SPR DESIGN STANDARD 32 20 00

PLAY AREA DESIGN

I. GENERAL

A. Intent of Standard: This document is intended as a tool for designers and citizens to use while planning the renovation or development of play areas within the Seattle Parks and Recreation (SPR) System. This standard shall apply in its entirety as applicable to the project scope. Additional requirements may apply, and if so, will be specifically identified by SPR early in the design development process.

B. Design Mission: SPR has Play Areas in all types of settings, some nestled among trees, and others surrounded by downtown traffic. All of the Play Areas in the system, however, must be considered within the greater urban context. The extent of use is generally higher than often found within other municipal settings. The quality ideal that the SPR aims for in acceptable Play Area Design balances Function and Aesthetics with Safety, Accessibility, Durability, and Maintainability. With these considerations in mind, the following design objectives must be upheld during the process of designing Play Areas:

1. Enhance children's development needs for physical, social and cognitive development;
2. Safe, while providing users with play features that are fun, physically challenging, provide learning opportunities, and/or stimulate the imagination; encourage social cooperative play;
3. Cost-effective in terms of low maintenance and utility needs.
4. Utilize play equipment which is durable, with a design life of 20 years or more;
5. Functionally appropriate for the target age group and/or ability range;
6. ADA/ABA accessible;
7. Consistent with the demographic characteristics and predominant needs and wishes of the surrounding neighborhood;
8. Aesthetically pleasing for all park users;

C. Definitions:

1. ***ADA/ABA:*** Americans with Disabilities Act, Architectural Barriers Act
2. ***Design Program*:** Generally a planning tool, this document outlines the basic intent of the project and defines certain specific boundaries, physical, regulatory, fiscal, and conceptual, as well as time constraints. This document may include the results of citizen surveys, Race and Social Justice (RSJ) analysis, and census data when available. Citizen groups or the SPR may produce this document directly, depending upon the primary funding source. Projects initiated through the

Neighborhood Matching Fund (NMF), Cumulative Reserve Fund (CRF) or levy/bond-funded projects will have the Design Program generated internally through the Department's Planning Unit. Citizen initiated projects may develop their own Design Program with the assistance of the Planning Unit.

3. ***Design Team***: A group of interested volunteers and/or paid individuals, who have committed to participating in the design process by attending working meetings, public meetings, and performing various research and consensus building tasks, to achieve a common goal of developing or renovating a Play Area. The group must be formally acknowledged for the stated project; must include the Designer, a facilities maintenance representative, a grounds maintenance representative, a SPR landscape architect, and others if/as appropriate to the project; and shall be led by a project manager or planner assigned by SPR.

4. ***Designer***: The licensed design professional responsible for the assembly of the documents required to implement the intent of the Play Area Design, including construction drawings and specifications. The Designer may be a volunteer, a paid consultant, or be provided by SPR.

5. ***IPEMA:*** The International Playground Equipment Manufacturers Association, an agency that provides third party product certification services for U.S. and Canadian public play equipment and public play surfacing materials in the U.S. IPEMA-certified equipment has been tested and certified in accordance with the standards required by SPR, and is generally considered acceptable for use in SPR play areas if/as appropriate to the specific play application.

6. ***Play Area:*** Any place or space specifically and primarily intended for recreational use by children, generally between the ages of 2 and 12.

D. Application of Standard: This design standard has been developed to address any situation, from a limited installation of individual play area components to a completely new play area. As such, there are design deliverables and criteria defined herein that do not apply to every situation. The Designer shall exercise professional discretion in applying the standard, and contact the Park Engineer for clarification/guidance whenever a design deliverable seems excessive for the Scope of Work. This design standard shall apply in any situation wherein one or more of the following conditions are present:

E. • **A new play area is being built;**

F. • **There is a change proposed for existing play area equipment (in-kind replacement of worn or failed equipment is not considered a change);**

G. • **A change is proposed to the layout, location within park, and/or size of an existing play area;**

H. • **Use of this standard is stipulated in the Designer scope of work.**

I. Design Team Approach: This standard utilizes a collaborative approach, including team meetings, SPR's Proview and Protech review processes, bringing different perspectives together in a team setting to assess whether SPR's goals will be met by the project proposal at key points throughout the design process. It also delineates

the responsibilities of the Designer in developing the deliverables that will be reviewed through the Proview/Proview Tech process.

