



Denton Parks and Recreation Department
City Hall East
601 E. Hickory, Suite B
Denton, TX 76205

July 17, 2019

Dear Gary Packan:

Thank you for the opportunity to visit with your Parks and Recreation Department and your local parks. In response to your tour notes from April 24th, it is evident that you have a solid foundation for the development and maintenance of recreational facilities in your city. The purpose of this letter is to provide your department with recommendations to enhance the development and maintenance of your playgrounds to ensure that they provide the needed social value and physical activities to individuals of all abilities within your community.

Due to limited time, we were unable to visit all of your available recreational facilities to speak to each individual playground. However, the recreational facilities we did visit provided an ample sample size that allowed us to evaluate the dedication of your park and recreation staff and the maintenance of your facilities. In the next few paragraphs, we highlight various areas to consider when you decide to develop new or update recreational facilities and also recommendations for maintenance of currently available playgrounds.

Playground Design and Build Recommendations

Community playgrounds can be classified as neighborhood and destination playgrounds. Neighborhood playgrounds primarily serve the residents in a specific neighborhood whereas a destination playground is a premier playground where patrons will travel for play opportunities. Destination playgrounds can also include athletic facilities such as soccer fields and Miracle Fields for individuals with disabilities. Athletic facilities, when accompanied with playgrounds, can provide play experiences for all family members. One sibling can participate in their sport while another is playing on a playground. In general, children prefer playgrounds which offer more varied play equipment and do not prefer more natural-looking equipment (e.g., green-colored equipment, brown colored-equipment, equipment that looks like wood). Community playgrounds are designed to support social interactions, social competence skills, and motor skills. However, community playgrounds are often criticized for not being accessible and useable by all individuals. It is our recommendation, when designing and building a new playground, you consider whether you wish to build a neighborhood or destination playground. We also recommend that you offer varied play equipment, avoid more natural equipment, and consider athletic facilities with a playground to attract children of various abilities and their families.

In recent years, much attention has been given to the importance of universal design, with its myriad of benefits for communities. For playgrounds, universal design means planning to build playgrounds that are useable for a wide range of individuals, regardless of age, size, gender, race, or disability status. One area in need of universal design planning is the play richness of the playground environment, specifically sensory stimulation. For playgrounds, sensory stimulation refers to sensations that an individual might see, hear, feel, or smell in response to the overall play environment (e.g., play equipment, greenery within the play area). Examples include flowers and other greenery which provide olfactory stimulation and musical instruments for auditory stimulation. The Consumer Products Safety Commission provides a list of approved plants and flowers for playground use. Prior research has highlighted the need for sensory play equipment and the benefits sensory input can have on children's overall development. In other words, sensory stimulation provided during play opportunities not only assists in brain development but it develops and/or enhances the neural connections needed for physical agility, creativity and problem-solving, coordination, balance, tracking of objects through sight, and gross and fine motor skills. These benefits are true of all children including those with disabilities such as autism, ADHD, hearing impairments, and visual impairments. When your community decides to build a new playground facility, we suggest that you consider a universal design approach to the playground build and include sensory play equipment. By including sensory play equipment in your playground build, you are including more than 35% of children receiving special education services. Universal design also includes the 0.8% of children with orthopedic impairments who are commonly considered for inclusive playground designs.

The term anthropometric refers to comparative measurements of the human body. The anthropometric measurements commonly used in the playground industry, as indices of growth and development in children, include length, weight, and head circumference. For example, children younger than 5-years have larger heads than hips and their center of gravity is chest-level. When children reach 5-years old, their hips are beginning to become closer in size to their heads and their center of gravity is at their trunk. By 12-years of age, children's hips are larger than their head size and their center of gravity remains at their trunk. These dimensions are then typically used to determine age separation in play equipment. Playground equipment is commonly separated by age ranges (children ages 5-years and under; children ages 5-years to 12-years) due to differences in children's anthropometric measurements. When designing and building a playground, we recommend that you consider the two age groups. In our prior research, our findings indicated that families want to go to one playground facility so that their children of various ages could play at the same time. We also suggest that some sort of barrier (e.g., sensory panels, musical instruments) be placed between the play area for children younger than 5-years from the play area for children 5-years and older. This barrier will not only separate the two ages, but reduce the number of safety concerns (e.g., older children running into younger children).

