

This allowed researchers to track where students were and how active they were while in each physical space at the same time (Amholt et al. 2022).

The experiment was conducted at four Danish school playgrounds which all had similar play areas and features such as traditional play equipment and soccer fields. In order for a playground to be eligible to participate in the experiment, it had to meet all of the following six criteria; (1) It had to be a school playground, (2) It had to be an outdoor playground, (3) The playground could not be older than 5 years old, (4) the playground had to have playground equipment which was designed for or catered to 9-12 year olds, (5) the playground had to include a minimum of 5 pieces of playground equipment, and (6) a budget of 300,000 DKK (Danish currency which is equivalent to around \$50,000) was included to be sure that the playgrounds were well-equipped (Amholt et al. 2022). After applying the aforementioned criteria, a total of 31 school playgrounds were eligible in the country of Denmark. The 31 sites were then assessed in relationship to factors known to increase physical activity levels. Those factors include; the size of the site, the maximum number of users on the site, the variation in play equipment, and the geographical location of the school. Once that assessment was made, the 31 school sites were then narrowed down to only 7 sites (Amholt et al. 2022). The school principals of all 7 sites were then asked if they would like to have the 9-12-year-old students of their school participate in the study. Four principals agreed to participate (Amholt et al. 2022).

At each site all teachers and parents of the students were given information sheets letting them know about the study and what it pertained to before it began. The parents also had to complete an electronic consent form and the students had to give oral consent before they were given the accelerometers and the GPS trackers (Amholt et al. 2022). In order for a child to participate in the study, the child had to have both parental consent and the child had to give oral consent for themselves as well.

For the completion of the experiment, students were given the 2 devices to wear on a belt which they kept strapped around their waist for 5 consecutive school days. Students were told to only take the belt off for showering, sleeping or doing anything that could potentially get it wet. When students slept, they were instructed to charge the items. The devices and instructions were given to 4th, 5th and 6th grade students who were 9–12 years of age.

A total of 657 students were invited to participate and 474 provided both parental and oral consent from the child to participate. Of those 474, only results from 376 participants could be used because of various errors. Of the 376, 176 participants were 4th graders, 150 participants were 5th graders, and 50 of those participants were 6th graders. After the students wore the devices for the 5 days including while outside at recess, high frequency play areas were pinpointed and available on maps as seen in figure 95 (Amholt et al. 2022).



Figure 95: Accelerometer and GPS data of student activity on a playground site. Red areas are high activity; blue areas are low activity.

The data shows red hotspots where the tween children frequented the most and this also includes where their physical activity and acceleration levels were higher the most while playing on the site. The blue colors on the aerial map show where children visited, but they did not engage in as much physical activity. These blue spots are characterized as “hangout” spots (Amholt et al. 2022). After organizing and comparing the data from the 4 schools, the four main hot spots which students visited the most were; climbing equipment, soccer fields, equipped areas away from the main

playground, and hangout areas which were spaces that did not include much equipment (Amholt et al. 2022). The results of this well executed experiment, resulted in the identification of those 4 favorite play spaces for tweens.

## ADOLESCENCE

### LITERATURE REVIEW: PARK CHARACTERISTICS PREFERRED FOR ADOLESCENT PARK VISITATION AND PHYSICAL ACTIVITY: A CHOICE-BASED CONJOINT ANALYSIS USING MANIPULATED PHOTOGRAPHS.

Linde Van Hecke, along with several other researchers, conducted an experiment in a quest to find out the types of spaces which cater to and attract adolescent aged youth onto playground sites. For the purposes of this literature review, an adolescent will be defined as a child from ages 12-16. To conduct this research Hecke and the other researchers manipulated photos of parks and playground sites and asked adolescent aged children to choose the images of the sites which they would like to visit the most. The experiment was conducted on 1,197 adolescent participants and 2 images were presented to participants at a time. The paired images were photoshopped renderings which included some variation of the following items; outdoor fitness equipment, a playground, naturalness, walking paths,



benches, drinking fountain, peers, a homeless person, a mother with child, a sports field, walking paths, and upkeep (Linde Van Hecke et al. 2018).

To begin, researchers manipulated 6,912 photos with the aforementioned characteristics in an effort to discover adolescent feelings about the various elements. Participants were asked which photo was most inviting and would result in them wanting to visit that site. Then based on the same photos, they were asked in which photo would they more likely want to participate in some type of physical activity.

Examples of 2 of the comparison photos are shown in figure 96.



Figure 96: Images which were shown in the adolescence choice-based analysis.

The pair of images in figure 96 were a part of the 6,912 photos which were shown to the 1,197 adolescent participants. All of the data responses were then gathered and the site features were organized in order of importance based on percentage as well as number frequency in regards to the 2 questions that participants were asked.

The percentage results and number frequency of the first question which was asked is outlined here. The first question asked participants, “Which park would you choose to go to?” The data analysis of that question is shown in figures 97 and 98, with figure 97 weighing the overall importance of site conditions and figure 98 showing the specific question responses.

### Percentage Importance Of Adolescents For Park Visitation

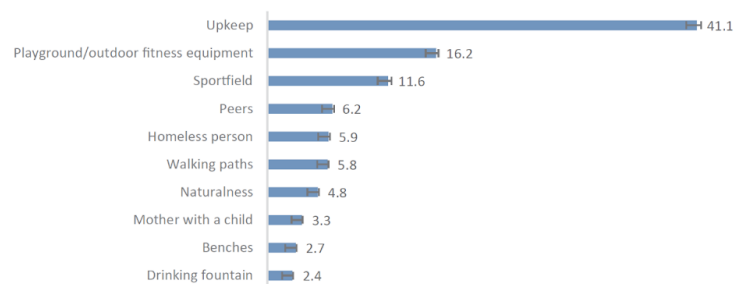


Figure 97: Percentage importance for park visitation for adolescents.

## Participant Response Numbers Of Adolescents For Park Visitation

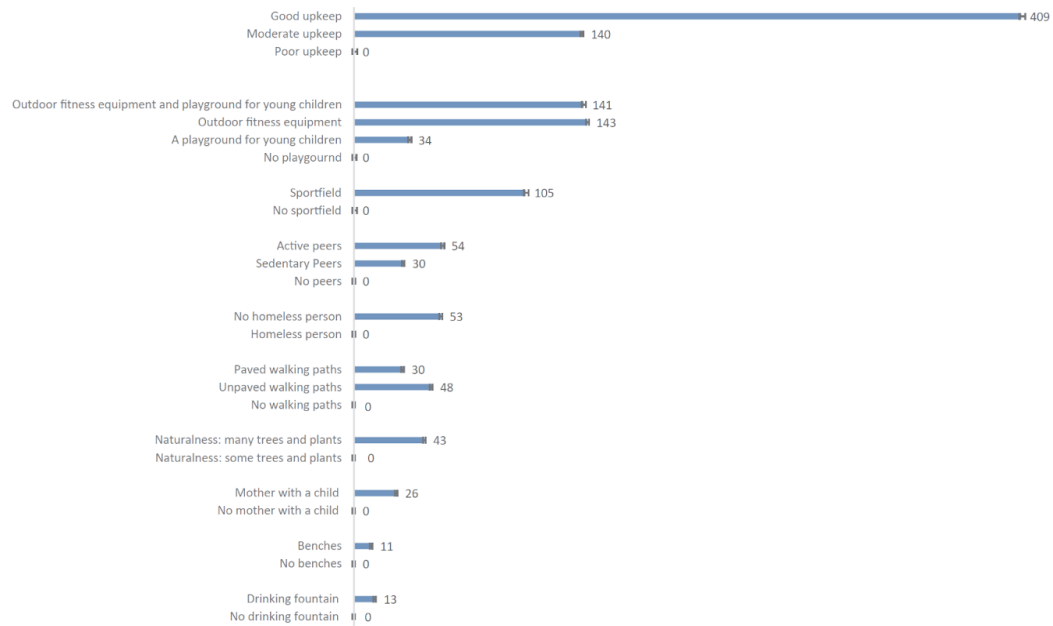


Figure 98: Participant response numbers for park visitation for adolescents.

The percentage results and number frequency of the second question which was asked is outlined below. The second question asked participants, “Which park would you choose for physical activity?” The data analysis of that question is shown in figures 99 and 100.

### Percentage Importance Of Adolescents To Engage in Physical Activity

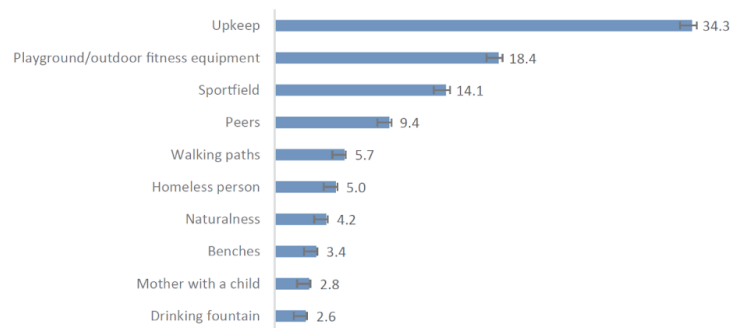


Figure 99: Percentage importance to engage in physical activity for adolescents.

## Participant Response Numbers Of Adolescents To Engage in Physical Activity

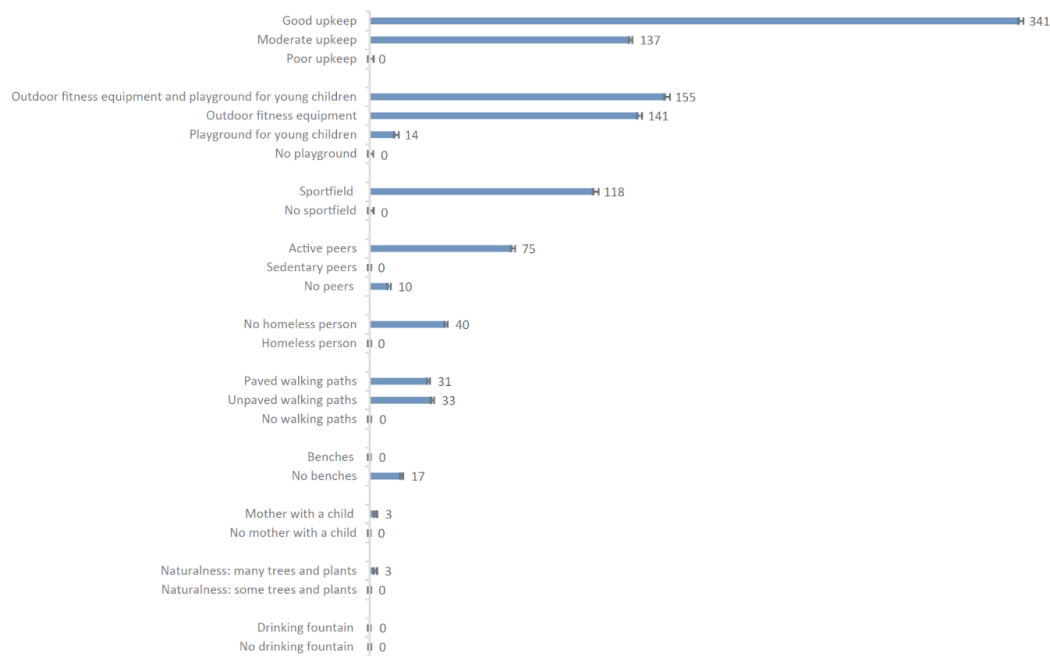


Figure 100: Participant response numbers to engage in physical activities for adolescents.

The similarity in results to the two questions shows that the most important site characteristics in regard to getting adolescents to visit and become physically active on a playground is the upkeep of the location. As a whole, the main features that adolescents want to see are; a well kept location, fitness and playground equipment, sports field(s), and peers. The least important factors to adolescent interests are; drinking fountain(s), benches, mother's and children playing, and how natural it is.

## CHAPTER SUMMARY

Children vary greatly in needs from birth up until they are adults. This chapter set out to organize the needs and preferences of children from 5 years of age to 16 years of age, in regard to playground sites. In the earlier years, children need to have outdoor spaces which keep them safe and allow them to be able to develop socially. In the tween years children value hangout spots while outside as well as some spaces which would allow them to become physically active. According to this survey, the top four characteristics that adolescents care about on a recreational site are the upkeep and maintenance of the space, fitness equipment, sports fields, and peers more so than any other factors. Considering all of these factors when designing playgrounds can create a space which caters well to a majority of children.

## CHAPTER 4: ADULT OUTDOOR EXERCISE

### CHAPTER OVERVIEW

In this chapter, adult exercise equipment will be discussed in relation to “working out” various parts of the body. There are several outdoor exercise equipment companies which offer various types of equipment to engage the full body, but for this chapter the Greenfields Exercise Equipment line will be used to model and represent those needs and requirements.

### LITERATURE REVIEW: GUIDANCE ABOUT AGE-FRIENDLY OUTDOOR EXERCISE EQUIPMENT AND ASSOCIATED STRATEGIES TO MAXIMIZE USABILITY FOR OLDER PEOPLE

When determining the right type of outdoor exercise equipment for an adult and especially mature adults who are older in age, there are several things which should be considered. Types of equipment, safety considerations, the type of physical activity desired, setting and location, topography of the area, weather elements, and pedestrian infrastructure.

According to Levinger et al. 2020, the types of exercise which should happen with the outdoor equipment include; aerobic fitness, balance, joint movement and flexibility, functional strength, and day to day movements).

To maximize engagement and participation, the site should have age-friendly senior ambassadors/champions, effective communication and marketing, supervision and instructional sessions, designated times for older people classes, organized programs/activities, on-site labeling/graphic, and clear instructions and signage (Levinger et al. 2020). In regards to setting and safe ground surfaces, sites should consider shade cover, safe sidewalks/trails, nonslip and compliant surface (“Softfall” or equivalent), water fountains, benches and sheltered resting areas. The location of the built environment should be near a children’s playground, it should be easily accessible by foot and other modes of transportation, it should be close to other sports and recreational opportunities, It should be close to amenities, community hubs and residential areas (Levinger et al. 2020). Levinger provides a checklist for planning outdoor exercise areas for older adults in figure 101.



Physical activity types to be targeted by the outdoor exercise equipment	<ul style="list-style-type: none"> <li>✓Day to day movements</li> <li>✓Functional strength</li> <li>✓Joint movement and flexibility</li> <li>✓Balance</li> <li>✓Aerobic fitness</li> </ul>
Built environment – location	<ul style="list-style-type: none"> <li>✓Close proximity to residential area, amenities and community hubs</li> <li>✓Proximity to other sport and recreational opportunities</li> <li>✓Easily accessible by foot and other mode of transports</li> <li>✓Co-location near children's playgrounds</li> </ul>
Settings and safe ground surface	<ul style="list-style-type: none"> <li>✓Benches and sheltered resting areas</li> <li>✓Water fountain</li> <li>✓Nonslip and compliant surface (Softfall or equivalent),</li> <li>✓Safe sidewalk/trails</li> <li>✓Shade cover</li> </ul>
Increase participation and engagement	<ul style="list-style-type: none"> <li>✓Clear instructions and signage</li> <li>✓On-site labelling/graphics</li> <li>✓Organised programs/activities</li> <li>✓Designated times for older people classes</li> <li>✓Supervision and instructional sessions</li> <li>✓Effective communication, marketing and information</li> <li>✓Age-friendly senior ambassadors/champions</li> </ul>

Figure 101: Outdoor Exercise Equipment for Older Adults Checklist

The types of outdoor equipment which are best for adults according to Levinger and accompanying researchers are outlined in the following list (Levinger et al. 2020).

- Cardio machine (dynamic aerobic): some examples of this would be an elliptical or bicycle. This type of exercise targets the cardiorespiratory system.
- Dynamic resistance (machine or not as a machine): some examples of this would be push ups or pull ups, shoulder press, chess press, leg press.

- Different types of static equipment: some examples of this would be pull up bars, push up bars, benches for sit ups, that allow the user to get exercise from their own body weight.
- Stretching equipment and mobility equipment stations which focus on flexibility and range of motion and utilizes the movement and sliding of body parts: some examples of this would be arm arch, shoulder arch, core twister
- Agility targeting: some examples of this would be walking beams, jump boxes, jump bars.

In figure 102, the chart lists types of exercises, their functionality, examples of those types of exercises, targeted primary users, safety considerations, limitations and any other things which should be considered. The chart can be used to help organize equipment for adults which focuses on and targets the various areas mentioned. Considering the things found here can help to organize an exercise space which caters to various types of exercise and fitness.

Type	Functionality	Examples	Targeted primary user	Safety considerations	Limitations	Other considerations for older people
Aerobic machine	Cardiorespiratory system	Sky walker, Cross/elliptical trainer, stationary bike	Adults		No resistance, no adjustable pieces. No progression of exercise difficulty is possible	
Dynamic resistance gym-based machine	Strength	Leg press, chest press, pull down	Adults Experienced/fit older adults	Users need to be able to lift body weight pull/push against machine weight	Fixed movement based on manufacture. No adjustable points/elements for different individual needs/ body size/dimension No progression of exercise difficulty is possible	
Static gym-based machine		Pull/push up bars, benches	Adults Experienced/fit older adults	Users need to be able to lift body weight. Users need to be able to do transfer movements unaided (eg, standing up from a lying position)		
Balance beams, agility equipment			Adults	Not safe for older people if no handrail provided	Agility/jump boxes are high boxes > 30 cm, which limit usability for those who are unable to jump safely to/ from a high platform	
Senior Exercise Park	Multiple stations of range of motion, functional strength, balance, cardiorespiratory fitness	Shoulder arch, core twister, sit to stand, balance beam, unstable walkway bridge, finger steps, stairs, step up platform.	Adults and older people	Hand rails/bar are provided for each equipment piece	Can be used by children; a priority use by older people should be indicated	Multigenerational (can be used by children and adults alike) Exercises can be adjusted/modified for various physical capabilities
Others - stand-alone static equipment	Flexibility and strength	Stretching station or step up platforms	Adults and older people	Handrail/hand support bar is needed for safety	Step height higher than the accepted standard height (22.5 cm) will limit usability	

Figure 102: Type of equipment, targeted users and associated safety considerations

When choosing where to place adult equipment in an existing park or playground it is important to consider location and proximity to other elements on site. If a senior is expected to use equipment which involves a lot of walking, oftentimes it is likely that that senior may not participate in it as thoroughly as they would have if the equipment was easily accessible. If a person is unable to walk long distances without help or support then making their way around a track could pose a genuine challenge. If the focus is to cater to seniors, then placing equipment which is for them near the entrance would be ideal.

Ground surface materials are another important consideration when designing for adults as well. A rubber or padded ground surface is often highly desired because of its ability to cushion falls as well as soften the impact of traveling feet. Maintenance is a key component in making sure cracks, holes and erosion do not create a poor quality surface which after weathering can then become a tripping hazard. Likewise, concrete and asphalt walkways should be checked periodically for elevation changes due to tree roots and similar obstructions.

In an effort to encourage engagement for adults on the site, signage is important in making the site stand out and attract an older crowd (Levinger et al. 2020). Clarifying how different pieces of equipment work, including images of people using the equipment, helps adults feel safe and comfortable participating on the site. Images of adults using the adult size exercise equipment are more likely to make an adult feel like it is safe and socially acceptable for them to participate in the playground space. Without this, an adult may sense a stigma toward recreating in a place where children are also present. Creating an environment where people of all ages feel safe and welcomed is ideal, like the authors explain:

Older people often provide care for their grandchildren. Approximately, 18% of children under 13 years are cared by their grandparents. This presents an opportunity for a shared experience, either using the same equipment, or using co-located outdoor equipment. Designing an outdoor space that includes both outdoor equipment for older people and a playground for children is an important consideration to allow all generations to be physically active. (Levinger 2020, 480)

Another way to encourage adult engagement is by allowing parks and recreational areas to use their spaces for organized events such as sports or family reunions which should also increase adult use on the site. After visiting the site for an organized cause and taking note of the adult-friendly equipment on site, users are more likely to come back to recreate freely there. Perhaps a huge motivation of a person's interest to visit a park is for the social aspect of the visit; providing features where adults can socialize regularly will also allow for that visitor to feel more comfortable coming back for a future visit. Designing the space and exercise equipment so that people can still talk and engage with one another while using the equipment is a great way to encourage people to consistently socialize and in turn should help adults feel comfortable coming back to the playground.

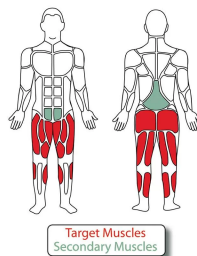
Creating an environment where adults can feel safe, be safe, as well as display functional strength, socialize with peers, and exercise using everyday life movements like walking and reaching, should result in an outdoor exercise space for adults which is both attractive to them as well as beneficial to them.

## OUTDOOR EXERCISE EQUIPMENT

There are multiple manufacturers who produce and distribute adult sized exercise equipment such as Landscape Structures, Action Fit, StayFIT, Street Barbell USA, along with several others. For the purposes of this research the Greenfields Outdoor Exercise Equipment line has been used. The Greenfields line has several pieces which can easily fulfill the exercise equipment requirements previously identified. Five types of exercises are listed here with the accompanying equipment piece(s) which can create that experience. Landscape Architects can use the following as a guideline when designing outdoor spaces for adults.

1) Dynamic Aerobic - Having a cardio machine which provides a dynamic aerobic experience on site is ideal. Some examples of this would be an elliptical or bicycle (figures 103-105). This type of exercise targets the cardiorespiratory system.

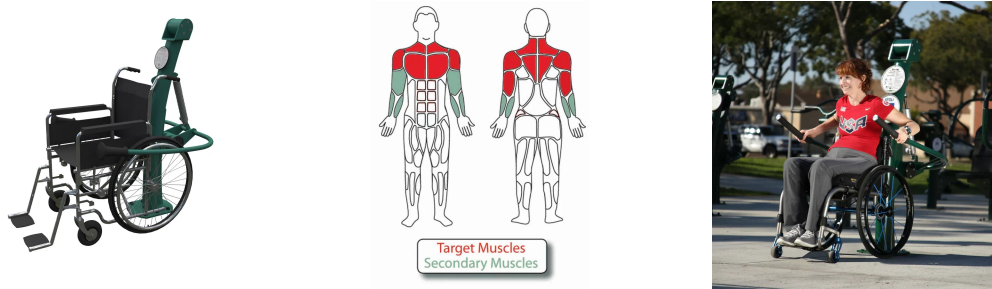
### Single Elliptical



Figures 103-105: Single elliptical machine by Greenfields and the muscles of the body which it targets.

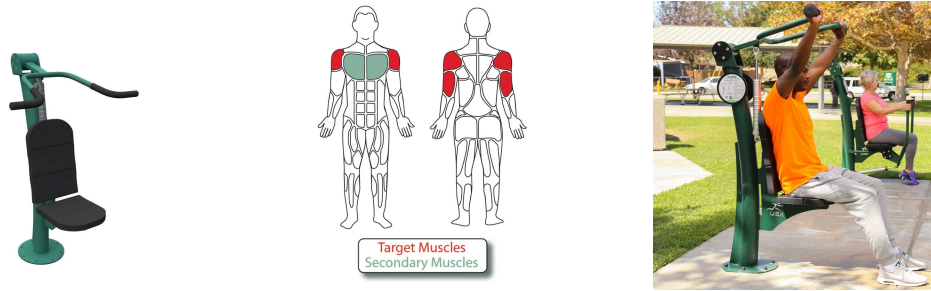
2) Dynamic resistance – exercise can be offered in the form of a machine or not as a machine. Some examples of this would be push ups or pull ups, shoulder press, chess press, leg press. Greenfield's Accessible Triceps Press is a wheelchair friendly machine which allows for this type of resistance (figure 106-108). Their Adjustable Shoulder Press is another machine which offers the same type of resistance, but for able-bodied people (figure 109-111).

Accessible Tricep Press (with adjustable resistance)



Figures 106-108: Accessible Tricep Press machine by Greenfields and the muscles of the body which it targets.

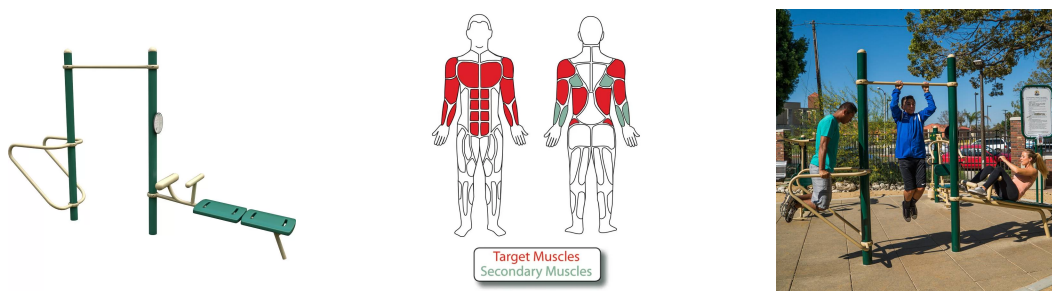
### Adjustable Shoulder Press



Figures 109-111: Adjustable Shoulder Press machine by Greenfields and the muscles of the body which it targets.

3) Static Equipment - Various types of static equipment such as the 3-Person Static Combo which allow users to build muscle from their own body weight (figure 112-114). Some other examples of this would be pull up bars, push up bars, and benches for sit ups.

### 3-Person Static Combo

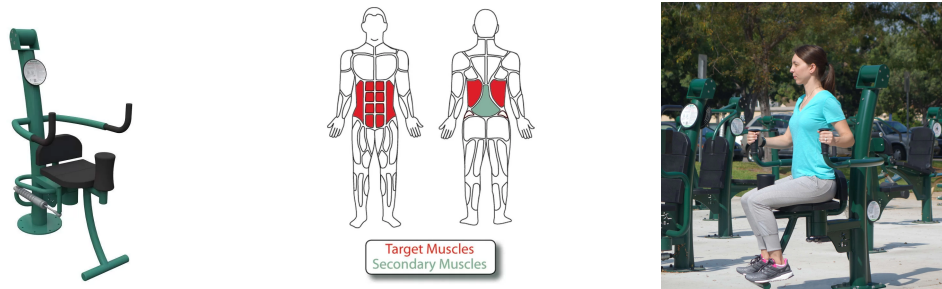


Figures 112-114: The 3-Person Static Combo by Greenfields and the muscles of the body which it targets.



4) Stretching - Examples of stretching equipment and mobility equipment stations which focus on flexibility and range of motion and utilizes the movement and sliding of body parts include the arm arch, shoulder arch, core twister, and as pictured here the Adjustable Hip Twist (figure 115-117).

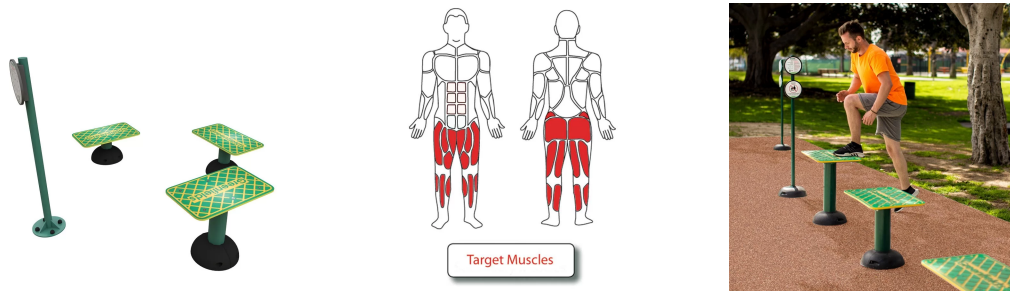
#### Adjustable Hip Twist



Figures 115-117: Adjustable Hip Twist machine by Greenfields and the muscles of the body which it targets.

5) Agility - Agility targeting can be completed via walking beams, slanted jump boards, jump bars, jump boxes, and Plyometric Steps which can be found on the Greenfields line (figure 118-120).

### Plyometric Steps



Figures 118-120: Plyometric steps by Greenfields and the muscles of the body which it targets.

## CHAPTER SUMMARY

The exercise needs for adults as well as older adults can be broken down into various body parts as explained in this chapter. It is a good idea to have exercises which vary in stamina and agility so that adults can choose the workout load and rigor that best suits their body's individual physical needs. The safety needs of the users are also a key factor for selection. Being sure to properly account for those needs helps keep adults well exercised and safe all at once.