J. Designer Qualifications: Individuals participating in the design of play areas and components thereof shall either have or be under the direct supervision of an individual who has the following qualifications and credentials:

K. Licensed professional in the State of Washington to practice design appropriate to the task(s), including but not necessarily limited to: architects, landscape architects, and civil engineers;

L. Minimum 5 years direct experience in the design and installation of play area infrastructure and components consistent with the scope of the project;

M. Be currently registered as a Certified Playground Safety Inspector (CPSI) with the National Playground Safety Institute (NPSI).

N. Design Product: At the beginning of the design phase, the Designer will be provided with a "Design Program" prepared by the Parks Department. The design products shall include the following elements, as applicable to the project scope and/or outlined in the Design contract:

1. **Physical Site Analysis:** A comprehensive site description, including layout drawing(s), compiling all information relevant to establishing play area/component features addressed in the design Scope of Work. Information shall include but not be limited to topography, solar orientation & wind conditions, pedestrian and vehicular traffic patterns, use patterns both formal and informal, known improvements such as surface materials, site furniture, existing sewer/utilities (both surface and underground), overhead power lines, site environmental issues, surrounding trees/vegetation and associated issues, presence of contaminants, current and past land use, target/planned use, vandalism and CPTED considerations, etc. Use common scales of measurement appropriate to the task.

2. **Preliminary Schematics:** Rough sketches showing various options based on requirements and parameters set forth in the Design Program and Site Analysis, as well as input at public meetings. Rough estimates of cost to construct should be calculated for each scheme. Review of Preliminary Sketches by the Design Team should result in revisions that develop a preferred alternative.

3. **Presentation of Preferred Alternative:** This typically includes a color rendering illustrating the alternative that reflects the consensus of the Design Team for use in presentation to the Public and various reviewers. This drawing should be proportional and to scale, showing all key elements to be included in the finished project. The presentation must provide a description of the existing and proposed play area plan for the complete physical area designated in the Scope of Work. Information shall include cost estimates showing that the proposal is consistent with the project budget, as well as sketch(es) depicting how the project elements will appear, all in accordance with the scope of work established by the Designer's contract or agreement with SPR.

   The Presentation shall include the ADA access diagram and analysis of ADA play event requirements.

4. **Maintenance & Utility Impact Report:** Unless deemed unnecessary by the Park Engineer, the Preferred Alternative shall be accompanied by a Maintenance and Utility Impact Report that quantifies expectations in terms of utility usage (if any), and ongoing maintenance costs (labor, materials, and consumables associated with equipment upkeep) for the proposed concept. This report shall be prepared using the format and applicable labor and utility rates in place at the time of the report. This report will generally be required for consideration at the Proview review of the Preferred Alternative, but may be prepared or revised at other points in the design development process, at the discretion of SPR.

5. **Support for Public Involvement Process:** The City of Seattle has a blanket policy of Public Involvement for all Public Works projects performed on public property. Generally this requires that notification be made within the geographic neighborhood or potentially impacted area, followed by a comment period and most often a Public Meeting where comment and discussion can take place. Public notifications and meetings may be required on multiple occasions depending on the scale and complexity of the project, on new development, or on projects proposing considerable changes to the use or character of public property. The Designer shall support this process and attend public meetings as needed.

6. **Review Meeting Support:** Play area plans shall be reviewed and approved by appropriate SPR staff (including but not limited to landscape architects and maintenance personnel) at regular intervals during initial planning and design development, following the protocol/procedures practiced in the SPR Proview and ProView Tech Review meeting process. Parks resource staff shall also review the plans for potential impacts to surrounding landscapes and the environmental infrastructure. Construction plans and specifications are typically reviewed at 65% and 95% progress stages and at the 100% stage if comments at 95% were extensive. The Designer shall provide the required deliverables and attend such meetings when they are scheduled in order to describe the plans and respond to questions.