Maintenance and Regulations

The two main resources for playground maintenance and regulations are the *ASTM-F-1487* and the Consumer Product Safety Commission's *Handbook for Public Playground Safety*. Both resources will be helpful to your organization when it comes to playground maintenance and regulations. There are four important areas of concern (a) importance of regular

maintenance, (b) low-frequency maintenance versus high-frequency maintenance, (c) surfacing, and (d) record keeping. Each of these areas will be described in more detail in the following paragraphs.

Importance of Regular Maintenance. An important aspect of ensuring playground safety is playground maintenance. Proper playground maintenance helps minimize the risk of preventable injuries. According to the National Electronic Injury Surveillance System (NEISS), the top causes of fatalities and permanent disability on a playground are the entanglement of children and falls from height. The top cause of playground injuries are falls from height. Regular maintenance inspections and appropriate safety surfacing is the best means to prevent playground injury and death.

Low-Frequency Maintenance versus High-Frequency Maintenance. Since play equipment and surfacing on playgrounds are subject to change due to use, abuse, and weather, they must be inspected on a regular basis. Two types of inspections should be performed on all playgrounds--low-frequency maintenance and high-frequency maintenance. Low-frequency maintenance is typically performed quarterly or twice a year. Low-frequency maintenance inspections are in-depth inspections of the playground equipment and surfacing looking for wear and tear. Examples of low-frequency maintenance include warning labels and age signage present, equipment free of entanglement hazards and protrusions, metal surfaces are free of rust and loose paint chips, and all hardware is present, tight, and fully engaged. High-frequency maintenance is typically performed daily or weekly. Examples include area is free from all trash, broken glass, weeds, and storm remnants, drains are working properly, and the playground equipment is not damaged, loose, vandalized, or has missing parts.

Surfacing. There are two acceptable playground surfacing materials—unitary materials and loose-fill materials. Unitary materials are typically rubber mats or a combination of rubber-like materials held in place by a binder that may be poured in place at the playground site and then cured to form a unitary shock absorbing substance. Unitary surfacing is ADA Compliant. Loose-fill materials include, but are not limited to, sand, gravel, shredded wood products, and shredded tires. These materials have acceptable shock absorbing properties when installed and maintained at a sufficient depth. If loose-fill materials are desired, it is important to consult the Consumer Safety Product Commission’s tests to determine the relative shock absorbing properties of the selected loose-fill material. Asphalt, concrete, soil, and hard-packed dirt are not recommended for playground surfacing.

Record Keeping. One of the most important tasks a playground inspector does is thorough record-keeping of maintenance (low -and high frequency) of each playground facility within their respective community. Taking note of all problems and corrective actions and keeping the information on-file is a necessary practice. Maintenance documents are critical for legal ramifications (e.g., if a community is sued). A maintenance record-keeping program should consist of daily, weekly, monthly, quarterly, and twice-a-year inspections. Content to include in record-keeping books are, at a minimum, the date of the inspection, the inspector’s name and credentials, issues identified, and how the identified issues were resolved.

It is our recommendation that your organization contacts Karen Snyder at the National Park and Recreation Association (NRPA) to have your staff take the certified playground maintenance course. This course will cover all maintenance and regulation topics previously discussed. Eric Schmidt, of PREP Consulting, is a certified playground maintenance inspector for NRPA.

Thank you for the opportunity to visit with your Parks and Recreation Department and your local parks. Please do not hesitate to contact us if you have any questions or concerns. It has been our pleasure to work with you and we look forward to working more with you in the future. Our contact information is (434-996-7674; tina@prepconsult.com).

Sincerely,

A handwritten signature in black ink, appearing to read "Eric Schmidt", written in a cursive style.

Eric Schmidt, CPSI, CPMI

A handwritten signature in black ink, appearing to read "Tina Stanton-Chapman", written in a cursive style.

Tina Stanton-Chapman, Ph.D.