Fitness equipment which focuses on dynamic aerobic, dynamic resistance, static equipment, stretching and agility are the key ways to create a balanced adult centered exercise space.

## CHAPTER 5: WHEELCHAIR ACCESSIBILITY ON THE PLAYGROUND

### CHAPTER OVERVIEW

In this chapter, childhood and adult disability statistics along with the needs of wheelchair users while on a playground site will be identified and the accompanying physical measurements which are needed for proper wheelchair accommodations will be reviewed. This chapter also identifies various playground structures which can accommodate a wheelchair. To further the research on this topic, a literature review of Keith Christensen, MLA and Jill Morgan, PH.D's paper titled, "How To Help Children With Disabilities, Design By Types of Activities, Not Types of Equipment." has been conducted.

### CHILDHOOD DISABILITY STATISTICS

To better understand the frequency in which accommodations are needed for physical disabilities for children, let us first take a look at statistics of children with disabilities. Although not all of the disabilities which are listed in the following chart are physical in nature, many times an accommodating site can still benefit a child with a cognitive disability. Similarly, a cognitive disability can also cause a physical problem. For example, in the case of Multiple Sclerosis, the brain and nervous system is the part of the body which is not healthy, but it may cause the brain not to be able to send the proper signal through the nervous system to allow the legs or any extremity

to work properly. Likewise, in the case of epilepsy, a person who has frequent seizures may greatly benefit from being in a wheelchair during certain times of the day. The condition POTS (Postural Orthostatic Tachycardia Syndrome) is characterized as a rapid heart rate which often leads to fainting unexpectedly at any given moment. Oftentimes things like heat and physical exercise may increase the frequency of ailments like seizures, fainting or other health problems and keeping a person who is known to have any of these conditions seated and in a wheelchair during play could be a good choice for their own safety or maybe even a necessity.

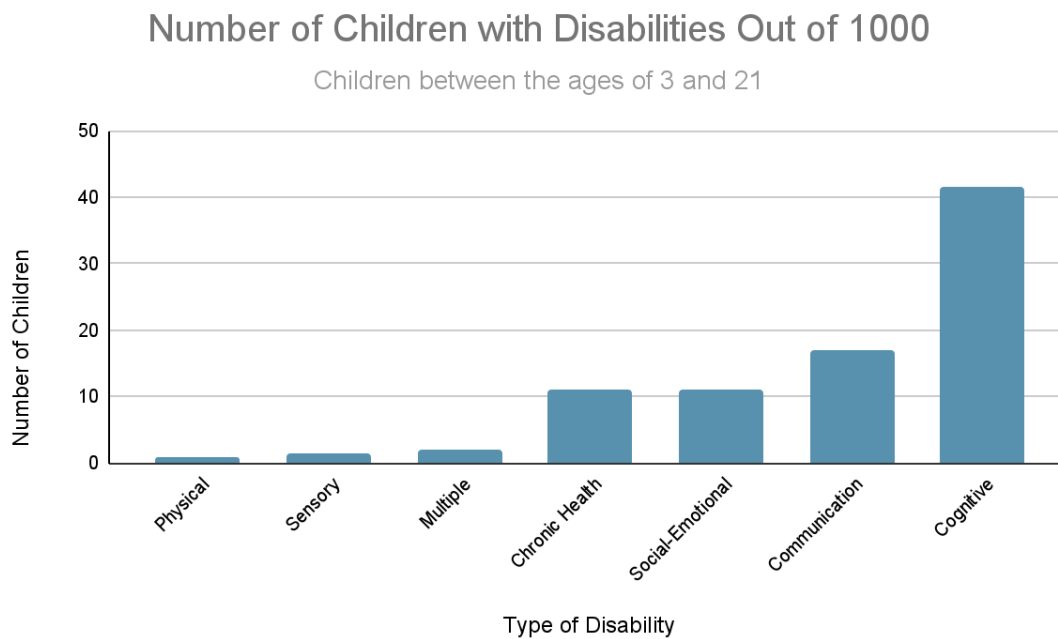


Figure 121: Number of children with disabilities out of 1000

Physical disabilities are defined as a person with an impairment to their body function. Of a group of 1000 children, approximately 1 child is typically living with this type of

disability. These disabilities typically include things like spina bifida and cerebral palsy.

Sensory disabilities are defined as a neurological disorder which causes a person to process either of the five senses (hearing, sight, taste, smell, feel) in a way which is abnormal. Often people with sensory issues feel overwhelmed with the introduction of either or multiple of the various stimuli. Common types of these disabilities are low vision, blindness, hard of hearing, and deafness. On average, in a group of 1000 children, approximately one and one-half (1.5) children are typically living with this type of disability.

Multiple disabilities are defined as a person who has any assortment of the other mentioned disabilities in this list. Out of a group of 1000 children, approximately two children are typically living with multiple disabilities.

Chronic Health issues are diseases which a person may be born with or once acquired may or may not last a lifetime. Some diseases which fall into this category are epilepsy, diabetes, fibromyalgia, cystic fibrosis and asthma. In a group of 1000 children, approximately eleven children are typically living with this type of disability.

Social-Emotional disabilities are defined as a disorder which causes a person to have difficulties relating to others. These disorders include things like anxiety, depression, OCD, and neurodevelopmental disorders. In a group of 1000 children, approximately eleven children are typically living with this type of disability.

Communication disabilities are defined as an impairment which makes it difficult or impossible for a person to take in or give back information in the send or receptive process which happens during normal communication. Such disabilities include speech disorders, language disorders, Central Auditory Processing Disorders (CAPD) per 1000 children, approximately 17 children are typically living with this type of disability.

Cognitive disability is defined as an impairment which causes a person not to be able to make decisions, remember, learn, think and similar dysfunctions. Examples of this type of disability would be ADHD, ADD, Autism and others. Of a group of 1000 children, approximately 41.5 children are typically living with this type of disability.

Considering the information in the chart and explanations above, if a typical school has an enrollment of 1000 children, statistically, approximately 85 or 8.5% of those students would have some type of disability. With several of those disabilities at one location, having an accessible playground experience would be of benefit to many even at a single school.

#### ADULT DISABILITY STATISTICS

As people age, their physical needs change. As a result, the disabilities of children differ from the disabilities of adults. In general, adults tend to have more physical based disabilities than children because their bodies begin to age. Sixty-one

million adults have some form of disability in the United States (Ability Magazine 2019). That equates to around 1 in 4 people (Ability Magazine 2019).

Mobility Disabilities are defined as difficulty walking or climbing stairs. Approximately 10.8 percent of adults in the United States have this type of disability (Ability Magazine 2019).

Cognitive Disabilities are defined as difficulty remembering, concentrating or making decisions. Approximately 13.7 percent of adults in the United States have this type of disability (Ability Magazine 2019).

Independent Living Disabilities are defined as difficulty completing errands alone. Approximately 6.8 percent of adults in the United States have this type of disability (Ability Magazine 2019).

Hearing Disabilities are defined as difficulty hearing or are completely deaf. Approximately 5.9 percent of adults in the United States have this type of disability (Ability Magazine 2019).

Vision Disabilities are defined as difficulty seeing or complete blindness. Approximately 4.6 percent of adults in the United States have this type of disability (Ability Magazine 2019).



Self-Care Disabilities are defined as difficulty dressing or bathing. Approximately 3.7 percent of adults in the United States have this type of disability (Ability Magazine 2019).

A visual representation of these disabilities are represented in figure 122.

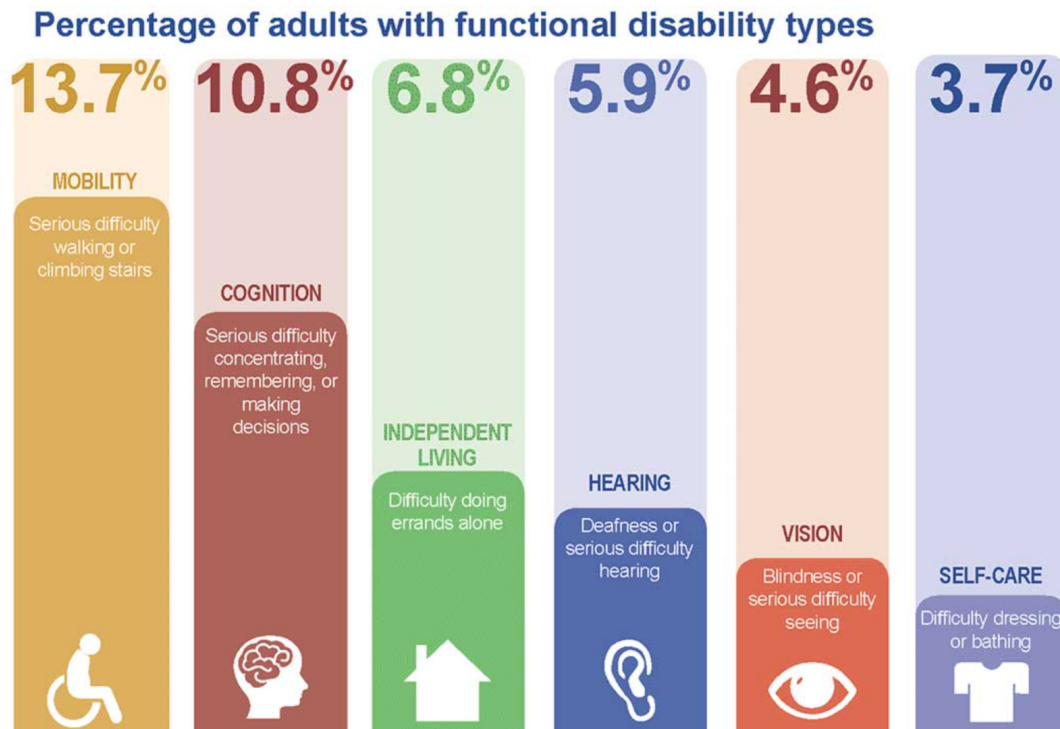


Figure 122: Percentage of adults with functional disability types.

Of these disabilities, those suffering from mobility and independent living would benefit from an accessible recreational space the most.

#### APPROACH, ENTER AND USE

Accessibility on a playground site is something that should be planned for in the beginning of a site's design. Landscape Architects should consider circulation paths,

the selection of play equipment and components, and take note of the overall layout before other specifics are addressed. It is important to ensure that people with disabilities are able to participate in as many features and parts of a playground as possible. To properly accommodate accessibility needs, Landscape Architects should always consider whether a person is able to access each and every component of the playground area.

The American with Disabilities Act does not allow discrimination in public spaces based on disabilities, and although parks, playgrounds, and playground structures are included in these requirements, there are still many play sites which utilize materials like wood chips under play structures that do not adequately allow accessibility for people with disabilities. In 1991 the American with Disabilities Act Accessibility Guidelines (ADAAG) was created, but even in it, it did not reference guidelines needed on playgrounds, parks, sports fields or related recreation areas. It expressed the importance of length, width, and slope, but not much more. As a result, Landscape Architects, developers and municipalities were unsure of how to properly be in compliance in regard to accessibility. So for several years, playgrounds were built with a lot of subjective accommodations which sometimes did and sometimes did not allow a person with a disability to be included on the equipment. In November of 2000, an update was included in the ADAAG which is referred to as the “Final Rule”. This rule is clarified in the Code of Federal Regulations under code 36 CFR part 1191.

The Final Rule clarified guidelines to Landscape Architects, developers, and municipalities. It focuses on people over the age of two and states that all people no matter the physical abilities should be able to approach, enter and use the recreational space. The 2000 update, went into more details including the specifics of ground level requirements, accessible routes, transfer systems and ramps, soft contained play structures, and elevated play components. All of these specifics help to outline the details needed for a person in a wheelchair to approach, enter and use a playground.

There are four major terms used including; play component, elevated play component, ground level play component, and accessible route which together comprise playgrounds. A play component is a part of a playground experience which could be natural or manufactured and it can be independently installed on a site or it could be connected to part of another component. A play component creates or gives a particular experience for a user; for example, a slide is a play component that gives the user a sliding experience from an elevated position to a lower position. An elevated play component is one which is placed above or below ground level and is connected to at least one other play component. It is often used as a transitional piece. For example, the circular shaped climbing structure which is shown in figure 123 is considered an elevated play component because it is above ground and it allows the user to transition from ground level to another play component.



Figure 123: A circular elevated play component (Accessible Play Areas 2005, 12).

A ground level play component is a component which is mounted and exited while on the ground. If the component is not mounted at all by the user then it is played with while the user is on the ground as shown in figure 124 (Play-Areas 2005, 13).



Figure 124: A ground level play component (Accessible Play Areas 2005, 13).

Within a playground or play area, an accessible route refers to all of the pathways which continuously connect all accessible features and components of the space together. The pathway should not be obstructed and it should be within the

boundary of the playground site and can also include routing to the parking area, crosswalks, curb ramps and similar elements. A ramp is a ground surface which has a slope that is greater than 5%. Ramps sloping at greater than 5% require handrails. Ramps must not exceed 8.33% slope which is equivalent to one inch of rise per foot. A running slope is a ramp and this slope refers to the direction that the slope travels in.

When dealing with accessible routes there are several requirements which should be followed. As far as ground-level play components are concerned there are two requirements to keep in mind. Firstly, there should be one of each type of ground-level component on the route and secondly there should be a certain number of ground-level requirements based on the number of elevated play components included. This requirement will be explained in greater detail in the following pages. Also, the one of each type rule must be followed which explains that one of each ground-level play component that is on site, has to be on the accessible route. The purpose of this requirement is to allow for some play components for a person who will remain in their wheelchair or using their mobility device. The following table (figure 125) clarifies the requirements in relationship to the number of elevated play components provided, the minimum number of ground-level play components required to be on the accessible route, and the minimum number of different types of ground-level play components required to be on accessible routes.

<b>Table 240.2.1.2</b>		
<b>Number of elevated play components provided</b>	<b>Minimum number of ground-level play components required to be on accessible route</b>	<b>Minimum number of different types of ground-level play components required to be on accessible route</b>
1	Not applicable	Not applicable
2 to 4	1	1
5 to 7	2	2
8 to 10	3	3
11 to 13	4	3
14 to 16	5	3
17 to 19	6	3
20 to 22	7	4
23 to 25	8	4
More than 25	8 plus 1 for each additional 3 over 25, or fraction thereof	5

Figure 125: Ground Level Requirements Based on Elevated Play Components (Accessible Play Areas 2005, 15)

Above is a chart specifying the requirements as far as ground-level is concerned, but in addition to the above requirements, if 50% or more of the site's elevated play components are accessible by a ramp and lead the guest to at least three different elevated play component types, then no additional ground-level play components are required because the user can comfortably access the elevated

components. An example of the “one of each type” requirement as well as the ground-level requirements are outlined in the following photos.

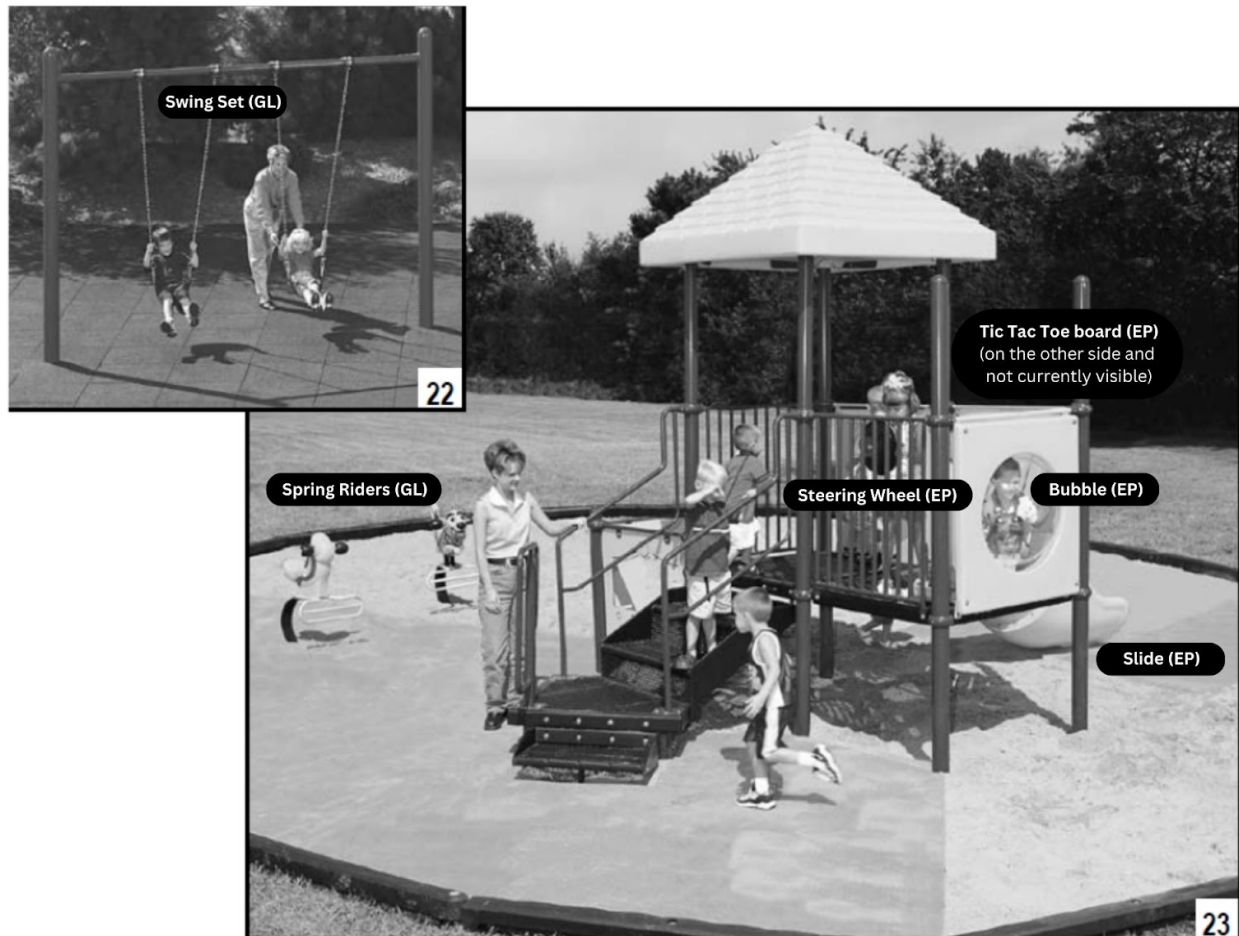


Figure 126: Ground Level Requirements Based on Elevated Play Components (Accessible Play Areas, 14)

The two images in figure 126 represent a playground space which is made up of four elevated play (EP) components which include a slide, bubble, steering wheel, and tic-tac-toe board. The playground also includes two spring riders and two swings on the swing set. To meet the requirements of the ground-level play components table, there is at least one ground-level (GL) component for the four elevated components.

In this particular example there are two ground-level component types, the spring riders and the swings. Both the riders and the swing are on the accessible route, although undefined in this example, and a person who is in a wheelchair can have direct access to them without having to change elevation.

In order for components which are elevated to be considered accessible, at least 50% of those elevated components need to be on the accessible route. Playgrounds with 20 or more play components must use a ramp to connect at least 25% of those components on the accessible route, while the remaining 25% needed to fulfill the 50% rule can be accessible by either a transfer system or a ramp. Playgrounds with less than 20 elevated play components can use a transfer system or ramps to allow for access to the accessible route.

To help with meeting the requirements for any playground which is built with accessibility in mind, the following flow chart has been created. This flowchart can be filled in using the ground-level requirements table (figure 125) and it helps the designer meet the requirements to maintain adequate accessibility on a playground site.

The applicable numbers should be filled into the circles and squares of the flow chart and it will guide anyone through the process of checking the amount of needed ground and elevated play components. After the use of this chart, the number of components required by law on a site will be determined.



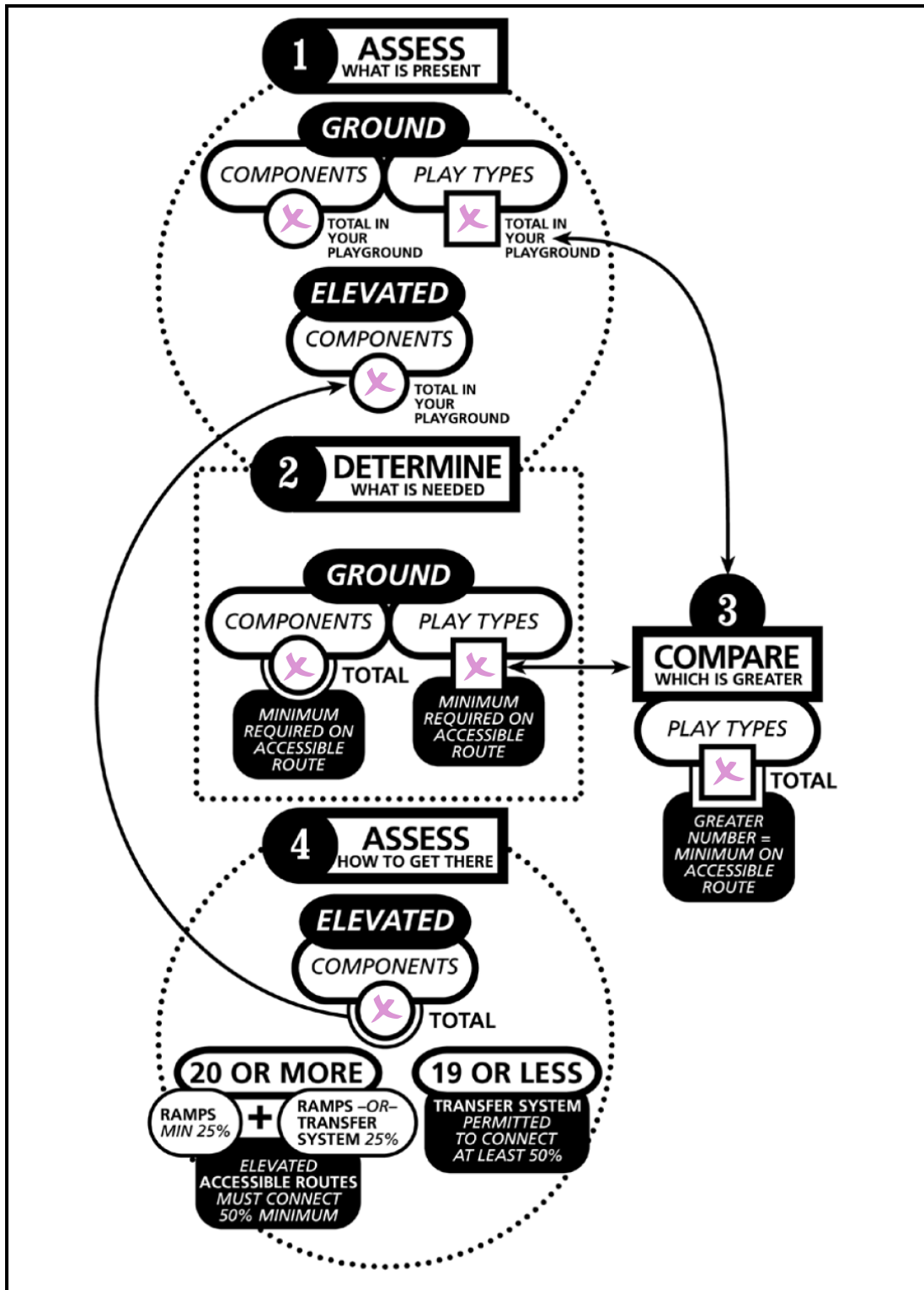


Figure 127: Ground Level Requirements Based on Elevated Play Components (Accessible Play Areas, 17)

## ACCESSIBLE ROUTES

Accessible routes must provide access to every entrance and exit from the site's play components. The two types of accessible routes are ground-level routes and elevated routes. The ground-level accessible route requirements include a 1:16 maximum slope and a 60-inch minimum path width. The path can become as narrow as 36 inches in parts of the route which may need to be smaller for trees or other equipment like shown in the photo below. The path cannot be at the smaller 36 inch width for more than 60 inches of the route.

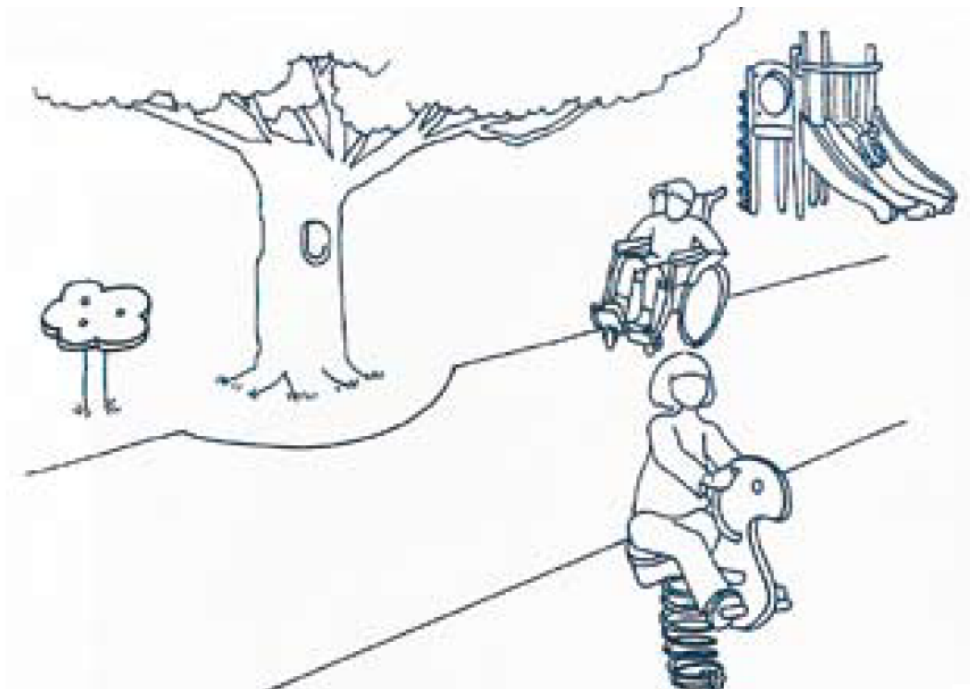


Figure 128: Narrowed accessible path because of the location of a tree. (Accessible Play Areas, 20)

The minimum width is 60 inches for accessibility because it allows for the passing of two wheelchairs at once both facing in opposite directions. This width also allows a wheelchair to be able to make a u-turn and turn around in the opposite

direction comfortably. For any accessible route which is on ground-level, nothing must project or protrude into the pathway from 80 inches above the ground or below that point. This specification applies to all 60 inch-wide pathways. Items which extend above the 80 inch mark are allowed because things like shade structures can protrude into the pathway, but at a clearance height which is out of the general flow of pedestrian traffic.

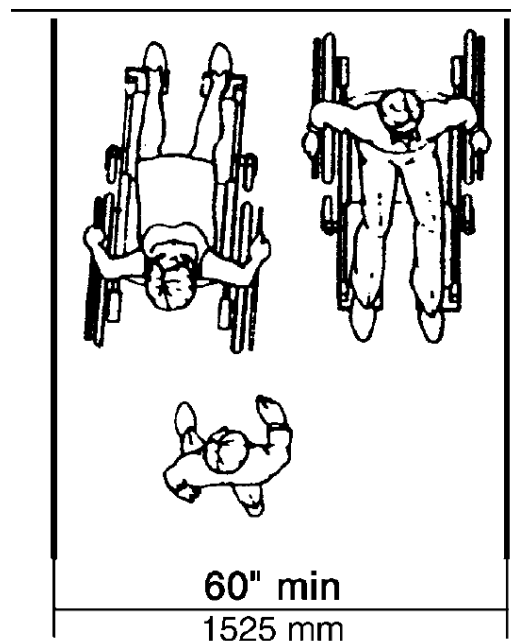


Figure 129: Minimum accessible path width of 60 inches (Accessible Play Areas, 17).

Playgrounds which are less than 1,000 square feet are allowed to have ground-level routes that are 44 inches in width which is more narrow than the 66 inches, but there must be a wheelchair turnaround area every 30 feet in that case. Accessible ground surfaces must be in compliance with the American Society for testing and materials (ASTM) F 1951-99 Standard specification for determination of

accessibility to surface systems under and around playground equipment. To be in compliance with this standard, the amount of effort a user must demonstrate in moving a wheelchair over a surface must be measured as less than the requirement to move a wheelchair up a ramp with a slope of 1:14. All ground surfaces should be maintained and inspected regularly to be in compliance with ASTM F 1292-04 standard “Standard Specification for Impact Attenuation of Surfacing Materials within the Use Zone of Playground Equipment”.