7. **Special/Custom Play Equipment Certification:** If any proposed play element within the project scope is custom-built and/or has not been tested and certified in accordance with ASTM F-1487, the Designer shall analyze the proposed element and perform testing as needed to certify that the element meets all applicable requirements within ASTM F-1487. The Designer shall provide a formal report, bearing the stamp of an appropriately qualified individual professionally licensed with the State of Washington, describing all analysis and testing that was performed for the element and certifying that the element is in conformance with ASTM F-1487.

8. **Construction Drawing Set:** A complete set of drawings showing all site preparation, demolition, installation, grading, drainage and utility components, and instructions necessary for successful implementation of the Preferred Alternative. SPR Standard Details as listed in Section 1.02 shall be utilized to the extent feasible. Drawings shall also include reference to “Dial-a-Dig” and in-house locate needs and provide direction for protection of soil structure during construction as appropriate.

   The drawings must be clear and concise, with plan views separated by trade as appropriate (i.e., existing conditions and demolition, layout, grading and drainage,

irrigation, planting, play equipment and site furniture). Separate drawing sheets shall be used to identify specific details to be used in construction. The details shall be organized in a logical manner by trades as indicated above. Construction drawings shall include layout of proposed play equipment with safety zone, drawn to scale within the confines of the containment area. Slopes and elevations of circulation and safety surfacing shall be identified.

Drawings shall be provided by the Designer in electronic (AutoCAD .dwg and/or .tif format) and hard copy form. Hard copies shall consist of two (2) sets of full-sized plan prints and six (6) sets of half-sized plan prints, which the Project Manager shall be responsible for distributing to the proper individuals within the Parks Department.

9. **Final Technical Specifications:** SPR uses a CSI-based, specification system consisting of Technical Divisions. Division 00 & 01 are the General Conditions and Requirements. Divisions 02 to 48 are the Technical Specifications. The Designer shall prepare all technical specifications. This shall include completing all relevant SPR template technical specifications, including but not limited to those listed in Section 1.02.A.1, to the extent required to properly coordinate with the approved Preferred Alternative and the design drawings, as needed for inclusion as part of the final Construction Contract Documents. Text within the template specifications that is intended to be edited by the Designer is generally identified by use of bold italic font or similar special formatting. Such items usually entail making choices about what type of equipment or material is needed for the conditions and requirements particular to the subject project. Other than appropriate finalization of these specially-identified areas in the template specification, the Designer shall not make any changes (add, delete, or alter) to the template specification unless specifically approved by the Park Engineer, through the project's technical review process.

10. **Cost Estimate:** Throughout the design process, an accurate estimate of the cost to construct the project must be maintained, as needed to ensure that the project remains within the required budgetary constraints.

    The final construction documents shall be accompanied by the Designer's "Engineering Estimate". This is an accurate cost estimate broken down by division and identifying each separate construction system within each division, showing quantity, unit price, and total system cost. Labor and non-labor estimates within each division should show a subtotal. Contractor markups can be shown per line item or as a multiplier to the subtotal. Unit price can be expressed as a line unit or broken down by Labor, Equipment, and Materials.

11. **Project Schedule:** The Designer shall provide with the final construction documents a reasonable critical path schedule based on the division and construction system breakdown used in the Engineering Estimate. Identify all major milestones and incorporate inspection plan. Identify clearly the division of labor anticipated for projects which include multiple implementation mechanisms, for example physical participation by citizen volunteers, donated contractor work, manufacturers, certified installers, and bid work.

12. **Participate in Inspections Before, During, and After Construction:**

a) Prior to construction, the Project Manager shall arrange a pre-construction walk-through if/as needed to identify site protection needs and similar issues. At minimum, the Project Manager shall invite the Designer, appropriate district crew chief, designated Parks landscape architect, facilities/maintenance crew chief, and urban forester. The Designer must participate.

b) With input from the Design Team, the Designer shall identify construction inspection needs during design development and incorporate those needs within the Construction Documents. Examples are erosion control, tree protection, concrete formwork prior to pour, survey needs, pressure testing irrigation lines prior to backfill, safety inspection of play equipment, tree inspection, etc. During construction, the Project Manager shall ensure that required Parks staff participate in all required inspections and observe any and all underground infrastructure prior to covering. The Designer shall perform inspections as appropriate and answer all questions and respond to any issues that arise with respect to the plans.