The space directly below and around a play component is called the “use zone”. The use zone is the space which is used to exit a piece of equipment or where a child might fall. Accessible ground surfaces which are inside of the use zone are required to meet the ASTM F 1292-04 *Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment*.

A more natural ramp which can be used on the site to give access to elevated components are berms (figure 130) which are ramped natural materials and surfaces like hills and shaped soil. The maximum slope of a berm is 1:16.

Edge protection is something which must be considered while on accessible routes. Ground-level accessible routes can use handrails if desired, but on elevated sites they may be required as edge protection depending on height. This will be discussed in further detail in the “Ramps and Transfer Systems” section of this chapter.



Figure 130: Image of a berm which gives access to an elevated play component (Accessible Play Areas, 21).

Elevated accessible routes (figure 131) are the connectors, joining play components which are elevated. These routes are required to connect the exits and entrances to at least 50% of all elevated components on the given site. Access can be provided via ramps or a transfer system. Ramps are the most commonly used means of access because transfer systems can come with various limitations. Ramps allow the elevated accessible route and the ground-level accessible route to connect to each

other.



Figure 131: An example of an elevated access route which connects elevated components (Accessible Play Areas, 24).

Elevated accessible routes include four requirements; (1) handrail gripping surfaces which are a minimum of 20 inches and a maximum of 28 inches above the ramp surface, (2) 12-inch rise maximum per ramp run, (3) 36-inch clear width, and (4) 32-inch narrowed width permitted for a duration of a 24-inch length to accommodate features in the elevated structure.

## RAMPS AND TRANSFER SYSTEMS

Ramps allow anyone who uses a wheelchair to access elevated play components without transferring (coming out of their wheelchair). Platform lifts are allowed along the accessible route as well, but must be independently operated and it must also be in compliance with the ADA/ABA Accessibility Guidelines. The ABA stands for Architectural Barriers Act and this act is a collection of standards which address access to the built environment. The three main ramp requirements are (1) 12-inch maximum rise, (2) 1:12 maximum slope, (3) 36-inch minimum clear width. Landings are the horizontal flat part of a ramp which allows a wheelchair user to take a rest break from moving along an incline. Landings also serve as a safety feature providing a rolling wheelchair a chance to stop on its flat surface. The three main requirements for landings include (1) minimum length of 60-inches, (2) they must be as wide as the ramp that they connect to, (3) if the ramp changes direction, the minimum landing size must be 60 inches wide to handle the turn.

Ramps which connect elevated play components require handrails on both sides. Those handrails must be continuous along the length of the ramp and have no obstructions along any side. The bottom portions of the handrail grip should not be obstructed more than 20% of its length. Horizontal projections should be at a 1.5 inch minimum below the bottom of the handrail gripping area. Extensions of handrails are

not required on playgrounds to keep participants from running into them. Handrails must be in compliance with all ADA/ABA505 standards.

Transfer systems are a means for a person who is in a wheelchair to mount onto an elevated play component (figure 132). The transfer system can be used in place of a ramp. The systems should be accessible while on the ground level and must give access to at least 50% of the elevated play components on any play structure that has less than 20 elevated components. In a play structure which has 20 or more play components, the transfer system must connect 25% of the elevated play components. The remaining components must be accessed via a ramp. Transfer systems consist of transfer steps, transfer supports and a transfer platform allowing wheelchair users to get out of their chair and directly onto the platform to then use the component. Also shown in figure 133, requirements for the transfer system include (1) the transfer platform is required to be 24-inches minimum in width, (2) the top surface of the platform must be between 11 and 18 inches high, (3) it must be a minimum of 14 inches deep, and (4) it must have one unobstructed side. Directly next to the transfer platform clear space is required for wheelchair parking.





Figure 132: A transfer system which includes a platform, steps and supports (Accessible Play Areas, 28)

The following plan view of a transfer system shows that the 48 inch platform must be parallel to the 24 inch side of the platform.

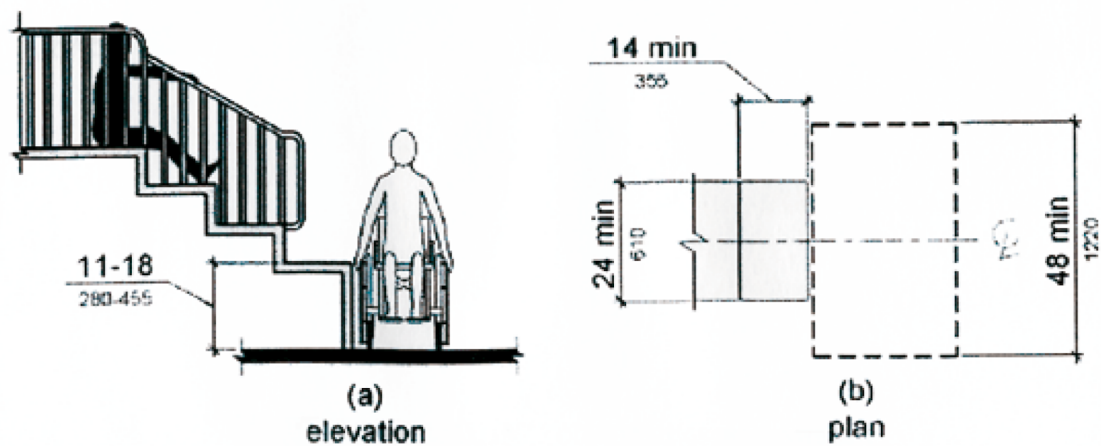


Figure 133: The section elevation and plan view of a transfer system (Accessible Play Areas, 29).

Transfer steps have three requirements which must be met when included. Those requirements include (1) they must have a maximum height of 8 inches, smaller heights which are less than 8 inches are better for play areas intended for younger aged children, (2) They must be a minimum of 14 inches deep, and (3) they must be a minimum of 24 inches wide. Transfer steps are not required in a playground area, however, to be in compliance with the ADAAG stair requirements guidelines, the three previously mentioned requirements are what is needed.

Transfer supports (figure 134) which are part of the transfer system are required to assist in the transition from wheelchair to the elevated component. Supports can be in the form of hand grips, handrails, or custom made handholds. The supports can be made of plastic, metal or rope. Transfer supports are also used when transferring from a wheelchair to a ground-level component.



Figure 134: Transfer supports on a transfer system (Accessible Play Areas, 31).

Clear ground and floor space is needed for wheelchair users to be able to occupy space which is not obstructed with anything to allow for ease of use and access. This space is required to have (1) a maximum slope of 1:48, (2) 30 inch by 48 inch minimum spacial area, (3) it is allowed to overlap accessible routes and maneuvering spaces. The location of these spaces do not have a requirement or specification because of the variety of design plans and layouts that playgrounds come in. Elevated play components accessed by a transfer system do not require a clear floor space because wheelchairs are left on the ground level.

On the same height level as play components, there must be at least one maneuvering space present. The max slope for a maneuvering space is 1:48. The reason for the same height play component requirement on elevated play components is so that a wheelchair can make a complete turn around of 180-degrees. Those maneuvering spaces can be formatted as either a 60-inch T-shaped turn (figure 135) which allows a wheelchair user to change directions by making a series of multi-point turns or a turning circle which is 60-inches in diameter (figure 136) and lets users turn around comfortably with a circular turn. Both platforms should not be at a slope of more than 1:48.

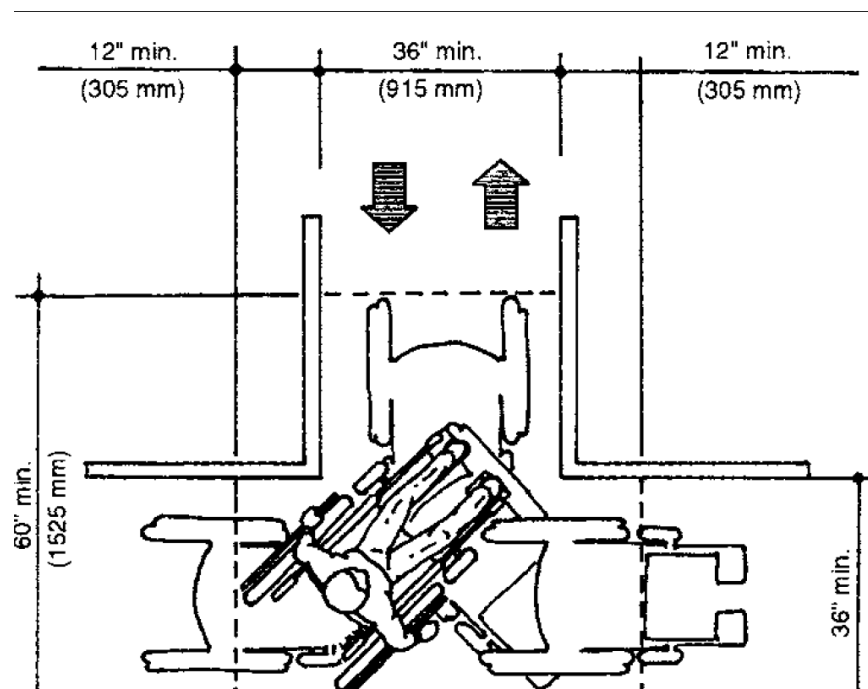


Figure 135: The plan view of a T-shaped turn layout for a wheelchair user (Accessible Play Areas, 34).

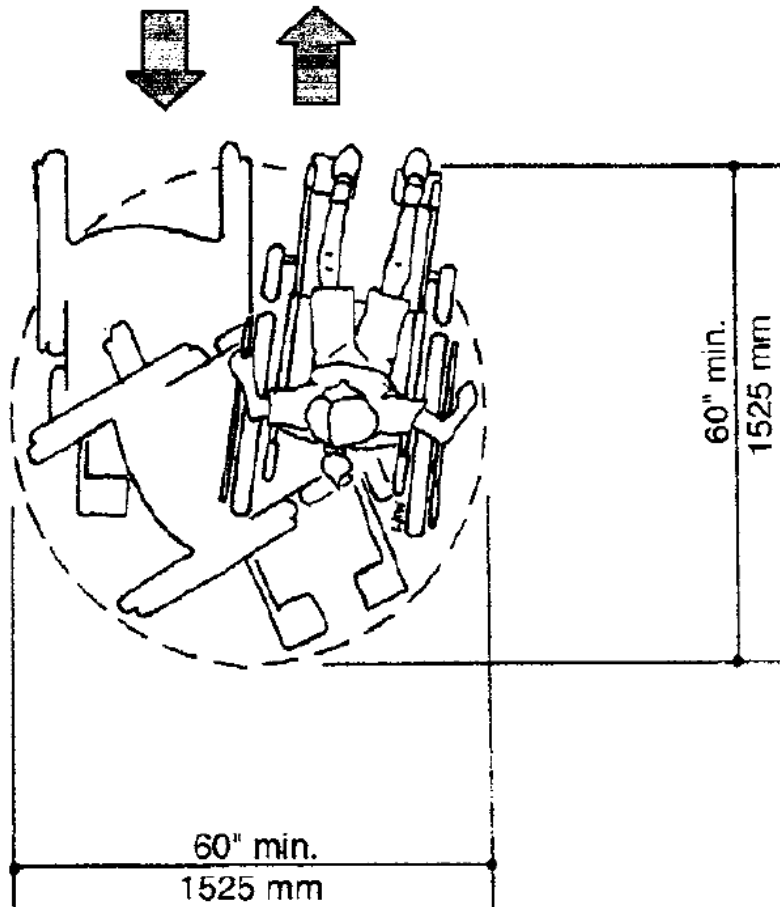


Figure 136: The plan view of a 60-inch diameter turning circle layout for a wheelchair user (Accessible Play Areas, 34).

Swings and swing sets are required to have maneuvering space right next to the accessible swing. The space can be in front, next to, or behind the swing. The only requirement is that the space is directly next to the swing. Figure 137 shows an example of locating a maneuvering space which is represented by the dashed lines. Both the circular 60-inch turning circle and the T-shaped turn are represented in this view.

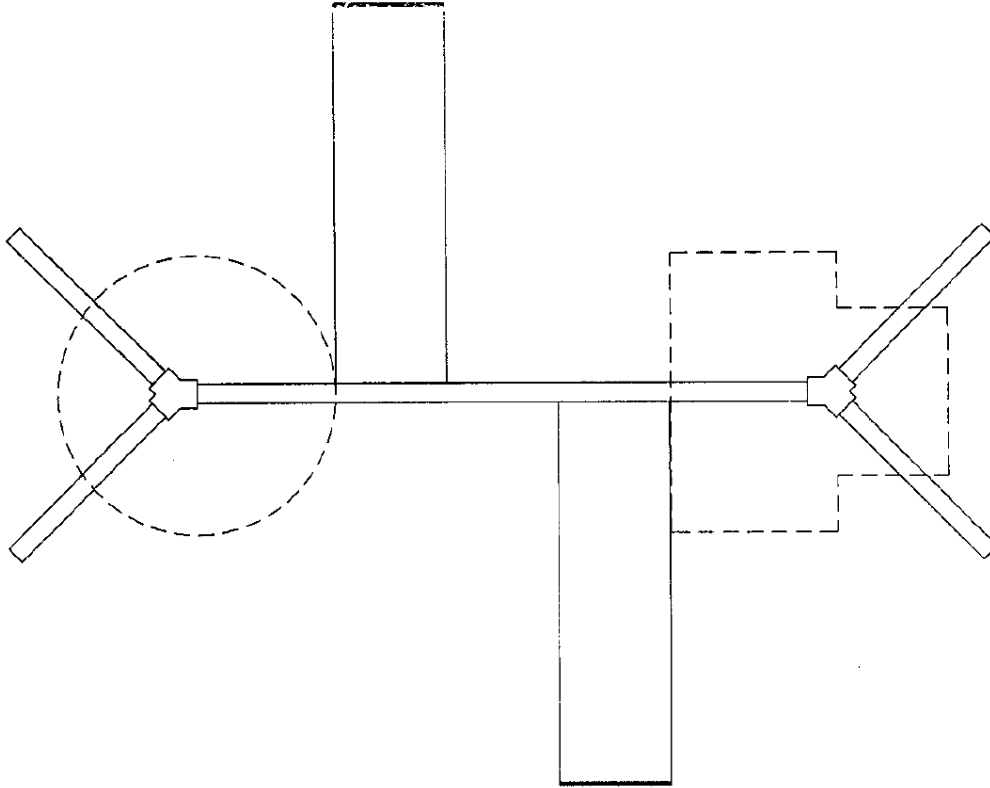


Figure 137: Plan view of a circular and T-shaped wheelchair turn location for a swingset (Accessible Play Areas, 34).

Seats and entry points are points which allow children to gain access to play components. The height requirements to transfer to a play component when on an accessible route is a maximum of 24 inches and a minimum of 11 inches. Often these points are designed with a height of 18 inches. Crawl tube openings, rocker seats and swing seats are all examples of seats and entry points.

Designing components which have easy access sides, hand supports and back supports are great ways to make entry points more easily accessible for wheelchair users for applicable components.

Play tables and boards (figure 138) are created to house water, sand, toys or any other similar type objects in a lofted up table position. Measurement requirements for knee clearance on a play table includes (1) 17 inches deep minimum, (2) 30 inches wide minimum, (3) 24 inches high minimum. With these heights a person in a wheelchair can comfortably roll partially under the play table and engage in the activity. Play tables can be both on the ground level as well as on the elevated component level.



Figure 138: A play table which meets the wheelchair knee clearance requirements (Accessible Play Areas, 36).

Reach ranges are the ranges in which a person who is in a wheelchair can reach without getting out of their seat (see figure 139).



Figure 139: A child playing with a play component while sitting in a wheelchair which is located at a good reach range (Accessible Play Areas, 37).

There are no true requirements for reach ranges, but some general recommended values are 16-44 inches for 9-12 year olds, 18-40 inches for 5-8 year olds and 20-36 inches for 3-4 year olds as shown in figures 140 and 141. Reach can be measured from both the side and forward position. Reach ranges are only needed for ground-level play components or elevated play components which are accessed via ramps. Elevated play components which are accessed via transfer systems would result in a user not being in a wheelchair so as a result the range is not applicable.



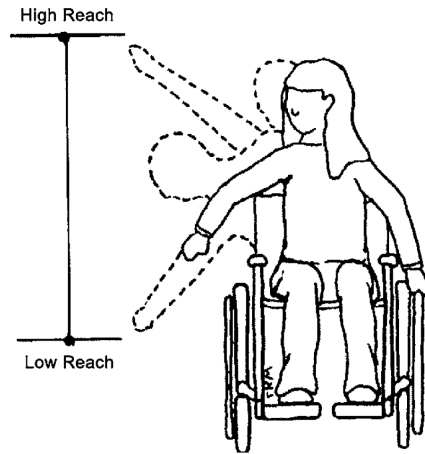


Figure 140: Side reach measuring position range for a wheelchair user (Accessible Play Areas, 37).

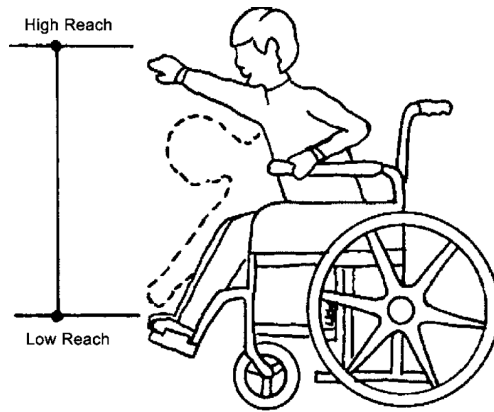


Figure 141: Forward reach measuring position range for a wheelchair user (Accessible Play Areas, 37).

## AMERICANS WITH DISABILITIES ACT (ADA)

Some disability guidelines which should be followed according to the ADA are listed as follows. For more specifics refer to the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

- Cross slopes of all accessible routes should not exceed more than a 2% slope.
- All primary slopes which are not ramps must be less than 5 percent.
- Wheelchair suitable width is a minimum of 4 feet.
  
- Ramps
  - Should have landings at the bottom and top of every ramp segment.
  - If a ramp is 30 feet long or more there should be a landing in between every 30-foot ramp segment.
  - Maximum slope should be 8.33%
  - Minimum slope should be 5%
  - If a ramp run has a rise of more than 6in. or a horizontal projection greater than 72 in., it should have handrails on each side.
  
- Landings
  - Need to be as wide as the ramp it leads to
  - Should have a minimum clear length of 60 inches from the end of the ramp
  - They need to have a minimum clear length of 60 by 60 inches for changes in ramp direction.
  - Should have a 2 % maximum cross slope for drainage purposes.
  
- Handrails
  - Must be provided along both sides of ramp segments. The inside handrail on switchback or dogleg ramps must always be continuous.
  - If handrails are not continuous, they must extend at least 12 inches beyond the top and bottom of the ramp segment and be parallel with the floor or ground surface.
  - The clear space between the handrail and the wall must be 1.5 inches
  - Gripping surfaces must be continuous

Consult with the ADAAG for a complete list of dimensional criteria for playgrounds as well as any state or local codes which need to be followed.

## LITERATURE REVIEW: “TO HELP CHILDREN WITH DISABILITIES, DESIGN BY TYPES OF ACTIVITIES, NOT TYPES OF EQUIPMENT”

Keith Christensen, MLA and Jill Morgan, PH.D write about the therapeutic benefits of play for children (Christensen et al. 2003, 51). Christensen is a landscape architect who is also the father of a child with Muscular Dystrophy. Jill Morgan, Ph.D., has the title of training/development specialist at the Center for Persons with Disabilities which directly coincides with the Utah State University. At the time of this writing both Christensen and Morgan are the directors of Beyond Access, an organization which gives information and technical assistance on how to provide accessible playground spaces to children with various types of disabilities.

The authors explain that play is critical for the healthy development of children's social well-being, emotional well-being, cognitive state and physical health. Free play comes at the top of the list for the best way for a child to develop into a well-balanced adult. They say this is true for a child no matter their physical situation, so if a child who is in a wheelchair is unable to participate in the activities that their peers are participating in, then it affects their overall development into adulthood.

Parks and playgrounds often have some elements which meet the requirements of the Americans with Disabilities Act (ADA ). The main goal of the ADA in regard to playgrounds is to allow for accessibility and use for all people who need it.

Wheelchair accommodations allow people in wheelchairs to be able to access, approach and enter elevated equipment, so as a result, people with disabilities are able to socialize in a more consistent manner than without that access. The main key to consider in accessible playground development is that physical barriers must be removed to allow for accessibility. Providing both social and physical access to the elevated play environment in addition to the ground level environment is crucial for a child in a wheelchair (Christensen et al. 2003).

Providing greater physical access within the play environment without creating similar social access can actually emphasize a child's disability, rather than their capabilities. Perhaps only one in ten children who use wheelchairs and other mobility aids are able to use a standard transfer system. And then they may be able to move around the equipment only by crawling. Too often, children with disabilities who can access equipment find themselves isolated because the “fun stuff” is all at higher levels, beyond their reach. (Christenson 2003, 51)

Christensen explains the playground designers should consider the types of experiences that a child will have while on the playground opposed to the amount of or even type of equipment. To go into more detail, playgrounds should provide a balance of passive resting (meditative stimulus), exploratory activities (cognitive stimulus), dramatic activities (imaginative stimulus), interactive activities (social/emotional stimulus), and practice activities (developmental stimulus).

Passive Resting is the deliberate placement of resting areas throughout the site so that a child may take a break after participating on a piece of equipment which might cause them to feel dizzy or cause some other type of feeling which could

warrant rest. An example of this would be a child calming themselves down in an open grassy area after spinning around on a merry-go-round. Children who are in wheelchairs often need a little more time than other children to recover and rest after a high sensation activity. If a child who typically spends most of their day in a wheelchair is immediately spun in any type of way the quick movement may be more than what they are typically used to and as a result the passive resting area would be important.



Figure 142-143: Tic-tac-toe and gear turn exploratory activities.

Exploratory Activities are activities which give a child a sense of discovery, surprise, and something new to explore. On man-made playgrounds, exploratory activities are often seen as panels which may include something like a game of tic-tac-toe, gears to turn, or something similar. The problem with man-made exploratory activities is that they typically remain the same and do not offer much variety. For example, a child could learn all of the pathways to complete a maze and as

a result have no fun with it after a couple of plays. As a result, the exploratory activity itself can become boring and unexciting after a handful of visits to the playground. The whole purpose of an exploratory activity is to allow a child to continue to be engaged in new and exciting ways consistently, however that can be a bit of a challenge when all of the exploratory activities are pre-manufactured.

Nature on the other hand, offers an endless amount of things to explore. Nature is ever-changing and it allows a child to discover new and exciting things every visit. Although there may be some challenges in allowing a child who is in a wheelchair to fully explore nature without any type of assistance, with some attention to detail access can be provided in a way that allows for an exploratory experience. Paving a trail with a meandering path through a wooded area or the playground site itself can become a source of independence and freedom for children in wheelchairs.

Dramatic activities allow children to role play and help build social well-being. Typically, dramatic activities happen in the spaces between larger pieces of playground equipment. For example, a bridge which connects two high points of a playground structure may be the acting stage for a playtime social gathering. Designating a particular space on the site which allows children to play out different roles without limiting accessibility is a great way to allow all children to be able to participate comfortably. These activities allow children to role play and engage with their peers in a different way.

Interactive activities may be the least provided activities for children with disabilities in the playground setting. It could be argued these activities are the most important because a child with any type of disability often does not properly engage in interactive play as often as they should for proper long-term development.

Providing opportunities for interaction among children who are able-bodied and disabled is often difficult, as children most frequently opt to play with peers (i.e., able-bodied with able-bodied and disabled with disabled). Forcing the two groups into close proximity by limiting play options or space may increase interaction, but some of that interaction is likely to be negative. In addition, children should always have the option of solitary play. (Christensen 2003, 52)

According to Christensen, a child should always have the option to interact with any activity which is found on the site. Making all parts of the site's interactive play accessible for a child in a wheelchair would include things like making tables at a height which allows for wheelchairs to roll under comfortably because of the height clearance. Another example would be providing ramps and transfer systems so that elevated play components can be accessible.

Practice Activities help to develop and strengthen large muscles, balance physical development, and fine tune fine motor skills. In short, these skills all help with everyday life tasks. Tetherball and seesaws are examples of practice activities. Practice activities build a sense of competition within children, however they can be challenging to be properly conducted for a child with a disability, specifically one who is in a wheelchair. Children play on playgrounds for fun and engagement not knowing

that built-in practice activities will help them to develop their bodies, minds and competitive spirits for their future.

Christensen and Morgan conclude the end of their thoughts with the following sentences.

To provide developmentally appropriate free play opportunities for children of all abilities, play settings should support the greatest possible diversity of activities, and be of the highest possible quality and accessible through the least limiting of means. Without thoughtful attention to these issues, provisions for greater physical access aren't only meaningless but may be socially detrimental. In the typical community playground physical activities predominate. We also need to provide for the other types of activity to allow children with different abilities to enjoy social interaction and acceptance through participation. (Christensen 2003, 53)



## INCLUSIVE PLAYGROUND EQUIPMENT

There are multiple manufacturers who produce accessible playground equipment such as; Playworlds, Little Tikes, Noah's Park Playgrounds, and more. For the purposes of this thesis the use of GameTime by PlayCore and Miracle brand's inclusive playground equipment has been used to demonstrate the possibilities of inclusive play and to show examples of playground equipment which satisfies the types of activities which were described by Christensen and Morgan.

Passive rest is an activity space which can be easily incorporated in any park or playground site. Leaving space on the site which has no equipment at all is the easiest way to go about this.

Exploratory activities can be easily modeled and represented on an inclusive site with the use of Miracle brand's Sensory Maze (figure 143). The maze can be built to order and allows a little one to be able to get lost in a world of twists and turns. The maze is designed with everyone in mind. Its turns and transitions can easily accommodate a wheelchair and there are quiet rest spaces all throughout its web for anyone who may need a break. Also, the maze can be reconfigured so that if a child has memorized its routes a new maze can be created. Similarly, GameTime's Alexis PowerScape play

system (figure 145) offers the able-bodied and wheelchair users the chance to mount an elevated play component via a ramp and as a result allows users to be able to explore the various play components which are located throughout.



Figure 144: Miracle Brand's Sensory Maze



Figure 145: GameTime's Alexis PowerScape play system

Dramatic activities like the Alta Glide Inclusive Glider (figures 146-147) allows a child to lounge and glide in a space where they can still socialize with their peers. The glider features a ramp at its entrance so users can walk or roll right onto its platform.



Figures 146-147: Miracle Brand's Alta Glide Inclusive Glider

Interactive activities like the Inclusive Whirl pictured here allows a person who is in a wheelchair to truly get engaged and into the activity just like everyone else. Instead of a merry-go-round, the Inclusive Whirl (figures 148-149) allows anyone to join in on the spinning fun with its design because its bottom is flush with the rest of the playground's walking surface. Also, GameTime's Sensory Dome (figure 150) allows for a fun climbing experience that also allows children to walk or crawl under the dome. It can fully accommodate a child in a mobility device under the dome.



Figure 148-149: Miracle Brand's Inclusive Swirl

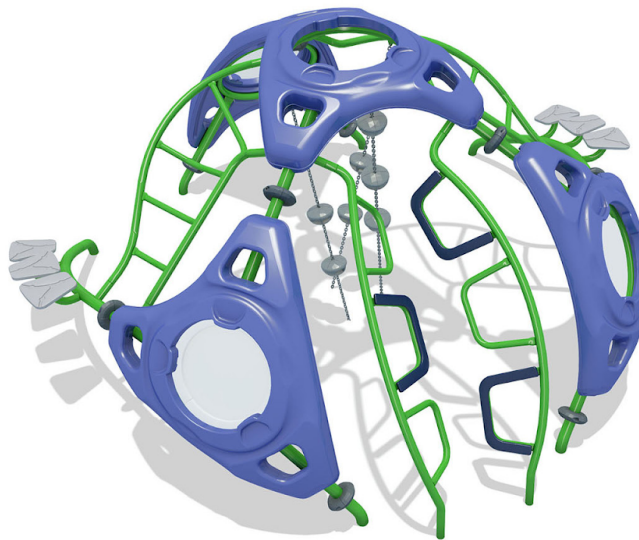


Figure: 150 GameTime's Sensory Dome - Medium

Practice activities help a child strengthen muscles, build balance, physical development, and fine tune fine motor skills. Practice activities like in the Fun Tunnel piece (figure 151) allow children to build these skills no matter if they are on foot or in a

wheelchair. Similarly, GameTime's Thread The Needle (figure 152) helps to reinforce hand-eye coordination for any wheelchair user or able-bodied player.