c) Upon both substantial and physical completion, the Project Manager shall coordinate a site walk-through that will include inspection of all equipment, play area components, ADA, plantings, and any other elements incorporated in the Work, involving key Parks staff such as landscape architect, crew chief, facilities maintenance staff, and Parks Resource Manager, as appropriate to the scope. The Designer shall participate in these inspections and identify any issues or corrections that need to be made to bring the as-built play area into conformance with the plans, for inclusion on the contract close-out punch list.

d) Prior to opening the play area to the public, the Project Manager shall arrange a play area safety audit by the Designer and CPSI, preferably from the Parks Play Area Crew. The Designer shall assist the Project Manager to arrange for correction of any issues identified during the course of the audit. The play area shall not be opened to the public until it is has been audited and approved by a CPSI.

13. **Installation by Volunteers:** When the project includes installation, assembly or other activities performed by volunteers, the Designer shall assist the Project Manager in working with SPR volunteer coordinators and community coordinators (as applicable) to organize such efforts, including scheduling, ensuring that needed tools and materials are provided, and ensuring that appropriate oversight/supervision is present.

14. **Record Documents:** The Designer shall submit a complete record drawing set based on as-built drawings/records within 10 calendar days of substantial completion, developed in accordance with the process outlined below. The Designer shall verify that the Construction Contract Project Manual is completed in a manner that contractually obligates the Contractor to follow this process.

a) The Contractor shall keep a current working set of drawings with all as-built changes or actual conditions as work proceeds, to be submitted to Designer at substantial completion of installation.

b) The Designer shall interpret and incorporate field information into a scaled AutoCAD drawing (utilizing same scale as contract documents) and provide to the Park Engineer prior to close-out of project.

c) The Designer shall prepare Mylar record drawings ("as-builts") with contractor's and SPR surveyor's information included, and CD(s) containing electronic AutoCAD and Adobe .pdf drawings with that same information, to be submitted to the Owner along with all other required information, manuals, etc.

d) The Designer shall provide complete as-built equipment information, including for each component the manufacturer, model number, other official identifier numbers as applicable, warranty information, and warranty expiration date. This information shall be provided on the appropriate plan drawing(s), contained within the O&M manual, and itemized as a separate electronic document in either Microsoft Word or Excel format.

e) The Contractor shall submit extra hardware, information regarding paint colors/availability, and O&M Manual to the Project Manager at substantial completion of installation. The Designer shall compile and organize such materials and information for appropriate subsequent distribution by the Project Manager.

15. **Warranty Support:** The standard warranty period for all Parks construction projects is one year minimum, with longer periods identified for specific work components (such as resilient “rubberized” surfacing) when appropriate. In consultation with the Design Team, the Designer shall ensure that appropriate warranty periods are incorporated within the Contract Documents. No later than one month prior to the warranty expiration date, the Designer and other Parks staff as appropriate shall make a final inspection of the play area, identifying any defects or issues that should be addressed under the contract warranty.

II. GOVERNING REGULATIONS, POLICIES, AND STANDARDS

A. Federal, State, County, and Municipal Standards:

1. American Society for Testing and Materials (ASTM) “Standard Consumer Safety Performance Specification for Playground Equipment for Public Use”, F1487 (most recent edition).

2. U.S. Consumer Product Safety Commission (CPSC) “Handbook for Public Playground Safety”, Publication No. 325 (most recent edition) *www.**cpsc**.gov/**cpsc**pub/pubs/325.pdf*.

3. ASTM F2223-04 Standard Guide for ASTM Standards on Playground Surfacing.

4. U.S. Architectural and Transportation Barriers Compliance Board, Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (most recent version of the regulations).

5. City of Seattle "Standard Specifications for Road, Bridge, and Municipal Construction" (most recent edition).

6. City of Seattle "Standard Plans for Municipal Public Works Construction" (most recent edition).

B. Seattle Parks and Recreations Department Standards: The following Standards and Specifications are available from the Park Engineer and/or on the Parks public website, and shall be used as applicable to the Scope of Work. Note that the Parks public website does not always contain the latest versions of these standards, so the Designer should confirm that he/she is utilizing the most current standards available. Other SPR specifications may be provided than those listed below during the course of design and design review, as may be deemed necessary for the acceptable completion of the design of the project.