Figure 151: Miracle Brand's Fun Tunnel

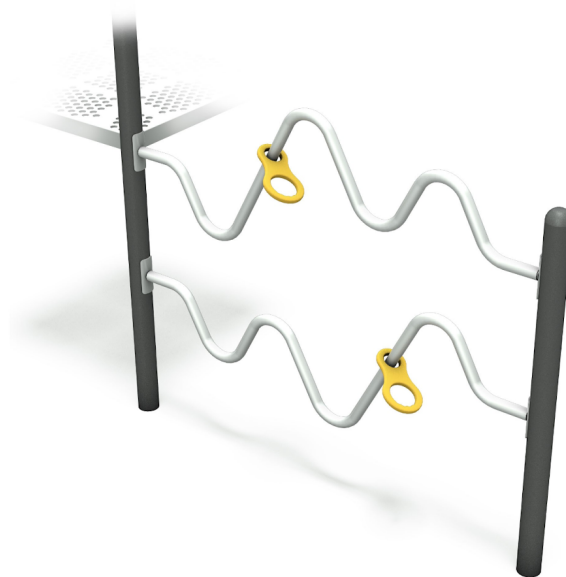


Figure: 152 GameTime's Thread the Needle

## CHAPTER SUMMARY

Accessibility on a playground should allow both able-bodied and disabled people to be able to approach, enter and use most components. The accessible route, ramps and running slopes all help to create a space which is accessible to all. A combination of ground level and elevated play components, create the play areas and spaces which people enjoy on playgrounds.

It's imperative that the various clearance and dimensional measurements are met in order to properly accommodate the needs and turn requirements of a wheelchair.

The types of activities which are found on the playground should focus on the type of experience that the user gets from the activity, and less on the type of equipment itself. Passive resting, exploratory activities, dramatic activities, interactive activities and proactive activities are all experiences which should be considered in play areas which are focused on the inclusion of children with disabilities.

There are many different types of disabilities that a person may have as both a child and an adult. Many of those disabilities may cause them to need a mobility device or a wheelchair to be more specific. The various needs of a wheelchair user on a playground are vast, but this chapter helped to outline both the technical requirements as well as the social and play needs of a wheelchair user. The ultimate

goal of this chapter is to better outline the specifics needed to accommodate disabled people.

## CHAPTER 6: SURVEY AND INTERVIEW RESULTS & ANALYSIS

### SURVEY RECRUITMENT LIMITATIONS

To conduct this survey, people who were in public parks were asked if they were willing to participate in a research survey for the cause. People who were already near or in playgrounds were targeted because their proximity and engagement with playgrounds suggest they would have meaningful opinions and be more open and willing to take the survey. As the QR code was shared and the topic of the survey was explained, most people held up their phone and proceeded to answer the questions. It appeared that some people did complete and finish the survey based on the number of responses that were collected in the end, however the number of responses does suggest that some people who showed interest in completing the survey either only pretended to be interested or started the survey and never actually finished and submitted it.

The survey was also shared online to promote participants' engagement via emailing and sharing on social media. After the first month of attempted survey collection during the month of March 2023, the realization that the amount of people who were completing the survey who actually had a physical disability was minimal so an attempt was made to target more of those people so that the survey sample was a good reflection of potential users of an accessible playground. Several attempts were



made to organizations and facilities which were catered to the disabled, but none of them gave out the survey to their members. They either did not respond to the requests at all, or replied stating that it was something that they were not able to do. Finally, some responses were obtained after the researcher joined several Facebook groups which catered to wheelchair related topics and shared the survey information in those groups.

Another limitation found within this overall research project was the fact that when people do answer survey questions sometimes they do not take the time to answer thoroughly. There were occasional question responses which did not quite line up with the questions which were being asked. Approximately half of the survey questions were multiple choice questions while the other half of the questions were short answer questions. Because of this, the short answer style responses allowed for a person to respond with anything that they typed. Although a small number of questions were answered with responses which did not seem to line up with the questions which were asked, a majority of the question's answers did make sense concluding to the survey responses still being of significant value to the overall research. Examples of question responses which did not make sense are of two responses collected on the first day of survey recruitment; there were a total of eight survey submissions at that time, and all participants marked "I am filling out this survey from answers from my own adult opinion," when asked "who was responding?"

However one of those eight responses listed an age of fifteen and another listed an age of twelve for the participant. If a parent were completing the form for their child the option was available to choose, “I am filling out this survey for my child. I am marking down their preferences for each answer. They have given me consent to participate in this survey on their behalf.” Similarly, there was one participant who marked that they had no physical disability, but listed a disability when the following question asked what that disability was. There were two participants who did the same, but in relation to the cognitive disability question. Although nonsense answers are limiting to survey analysis, having multiple survey responses with a majority of intelligible responses is more of a benefit than a limitation to the overall project. As a result, all surveys which were completed were used in this data analysis.

## SURVEY STRUCTURE

As far as the survey structure itself, the first question asks the participant to clarify that they are giving informed consent to participate. This question is required and must be selected in order to complete and submit the survey. The next question asks the participant how they are filling out the form and they have one of three choices. The first answer choice states “I am filling out this survey from answers from my own adult opinion”. The second answer choice states, “I am filling out this survey for my child. I am marking down their preferences for each answer. They have given me consent to participate in this survey on their behalf”. The third and final answer choice reads, “I am filling out this survey as a caretaker for an adult with a disability who cannot fill it out on their own. I am marking down their preferences for each answer. They have given me consent to participate in this survey on their behalf”.

After that question, the participant has two questions which are demographic based and asks the participant their age followed by their gender. The next four questions pertain to disabilities. The questions ask if the participant has either a physical or cognitive disability. After each of those questions, the participant then clarifies what the disability is.

To complete the survey the participant then answers 14 more questions, if applicable. Seven of those questions are multiple choice while the other seven are open response, where the participant can leave a short answer in the form of a

sentence or phrase. Once the participant completes all of the relevant questions they then hit the submit button and all of their answer responses are stored. No questions regarding race, ethnicity, or socio-economic status are asked in the survey. To keep all survey responses as unbiased as possible on multiple choice questions the answer choices are written in alphabetical order. Similarly, on choices which ask for favorability preferences, the question choices always start with the most negative feeling choice being listed first to minimize swaying the participant to quickly mark that they liked something without giving much thought to it.

#### SURVEY ANALYSIS

A total of 202 participants completed the survey and an analysis of that data is as follows.

## PARTICIPANT PERSPECTIVE

When completing this survey, participants were asked how they were filling it out. The options participants had were; “I am filling out this survey from answers from my own adult opinion.” or “I am filling out this survey for my child. I am marking down their preferences for each answer. They have given me consent to participate in this survey on their behalf,” or “I am filling out this survey as the caretaker for an adult with a disability who cannot fill it out on their own. I am marking down their preferences for each answer. They have given me consent to participate in this survey on their behalf”. Of the responses, 190 (94%) chose “Adult”, 13 (6.5%) chose “Child”, and 7 (3.5%) chose “Caretaker of an Adult” (figure 153).

Participant Perspective

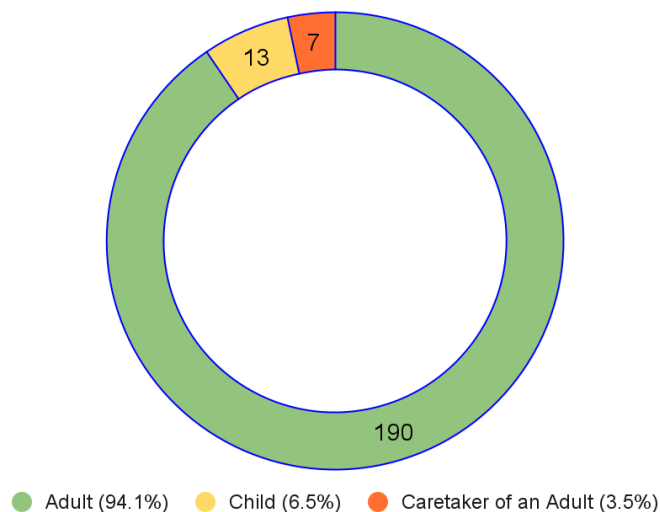


Figure 153: Survey participant's perspective

## AGE OF PARTICIPANTS

A summary of the ages of the participants who completed the survey are grouped in figure 154. These groupings are in increments of 10 years and range from 0-79. There were 5 (2.5%) participants who marked that they were between the ages of 0-9, there were 13 (6.5%) participants who fell between the ages 10-19, there were 57 (28.4%) participants who fell between the ages of 20-29, there were 47 (23.4%) participants who fell between the ages of 30-39, there were 46 (22.4%) participants who fell between the ages of 40-49, there were 18 (9%) participants who fell between the ages of 50-59, there were 9 (4.5%) participants who fell between the ages 60-69, and there were 7 (3.5%) participants who fell between the ages 70-79.

Participant Age

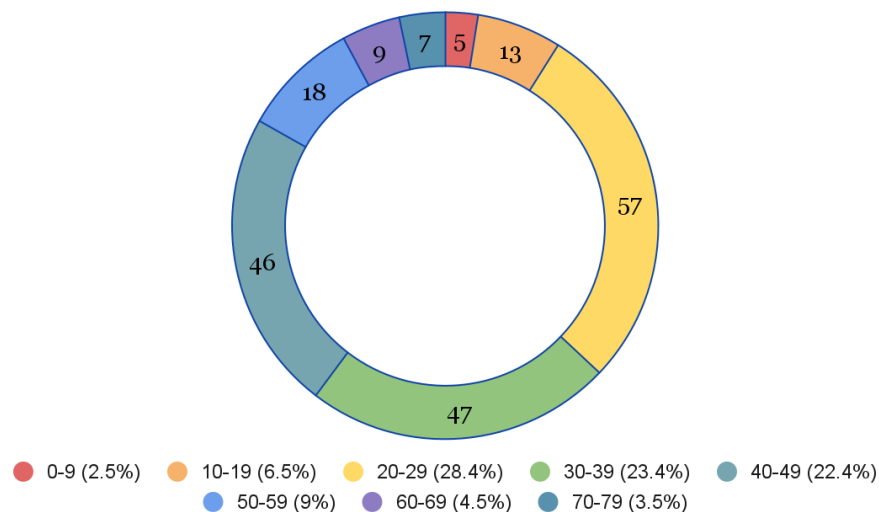


Figure 154: Survey participant's ages

## GENDER

Participants had the option to choose three different gender options which included, male, female and other. There were 153 (75.6%) participants who chose “female”, 45 (22.4%) who chose “male”, and 4 (2%) who chose “other” (figure 155).

### Gender

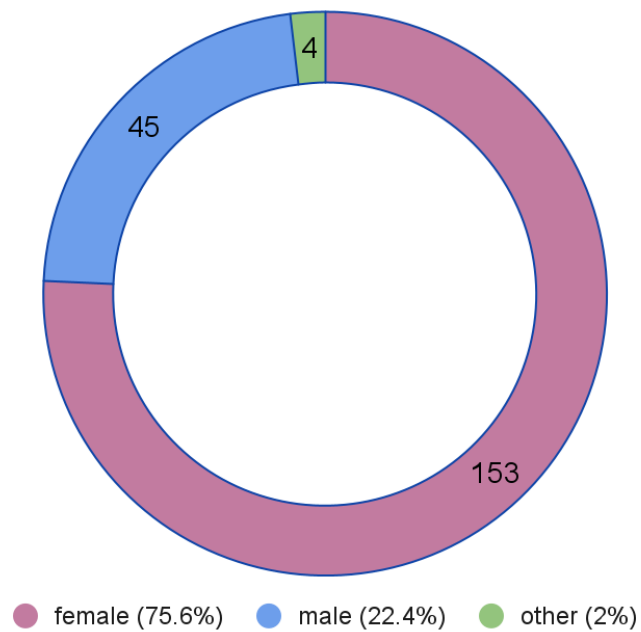


Figure 155: Survey participant's gender

## PHYSICAL DISABILITIES

Of the participants, 33 (16.4%) marked that they do have some type of physical disability, while 169 (83.6%) marked that they do not have any physical disabilities (figure 156).

### Disability Status

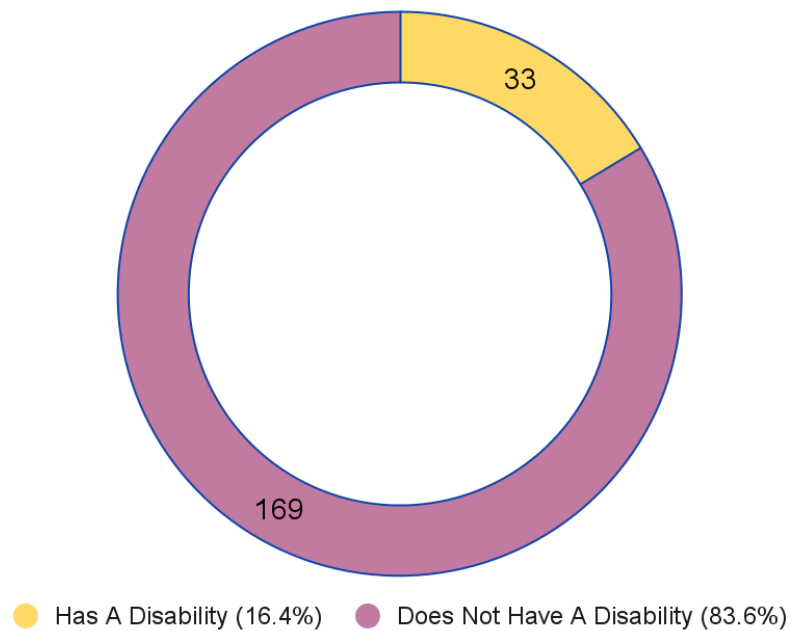


Figure 156: Survey participant's disability status



## TYPES OF DISABILITIES

The participants who completed the survey specified the type of disability that they have and that information has been organized in the table in figure 157 including the age and gender for each person reporting.

Age	Gender	Physical Disability
6	Female	Cerebral palsy
7	Female	Juvenile idiopathic arthritis, muscle contractures, hypotonia,
8	Female	Infantile onset ascending hereditary, spastic paraplegia
10	Female	Spina bifida
10	Male	Hypotonia
13	Male	Cerebral Palsy- spastic
19	Female	Ambulatory Wheelchair user (Chronic Knee Pain & Joint Issues affecting mobility)
19	Male	Epilepsy
22	Other	Functional Neurological Disorder and associated conditions, ambulatory powerchair user
27	Female	Hearing loss, ostomy, hip problem, arthritis
32	Female	Wheelchair user
34	Female	Functional neurological disorder which means legs go functionally paralyzed, weakness in arms and legs, chronic fatigue and arthritis, also slipped disc in spine
34	Female	Cerebral palsy
34	Male	Sickle cell anemia, arthritis
35	Female	Functional Neurologic Disorder
36	Female	Partial quadriplegic from stroke
36	Male	Triple amputee
37	Female	8 weeks postpartum from a physically limiting pregnancy
37	Female	Pontocerebellar Atrophy (degenerative neurological condition)
37	Female	Hereditary spastic paraplegia
38	Female	Spinal cord injury
39	Female	Wheelchair User
43	Female	Multiple: 1 to do with the spinal cord, 3 of the spine itself, 1 of the knees, 1 of the hips, cerebral palsy.

45	Female	Son has autism
46	Female	MS causes a wide variety of symptoms and dynamic disability for me.
48	Female	Wheelchair user
54	Female	Paraplegic
56	Male	Polymyositis
60	Male	Multiple Sclerosis - paraplegia
61	Male	Cerebral palsy
70	Female	Multiple myeloma
70	Female	Wheelchair bound bilateral amputee
70	Female	Bad knee
71	Female	Congestive Heart Failure

Figure 157: Survey participant's disability status in relation to gender and age

## WHEELCHAIR USERS

Participants were asked if they use a wheelchair on a regular basis for mobility and 7 (5.7%) responded that they do, while 117 (94.3%) respondents said that they do not (figure 158). A special note which needs to be made about this particular question is that it was added onto the survey after the survey was initially distributed. As a result, only 123 people answered this question so it is not fully representative of the entire population of 202 participants..

### Wheelchair Users

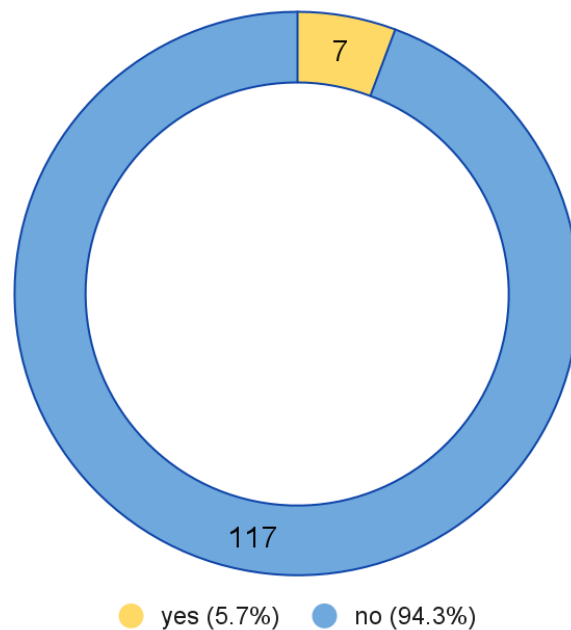


Figure 158: Survey participants who are wheelchair users versus non-users

## COGNITIVE DISABILITIES

Participants were surveyed about their cognitive disability status. All 202 participants responded and 50 (24.9%) explained that they do have a cognitive disability, the remaining 152 (75.1%) explained that they do not (figure 159).

### Cognitive Disabilities

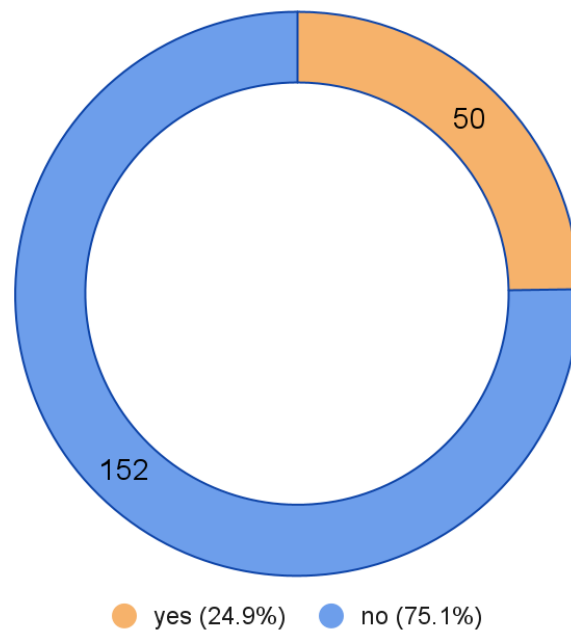


Figure 159: Survey participants with and without disabilities

## TYPES OF COGNITIVE DISABILITIES

The participants who completed the survey specified the type of cognitive disability that they have and that information has been organized in the table in figure 160, including the age and gender for each person reporting.

Age	Gender	Cognitive Disability
10	Female	ADHD
21	Female	ADHD
22	Female	ADHD
22	Female	ADHD
22	Female	ADHD
23	Female	ADHD
25	Female	ADHD
26	Female	ADHD
26	Female	ADHD
28	Female	ADHD
31	Female	ADHD
33	Female	ADHD
37	Female	ADHD
40	Female	ADHD
44	Female	ADHD
44	Female	ADHD
45	Female	ADHD
54	Female	ADHD
5	Male	ADHD

19	Male	ADHD
21	Male	ADHD
27	Male	ADHD
33	Male	ADHD
34	Male	ADHD
40	Male	ADHD
41	Male	ADHD
56	Male	ADHD
74	Male	ADHD
57	Female	ADHD
36	Female	ADD
20	Female	autism
10	Male	Autism
22	Other	Autism
24	Other	Autism spectrum disorder
25	Female	OCD
27	Male	OCD
25	Female	not sure
26	Female	Anxiety
27	Female	Epilepsy
32	Female	Sensory processing disorder
34	Female	Brain fog caused by FND Functional neurological disorder
40	Female	Central Auditory Processing Disorder
13	Male	Delays in processing
44	Male	Withheld

7	Female	Trisomy 21 (Down syndrome), intellectual disability
37	Female	ADHD, Anxiety, depression
20	Male	ADHD + ASD
61	Male	Learning disabilities/ intellectual disabilities
22	Other	Autism, ADHD, dyspraxia

Figure 160: Survey participant's cognitive disability status in relation to gender and age

## INCLUSIVE PLAY

Survey participants were shown 3 different images and were asked how comfortable they would feel on a playground site with different types of people in various ways. The first image (figure 161) showed a running or walking track which had participants on it of different ages and abilities. The second image (figure 162) was a cartoon which showed people exercising who were adults, and some with physical disabilities. The third image (figure 163) was of a dual use adult exercise piece of equipment which allowed both able-bodied and disabled people to exercise at the same time while outside. The data analysis shows that no matter the age or gender of the survey participant, the majority of people either felt comfortable or very comfortable with participating on a playground with people who were of different ages or physical abilities from them.



Figure 161: Image of a track with various aged people and physical abilities





Figure 162: Image of adults exercising, some with physical disabilities



Figure 163: Image of a dual use adult outdoor exercise piece of equipment

## MUSICAL INSTRUMENTS

Survey participants were asked if they had ever used outdoor musical instruments like or similar to the collection shown in figure 164. Of the participants 148 (73.3%) responded with "yes" they had used an outdoor instrument before. Immediately afterwards, participants were asked how they felt about the instruments and 159 (79.1 %) of the 202 participants noted that they either liked or strongly liked the instruments. These two responses were both chosen the most regardless of age, gender or any other factors.



Figure 164: Outdoor musical instruments photo which was used in the survey.

## PLAYGROUND PREFERENCES

Survey participants were asked to choose their top three preferences from the following list of choices including; exercise equipment, musical instruments, path for walking and/or wheels, seating, shade, slide, swings, water play/mister and they were also given the choice to write in a response which was not listed. The results of that survey question are listed in figure 165 with the top three options being path for walking and/or wheels with 149 votes, shade with 126 votes and exercise equipment with 110 votes. The most popular write-in responses were related to including more climbing playground equipment with 3 responses and to include more space for dogs with 2 responses. Children's responses were similar to the majority of the group, but the top three preferences for them were swings, slides, and a path for walking and/or wheels.

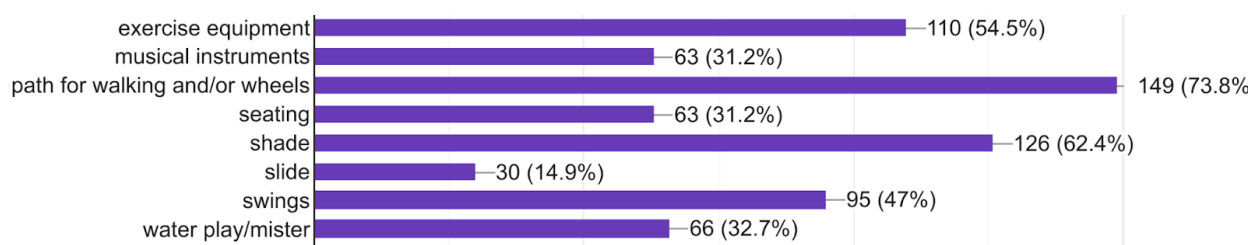


Figure 165: Survey response preferences of desired features in an outdoor play and exercise space.

For another survey question, participants were asked to “Choose all of the facilities and/or features which would make your playground experience easier? You may choose as many as you would like and you can also write in anything else that is not listed.” The top choices shown in figure 166 were restrooms (156), shade (146), ease of parking (142), accessibility of water fountains (114), ramps for wheels (80), changing tables inside the restrooms (56). Some of the popular hand written responses included; wheelchair accessibility with 8 responses and seating and picnic areas for resting and eating with 6 responses.

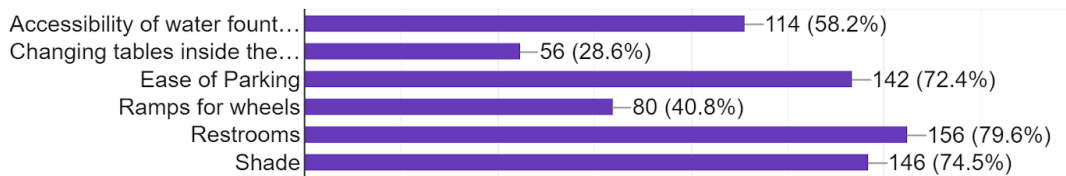


Figure 166: Survey responses showing which facilities and/or features would make playground recreation easier

## SHORT ANSWER RESPONSES

Survey participants were asked “Have you recreated in the past, but stopped due to a barrier or obstacle that started? What was the obstacle?” Those short answer responses were organized and grouped into categories with similar and related responses (figure 167). There were 144 people who answered this optional question and the results of the top nine mentions are as follows; lack of accessibility (21), age/size/weight (12), lack of shade (8), quality/lack of equipment (7), too crowded (5), weather/heat (5), bad health (4), dirty site/muddy (3), bugs/mosquitos (2).

<b>Past Barrier (s)</b>	<b>Quantity of people who mentioned this</b>
Lack of Accessibility (for both able-bodied and disabled)	21
Age/Size/Weight of the participant	12
Lack of Shade	8
Quality/Lack of equipment	7
Too crowded	5
Weather/Heat	5
Health/Bad knees	4
Dirty/Muddy on site	3
Bugs mosquitos	2

Figure 167: Survey responses to short answer question about past playground barriers.

Survey participants were asked “What are some barriers or obstacles that you currently have that prevent you from using playgrounds?” Those short answer responses were organized and grouped into categories with similar and related responses. There were 159 people who answered this optional question and the results of the top 8 mentions are shown in figure 168. Age/size/weight received (40) mentions, lack of accessibility for able-bodied and disabled (22), lack of shade (7), quality of equipment (5), lack of time (7), proximity of playground to home (7), weather/heat (6), and finally maintenance and upkeep (4).

<b>Current Barrier</b>	<b>Quantity of people who mentioned this</b>
Age/Size/Weight of the participant	40
Lack of Accessibility (for both able-bodied and disabled)	22
Lack of Shade	7
Quality/Lack of equipment	5
Lack of Time	7
Proximity of playground to home	7
Weather/Heat	6
Maintenance and upkeep	4

Figure 168: Survey responses to short answer question about current playground barriers.

Survey participants were asked “Considering the barriers or obstacles that you currently have that prevent you from using playgrounds, how might these obstacles be changed, removed or made better?” Those short answer responses were organized and grouped into categories with similar and related responses. There were 132 people who answered this optional question and the results of the top eight mentions are shown in figure 169. The top three preferences from participants were; adding adult sized exercise and play equipment (32), all trails and pathways should be paved for wheelchairs (16), and in a tie for 3rd place with 10 votes each are increasing accessibility in various ways, increase shade, and equipment (repair, improve etc.).

<b>How to make playgrounds better?</b>	<b>Quantity of people who mentioned this</b>
Add adult sized exercise and play equipment	32
All trails, pathways, and equipment areas should be paved, or covered with a wheel/wheelchair friendly material.	16
Increase accessibility in various ways	10
Increase shade	10
Equipment (repair, improve etc.)	10
Better seating	8
Water fountains	6
Nearby restrooms	5

Figure 169: Survey responses to short answer question about overcoming barriers

Survey participants were asked “In your opinion and from life experience, what could make an outdoor play and exercise experience better?” Those short answer responses were organized and grouped into categories with similar and related responses. This question was required so all 202 participants answered this question and the results of the top eight mentions are shown in figure 170. The top choices were shade, accessibility and adult equipment and entertainment along with keeping it clean and maintained were tied for third place.

<b>How to make outdoor play and exercise better?</b>	<b>Quantity of people who mentioned this</b>
Increase the amount of shade	20
Make it accessible	18
More adult equipment and entertainment	13
Keep it clean and maintained	13
Offer more variety on site	10
Offer a variety of equipment types	9
Provide water fountains	8
It should accommodate different ages	7

Figure 170: Survey responses to short answer question about current playground barriers.



## INTERVIEW ANALYSIS

There were a total of two interviews which were completed to gather research in a way which was more personal and gave direct one-on-one information from a user who had personal knowledge and interest in the subject. The first interview was of a 10-year-old girl who is in a wheelchair, and the second interview was from a 4th grade special education teacher who regularly helps students with disabilities get the accommodations which they need on a daily basis.

On March 3rd, 2023, a Friday afternoon in a park in the middle of a residential neighborhood, one of the interviews took place with the 10-year-old fourth grade girl who is in a wheelchair. The sole purpose of this interview was to learn about the challenges that she encounters when visiting traditional parks and playgrounds. The interview went very smoothly with no interruptions. The girl was accompanied by her mother and they were both eager to participate.

The researcher planned out several questions to ask the mother and girl during the interview before the start of it, and a physical copy of those questions were present at that time as well as a physical copy of the consent form. A copy of the planned interview questions are available in Appendix D of this thesis.

The mother received a copy of the consent form before attending the interview so she was able to read all of the details and signed the interview consent form on the

spot. A digital copy of the signed consent form was made which the researcher kept while the mother left with the paper copy which she and the researcher both signed.

While the interview was conducted there were some topics which came up which were not a part of the interview question series. However they were good points to make and only a person who regularly lives in a wheelchair would know to bring up, so the off-script dialogue and information was very helpful to research collection.

The result of the interview concluded with the following information. In the past the girl and mother often found that the distance that they lived from the park that they visited most was a barrier for them and kept them from going to the park altogether. However, since that original home location, they have moved into a different house and they currently live three houses away from the park in which the interview took place and it is so close to their home that they walk and wheel there regularly. One of the main reasons for going to the park is to socialize and play with friends so if there are no friends to engage with then they do not enjoy the visit as much. The mother and girl explained that sometimes when they arrive at the park there are no other people there and as a result they do not stay as long.

The main barrier that the girl currently has when on the playground is the fact that she is in a wheelchair. To be specific her wheelchair cannot comfortably roll over various materials such as mulch. All three of the main playground structures at this particular park were all surrounded by mulch wood chips underneath the structures.

The mulch was not wheelchair friendly and if she tried to roll over it her wheels dug deeper into the ground; this meant that she could not engage in the three main play structures at all while in her wheelchair. Her mother explained that sometimes she does take her out of the wheelchair and place her onto the equipment but that is not something that the girl can do by herself. The materials that they explained are best for rolling wheelchairs over are rubber padding or concrete. The family did explain that the girl does sometimes use what they refer to as sticks to get around instead of her wheelchair. They clarified later on that by sticks they mean crutches. The girl explained that if she had to travel over mulch and she had her crutches with her then she could get around, however she would not want to try to get around in mulch while in a wheelchair. An image of what that girl's playground looked like is shown in figure 171, this was also the location of the interview. The bottom of the play structure is enclosed with a border and filled in with mulch. Those two things are both obstacles for wheelchair users.

A second ground layer obstacle that the pair mentioned experiencing was the collection of leaf litter primarily from a Sweet Gum tree which produced large fruit seed balls (figures 172 and 173) which made traveling even parts of the paved sidewalk challenging.



Figure 171: A photo of a play structure which has mulch under it.



Figures 172 and 173: *Liquidambar styraciflua* (Sweet Gum) fruit seed balls

The girl said that some features that she would love to see more of at this particular playground were water fountains because there was currently one there, but

it was broken. Also, covered trash cans which would allow less insects to be attracted to the area. While the interview took place there were several large carpenter bees which were swarming around the interview area. She would love to see water play type activities as well. On that particular site, there was a splash pad but the mother and girl explained that it had been recently closed for a reason which was unknown to either of them. Before it was closed, the splash pad would spray high up into the air and kids would come during warm weather to enjoy it, but the city had recently closed it permanently. The mother also mentioned how much she enjoyed playing with water tables. The height of the water table is something that would allow the girl to be able to participate in, while still being in a wheelchair. The mother said that she has seen a nature inspired water table which was interactive and fun.

The girl explained that the one feature on site that she would love to participate in but is not able to because of her situation are the monkey bars. She says she believes that she could use them on her own if they were just lower. As they are now, someone would have to lift her up to be able to grab the first bar and then if she were to fall because she is unable to use her legs the fall could be very impactful and damaging for her. If the monkey bars were lower in height and she did fall it would not have as much of an impact and it is very likely that she would be able to pull herself out of her wheelchair to participate in the monkey bars without any type of assistance.

The second interview was of a 4th grade special education teacher who is also the mother of an 8-year-old boy. She mentioned that not only does she have playground and recreational experience from her job, but in her personal life from going to parks with her son as well.

During the interview, she told of a time when she worked at a school which did have a playground, but there was no poured concrete pathway to it, so her wheelchair-using students could not access the site. She also mentioned that she had a student who would regularly try to run away from teachers and she felt like any outdoor area where the students were going to play should be fenced in because it would prevent students from being able to escape easily.

In regard to what she felt a public park would need, she clarified that accessible water fountains especially some at toddler height so a small child does not have to be lifted up to drink, bathrooms which have changing tables for larger sized children/people, shade and good parking options were key elements. Another notable element that she mentioned was having swings which could be locked into place. She pointed out that trying to transfer a student into a moving swing is quite difficult. To help with accessibility needs, having a swing which could lock into place and not move during the transfer was ideal.

She also confirmed that pavement or rubber padding groundcovers were the best for wheelchair access. Mulch, woodchips, gravel were the worst ones for her students.

When the teacher was asked about which type of playground equipment she felt that most students want to get on that they could not because of their disability, she explained that, they just want to be with their peers, and that means, it was not so much about the equipment as much as it was about the inclusion with friends. The students just wanted to feel like they were a part of the group.

## CHAPTER SUMMARY

Both the surveys and the interviews clarified that the same things were desired in order to make an existing playground more user friendly. Accessibility needs to be addressed so that wheels can roll over materials which work for them, not materials which keep those users from being able to participate or access the site. Ground covers which are made of pavement or rubber padding is best, and equipment which assists in disability needs, like swings which lock into play for transferring should also be present.

As far as features which are designed for everyone, most users explained that they would like to have more shade on site, access to water fountains for drinking, keeping the site clean and well maintained is imperative, and it needs to include more

adult sized equipment for exercise and/or play. People want a playground where there is no social stigma for adults who want to participate, so proper signage explaining that the playground is adult friendly is best. The playground should also have adequate seating along with picnic tables and nearby restrooms which have adult sized changing tables. By accommodating a variety of ages on the playground, a Landscape Architect can help keep more than the typical playground user occupied and happy.



## CHAPTER 7: INTEGRATED PLAYGROUND RECOMMENDATIONS

### CHAPTER OVERVIEW

Important criteria which is needed to create a playground for everyone that includes wheelchair accessibility and adult exercise is outlined within the following text. There are 4 main pieces which are to be considered:

1. Children's playground functionality and equipment
2. Wheelchair accessible playground criteria
3. Adult sized exercise functionality and equipment
4. The public's voice

In order to complete the task of combining needed and preferred components into a playground that meets the needs of its users, an existing playground site was studied in terms of its baseline or existing conditions, and analyzed in terms of how friendly it is to children, adults, wheelchair users and the general public.

Subsequently, that site was redesigned with a new ground plan that includes the elements which were discussed in the previous chapters of this thesis. Finally, a comparison of the existing and proposed playgrounds was performed.

## BASELINE CONDITIONS

The park which was chosen for this demonstration is Dixon Park found in Savannah, GA on the corner of East Broad and Henry Streets. The park is on a 1.2 acre site. The site's baseline conditions include a play component which does have a transfer system, swings, merry-go-round, picnic tables, benches, 2 spring riders, walking path, parking, as well as shade from the existing tree canopy, which also provides a natural play area. An aerial view of the site is found in figure 174. Key features of the site which are hard to see because of the tree canopy have been traced over for clarity.

This park was chosen because of its size, location in the city in relation to well traveled roads and because of its surrounding neighborhoods. Dixon Park is located along two well traveled streets which both have a fair amount of driving traffic as well as foot traffic. There are even some streets which are a block or two away which also consistently have a high volume of foot traffic making this park a good one in terms of inviting the general public. The surrounding neighborhoods are of average sized single family residential homes with a few duplexes and quadplexes mixed in. The fact that the park already had playground equipment also made this park a great choice because updating what was already there for the public seems to be the best next step.

# Dixon Park - Baseline Conditions

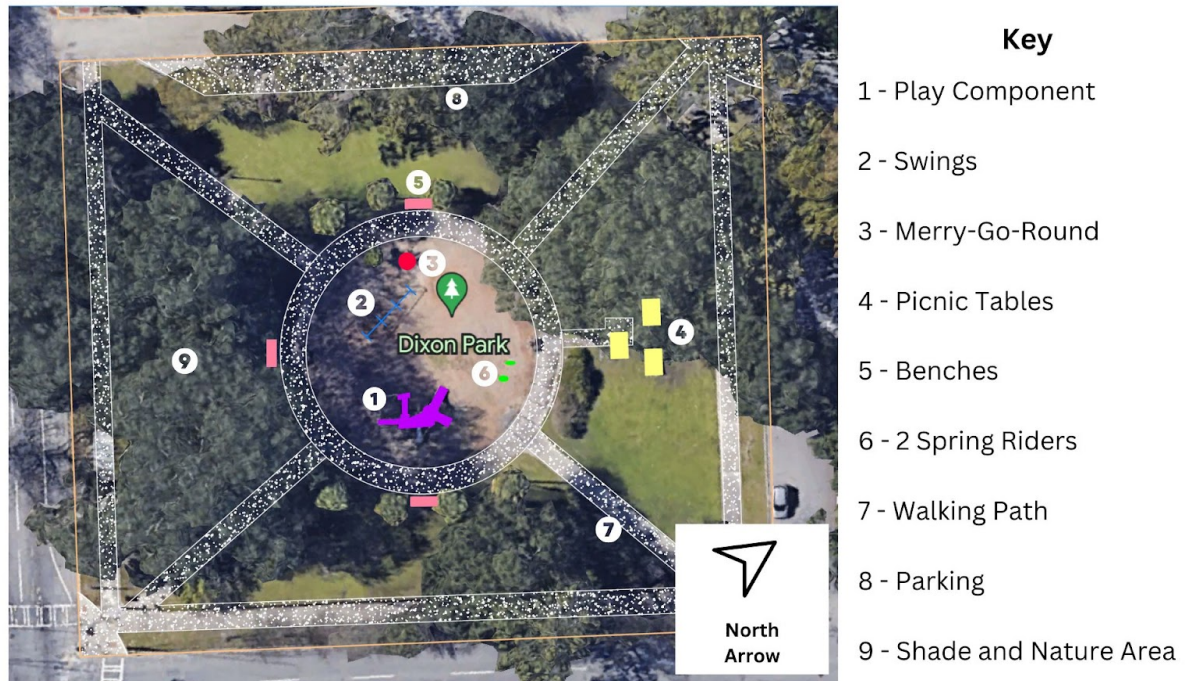


Figure 174: Baseline conditions of Dixon Park at a scale of 1"=50'.

The park takes up all of the space in an entire street block and is surrounded by several homes, a library, a church and a small business complex. Images of all of those adjacent land uses can be found in figures 175-181.



Figure 175: Several homes which are located on the north perimeter of Dixon Park.





Figure 176: Several homes which are located on the northwest corner of Dixon Park.



Figure 177: A house which is located on the west perimeter of Dixon Park.



Figure 178: The Carnegie Public Library which is located on the south perimeter of Dixon Park.

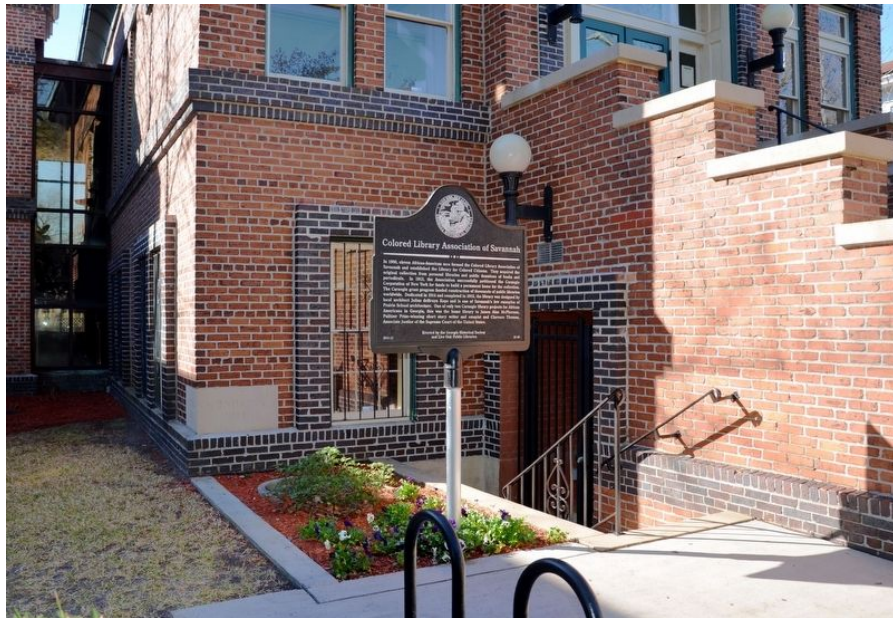


Figure 179: The sign in front of the Carnegie Public Library



The Carnegie Public Library was one of the first public libraries which was created for African Americans. The historical sign in front of the building has an inscription which reads:

“In 1906, eleven African-American men formed the Colored Library Association of Savannah and established the Library for Colored Citizens. They acquired the original collection from personal libraries and public donations of books and periodicals. In 1913, the Association successfully petitioned the Carnegie Corporation of New York for funds to build a permanent home for the collection. The Carnegie grant program funded construction of thousands of public libraries worldwide. Dedicated in 1914 and completed in 1915, the library was designed by local architect Julian deBruyn Kops and is one of Savannah’s few examples of Prairie School architecture. One of only two Carnegie library projects for African Americans in Georgia, this was the home library to James Alan McPherson, Pulitzer Prize-winning short story writer and essayist and Clarence Thomas, Associate Justice of the Supreme Court of the United States.” (Carnegie Public Library Historical Sign)

Dixon park was chosen for this redesign location because it is located in a historical area which has become a melting pot for various races and nationalities. The park has been a location which brings together people with various backgrounds, but with the redesign available in this location it can also bring together people with varying physical abilities as well.



Figure 180: The intersection at the southeast corner of Dixon Park shows the entrance to the adjacent church.



Figure 181: The small business complex which is located on the east perimeter of Dixon Park



The playground and leisure equipment which is located in the middle of the park include the playground area, three picnic tables, several benches, a circular walking path and several large Live Oak Trees which provide a lot of shade. The images found in figures 182-190 give a visual description of all of these things.



Figure 182: A view of the playground found on Dixon Park; includes swings, spring rocker and an elevated play component.



Figure 183: The Spring Rocker which is found at Dixon Park.



Figure 184: The view of the elevated play component located at Dixon Park while facing east.





Figure: 185: The view of the elevated play component located at Dixon Park while facing southeast.



Figure 186: The three picnic tables which are found at Dixon park.





Figure 187: The circular walking path and a bench that are found at Dixon Park



Figure 188: View of the large Live Oak Canopy when facing north.





Figure 189: View of the large Live Oak Canopy at DixonPark when facing southeast



Figure 190: The large Live Oak Canopy at Dixon Park and a view of how the branches grow horizontally along the ground.

## SITE ANALYSIS

After viewing the baseline conditions, it seems as though there are several things within the site which could allow the space to function better. Those items include:

- There are multiple places along the walking pathways where tree roots have broken up the existing concrete. In its current state the pathways are not wheelchair accessible (figure 191).



Figure 191: Broken pathways which are not wheelchair friendly at Dixon Park

- The playground equipment could be more easily accessible for wheelchairs.
- There could be more seating and benches for resting.

- The playground area could be fenced so that children can have a barrier of safety.
- Focus could be put into adult recreational activities.
- Water fountains could be available on site.



## SYNTHESIS

Considering the various features which have been discussed throughout the previous chapters as well as the survey results from the general public, the proposed features of the park have been designed to accommodate and integrate children, adults, seniors and wheelchair users. The main features based on the survey and interview findings include adult-sized exercise equipment, paths for wheels and walking, shade, water fountains, and restrooms with larger changing tables. Proposed park features are shown in figure 192 and explained immediately afterwards.

### Dixon Park - Developed Conditions

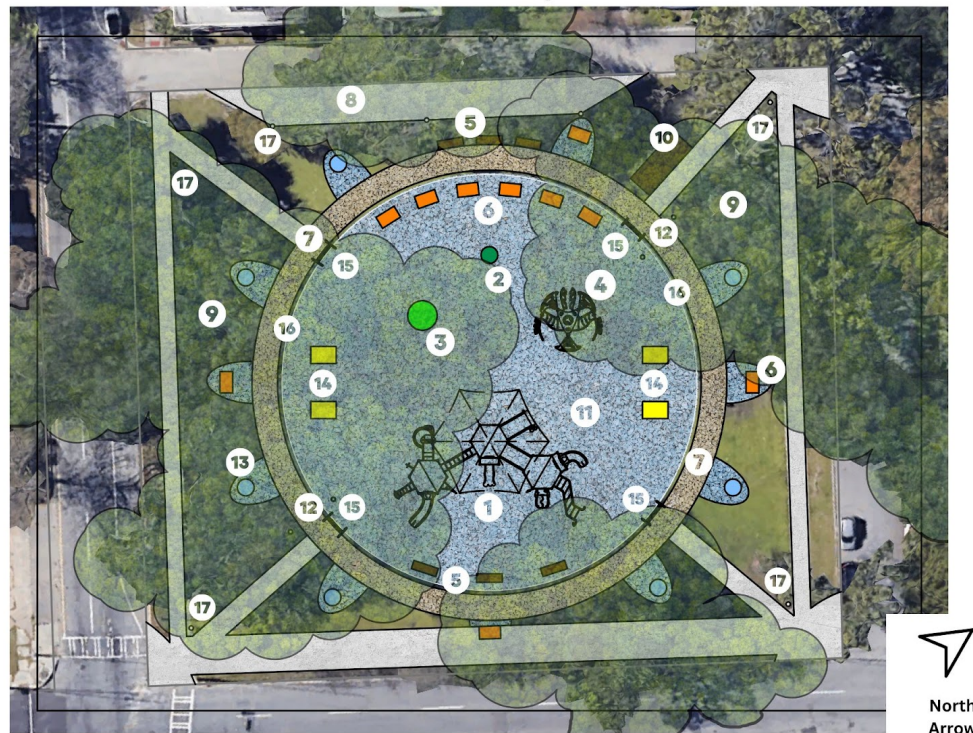


Figure 192: Proposed developed conditions of Dixon Park at a scale of 1"=50'.



The items proposed for the redesigned park are given a short description here.

In the following paragraphs they are explained in more detail. The park features include: 1 - Alexis, 2 - Fun Tunnel, 3 - Inclusive Whirl, 4 - Sensory Dome, 5 - Benches, 6 - Music Instruments (orange rectangles), 7 - Walking Path, 8 - Parking (food truck friendly), 9 - Shade and Nature Area as well as the tween and adolescent hangout area, 10 - Restroom with large changing table, 11 - Recreational Surfacing, 12- Water Fountains, 13 - Adult Exercise Equipment (blue circles), 14 - Picnic Tables, 15 - Gate, 16 - Fence, and 17 - Lighting.

1 - An accessible play component which a wheelchair user can mount and engage in via its accessible ramps. For this site, GameTime's "Alexis" has been used to fill this need.



Figure 193: GameTime's "Alexis"

2 - The Fun Tunnel by Miracle brand has also been used on the site to offer a ground-level play component which both able-bodied and disabled people can enjoy.



Figure 194: Miracle brand's Fun Tunnel

3 - The Inclusive Whirl by Miracle brand is a fun alternative to the traditional merry-go-round. Its ground level design allows users to walk or roll directly onto its base and go for a spin just as you would on a merry-go-round.



Figure 195: Miracle Brand's Inclusive Whirl

4 - GameTime's Sensory Dome is being used on this proposed site to allow walking children to climb on or under and wheeling children can roll under as well and play with its under-hanging gadgets.

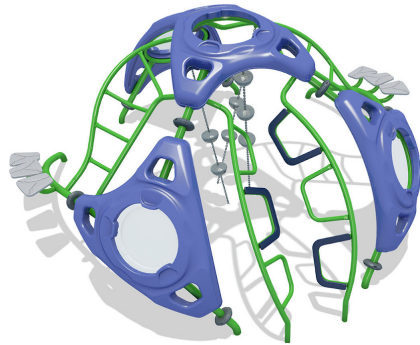
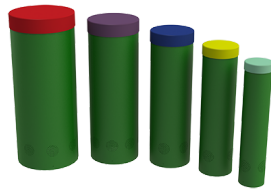


Figure: 196 GameTime's Sensory Dome - Medium

5 - There are benches located at both the north and south ends of the park.

6 - Ten different musical instruments are located throughout various parts of the site.

Six of those instruments are inside the fenced portion of the site and are located directly next to each other creating an on site orchestra. Approximate spacing of those instruments are shown in the developed planview (figure 192). The other 4 instruments are located around the walking pathway and allow a user to play music as they travel along the path. All instruments can be played by able-bodied and wheelchair users. The six instruments which create the orchestra are the:



Tuned Drums



Figures 197-198: Freenotes Harmony Park's Tuned Drums



Lilypad Cymbals



Figures 199-200: Freenotes Harmony Park's Lilypad Cymbals



Serenade



Figures 201-202: Freenotes Harmony Park's Serenade

## Pagoda Bells



Figures 203-204: Freenotes Harmony Park's Pagoda Bells

## Swirl



Figures 205-206: Freenotes Harmony Park's Swirl

## Flowers



Figures 207-208: Freenotes Harmony Park's Flowers

The four instruments which are located around the outside of the fenced in play area include the following:

Griffin



Figures 209–210: Freenotes Harmony Park’s Griffin

Manta Ray



Figures 211–212: Freenotes Harmony Park’s Manta Ray

Contrabass Chimes



Figures 213–214: Freenotes Harmony Park’s Contrabass Chimes



Tenor Tree



Figures 215–216: Freenotes Harmony Park’s Tenor Tree

7 - The walking path itself is circular in shape and has 4 gate entrances into the fenced play area. The path gives access to the 7 adult exercise equipment stations as well as 4 music instruments. In addition to the circular walking path, the linear concrete pathways along the perimeter of the block have been repaved to allow for a smooth surface for those in wheelchairs.

8 - The parking lot is just off site and allows vehicles to parallel park out of the flow of traffic. The parking lot can also accommodate food trucks.

9 - There are still several trees on site which allow for ample shade and some natural space to be available for park users. This is also the designated tween and adolescent hangout area.

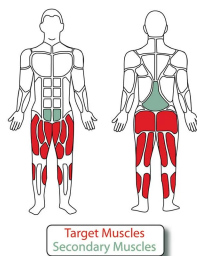
10 - There is a restroom which includes an adult sized changing table which is located just to the east of the parking lot.

11 - All of the circular portion of the site as well as the exercise and music station are designed with rubber matting as the ground cover for users to walk and/or run over.

12 - There are 6 water fountains which are located on site. There is one on the left side of every entrance as well as 2 inside the fenced loop.

13 - Adult exercise equipment which can accommodate both able-bodied and/or disabled adults is found all around the walking trail. Each of the five types of exercises which are best for adults can all be identified in the following seven pieces of equipment including; dynamic aerobic, dynamic resistance, static equipment, stretching, and agility. The seven pieces of equipment which have been included on the developed site include the following:

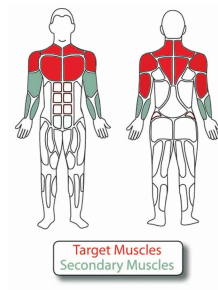
### 2-Person Cross Country Ski



Figures 217-219: 2-Person Cross Country Ski by Greenfields and the muscles of the body which it targets.

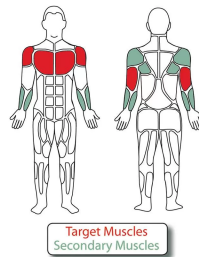


### Accessible Tricep Press (with adjustable resistance)



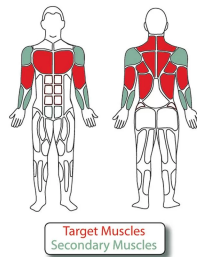
Figures 220–222: Accessible Tricep Press machine by Greenfields and the muscles of the body which it targets.

### 2-Person Accessible Vertical Press



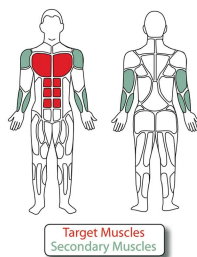
Figures 223–225: 2-Person Accessible Vertical Press by Greenfields and the muscles of the body which it targets.

## 2-Person Back and Arms Combo



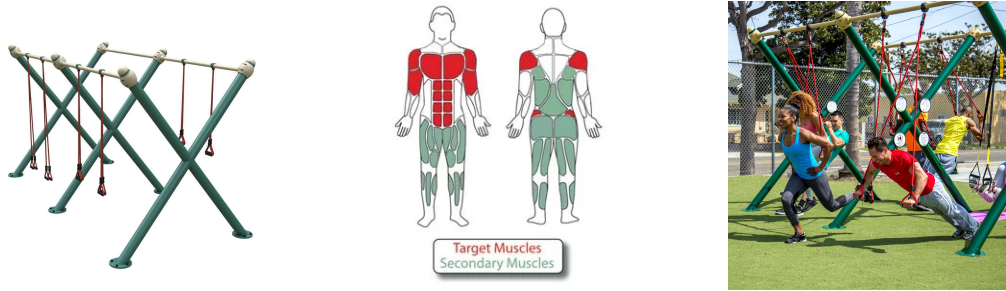
Figures 226–228: 2-Person Back and Arms Combo by Greenfields and the muscles of the body which it targets.

## 2-Person Accessible Chest Press



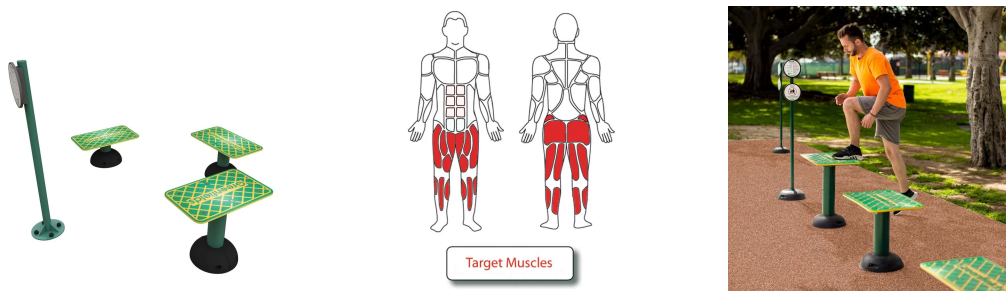
Figures 229–231: 2-Person Accessible Chest Press by Greenfields and the muscles of the body which it targets.

### X-Rig



Figures 232-234: X-Rig machine by Greenfields and the muscles of the body which it targets.

### Plyometric Steps



Figures 235-237: Plyometric steps by Greenfields and the muscles of the body which it targets.

14 - Four picnic tables are located in the fenced in portion of the site and allow for picnics and casual seating.

15 - Four gates are at the end of each of the four paths which lead into the play circle. The gates allow children and adults to enter and exit the play area.

16 - The main play area is closed in via the fence which surrounds the circular play area.

17 - Three lamp posts have been placed along the edge of the parking area along with four lamp posts at each of the corners of the park.