1. **SPR's Design Standards:** Many existing SPR Design Standards may be pertinent to elements of the play area, its substructure, and/or its component equipment. Such standards shall apply to the extent applicable within the Scope of Work, and may include, but are not limited to:

ADA Information & Standards including:

- 07- ADA Access & Signage Design
- 07a-ADA Standards-2010
- 07b-ADA Errors & Omissions
- 07c-WSDOT ADA Field Guide

Additional Design Standards including:

- 06 00 00 Wood and Wood Substitutes
- 10 14 16 Plaques, Tiles and Pavers
- 10 18 00 Signage & Kiosk Design
- 12 93 13 Bicycle Racks
- 12 93 23 Trash Receptacles
- 12 93 33 Benches
- 12 93 36 Olmsted Bench-Wood & Concrete
- 12 93 43 Picnic Tables-Fixed
- 12 93 46 Picnic Tables-Portable
- 12 93 53 BBQ Grills
- 12 93 63 Bollards
- 13 14 26 Water Feature Design
- 26 00 00 Electrical System Design
- 26 56 00 Outdoor Lighting Design
- 33 30 00 Sanitary Sewerage Utilities
- 33 34 00 Storm Sewer Utilities
- 32 80 00 Irrigation System Design

- 32 93 00 Landscape Planting Design

2. **SPR's Technical Specifications:** The Designer shall modify the available template technical construction specifications to the extent needed to address the play area design, and may create a stand-alone technical section specifically for a given play area component only if appropriate and approved in advance by the Park Engineer. If the stand-alone option is utilized, the Designer is responsible to verify that all technical specifications are consistent with Parks standards and that there are no contradicting requirements contained in other sections of the Construction Contract Documents. SPR template technical specifications that may be utilized as applicable to the play area design include, but are not limited to:
   - 01 56 39 Temporary Tree & Plant Protection
   - 02 41 13 Selective Site Demolition
   - 02 41 13.23 Site Utility Removal
   - 03 10 00 Concrete Formwork
   - 03 20 00 Concrete Reinforcement
   - 03 30 00 Cast-in-Place Concrete
   - 03 35 00 Concrete Finishing
   - 05 52 00 Metal Handrails & Guardrails
   - 06 10 00 Rough Carpentry
   - 09 91 13 Exterior Painting
   - 11 68 13 Play Area Equipment
   - 12 93 00 Site Furnishings
   - 13 34 19 Pre-engineered Metal Structures
   - 31 00 00 Earthwork
   - 32 12 16.13 Asphalt Paving for Pathways
   - 32 12 16.39 Porous Asphalt Paving
   - 32 13 13 Concrete Paving
   - 32 13 13.13 Porous Concrete Paving
   - 32 14 13.13 Precast Concrete Masonry Unit Paving
   - 32 14 40 Granite Stone Paving
   - 32 31 13.13 Chain Link Fencing & Gates
   - 32 31 13.16 Color-Coated Chain Link Fencing & Gates
   - 32 18 16.13 Engineered Wood Fiber Safety Surfacing
   - 32 18 16.16 Play Area Synthetic Surfacing
   - 32 18 16.19 Play Area Sand Surfacing
   - 32 15 40 Crushed Rock Pathways
   - 33 34 00 Storm Sewer Utilities
   - 32 50 00 Landscape Boulders
   - 32 80 00 Irrigation Systems
   - 32 92 00 Landscape Planting

- 33 10 13 Potable Water Systems for Drinking Fountains
- 33 30 00 Sanitary Sewerage Utilities
- 33 34 00 Storm Drainage Utilities

3. **SPR's Standard Details:** Many existing SPR Standard Detail drawings may be pertinent to elements of the play area, its substructure, and/or its component equipment. Such standards shall apply to the extent applicable within the Scope of Work, and may include, but are not limited to:
   - 32 15 73-76 Play Area Concrete Curbing Details
   - 32 15 79-83 Play Area ADA Ramp Details
   - 32 15 86-89 Play Area Engineered Wood Safety Surfacing Details
   - 32 15 93 Play Area Synthetic Surfacing Details
   - 32 15 96 Play Area Surfacing Wear Mat Detail

III. **DESIGN GUIDELINES FOR PLAY AREAS:** In general, the SPR supports the goal of creating play environments that integrate manufactured play equipment with the living landscape. We therefore highly encourage use of the following best practice guidelines:

- PlayCore, Inc. & Natural Learning Initiative, College of Design, NC State University, "Creating & Retrofitting Play Environments Best Practice Guidelines"; 2009 or most recent edition; see http://www.natureground s.org/guidelines.html.