The way that the park has been redesigned allows any park visitor to enter the park from the parking lot or either of the four corners of the block and follow a paved concrete pathway to an interior circle which is paved with a rubber recreational surfacing. This surface is slightly bouncy to help with falls in the playground area and this surface is also wheelchair friendly. At the ends of all four pathways there is a gate which allows the visitor to be able to enter into the circular fenced in playground area. Within the playground area a visitor can play with any of the ground level or elevated play components along with the six musical instruments which are located near the parking lot. While traveling outside of the fenced circle, a visitor can exercise on any of the adult sized exercise equipment pieces as well as play the musical instruments there. The natural shade areas located around the perimeter of the site serve as tween and adolescent hangout areas which can also be utilized.

Dixon Park's redesigned conditions include 8 ground level play components which is a variety of 7 different play types. There are 13 different elevated components. In relation to the Ground Level Requirements Worksheet and Table, the redesigned conditions of Dixon Park require a minimum of 4 ground components and 3 play types which should be on the accessible route. There are 7 play types which are on ground level as well as on the accessible route which is the minimum required on the accessible route. Only physical play components were used in the calculation of these numbers. The musical instruments and adult sized play equipment were not used or considered for these calculations.

Meeting the standard for accessibility is a minimal requirement when describing Dixon Park as an accessible park, so the number of components for the site is crucial. Because all of the play components were chosen with accessibility in mind, a child or person in a wheelchair can approach all play equipment on site. However in terms of component use, all of the components are wheelchair accessible with the exclusion of the 4 slides on the Alexis play system. Although a person in a wheelchair could be placed or scoot to a slide to use, it would result in them having to leave their wheelchair at the top of the play system and would then need a buddy to bring their wheelchair down to them. Because they would not be able to complete the sliding without some type of help the 4 slides are not considered usable for a person in a wheelchair.

## STRENGTHS AND WEAKNESSES OF THE REDESIGN

As a whole, the park has several strengths and some weaknesses as well. As far as strengths, the park allows a person who uses a wheelchair to be able to participate with more equipment because of the inclusion of the accessible ground level and elevated play components as well as the musical instruments. The ramped elevated play component allows wheelchair users to mount and play with the components which are above ground level. The inclusion of the Inclusive Whirl, Sensory Dome, Fun Tunnel and several musical instruments allows wheelchair users to also participate in play activities which do not require any mounting at all and minimal physical movement.

The adult sized exercise equipment pieces allow any adult or parent to also enjoy the site making it a place which both children and adults can now enjoy as opposed to its previous state.

Some weaknesses of the site include the fact that there are only 3 adult sized exercise pieces which are wheelchair friendly. This means that an adult who would like to use the space for exercise who is in a wheelchair is only able to play on and enjoy 3 exercise pieces unless they choose to play with the children's play equipment which is large enough to accommodate an adult wheelchair. A parent who is in a wheelchair who wants to help their child on the playground may appreciate this option however.

## COMPARISON

A comparison of the two playground's equipment components are shown in figure 237 in relation to targeted users. The proposed design expands opportunities for children, and adds new opportunities for wheelchair users and adults.

Targeted Group	Baseline Conditions	Redesigned Conditions
Youth	Elevated Play Component Merry-go-round Swings Spring Riders Picnic Tables	Elevated Play Component Fun Tunnel Inclusive Whirl Picnic Tables Music Instruments Restrooms Changing Table Rubber Matting Water Fountains
Tween	Elevated Play Component Merry-go-round Swings Picnic Tables Hangout Space	Elevated Play Component Fun Tunnel Inclusive Whirl Picnic Tables Music Instruments Restrooms Changing Table Rubber Matting Water Fountains Hangout Space

Adolescence	Elevated Play Component Merry-go-round Swings Picnic Tables Hangout Space	Elevated Play Component Fun Tunnel Inclusive Whirl Picnic Tables Music Instruments Restrooms Changing Table Rubber Matting Water Fountains Hangout Space Adult Exercise Equipment
Adult	Elevated Play Component Merry-go-round Swings Picnic Tables	Elevated Play Component Fun Tunnel Inclusive Whirl Picnic Tables Music Instruments Restrooms Changing Table Rubber Matting Water Fountains Adult Exercise Equipment
Wheelchair user	Elevated Play Component Picnic Tables	Elevated Play Component Fun Tunnel Inclusive Whirl Picnic Tables Music Instruments Restrooms Changing Table Rubber Matting Water Fountains Adult Exercise Equipment

Figure: 238: A comparison of accommodations between the baseline and developed site



## CHAPTER SUMMARY

Dixon Park was identified as a test site for an accessible playground because it is located in a central location in the Savannah, GA area. The site is on the intersection of two busy cross streets which have a lot of foot traffic during the day. The existing conditions of the site include an accessible elevated play component, a spring rocker, four traditional swings, three picnic tables, benches, large Live Oak Trees for shade, paved pathways and parking.

The baseline conditions of Dixon Park are fair, but left much to be desired for adults as well as the wheelchair community. Throughout the park there were several places where the paved pathways were broken up and posed a challenge to any wheelchair user. Although the park did have an accessible elevated play component, the rest of the play components are not the easiest for a wheelchair user to operate.

The new site design addresses the main three users this thesis is intended to cater to; children, adults and wheelchair users.

The proposed child focused play components that were identified to meet the target group are GameTime's Alexis and their Sensory Dome, Miracle Brand's Fun Tunnel and their Inclusive Whirl are the playground components of choice. All four of these pieces of equipment are user friendly for both able-bodied and wheelchair users.

The proposed adult and wheelchair friendly exercise equipment for the site includes Greenfield's 2-Person Cross Country Ski, Accessible Tricep Press (with

adjustable resistance), 2-Person Accessible Vertical Press, 2-Person Back and Arms Combo, 2-Person Accessible Chest Press, X-Rig, and the Plyometric Steps. Three of those pieces of equipment are wheelchair friendly.

The 10 musical instruments which can be used by a child, adult or wheelchair user that have been proposed for the site are all from the Freenotes Harmony Park's musical instrument line and include the: Tuned Drums, Lilypad Cymbals, Serenade, Pagoda Bells, Swirl, Flowers, Griffin, Manta Ray, Contrabass Chimes and the Tenor Tree.

A collection of the key components which a site needs to have in order to accommodate more than just the typical youth demographic in a playground have been outlined in this thesis and summarized in this chapter with a table that includes written comparisons, visual design, and thorough descriptions. Accommodating both adults and wheelchair users in addition to children on the typical playground site can create a space which many can enjoy for years to come.

## CHAPTER 8: FINAL THOUGHTS & CONCLUSION

This thesis aimed to explore various options which could make a playground site more inclusive. There are significant numbers of children and adults who are not getting the proper amount of physical activity that they need to maintain a healthy lifestyle (WHO 2023). Creating a space which is outdoors and works for a majority of people's physical benefit will help bring people together and will allow people to grow as a community. The four main research questions which this thesis answered are listed below.

- How should Landscape Architects design playgrounds which integrate children ages 5 and up, adults and wheelchair users?
- What playground features are most accommodating and preferred on playgrounds?
- What types of outdoor exercise equipment or features would adults be able to use on a playground?
- What features are needed on playgrounds to make them accessible for people in wheelchairs?

The objective of the previous chapters was to bring together all of these crucial questions and elements in a way which makes an overall site design that is inclusive for the majority of people.

The use of a survey, interview, case studies, and literature reviews were used to gather well-rounded research and to review playgrounds which already exist and have some of the features that need to be considered, as well as to gather public opinion and scholarly insights on the topic.

The organization of all of the information which was gathered is the concluding synopsis which is now a guide to making the ultimate playground space with the outlined parameters which have been mentioned. All of the research has been executed in chapter 7 of this thesis and as a result can be used as a great starting point in the process of designing a playground which is child, adult and wheelchair friendly.

Play and exercise components were identified. Their functionality was reviewed and the individual pieces were selected.

An existing park was studied and proposed improvements were applied to it. The results were evaluated for functionality and overall accessibility for all targeted groups.

Because of various factors such as time constraints and data collection limitations, the extent of research on this topic has ended with what has been presented here. However, there are many more related topics which could be researched in more detail to include and point out the needs of another demographic of people such as infants and children under the age of 5 or people with other

disabilities such as vision or hearing loss. The research which has been completed in this thesis, "Playgrounds For Everyone", is a great beginning guide to the inclusion of all people in recreational spaces from the viewpoint of a Landscape Architect.

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## APPENDIX A: BLANK SURVEY

### SURVEY QUESTIONS

#### Playgrounds for Everyone Research Survey

This survey is being conducted by a Master's of Landscape Architecture student from the University of Georgia. The results will be used in a thesis titled "Playgrounds for Everyone", it is about creating and designing playgrounds which are inclusive of people of all ages and physical abilities. This type of playground would include outdoor exercise equipment for adults and more options for children and adults who are physically disabled. All ages and demographics are welcome to participate in this survey.

\* Required

##### 1. UNIVERSITY OF GEORGIA

\*

###### CONSENT FORM

###### Playgrounds For Everyone

###### Researcher's Statement

You/your child/the adult you represent are being asked to take part in a research study. The information in this form will help you decide if you/your child/the adult you represent want to be in the study. Please ask the researcher(s) below if there is anything that is not clear or if you need more information.

###### Principal Investigator:

Ronald Sawhill

College of Environment and Design

e: [sawhill@uga.edu](mailto:sawhill@uga.edu)

This study aims to learn how children, adults and people of all ages who have various types of disabilities can play and exercise together safely in an outdoor experience. The researcher would like to learn what type of equipment a person who has a disability would need in order to play and exercise outside comfortably and safely. The researcher would also like to learn what physically arrangements would need to be made to accommodate the comfort and mobility of the aforementioned people. Participation in the study is voluntary, and you/your child/the adult you represent may choose not to participate or to stop at any time without penalty or loss of benefits to which you/your child/the adult you represent are otherwise entitled.

To collect information, you will need to fill out a survey which asks you questions about the participant as well as preferences after viewing several images.

The main risk from this study is a loss of privacy. This could happen if someone other than the researcher were to have access to the survey results. The survey does not collect any identifying information such as name, phone number, or email address so if an outsider did see the survey results, they would have no way of knowing who filled in the responses. If maintaining your privacy is very important to the participant, you may not want to be in this study. If you feel comfortable participating in the survey and trust the researcher to protect the responses as well as he/she can, you may want to be in this study.

Key information you might consider before you decide if you/your child/the adult you represent wants to participate in this survey.

The purpose of this study is to learn how children, adults and people of all ages who have various types of disabilities can play and exercise together safely in an outdoor experience.

Your/your child's/the adult you represents involvement in the study is voluntary, and you may choose not to participate or to stop at any time without penalty or loss of benefits to which you are otherwise entitled. It will take approximately 10 minutes to complete the survey. The participant will scan a QR code to have access to the survey, they will then complete the survey. The main risk from this study is a loss of privacy. The primary benefits to the prospective participant and/or to others that may reasonably be expected from the research is that if an outdoor play space is constructed for people of all ages and abilities the participant will have contributed to the research and planning stages of its development. If a participant does not want to participate in this survey, then the participant could take the alternative approach of verbally telling the principal investigator their thoughts on what could make a playground for everyone acceptable via an interview. You/your child/the adult you represent are being asked to participate in this survey because you meet the criteria of a person of any age with or without a physical disability.

If you/your child/the adult you represent are interested in participating in the study, please read the additional information on the following pages, and feel free to ask questions at any point.

#### **Study Procedures and Time Commitment**

The time commitment of this procedure is approximately 10 minutes. This includes filling out the survey.

#### **Risks and discomforts**

If a person has any type of disability, they may feel discomfort in acknowledging them on the survey.

If a person were to get ahold of the survey results the participant could feel embarrassed by the results. However, there are no identifying markers such as name, phone number, or email address which is collected on the survey.

#### **Benefits**

The primary benefit to the prospective participant and/or to others that may reasonably be expected from the research is that if an outdoor play space is constructed for people of all ages and abilities the participant will have contributed to the research and planning stages of its development.

#### **Confidentiality of records**

We do not plan to share this information with anyone who is not connected to this research study.

The information will not be used or distributed for future research.

Researchers will not release identifiable results of the study to anyone because that data will not be collected. Survey responses will only be viewed directly by the principle investigator and the student researcher, Tiffany White. No other people will see survey responses as an entire survey response directly. However, a summary of the survey results will be collected and that data will be available to anyone who reads the final thesis which this survey is contributing to.

All data will be stored online in the google forms file in which the data was collected. The data will also be in a google sheets file which will allow it to be viewed and analyzed conveniently by the researcher. Only the principal investigator and student investigator will have access to the full survey submissions, however the thesis which this data collection is being put together for will mention several bits of the data, but in no identifiable way.

Researchers will not release identifiable results of the study to anyone other than individuals working on the project without your written consent unless required by law.

#### **Participant rights**

If you/your child/the adult you represent have any questions or concerns regarding the rights as a research participant in this study, you may contact the Principal Investigator, Ronald Sawhill at sawhill@uga.edu or the Student Research, Tiffany White at tiffany.white1@uga.edu or the Institutional Review Board (IRB) Chairperson at 706.542.3199 or irb@uga.edu.

#### **Internet Data Collection**

Your confidentiality will be maintained to the degree permitted by the technology used. Specifically, no guarantees can be made regarding the interception of data sent via the Internet by any third parties. OR This research involves the transmission of data over the Internet. Every reasonable effort has been taken to ensure the effective use of available technology; however, confidentiality during online communication cannot be guaranteed.

#### **Withdrawal from the research study**

If you decide to withdraw from the study or the investigator terminates your participation, the information that can be identified as yours will be kept as part of the study and may continue to be analyzed, unless you make a written request to remove, return, or destroy the information.

*Check all that apply.*

☐ Yes, I give informed consent to participate in this survey.

2. Please clarify how you are filling out this survey. \*

*Mark only one oval.*

- ☐ I am filling out this survey from answers from my own adult opinion.
- ☐ I am filling out this survey for my child. I am marking down their preferences for each answer. They have given me consent to participate in this survey on their behalf.
- ☐ I am filling out this survey as the caretaker for an adult with a disability who cannot fill it out on their own. I am marking down their preferences for each answer. They have given me consent to participate in this survey on their behalf.

3. What is your age? \*

---

4. What is your gender? \*

*Mark only one oval.*

- ☐ Male
- ☐ Female
- ☐ Prefer not to say
- ☐ Other: \_\_\_\_\_

5. Do you have any physical disabilities? \*



Mark only one oval.

- ☐ Yes  
☐ No

6. What is your physical disability? (if applicable)

---

7. Do you have any cognitive disabilities? (for example: ADHD, Alzheimer's, Autism, etc.) \*



Mark only one oval.

- ☐ Yes  
☐ No



8. What is your cognitive disability? (if applicable)

---

9. How would you feel on a playground or outdoor exercise equipment along with people who are 30 years or more apart in age from you? (Keep in mind that both children and adults would be able to play or exercise within close vicinity of each other on this type of playground.) \*



Mark only one oval.

- ☐ Very Uncomfortable
- ☐ Uncomfortable
- ☐ Neutral
- ☐ Comfortable
- ☐ Very Comfortable

10. How would you feel on a playground or outdoor exercise equipment along with people who have different physical abilities from you? (Keep in mind that both disabled and nondisabled adults and children would be able to play or exercise within close vicinity of each other on this type of playground.) \*



Mark only one oval.

- ☐ Very Uncomfortable
- ☐ Uncomfortable
- ☐ Neutral
- ☐ Comfortable
- ☐ Very Comfortable

11. The exercise device in the photograph here allows for exercise outdoors and works for people with or without disabilities. How comfortable would you feel using a piece of equipment like this on a play space with people of all ages in close proximity? \*



*Mark only one oval.*

- ☐ Very Uncomfortable
- ☐ Uncomfortable
- ☐ Neutral
- ☐ Comfortable
- ☐ Very Comfortable

12. Have you ever used outdoor musical instruments like or similar to the ones pictured here? \*



Check all that apply.

- ☐ yes  
☐ No

13. What is your opinion of them? \*



Mark only one oval.

- ☐ Strongly Dislike  
☐ Dislike  
☐ Neutral  
☐ Like  
☐ Strongly Like

14. Choose 3 of the following that you would most enjoy seeing at an outdoor play and exercise space? You may also write in an answer which is not listed. \*

*Check all that apply.*

- ☐ exercise equipment
- ☐ musical instruments
- ☐ path for walking and/or wheels
- ☐ seating
- ☐ shade
- ☐ slide
- ☐ swings
- ☐ water play/mister
- ☐ Other: \_\_\_\_\_

15. Have you recreated in the past, but stopped due to a barrier or obstacle that started? What was the obstacle?

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16. What are some barriers or obstacles that you currently have that prevent you from using playgrounds?

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17. Considering the barriers or obstacles that you currently have that prevent you from using playgrounds, how might these obstacles be changed, removed or made better?

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18. Were you able to overcome that barrier and then began to participate in a recreational space? If yes, how did you do that?

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19. Choose all of the facilities and/or features which would make your playground experience easier? You may choose as many as you would like and you can also write in anything else that is not listed.

*Check all that apply.*

- ☐ Accessibility of water fountains  
☐ Changing tables inside the restroom  
☐ Ease of Parking  
☐ Ramps for wheels  
☐ Restrooms  
☐ Shade  
☐ Other: \_\_\_\_\_

20. In your opinion and from life experience, what could make an outdoor play and exercise experience better? \*

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21. What is something(s) that you would like to point out about a playground which is built for everyone?

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22. What is something(s) that you would like to share in relationship to this survey?

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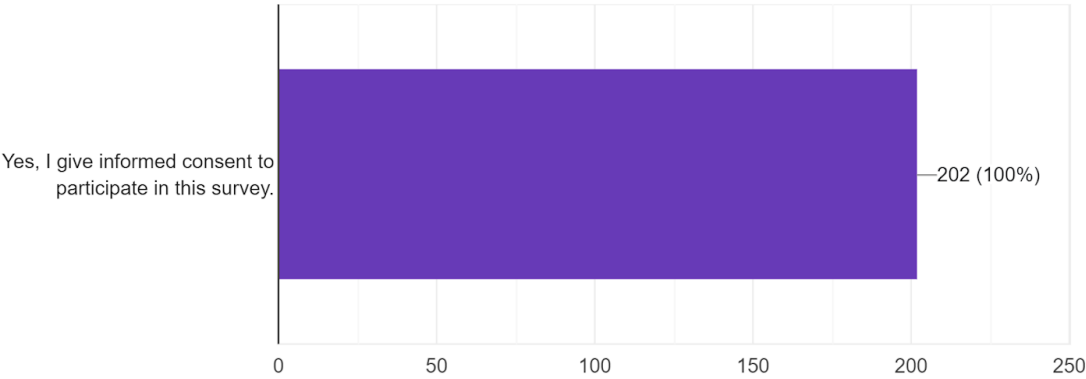
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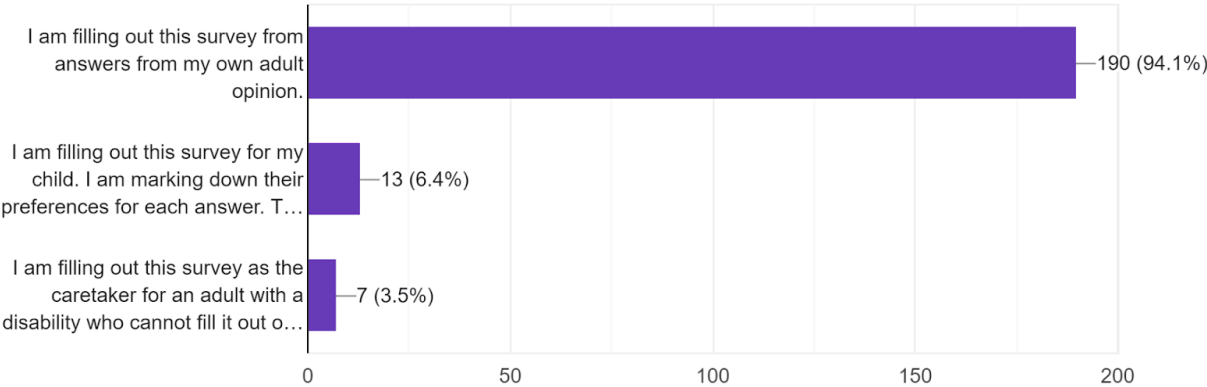
# APPENDIX B: RAW SURVEY DATA

202 responses



Please clarify how you are filling out this survey.

202 responses



What is your age?

202 responses

Age	1	2	3	4	5	6	7	8	9	10
Quantity					1	1	2	1		3

Age	11	12	13	14	15	16	17	18	19	20
Quantity		1	1		1			4	3	6

Age	21	22	23	24	25	26	27	28	29	30
Quantity	7	12	3	4	8	4	7	4	2	3

Age	31	32	33	34	35	36	37	38	39	40
Quantity	3	5	5	7	3	4	10	5	2	8

Age	41	42	43	44	45	46	47	48	49	50
Quantity	6	4	1	7	8	3	2	2	4	1



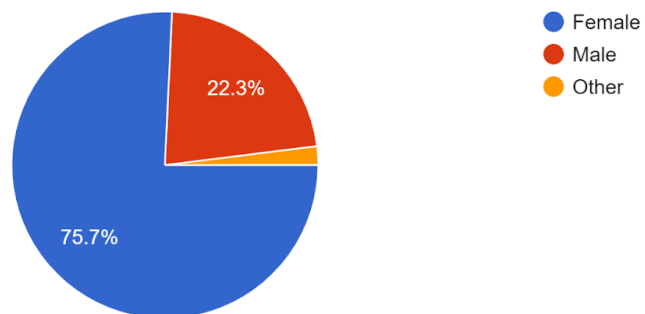
Age	51	52	53	54	55	56	57	58	59	60
Quantity	2	3	1	2	2	5	2			1

Age	61	62	63	64	65	66	67	68	69	70
Quantity	3		2		1		2			4

Age	71	72	73	74	75	76	77	78	79	80
Quantity	1	1		1						

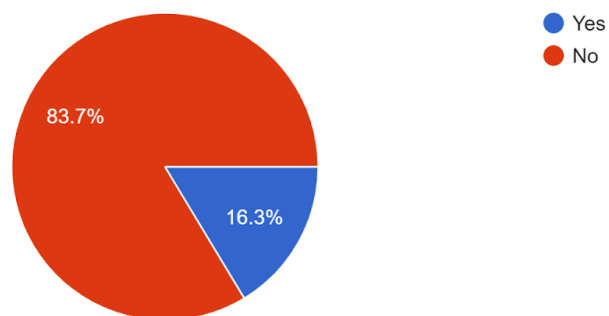
What is your gender?

202 responses



Do you have any physical disabilities?

202 responses



What is your physical disability? (if applicable)

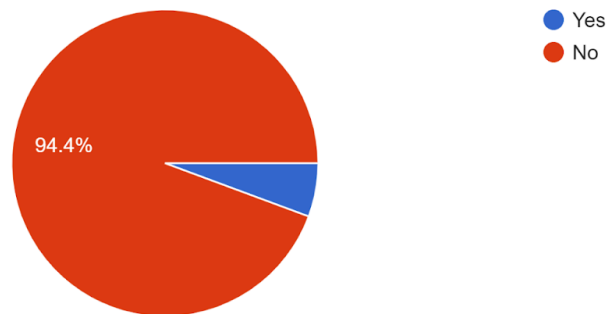
42 responses

Cerebral palsy
Juvenile idiopathic arthritis, muscle contractures, hypotonia,
Infantile onset ascending hereditary, spastic paraplegia
Spina bifida
Hypotonia
Cerebral Palsy- spastic
Ambulatory Wheelchair user (Chronic Knee Pain & Joint Issues affecting mobility)

Epilepsy
Functional Neurological Disorder and associated conditions, ambulatory powerchair user.
Hearing loss, ostomy, hip problem, arthritis
Wheelchair user
Functional neurological disorder which means legs go functionally paralyzed, weakness in arms and legs, chronic fatigue and arthritis . Also slipped disc in spine
Cerebral palsy
Sickle cell anemia, arthritis
Functional Neurologic Disorders
Partial quadriplegic from stroke
Triple amputee
I am 8 weeks postpartum and had a physically limiting pregnancy.
Pontocerebellar Atrophy (degenerative neurological condition)
Hereditary spastic paraplegia
Spinal cord injury
Wheelchair User
Multiple: 1 to do with the spinal cord, 3 of the spine itself, 1 of the knees, 1 of the hips, cerebral palsy.
Son has autism
Multiple Sclerosis, causes a wide variety of symptoms and dynamic disability for me.
Wheelchair user
Paraplegic
Polymyositis
Multiple Sclerosis - paraplegia
Cerebral palsy
Multiple myeloma
wheelchair bound bilateral amputee
Bad knee
Congestion Heart Failure

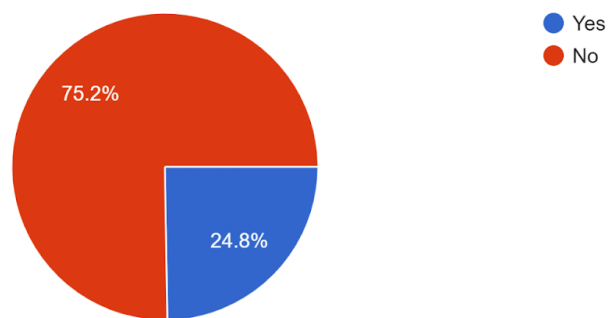
Do you use a wheelchair for mobility regularly?

124 responses



Do you have any cognitive disabilities? (for example: ADHD, Alzheimer's, Autism, etc.)

202 responses



What is your cognitive disability? (if applicable)

61 responses

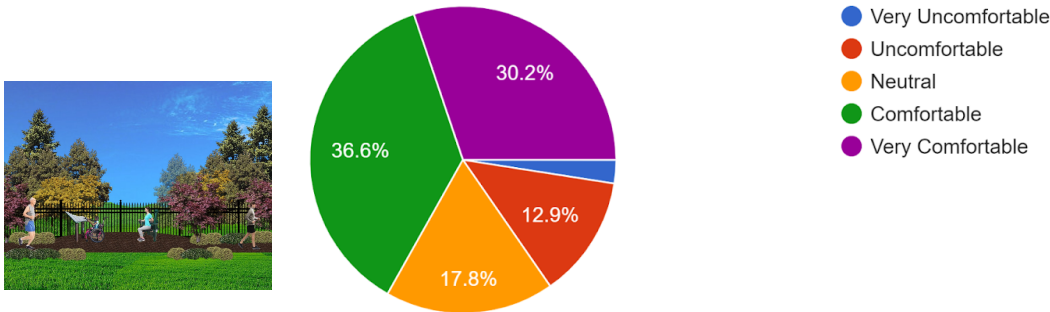
ADHD
Anxiety
OCD
Central Auditory Processing Disorder
ADD

ADHD
ADHD
ADHD
ADHD
ADHD
ADHD
Autism, ADHD, dyspraxia
Trisomy 21 (Down syndrome), intellectual disability
Learning disabilities/ intellectual disabilities
ADHD, Anxiety, depression
Brain fog caused by FND Functional neurological disorder
ADHD
Sensory processing disorder
Delays in processing
Autism
ADHD
ADHD
OCD
Withheld
ADHD
ADHD
ADHD
ADHD
ADHD
ADHD
Autism spectrum disorder
ADHD
ADHD
Autism
ADHD
not sure
ADHD

ADHD
ADHD
ADHD
ADHD
ADHD
ADHD + ASD
Epilepsy
ADHD
autism
ADHD
ADHD
ADHD

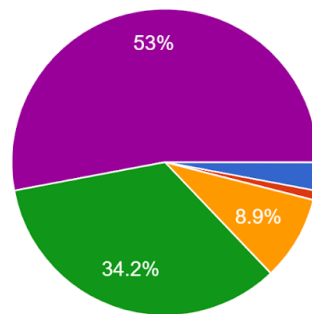
How would you feel on a playground or outdoor exercise equipment along with people who are 30 years or more apart in age from you? (Keep in mind that both children and adults would be able to play or exercise within close vicinity of each other on this type of playground.)

202 responses



How would you feel on a playground or outdoor exercise equipment along with people who have different physical abilities from you? (Keep in mind that both disabled and nondisabled adults and children would be able to play or exercise within close vicinity of each other on this type of playground.)

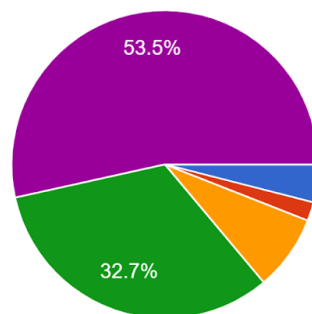
202 responses



- Very Uncomfortable
- Uncomfortable
- Neutral
- Comfortable
- Very Comfortable

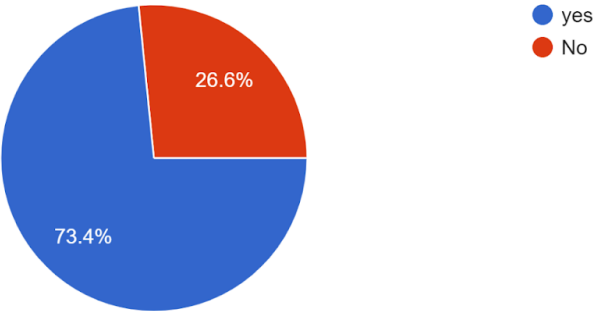
The exercise device in the photograph here allows for exercise outdoors and works for people with or without disabilities. How comfortable would you feel using a piece of equipment like this in a play space with people of all ages in close proximity?

202 responses

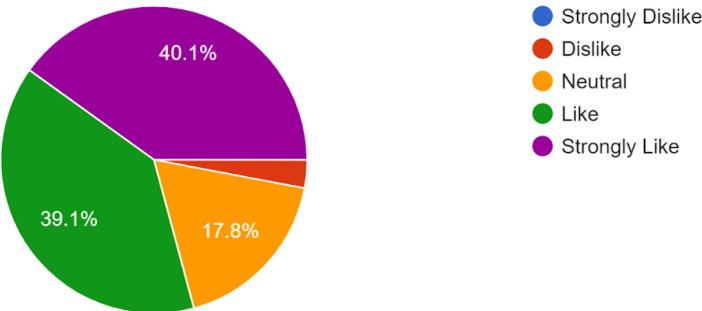


- Very Uncomfortable
- Uncomfortable
- Neutral
- Comfortable
- Very Comfortable

Have you ever used outdoor musical instruments like or similar to the ones pictured here?  
202 responses



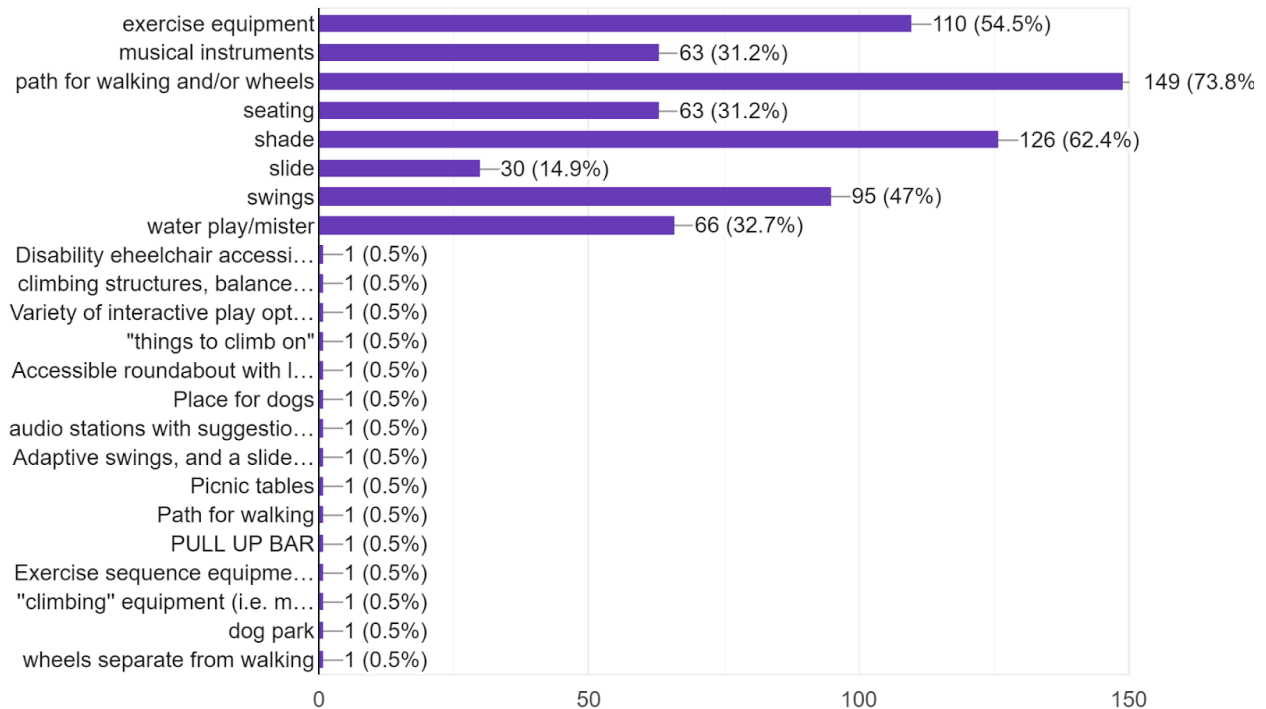
What is your opinion of them?  
202 responses





Choose 3 of the following that you would most enjoy seeing at an outdoor play and exercise space?  
 You may also write in an answer which is not listed.

202 responses



Have you recreated in the past, but stopped due to a barrier or obstacle that started? What was the obstacle?

143 responses

Being too large; ie. children equipment not being suitable for me (an adult)
Age
No
No

N/A
Yes. To busy
No
No
No
No, I have not recreated in the past, due to a barrier or obstacle.
No
Discouragement from onlookers (swing sizes)
No
no
Travel distance to facility
No
No
Just age!
No, i don't like the bugs so much.
Monkey bars were too short for my height
Broken Equipment, Lack of seating, Lack of shade
Worn equipment
No, I haven't recreated in the past.
no
I have left playgrounds with my kids that were either too hot (no shade) or too muddy
Yes, I'm pretty big and a lot of equipment is made for children

Yes. Lack of shade during hot summer months.
wheel/foot surface
Broken equipment
I don't understand what this question is asking exactly due to the phrasing, but no I don't think so.
Heat
The type of ground, hard to walk or wheel on
time
Yes. A knee injury that led to a replacement.
No
Paths are too hilly or ill-maintained for wheelchairs, difficulty using some equipment because too many children are playing on them. There really needs to be an adult area.
No
No
Heat. Need more shaded areas.
No
No
No
No
No
No
No
Weight
No
No

No
No
Time
No
No
No
No
No
No
This is a sentence?
No
mosquitos
No
No
No
Limited seating if too crowded
Smoking
Sometimes if it's filled with kids I don't feel welcome!
Dogs not allowed
Covid
Little to no activities
no
n/a

Heat
Covid
No
I have not personally been stopped but I have seen people leave the park (in Forsyth) because there are not enough swings for children with disabilities.
INJURY
No
No
No
yes! sometimes i feel a little silly. adults should be allowed to play and have fun too!
Yes, I stopped when too many people were around
No
No
Playgrounds specifically being tailored towards only children
The structures were too small for me to comfortably recreate.
water being unsanitary/ giving infections. lack of variety of equipment
no
Tennis no shade
No drinking water available
Age
No
Sun
Size of the equipment, not strong enough to reach the location (not accessible)

Stopped due to access
Sand or loose gravel not compatible with wheelchair
yes, i used to enjoy going to my local park to use the gym equipment but i use a electric attachment to get to the park and there is no longer anywhere for me to lock up my electric attachment while i use the equipment and on a evening large groups of teenagers sit on (but not use) the equipment so i cant use it and there is no park owner or security person to ask them to use or move away from the equipment, they have weapons (knives) so i don't feel safe to ask them if i may use the equipment that they are sat on but not using
Yes but when i got ill i couldn't walk the distance to the rec space and couldn't mobilise on grass with crutches or chair.
Don't really understand your question
Yes....wheelchair path
Lots of equipment I can't safely use
No
A lot of places where I live aren't wheelchair accessible and I'm no longer able to access the equipment/area in general
Yes. Inaccessible parks for rollators or wheelchairs.
Mobility - the playgrounds aren't suitable
Tired low oxygen, heat exhaustion, no shade
Played tennis/bad knees
No
Extreme weather outdoors
Hull Park - we don't go to that park anymore because of the gum tree seeds making it hard to walk without slipping.
No
"It was too hot" (translation from mom: there was no shade on a sunny day, the slides burned his legs)
No
Lack of viable mountain biking trails.

Time
Yes
Not enough shaded areas.
?
Weather dirt and or mud and no shade
Too many people, not enough equipment
Yes, started focusing on other avenues
No
Social anxiety of condensed spaces with a lot of people
Weight Capacity of equipment
Deterioration of equipment
No
No
nope
No I haven't
Hobbies. Having a full time job and a child
Covid !
Lack of space/ availability
Yes, not enough shade and poor seating options (or broken)
No
Barriers for WC use. Ground is muddy.
Yes, woodchip surfaces that even my robust powerchair cannot access, despite being technically ADA compliant

Inaccessible ground (wood chips, large pot holes, etc.)
Lack of wheelchair access
Unpaved patches, steps
Yes due to the lack of equipment that is accessible.
no legs... very little accessibility for wheelchairs
Started using a wheelchair and none are accessible to me.
Yes- no accessible paths or equipment to play or participate.
Yes, there was a handicap supportive swing but the ground underneath it was sand - impossible to roll a chair there.
yes age limits

What are some barriers or obstacles that you currently have that prevent you from using playgrounds?

158 responses

Age (too old); childless (stigma around adult play)
Playgrounds are not meant for adults
My four year old daughter is much less inhibited than my other children. When I take her to a playground I have to watch her more closely than my other children because she would leave the playground if she saw something she wanted that wasn't on the playground.
Heat, outdoor temperature
N/A



No time
N/A
The distance to get to a playground close by the house.
None
This does not apply.
Playgrounds are mainly for kids. The only thing for parents is the seating.
Not a lot of options for adults
None
none
Time restraints
None
None
Feeling stupid because I'm older than everyone else there
Access to equipment that is made for adults

None

None

Broken Equipment, Lack of seating and shade

I don't feel like playgrounds are suitable for adults. For example - I can go to a playground to use the swing and I feel like I'm too tall to enjoy swinging.

they are not attractive

My children are too old/big to enjoy the playground and don't ask to go anymore

None

I'm too big for most equipment

Playgrounds (in general) aren't setup for adults, so I don't fit on the swings, etc. They're uninviting to adults to play on because they were created for kids only.

crowds

Now I feel I'm just too old / only kids use playgrounds. I feel like once you get out of middle school it's not really acceptable anymore.

Time availability

Heat

time

Playgrounds aren't made for adults.
None
same as above
Typically, I think intense heat and direct sunlight are major problems.
None
None
N/a
Directed for kids/dogs
Na
Not having one in neighborhood
Close proximity to my house
None
Weight
No adult exercise spaces

None
None
Nothing
None
None
None
None
None
None
None
None
I'm an adult.
None
Lack of time
lack of access, not designed for adults
mosquitos

No trees or shade
Dirty grounds
None
N/A
Lazy
Usually my age. I like to bring my dog to playgrounds at night to play on ramps and stuff and sometimes i just like to go swing myself but during the day its not usually acceptable to be older without a kid on a playground.
Dogs not allowed
Covid
Mainly geared toward young children, germs
Little activities
time
Age difference
memberships
Heat

Time/children
None
Not enough seats and shade.
PARENTS OF CHILDREN WOULDN'T WANT ADULTS WORKING OUT NEAR THEIR CHILDREN IF THEY DIDN'T HAVE CHILDREN WITH THEM
Na
None
social barrier of acceptability. feeling like i cant go because i dont have little kids
Children/ size is not accommodating to adult bodies
None
Proximity to home
stigmatization of older people being at a playground.
I don't fit on the structures
i'm too old
they're all limited to kids

parking availability - if i can't park for free within a few blocks of a park, im much less interested in going
To hot
They're not meant for people my age
Age limitations
Wanting w comfortable place for both children and adults can enjoy play-spaces, possibly separately
No kids
None
Legs and multiple myeloma along with skin disease and kidney diseass
Most are made for children, also many feature require climbing stairs which is hard with arthritis and my hip
Getting to them. Access way from parking to playground
Mulch or barrier wall around the equipment
Transferring to the equipment, unsteady ground or bumps, dirt uneven
Not enough options for someone with a wheelchair
i have no where to lock up my electric attachment which i use to get to the park.

Grass not good for wheels and crutches as not even level and very risky to fall. Distance to the accessibility exercise bit is so far away from the car park where wheelchair users have to start at. Not all adapted and the grass makes it impossible. Need tarmac everywhere as safe from falls etc

Not wheelchair accessible.

Paths, and surface they use on playgrounds, no hand rails, no ramps,

Wheelchair pathways

Equipment I can't safely use

Uneven paths, dirt paths, not wheelchair accessible, exercise equipment not suitable for wheelchair users etc.

Mobility and strength limitations, heat intolerance

Flooring like grass or bark which is not wheelchair accessible even if the equipment is.

My wheelchair. I want to use playgrounds with my daughter but can't.

Heat

None

Having playground elements for adults

Age, lack of proximity



Heat during the summer, equipment gets hot; safety of the surrounding neighborhood; stroller access, not paved areas

My weight. I get hot easily.

None

Children

"Some things are too tall and I can't do them."

The heat in the summer time/ lack of water fountain/

Dirty or old equipment

None

Not available

Not being properly maintained

No fence noise and sand pebbles or bark chips that are rotten

There's not a lot to do at playgrounds for people in their 20s

My age

No shade mud and I love the idea of being able to exercise while my dog or kids play..

Feeling like I'm too old

Access, no reason to go without children or adult equipment

I'm an adult

time and space availability at the parks near me (plus cleanliness of current parks)

they are children styled playgrounds

too old

Just having more time to do it.

Age limits

none

I'm too old lol

Crowds

Full time job

age and size

Location
shade/ ease of access
Not enough shade and poor seating options (or broken)
Tire easily
Play areas filled with mulch
Lack of adaptive equipment, lack of wheelchair access to play structures (to play with younger family members/ babysit), lack of adaptive swings which are an important sensory management tool for me.
Inaccessible ground (wood chips, large pot holes, etc.), swings without back support (hypotonia), space wide enough between equipment to allow a wheelchair/walker pass through.
Lack of wheelchair access
No equipment for adults or disabled like wheelchair accessible swings
Most accessible equipment is tailored to children only. As a parent and uncle I would enjoy being able to participate with my children. When the equipment isn't tailored to all ages it makes it difficult.
No accessible wheelchair equipment and grass getting to playground
Not wheelchair accessible
Not accessible equipment or terrain
Sand or gravel pathways that a wheelchair can't go on. Picnic tables too close together to allow chair access.

age limits

Considering the barriers or obstacles that you currently have that prevent you from using playgrounds, how might these obstacles be changed, removed or made better?

131 responses

N/a

something like a bike park would be really helpful, a n shaped bar that is fixed to the floor would help as i could safely lock my electric attachment to it using my own bike lock. also a park security person or police walking around the park would help prevent the large groups of teenagers who hang around the park on a evening

?

"Make them smaller?"

a covered area for shade/ regular maintenance of water fountains

A park meant for older people?

Ability to maintain social distance

Accessible equipment

Accessible paths, shade, water misters for cooling

add more interesting elements

Add more playgrounds

Add screens and shelters

Add shade and water activity

Additions to playgrounds to accommodate adults can be made

Adult play equipment

Adult playgrounds!

All paths paved, a wheelchair accessible picnic table.

Being able to enjoy going outside after work

Better curb cuts and walkways

Better diet

Better ground cover

Better ground covering for wheelchairs

Better terrain where wheelchair users can access and play sports, exercise or play with others

Bigger activities and big kid spaces!!

Bug spray

Build them

By having a playground closer to my home and having the adult exercise equipment and equipment for children to play on and With.

Change dirt paths to concrete/tarmac, fix bumpy path ways, make them more accessible in general

change my priorities and schedule

Consideration about the surroundings not just the equipment

Covered areas and restroom facilities closeny

CREATE MIXED USE EQUIPMENT FOR ALL AGES

Ensure public drinking water

Equipment for adults

Get rid of age limits I want to swing

get rid of them

Have cleanup stations so dogs are allowed

Having things accessible to interact with, not just physical

I don't feel like I have those obstacles but in general they need to be more accessible to people with disabilities. A person needs to be able to wheel themselves on different terrain without assistance. Surfaces need to be able to super wheels, walkers, etc. Swings that could support a wheel chair or allow access from a chair would be great.

I don't know what this is asking.

I like when playground equipment is spread out throughout a park, not just centralized in a usually kid focused area.

I would play at an adult playground

I would take her to the playground much more often if the playground was fenced in.

If playgrounds had activities that were fitting for grown people.

If playgrounds had more working space for parents. Maybe an area with outdoor office type space.

If some equipment was added/updated to accommodate larger bodies, signage that the playground is for everyone.

Implementation of universal design

Including adult and kids play equipment

incorporating space for varieties of age groups to blend and have private spaces. I dont go on playgrounds because there are children 20 years younger than me there and it feels uncomfortable.

It would be nice to integrate a typical playground with exercise equipment outside yet close enough for parents to use while their kids play

items that are single use for older and heavy adults



Make equipment a little larger to allow my adult power wheelchair to have the space needed.

Make it a priority

make it clear that they are designed for adults. include "fun" equipment for adults (like swings or slides), not just exercise equipment

Make playgrounds more inclusive or that accommodate every age

Make sidewalks and area with wheelchair friendly material. No curbs on entrance.

Make the location of the park or playground close to home.

Making a collective space for people of all ages with equipment appropriate for age ranges and stature

Maybe designing a playground for adults / people that are older. I think having a separate playground for each age group would work better - especially if they were right next to one another bc I feel like kids could get hurt easier if they were on an adult playground / they wouldn't be as safe.

Maybe rubberized platform? benches to transfer/slide from chair to the equipment.

Mixed usage children adults

Modernized and maintained

more acceptance, stuff more made for adults specifically.

More equipment for large adults

More equipment used for things like exercise as well and not just play

More exercise equipment made

more free parking / sharing parking space with other nearby restaurants/hotels/etc

More geared for adult activities

more inclusive spaces. spaces more specialized for adults

More inclusive things to do

More parks

More parks, clean parks, that are well laid out and spaced

More paved surfaces and equipment that is wheelchair accessible

More seating

More seating for parents and shady areas where you can still see the kids play.

More shade place for dogs to go that's cool and less mess making and a way to stay i the park while they exercise and I exercise

More stuff for adults!

More things for kids to do while there

more time

more trees for shade more places to sit

More universal equipment that is easily accessible

More urban/suburban public Green spaces

More wheelchair accessible equipment

N/A

N/A
N/A
n/a
N/A
N/A
N/A
NA
NA
Na
Need to change mentally
No

No

No family bathroom

None

None

None

None

Not applicable

Not sure

Nothing

Of course

Offering more fun features closer to the ground; creating a space larger for adults and children to use

Paths and accessible equipment

Plant trees!

Playground areas being accessible to a wider range of people

Poured in rubber grounding, adaptive swings, relocating equipment pieces

Proper Shading; Misting or Water Station

Provide an adult area and fix the sidewalks or paths

Put foam down, install hand rails and ramps, put in paths that are accessible

Put more playgrounds throughout the city

Ramps not steps

Repaired Equipment, Add shade, Add seating

Rest area, shaded cooled with a fan, and cold water to drink

Seating, water fountains, restrooms.

Shade

Shade over playground equipment; paved accessible area

Shade over the structure, more supportive seating

Shade. Bug removal or systems in place  
Misters

Shaded playground areas, access to water

solid surfaces

some playground close to early but adults like to use them too, but with more adult activities it might not feel weird to come when kids are there

Spaces with more space and age appropriate items (ie: trails around the playground) or seeing other people besides children at the playground.

Take down barrier wall. Don't use mulch

Tarmac all recreational parks. No grass. Level access everywhere. Shorter distances from w chair accessible entrances. Longer distances for step access as people who can walk can for longer distances. Prioritise disabled. Make exercise equipment able to place chair in or around. Have wheelchair level for all exercise equipment height. Create different textures for the machines so

they are not slippery when wet. Tactile grips for handles. Tactile textured colourful benches.
The areas could be accessible to a wider range of people
This does not apply.
Universal wheelchair accessible design, ramps up to play structures as well as climbing sides, adaptive swings strong enough to hold adult weight, gates that are not too heavy and ideally automatic

Were you able to overcome that barrier and then began to participate in a recreational space? If yes, how did you do that?

102 responses

"I don't know."
By going to the gym.
Depending on when and where yes. Like using a playground at times that children aren't using it.
Drove further
Friends and I would go later in the day when kids aren't there
Help from the community parks and rec
I didn't
I experienced a lot of small outdoor exercise equipment on a visit to China. They were every few blocks and always being used. I got on several myself and really enjoyed that.
I have not yet.



I haven't
I stay in close proximity to my vehicle.
I was not able to overcome the barrier.
It was a place with a variety of spaces for all ages to pick what you wanted to do or blend the groups.
Losing weight.
Masks, social distance
Moved to indoor options and early morning/late evening participation
n/a
N/A
N/A
N/A
n/a
N/A
N/A
N/a
N/A.
NA
NA
Na
Na

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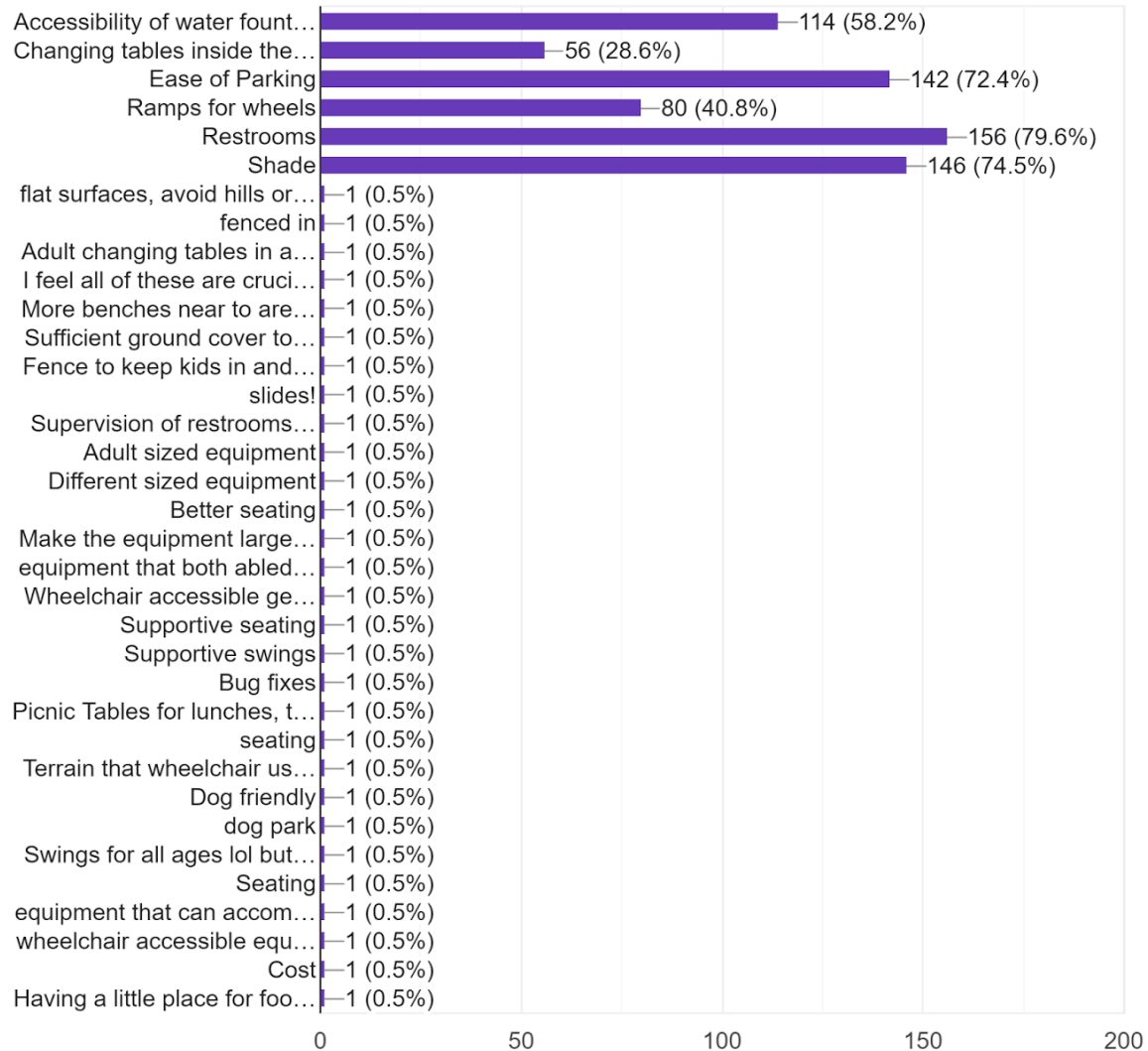
No
No
No
No
No
No
no
No
No
No
No
No (if WC is used)
No barrier
No disability
No had to find alternative playgrounds
No, if too hot I will reconvene somewhere else
No, there was a shady playground though in a past neighborhood when I was as pregnant/postpartum, and I loved it. Parking was really easy too.
No.
No.
None

None
Nope
Not applicable
Not at some parks without facilities closeby
not really
Not really, I was able to partially use the equipment as is but very limited.
Not yet
Not yet
Once. Had a carer with me . Wheeled to area. Helped onto machines. Half of them were not accessible. Would like to go independently but can't.
Poor grammar..not sure
Set out a specific day to do it
Sometimes ro watch my daughter play
Sometimes yes, just deciding I don't care or by going with a friend that doesn't care
sometimes! go with friends in the evening when little kids arent there or less people in general
Sort of, I mean I just don't use playground equipment now unless I'm babysitting or have a younger family member with me - then i will play with them on it. I also have a brother with cerebral palsy who is my age because I'm a triplet, and he enjoys the special swings with harnesses so sometimes I will push him on that... we just don't have any swing sets like that close by anymore so we never go.
Stopped going to that park
suffered through!
therapy lmao
Umbrellas! And bringing our own chairs

Walks in parks w trees
We go to playgrounds that provide the access we need. We don't go to the playgrounds that we know will be hot or we can't get a stroller through.
What on earth.
Working on it
Yes
yes
Yes because went to the playground when the age restrictions were lifted
Yes by being patient or sitting in grass
Yes I just sucked it up
Yes- I am independently mobile
Yes- we love Skidaway islands parks with the exercise equipment and would love more spaces like this
YES, BROUGHT MY KIDS WITH ME
Yes, I have recreated on children's playgrounds, but it is uncomfortable if you take the space from children being able to use it.
Yes. I still take her, but I am more likely to take her when I can bring another adult with me.

Choose all of the facilities and/or features which would make your playground experience easier?  
 You may choose as many as you would like and you can also write in anything else that is not listed.

196 responses



In your opinion and from life experience, what could make an outdoor play and exercise experience better?

202 responses

"More stuff to do."
Shade from the trees. Light at night in the park.
More accommodations/things to do for different people.
Covered spaces, safe place
security hub
Things for everyone to do while there
Good cleanliness
More adult play equipment
Activities for adults.
More people
Art
A wide variety of machinery to choose from. A beautiful design that makes me excited to go and workout.
Places that make me want to stay longer. Food, bathrooms, water spaces on a hot day, foot trucks, vendors, music, spaces for activities and rest.
The runner the equipment. Or new things that we've never experienced. Having fun with friends
Areas cleaned daily (dog park)
Having ample shade and having inclusive equipment (adapted swings, roll-on wheelchair swing, all inclusive merry-go-rounds, activitiy walls that can be accessed by individuals using mobility equipment, etc.) as well as ADA accessibility and changing tables within restrooms.