In general, SPR will be accepting of most play area designs that incorporate the above guidelines. However, there are certain areas where maintenance and safety considerations specific to SPR take precedence. These include, but are not limited to, the guidelines and criteria described below.

A. Wood Use: In general, the use of wood materials for anything other than safety surfacing is not allowed for play area design. This prohibition includes but is not limited to structural members. All exceptions must be specifically approved by the Park Engineer in writing. Refer to Design Standard 06 00 00, Wood and Wood Substitutes.

B. Safety Surfacing: Engineered Wood Fiber Safety Surfacing (EWFSS) is preferred for most play area applications. Resilient (rubber) surfacing may be considered based on site-specific considerations and/or maintenance criteria. Typical applications for resilient surfacing include improved accessibility for ADA/ABA compliance and surfacing near sand boxes and/or water features. Resilient (rubber) surfacing is not to be used under whirls, swings, "Supernovas", or other playground equipment that is free to move with respect to the underlying surfacing.

C. Wear Mats: Rubber wear mats are required under swings and at the ends of slides.

D. Sand Boxes: In general, SPR discourages the use of sand boxes and similar components in its play areas. Because of their popularity, SPR will consider their inclusion as a play area feature on a case-by-case basis. When approved, the following guidelines apply:

1. There must be a minimum separation of 10 feet between areas of sand and EWFSS and/or any other adjacent safety surfacing, with a paved pathway in between.
2. Sand must be physically contained by a permanent structure to avoid migration of sand particles.

3. Resilient safety surfacing is preferred near sand play elements.
4. Sand boxes may not be located in close proximity (30 feet or less) to drinking fountains, catch basins, wading pools, or water features.

E. Fencing Guidelines: Fencing shall be allowed where border concerns are nearby (as defined in ASTM 1487), for example a railroad crossing or an arterial with heavy traffic within 100 feet of the play area. Fencing shall comply with Parks standards and/or ASTM F2049, and should be designed in such a way that it does not isolate or limit access to the play area, and is inviting with clear access points that relate to overall park circulation.

F. Equipment Guidelines: The following guidelines apply:

1. IPEMA-certified equipment is preferred. All equipment must be tested and certified in accordance with ASTM F-1487.
2. Custom-built equipment is discouraged in general, and must be specifically approved for use by the Park Engineer. All custom-built equipment and components must meet all applicable safety standards and be tested and certified (preferably by a third party testing agency) in accordance with ASTM F-1487. If the Designer provides such certification, a certification test report must be provided, including the Designer's professional stamp.
3. Kompan "Supernovas" are not recommended.

G. Adjacent Features Guidelines: The following guidelines apply:
Avoid placing irrigation heads adjacent the boundary of the play area. No irrigation heads shall be allowed within the boundary of the play area.

H. Plantings: Vegetation may be situated near play areas as appropriate for creating a safety barrier or aesthetic purposes. Vegetation shall not obstruct the view of parents/caretakers supervising their children within the play area, nor shall plant species pose health or safety risks to children. Plant beds within play areas are discouraged. When planting beds are within or adjacent to play areas, plantings must be durable and/or protective measures (e.g. fencing, walls, and physical barriers) must be in place to minimize potential trampling damage to plantings. In order to facilitate fall maintenance, only large-leaved trees (such as maples) may be planted adjacent to play areas.

I. Water Spray Play Features: Any play component or device which includes elements involving water intended for play or aesthetic purposes are considered a "water feature", and are subject to Standard 13 14 26 Water Features Design. Standard drinking fountains are not considered water features.

J. Warranty: All equipment, including custom-designed equipment, shall be warranted for a minimum of ten (10) years. Longer warranty periods are highly encouraged.

END OF SECTION