Shaded areas/snacks/water
N/A
Hammocks in the shade
Equipment allowing the kids to be physically active and allowing them to use their imagination is great.
Children love equipment that evokes their curiosity about science. Swings and slides are very common.
Nice wide walking paths and clean restrooms
Shade, varying ages, programs and activities that activate the park space, restrooms, food/beverage, public art, lots of vegetation (playground at the botanical gardens in Athens is only for kids but very nice)
Multifunctional for all ages and accessible
In my opinion and from life experience - what could make an outdoor play and exercise experience better is appropriate practice that provide a variety of motor skills through play and exercise.
More shade is always good, especially over kinesthetic equipment.
Having and being able to use something as a parent while my kids play so that I am not sitting there sedentary while they play/get energy out.
Sun shades when it's hot
Na
More shade
Shade, swings, & water fountains
equipment that both abled and disabled people can use so i can take my able bodied family with me and join in with the fun rather than just sitting at a distance and watching them have fun
Adequate space, shade and accessibility
Accessibility to children and adults



In Savannah shade and water activity
Playgrounds are few and far between. Especially places that encourage adults to recreate at!
Cleanliness, alcohol
Accessible to everyone
Wheelchair accessibility
Inclusiveness and thought into design. Having a path that then goes into mulch or just a ramp on a play equipment doesn't mean it's accessible. Being able to access and use the same equipment as others in an equitable way would be fantastic.
Clean areas, equipment looked after, more accessible in general
Being able to utilize the equipment and have fun outside, solo or with other people. I would love to be able to swing (comfortably) outside and bring back memories of playing on playgrounds as a child.
Location of Adult equipment that has visibility to child areas.
More options!
Water fountains
When people are actually allowing people to enjoy their time
More places to Sit and shade and cleaner
variety of equipment
Range of different equipment and pathways that support various activities
More options
Cleaning and safety
Accessibility

All the previously mentioned items. Also, ensure snow is properly removed.
The signs having braille and pictures for how it works for all to understand
Upgraded equipment. Addition of exercise equipment would be nice. Nicer pavilions with extra seating
Musical instruments in a separate section and spread out
Comfortable seating
Having a variety options that don't require transfer from wheelchair, or if they do, having enough support for people who struggle to sit independently
Making them wheelchair /limited mobility accessible. Making it more accessible to blind/vision impaired.
Accessible ramps and easy of movement on ground (rubber ground instead of woodchips or sand)
Clean spaces
The environment
Nor sure, I only come to dog parks
All equipment being accessible rather than an add on at the end
The ability to play even in heat. For example, a slide or a swing could be too hot to use if made from with metal parts
Good restrooms, shade, supportive seating, enough parking
Built with the help of disabled people to test each step in the design.
Wider paved paths.
Providing a variety of engaging equipment for people of a variety of sizes and abilities in the shade with seating options at the periphery
More fun things for adults

Music
Equipment that allows for adults to interact with their children in regards to height of space.
Rubber floors Shaded benches
wheelchair accessibility
Proper accessibility, not just a partial attempt. Using actual life experience and not only the guidelines set down in the ADA.
Although I am comfortable being around people of all ages, it is hard to not feel like we are being treated as a child or inferior just because we are disabled or in wheelchairs. Putting all the handicapped accessible outdoor activities for all ages feels a bit exclusive.
More equipment, water fountains, bathrooms, and shade.
Eliminate grass. Use tarmac. More texture less slippery gloss finish on everything. More colour.
Unique aspects
Spacing
Universal access
Make swing sets of multiple sizes for people who are bigger boned or wider
shade for sure
I think somehow making it known to society that adults can also play on this equipment and making it socially acceptable is an important first step. Idk if this is with advertising, signage, etc. Playgrounds and play of any type is strongly associated with childhood and we need to change that, especially as these societal rules for those with disabilities don't apply. I love the idea of an inclusive playground for everyone so no one feels left out, but the issue of safety does worry me for both the disabled and children playing on the same equipment as grown adults. Thinking about my brother, his disability is cerebral palsy - he was born with it due to a lack of oxygen reaching his brain at birth, I chose water features, walking paths and swings because those are the 3 things he enjoys the most when we used to go / sometimes go to playgrounds if we go at all.
More accessibility more shade if you take prescription medication's that sunlight effects

access to clean restrooms, water and shade!
more options when it comes to what to do (i.e. more features)
accessible equipment for all to use. Even adults to be able to engage with their kids
Dog park
Having a place to rest at times. Open spaces for kids to run or to make up games.
No opinion
Organized games scavenger hunts
Shade
making them bigger, space wise and equipment wise, placing more of it on the shade
Get rid of age limits so I can swing
creative fresh new playground experience
Well maintained and modern
Accessibility
Sometime shade is an issue - it's very hot and high noon sun is rough! I also like when I had clean line of sight to see my boys at playgrounds! I felt safer.
VARIOUS EQUIPMENT FOR ALL ABILITIES AND AGES
Multi age level amenities
I like playgrounds that have that rubber padded surface areas under everything, that have good visibility for their structures, with less areas that kids can climb into that you can't see them so you can keep up with multiple children.
Maintenance and updated

People being polite
Close bathrooms, shaded areas
Accessibility
Creative exercise equipment like zipline/roller coaster/swing.
locate in a spot that has good visibility - i am uncomfortable when I am alone and in a secluded space.
More “dangerous” activities. Studies show that plushy playgrounds create more fragile children
Not sure
Accessible area
Having things accessible to interact with, not just physical. Also having appropriate flooring.
Variety in materials used in playground equipment.
Shade and plant material / garden vibe
Advertising that a space is accessible and how it's accessibility improves the the experiences for families and individuals. This Advertising would broadcast to the community what these changes can do to help the community and hopefully push other locations to make similar improvements.
ease of access
More wheel chair friendly playground equipment.
Walking path around the play site so I can get some laps in while my kids play.
See answer above
consistent maintenance of equipment, security
a dedicated space for adults to exercise and enjoy

Updated equipment
The invitation of play for all
Easy accessibility and also multi-sensory. Lots of visual supports for non readers or English learners (I was a former ESL/SpEd teacher).
Various options
Guided assistance via video
NA
Rubber mulch
Having security
A space which is obviously designed for people with disabilities and is large enough to allow for adults to play would make the environment more comfortable; even putting signs out that explicitly state this is a playground for everyone including adults might inspire more play
Ramps
Strength training/calisthenics area
Cooling
Accessible equipment and entrance
Space and differentiation
Rules about manners ie: no littering, pets on leashes, supervised children
Keeping them clean
Accessibility and Safety
If the area is kept clean and maintained

Accessible and free. With plenty of space and equipment
spaces or features that encourage exploration and discovery while still remaining safe, such as tunnels, caves and precipices, that reflect symbolic archetypes of nature; for example, features allowing visitors to experience the space by going over, under and through; also not having everything completely visible and made with fabricated materials
Just a opportunity for everyone to be able to enjoy everything
Cleanliness and maintenance
Nature is highlighted
sufficient space and a variety of activities that could be enjoyed by many
Good visibility at all times. I have to watch my children while they play and I want to see where they are at all times.
Access to shade, water, tables for sitting, restrooms and changing stations.
Water park
Wide variety of equipment styles
Manicured lawn and green
Water bottle refuel stations. Bathrooms. Shade
More adult catered equipment/activities
Chess
Incorporating nature
Interesting and diverse equipment
na
Shade and tables!

Bathrooms, dog park
More places on our size as well to be able to play with our kids
Everyone has the opportunity to enjoy it.
More accessibility
Track
Safe for kids
more shade
More parking
Water stations
Enough benches, Include ramps for wheels, exercising equipment
Better space
Letting dogs participate
Rest stops
New modern equipment
Accessibility
Areas that don't allow smoking, plenty of greenery
More inclusive spaces. Daily cleaning of playground and surrounding areas (sanitization). Far from loud traffic. Activities or clubs geared toward adults. Community gardens. Outdoor games. Allowing food and alcohol.
Well-maintained equipment and grounds



computer access
Exercise equipment
Clean and safe spaces and more of them
Free water
Would be great if the kids area was closed off so kids can wander out and in a shady spot
Forts for hide and seek
Restroom
Be more age/disability inclusive
Accessibility , rest areas with shade and water, and , instructions
more unique attractions and features
SHADE and trees and a lot of grass
Maybe more spots for hammocks
Varied equipment/ activities
Rubber floor
I don't know
No
Well maintained environment
Shade

more shade, water stations, grouping for multiple ages so I can exercise but watch my younger family members

In Savannah: ways to stay cool

More green space

More dog parks, area for dogs

More space for dogs

nothing

adult activities, maybe water fountains, water to play in etc

Na

Nicer textured equipment

What is something(s) that you would like to point out about a playground which is built for everyone?

114 responses

"Not everyone likes to do the same things but they can still play together."

A municipality would have to adopt it to maintain the equipment. Market it as a family park, not a disability resource. If people have not experienced disability, they do not identify with those terms. Maybe call it independence park!

A peaceful play for all to enjoy. Respect for self and others .

A playground built for everyone still serves the original crowd that was going to be there anyway, but now people who don't normally have those opportunities get to join in too. It's a win-win situation

A recent playground we visited had a small work out area, traditional equipment and also musical equipment. It also had ample seating and shade in the seated areas. It's was very enjoyable.
accessability is the most valuable thing to keeping parks alive
Accessibility for all abilities
Activities for young kids and mature adults
Anything that is located on the ground plan and at an adjustable height
Avoid wood chips and sand, these materials are very difficult to maneuver with Wheelchairs
Benches
Builds community
By providing individuals of all abilities with inclusive environments and the skills to play and engage together more independently, everyone has the opportunity to feel nurtured, encouraged, respected, and active during play - both physically and socially - thereby creating a sense of community among all children.
Convenient
Cushion service, fenced in fir runners and family bathroom with a adult changing station
Ease of access
Ensuring that it's accessible for everyone
Everyone can use it as equals

Everyone, regardless of their age, body type, etc., would be welcome to utilize it instead of just one age group. It would be nice to have variety

Exercise equipment and shading

Good seating/soft play surface for kids

Grass

Greater integration of disabled and non disabled people leads to greater unity of society as a whole.

Ground materials

have a clock or a sun dial

Honestly, I haven't ever seen one built for both kids and adults, only all accessible for all disability types.

How it makes it easier to come together and socialize.

I don't think about this

I have concern about the types of adults who wish to hang around kids at playgrounds, and giving them a reason to be there.

I just think it's a great idea. To get every age and type of person involved with using a playground.

i just want to be able to join in with the fun and use the equipment the park has to offer

I like merry go rounds that are built into the ground instead of above ground. Also swings made for wheelchairs are amazing!

I like the idea of having equipment for all ages. The only reason I put I was uncomfortable is because having separate play areas for children keep them safe. The parents tend to stay around them and it weeds out people that could be predators. If there is equipment for adults mixed in could be a safety issue for children.

I love the swings at Forsyth

I love wheelchair accessible marry-go-rounds.

I think accessibility is good. But also if it's dual purpose- So toys that could be used for everyone. I think parks would be better if they had toys designed that weren't solely one demographic. Like a swing that is big enough for special needs but could also be used by someone without needs

I think this is a great idea!

I think this is a really great idea!

I would like to point out that a playground which is built for everyone is awesome - this promotes motor learning in ways that enhance movement education.

I would love a playground that was equipped for me to play with my children. I have seen pictures of swings where a parent and child face one another, and I think that would be neat.

I would love to see a facility or a playground with equipment that would be suitable for a lot of people.

I'm unsure

Idk

If equipment is accessible then it means anyone can use it, but if it isn't then it excludes people.

If there is strength based exercise equipment, please make it adjustable to different strength levels

Inclusive - be able to play with others

IT ALLOWS ALL ABILITIES AND AGES TO ADAPT AND USE THE EQUIPMENT

It can encourage more family-oriented interaction and fun. I always played with my kids on playgrounds but it would have been much more fun for me if there had been some adult-ish equipment included.

It needs to be seasonal. what you play on in the summer differs from what you would play with in the cold and snowy months.

It needs to be used correctly

It promotes inclusion and fosters a closer knit community

It would be used more often and increase the feeling of community if people of all ages and abilities could utilize the equipment and have fun outside together. If it's built for everyone, more people will feel comfortable participating.

It would possibly help to break the playground up into different "zones" for play and exercise.

It's good to have accessibility to allow kids to play with everyone and to see how adaptability can help everyone.

It's a great networking opportunity for parents as well.

It's difficult to be obese and use a playground due to size and strength of playground equipment

It's for EVERYONE

It's important to disabled/ differently baled children to play and participate!!

Just issue of safety. I do like this idea conceptually though! It's interesting because I have been to playgrounds meant just for disabled people and their families and those really work well, and then I have been to playgrounds meant just for children without a disability and those work well... will definitely be interested to see how all of these playground types are merged to create something fun and inclusive, but also safe.

Just make sure it's inclusive

Lots of options for everyone, shade, seating

Lots of playgrounds are located in a big patch of grass which looks nice, but this would be difficult to get to if you were disabled. Also, the equipment would need to be specifically for people with disabilities as most of the playgrounds I have experienced are centered towards small, able bodied kids.

Make it inclusive by having everything wchair height and colourful and textured grips then kids and adults in or out of chairs can access if right height.

Make sure people with other disabilities can be included. For example accommodate a blind person, include brail etc.

Make sure there are no curbs or stairs for easy access

maybe a space for babies?

Might be a good idea to have designated areas for adult or child. Close proximity with some overlap. Possibly family area as overlap

More play equipment for the handicap

More seating

N/A

N/a

Na

na

na

Na

Need for security if mixing adults and children

Neutral spaces like open grass, walking paths, shaded seating

Normalization of our differences is important for everyone, especially children to see.

Nothing

Nothing

Open space with shaded seating or swings (some with seat supports too)

open spaces and bigger swings

Ramps, ground grade, ease of getting on and off of equipment.

Richmond hill Hregory? Park awesome

Safety and lighting

Safety concerns

Safety first. Ensure that everyone is welcome in the space but disallow dangerous or unwanted activity.



seating

Seating that fits all body types, not chairs or tables that are restrictive

Shade

Shade and accessibility for disabilities

Slides and swings for adult butts

Solid flooring which allows wheelchair users to participate

Splash pads that are flush to the ground.

Surfaces that are wheel-friendly, ramp options, quiet/calm-down nooks for overstimulated kids (which still allow for visibility for caretakers to keep an eye on them)

Swings

Swings

That the respect of everyone be taken into consideration by everyone.

That there will be equipment that is suitable for all types of people of all sizes.

The equipment for children should be spaced in a way where elderly people are safe.

The Savannah Children's museum playground is a great example. It could use more handicapped access.

The word community is inclusive and areas meant for a community should reflect that.

There are many different kinds of wheels (chairs, carriages, skateboards, etc.). Wheel friendly parks should accommodate them all.

There is a park near my home with an area where you can leave unwanted books and/or pick up a book for free. I think that's really nice.

There is not a relegated space for wheelchair users rather all equipment can be accessible to all.

There's never enough shade. Often times equipment is old and rickety and doesn't feel safe. There's rarely equipment someone in a wheel chair could access or operate completely by themselves.

They are able to provide all the necessities such as water, restroom, and shade.

They're amazing!

think about some for adults. Most of the playground are too naive for adults to play

Tracks/trails

Varying or adjustable heights of things

Video stations with warm up exercises

Wheelchair accessible

You can't make it perfect for everyone but you can make it useable for most.

What is something(s) that you would like to share in relationship to this survey?

74 responses

Alot

As a parent with disabilities, my disability affects my able bodied daughter

As a person with a disability, I would adore a playground to see children with disabilities get to interact with children with "normal" abilities. The more children are around people who are different from them the better off they are as adults. Interaction through play is everything to a child and will leave them with lasting memories and a better understanding of people from all backgrounds

Everyone can't be in same space same time.

Good luck and thanks for offering universal access!

Great idea

Great that you're doing this!

Hopefully it will give a broad understanding of what some people live with.

I am a mother of five children ages 22, 21, 10, 6, and 4.

I am so thankful that you are doing this project - it is very much needed!

I can't think of anything

I don't like going to the park because I get very bored as a parent. It would be nice to have something to do. Also, the seating is very hard on me as a postpartum mom and when I was pregnant. I needed better chairs and packing in my own was/is a struggle. I'm not strong enough yet to walk or sit in unsupported positions very long.

I enjoy seeing the children as they interact with their parents. But a lot of unsupervised kids would make me leave.

I feel very confident in this project taking place

I have helped care for my disabled father and am a special education teacher. I completed this survey for an adult instead of for children, because I think most parks and play areas are built with only children in mind.

I hope there are many many more accessible playgrounds

I hope to see more functioning water fountains and picnic tables in the future.

I like the idea of adding adult workout to children's playgrounds.

I like the play areas that have obstacle like structures for the kids.

I like to see exercise equipment

I think a lot of playground equipment isn't built for people over 200 lbs or with wide hips. I'm sure there are options that exist though!

I think the idea of creating these types of parks is great and if there was one near me I would have more incentive to get out the house and be outside more.

I think we need more parks

I think your thesis is an amazing subject and i hope you do well with this. Please implement your great ideas to parks everywhere. Also seek opinions from occupational therapists.

I would like to share that when dealing with special needs it is imperative that the equipment allow the children and adults to take an active role in encouraging all to explore. I also think tactile markers are needed to assist visual impairments to find their way to, from, and around equipment, the playground equipment should always be upgraded to meet the needs of all involved individuals.

I'M A MOM, BUT FEEL IF I WERE TO USE EQUIPMENT AT A PLAYGROUND WHEN MY KIDS AREN'T WITH ME, IT MIGHT BE AWKWARD

I'm open to the idea of "playgrounds for everyone" but admittedly as a parent I would be uncomfortable with an adult hanging out by themselves recreating near my two young kids for safety reasons. Conversely, as an adult, I may not feel comfortable using exercise equipment alongside children out of fear that I may inadvertently injure them.

Important research!

In Senegal, West Africa, there are exercise areas along a portion of the coastline. They are extremely popular and are filled to capacity early afternoon until dusk. Seeing so many people working out, getting fit, with all available equipment in use at the same time is such inspiration.

It seems that people only realize barriers exist when it affects them or someone near them. Universal design should be encouraged and thought about w/ every new build or renovation. However, I'm not sure how to broadcast this message.

It would be great to see more play equipment on campus!

It's been sometime since I was on a playground but I've supervised students on playgrounds in field trips

Keep in mind materials when you are designing this playground as material changes are important! I hope you are considering a variety of user groups such as the visually and hearing impaired, and are also designing equipment they can use... not just those with a physical disability (needing wheels like a stroller or wheelchair to be mobile) or impairment. Idk if you considered those with chronic conditions being able to use this playground - that would open up a new type of users - and I could see the exercise portion being potentially useful to this user group. Pregnant women, children, seniors, able-bodied, and those with mental health conditions would also be valuable user types. Not sure if this goes beyond your research but just wanted to suggest it, even if it is just something you put in your "investigate further" section of your thesis! Best of luck :)

Kids like games such as chess boards

Kids like the opportunity for imaginative play and to make up their own uses for equipment. They don't follow the rules (they go up the wrong way on the slide, they climb on the play house).

Kids need hobbies

Madison, WI has at least two accessible playground (Elvehjem Elementary School has a boundless playground; McKee Farms Park??)

Make the questions simpler

MN needs more inclusive play grounds that are inside for winter and warm water pools for arthritis and people who have medical condition that requires a warm water pool or lazy River walking

Most playgrounds have old equipment or not enough to do or not enough to share with other children. Lack of seating and shade has also kept me from choosing a playground space. Broken equipment is also a problem due to age or lack of care. Forsyth Park in Savannah has nice equipment. It serves as a good example. I would love to see more places like this with perhaps exercising equipment for adults. That would be a nice addition.

Most schools could use a better playground for the handicapped.

N/A

N/A
N/A
N/A
NA
Na
na
Na
Na
NA



Need more community emphasis on improving our health through exercise

no

no sure

None

None

None

None of these questions really support giving you my knowledge of disabled people. I've worked with children of different abilities the majority of my career and these questions focus mostly on my experience, which is different that that of theirs.

Nothing

Nothing

Nothing really

Now I want to go to a playground!

Our adults with disabilities often times become far less active following high school and it's important as a community to support their health and well being needs. Not getting enough physical activity has been shown to contribute to heart disease, type 2 diabetes, obesity and depression so finding positive ways to enable them healthy exercise while also providing social opportunities is priceless and should be every community's goal.

Playground for adults are AWESOME

Please I just want to swing

please make toilets available to be used. working out and using my core muscles makes me need the toilet often but because the toilets are often locked at my local park means i cant take a drink with me to the park and that i have to leave the park as soon as i need the toilet to ensure i get home quickly to avoid any toilet accidents

Public green space is a gift that should be accessible to all, not just those that live in fancy neighborhoods or can drive 30 minutes to get there

Thank you for sharing this. Accessibility is a huge issue in this city that we need to address

Thanks for being a voice for this unspoken need.

thanks! adults should be allowed to play more :) life and fun is for everyone

This is a great concept, it would help Americans to stay healthy and fit, or. Try to be healthy and fit.

Try to incorporate discovery activities like Scavenger hunts or nature sights. Musical activities. Some hands-on/multi sensory activities

Well done!

What a great topic!!! Definitely needed to improve quality of life experiences.

## APPENDIX C: INTERVIEW CONSENT FORM

### UNIVERSITY OF GEORGIA UNIVERSAL CONSENT FORM Playgrounds for Everyone

#### Researcher's Statement

We are asking you/your child/the adult you represent to take part in a research study. The information in this form will help you/your child/the adult you represent decide if you/your child/the adult you represent wants to be in the study. Please ask the researcher(s) below if there is anything that is not clear or if you need more information.

**Principal Investigator:** Ronald Sawhill  
College of Environment and Design  
e: [sawhill@uga.edu](mailto:sawhill@uga.edu)

This study aims to learn how children, adults and people of all ages who may have various types of disabilities can play and exercise together safely in an outdoor experience. The researcher would like to learn what type of equipment a person who has a disability would need in order to play and exercise outside comfortably and safely. The researcher would also like to learn what physical arrangements would need to be made to accommodate the comfort and mobility of the aforementioned people. Participation in the study is voluntary, and you may choose not to participate or to stop at any time without penalty or loss of benefits to which you are otherwise entitled.

To collect information, you will need to answer a series of interview questions pertaining to the subject.

The main risk from this study is a loss of privacy. This could happen if someone other than the researcher were to have access to the interview results. The interview sheet itself does not collect any identifying information such as name, phone number, or email address so if an outsider did see the interview results, they would have no way of knowing who filled in the responses. If maintaining your privacy is very important to you, you may not want to be in this study. If you feel comfortable participating in the interview and trust the researcher to protect the responses as well as he/she can, you may want to be in this study.

Key information you might consider before you decide if you want to participate in this interview.

The purpose of this study is to learn how children, adults and people of all ages who have various types of disabilities can play and exercise together safely in an outdoor experience.

Your involvement in the study is voluntary, and you may choose not to participate or to stop at any time without penalty or loss of benefits to which you are otherwise entitled. It will take approximately 20 minutes to complete the interview. The participant will answer interview questions regarding the subject. The main risk from this study is a loss of privacy. The primary benefits to the prospective participant and/or to others that may reasonably be expected from the research is that if an outdoor play space is constructed for people of all ages and abilities the participant will have contributed to the research and planning stages of its development. If a participant does not want to participate in this interview, then they could take the alternative approach of taking the digital survey and sharing their thoughts on what could make a playground for everyone acceptable without the interview happening. You are being asked to participate in this interview because you meet the criteria of a person of any age with or without a physical disability.

If you are interested in participating in the study, please read the additional information on the following pages, and feel free to ask questions at any point.

### **Study Procedures**

If you agree to participate, you will be asked to:

- Answer several interview questions about playground structures.

### **Risks and discomforts**

The risks to participating in this study include:

- There is a risk of someone outside of the research team finding out that this interview took place.

### **Benefits**

The primary benefit to the prospective participant and/or to others that may reasonably be expected from the research is that if an outdoor play space is constructed for people of all ages and abilities the participant will have contributed to the research and planning stages of its development.

### **Incentives for participation**

none

### **Privacy/Confidentiality of records**

We do not plan to share this information with anyone who is not connected to this research study.

The information will not be used or distributed for future research.

Researchers will not release identifiable results of the study to anyone other than individuals working on the project without your written consent unless required by law.

The project's research records may be reviewed by Office for Human Research Protections and by departments at the University of Georgia responsible for regulatory and research oversight.

### **If you have questions**

The main researcher conducting this study is Ronald Sawhill, Assistant Professor and Tiffany White, UGA student. Please ask any questions you/your child/the adult you represent have now. If you/your child/the adult you represent has questions later, you may contact either of the researchers at [sawhill@uga.edu](mailto:sawhill@uga.edu) or [tiffany.white1@uga.edu](mailto:tiffany.white1@uga.edu). If you have any questions or concerns regarding you/your child/the adult you represents rights as a research participant in this study, you may contact the Institutional Review Board (IRB) Chairperson at 706.542.3199 or [irb@uga.edu](mailto:irb@uga.edu).

### **Consent/Permission to Participate in Research:**

To document agreement to participate and permission for you/your child/the adult you represent to take part in this study, please sign below. Your signature indicates that you have read or had read to you this form and have had any initial questions answered.

The interview will NOT be audio recorded, all responses from the participant will be manually written on paper by the student researcher.

**Parent**

If you agree to participate in this research study and you are consenting for your child, please sign below:

Your child's Name: \_\_\_\_\_

Parent/Guardian Printed Name: \_\_\_\_\_

Parent/Guardian Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of Researcher: \_\_\_\_\_ Date: \_\_\_\_\_

---

**Caretaker**

If you agree to participate in this research study and you are consenting for an adult whom you are caring for, please sign below:

Name of person who needs assistances: \_\_\_\_\_

Caretaker Printed Name: \_\_\_\_\_

Caretaker Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of Researcher: \_\_\_\_\_ Date: \_\_\_\_\_

---

**Self**

If you agree to participate in this research study and you are consenting for yourself, please sign below:

\_\_\_\_\_  
Name of Researcher

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Please keep one copy and return the signed copy to the researcher.**

## APPENDIX D: INTERVIEW QUESTIONS

### Playgrounds for Everyone

#### Interview Questions

1. In the past did you ever recreate, but stopped because of some type of barrier?  
What was that barrier?

---

2. Were you able to overcome that barrier? If yes, how so?

---

3. What are some barriers or obstacles that you currently have that prevent you from using playgrounds?

---

---

4. Considering the barriers or obstacles that you currently have that prevent you from using playgrounds, how might these obstacles be changed, removed or made better?

---

---

---

5. Are there certain facilities or features that might help you use playgrounds more, if in place, such as:

- a. Accessible water fountains, etc.
- b. Bathrooms (accessible)
- c. Changing tables
- d. Ease of parking
- e. Shade

---

---

---

6. What item on a playground would you like to participate in the most even if you have never been able to in the past? \_\_\_\_\_

7. If you use a wheelchair, what materials feel best to wheel over?

---

---

8. If you use a wheelchair, what materials feel worst to wheel over?

---

---

9. Do you ever use something other than a wheelchair to get around such as a walker or cane?

---

---

10. What type of accommodations might need to be made for use of a walker or cane on a playground site that you might know of or could think of?

---

---



## APPENDIX E: EXEMPTION DETERMINATION



UNIVERSITY OF  
GEORGIA

Tucker Hall, Room 212  
310 E. Campus Rd.  
Athens, Georgia 30602  
TEL 706-542-3199 | FAX 706-542-5638  
IRB@uga.edu  
<http://research.uga.edu/hso/irb/>

Human Research Protection Program

### EXEMPT DETERMINATION

February 24, 2023

Dear [Ronald Sawhill](#):

On 2/24/2023, the Human Subjects Office reviewed the following submission:

Title of Study:	Playgrounds for Everyone
Investigator:	<a href="#">Ronald Sawhill</a>
Co-Investigator:	Tiffany White
IRB ID:	PROJECT00006964
Funding:	None
Review Category:	FLEX Exempt 7

We have determined that the proposed research is Exempt. The research activities may begin 2/24/2023.

Since this study was determined to be exempt, please be aware that not all future modifications will require review by the IRB. For more information please see Appendix C of the Exempt Research Policy (<https://research.uga.edu/docs/policies/compliance/hso/IRB-Exempt-Review.pdf>). As noted in Section C.2., you can simply notify us of modifications that will not require review via the “Add Public Comment” activity.

A progress report will be requested prior to 2/24/2028. Before or within 30 days of the progress report due date, please submit a progress report or study closure request. Submit a progress report by navigating to the active study and selecting Progress Report. The study may be closed by selecting Create Version and choosing Close Study as the submission purpose.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual (HRP-103).

Sincerely,

Maricia Dilan, IRB Professional  
Human Subjects Office, University of Georgia

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An Equal Opportunity, Affirmative Action, Veteran, Disability Institution