



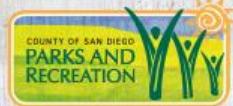
DEPARTMENT OF PARKS AND RECREATION

PARK DESIGN MANUAL

JANUARY 2020



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COUNTY OF SAN DIEGO DEPARTMENT OF PARKS AND RECREATION

The County of San Diego Department of Parks and Recreation (DPR) enhances the quality of life for County residents and visitors of all ages. We promote health and wellness, safe communities and civic pride through thousands of programs across San Diego including festivals, hikes and rides, educational events and activities for youth, three strategically located recreation centers, and multiple state-of-the-art sports complexes. Daily programs enrich the lives of all patrons with a special focus on families, seniors, people with disabilities and at-risk youth.

Our award-winning park system features more than 100 locations across 50,000 acres of land, including 36 local day-use parks, 19 regional parks, 9 camping parks, a number of open space preserves and several registered historic sites. Some 350 miles of trails take visitors through multiple climates and habitats - from the coast to the desert and the valleys to the mountains.

DPR VISION

A parks and recreation system that is the pride of San Diego County and a national model for park and recreation organizations.

DPR MISSION

We enhance the quality of life in San Diego County by providing exceptional parks and recreation experiences and preserving significant natural resources.

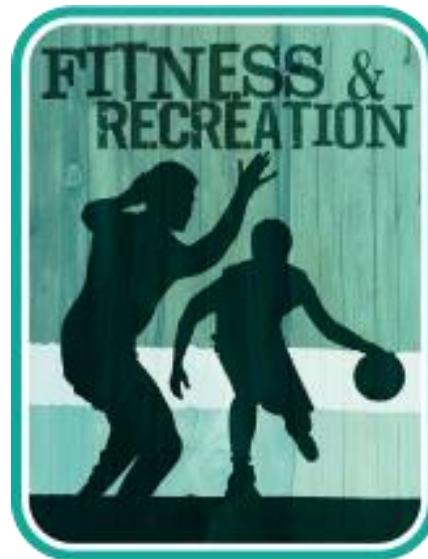


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INTRODUCTION

INTENT

The County of San Diego Department of Parks and Recreation (DPR) created this Park Design Manual to serve as a reference tool when DPR Park Project Managers, consultants, and private developers dedicating improved park land pursuant to the Park Lands Dedication Ordinance are planning, designing, and constructing parks and recreational facilities that will be owned and operated by the DPR. This Park Design Manual support Live Well San Diego, the County's Strategic Plan and General Plan, and applicable Board of Supervisors and DPR Policies. This Park Design Manual also facilitate DPR's mission of enhancing the quality of life in San Diego County by providing exceptional parks and recreational experiences and preserving significant natural resources in all aspects of parkland development.

This Park Design Manual shall be used for the design of new parks and recreational facilities or retrofitting or rehabilitation of existing parks and recreational facilities that are or will be owned and/or operated and maintained by DPR. The Park Design Manual shall also apply to the following projects:

- DPR initiated park and recreational facility improvement projects that includes new construction or rehabilitation of existing parks and recreational facilities.
- Parks and recreational facilities constructed by private developers for compliance with Park Lands Dedication Ordinance that will be operated and maintained by DPR.
- Parks or recreational facilities constructed and/or operated pursuant to a joint use agreement.

The Park Design Manual does not substitute for professional experience and sound judgment must be exercised in their application. The standards do not preclude the use of different methods when special conditions or site specific conditions are a factor and when proper authorization is obtained from DPR.

The design and construction of parks and recreational facilities shall comply with standards, guidelines, and requirements referenced in this document and all other that may apply. If conflicts arise between the Park Design Manual and other governing documents, contact DPR for clarification. If deviation from this Park Design Manual is necessary or desirable, then a request shall be submitted to DPR for review and approval.

This Park Design Manual is a living document and will be updated periodically as needed.



CHAPTER 1 REGULATORY REQUIREMENTS

1.1 REGULATORY COMPLIANCE AND PERMITTING

In addition to the design guidance provided by this document, the consultant or developer shall be responsible for designing and constructing parks that comply with all regulatory and permitting requirements associated with a project, including, but not limited to:

- ✓ American Society for Testing and Materials (ASTM)
- ✓ Americans with Disabilities Act (ADA)
- ✓ Americans with Disabilities Act Accessibility Guidelines (ADAAG)
- ✓ CALTRANS Standard Specifications for Public Works
- ✓ Consumer Products Safety Commission (CPSC)
- ✓ County of San Diego Consolidated Fire Code
- ✓ County of San Diego County Trails Program
- ✓ County of San Diego Grading Ordinance
- ✓ County of San Diego Groundwater Ordinance
- ✓ County of San Diego Noise Ordinance
- ✓ County of San Diego Park Lands Dedication Ordinance
- ✓ County of San Diego Public Road Standards
- ✓ County of San Diego Regulatory Code
- ✓ County of San Diego Rules and Regulations for Recycled Water Use
- ✓ County of San Diego Water Conservation in Landscaping Ordinance
- ✓ County of San Diego Watershed Protection Ordinance
- ✓ San Diego Regional Standard Drawings (SDRSD)
- ✓ Standard Specifications for Public Works Construction (Greenbook)

- ✓ Title 24 of the California Building Code (CALIFORNIA BUILDING CODE) (Title 24)
- ✓ Uniform Building Code (UBC)
- ✓ Community and Subregional Plans
- ✓ Community Design Guidelines
- ✓ All other applicable local, state, and federal codes and regulations

County Board of Supervisors Policies

- ✓ A-106 Water Supply, Conservation, and Reclamation
- ✓ F-26 Utilization of Park Lands Dedication Ordinance Fees and Interest
- ✓ F-52 Naming of County Park and Recreation Amenities
- ✓ G-15 Design Standards for County Facilities and Property
- ✓ G-19 Design Guidelines and Standards for County Parks and Recreational Facilities
- ✓ I-44 Procedure for Designing New County-owned Community/Local Parks
- ✓ I-136 Comprehensive Goals and Policies for Community Facilities Districts
- ✓ J-37 Landscape Maintenance Districts

DPR Policies

- ✓ C-39 Signage
- ✓ C-43 Establishment of Community Gardens in County Park Lands

The design consultant or private developer has sole responsibility in complying with all applicable local, state, and federal laws, codes, and regulations. Failure to design in conformity by law shall be remedied at the consultant or developer's own expense. DPR will not be responsible for any errors or omissions in the evaluation and plan review of the design.

1.2 PARK LANDS DEDICATION ORDINANCE

Park land being dedicated or improvements being constructed pursuant to the Park Lands Dedication Ordinance (PLDO) must be improved with the PLDO eligible recreational uses as identified in Table 1 and in accordance with the following:

1. Provide two (2) high intensity and one (1) low intensity recreational uses, not including trails or scenic overlooks. Additional recreational uses may be provided once at least two (2) high intensity and one (1) low intensity recreational uses are provided. These additional recreational uses may include any number or combination of high and low intensity recreational use and a maximum of one (1) of each specialty recreational use.
2. Reference the County of San Diego Parks Master Plan to understand the recreational trends and needs of the community where the park will be located.
3. When dedicating five (5) or more acres of land pursuant to the PLDO, provide a regulation turf playing field or open lawn area that is at least one (1) contiguous acre to accommodate multiple or individual recreational uses that shall include baseball or soccer and may also include other field sports or other PLDO Eligible Recreational Uses.
4. When dedicating ten (10) or more acres of land pursuant to the PLDO, provide more than one of each of the following recreational uses: sport court, children's play areas, and regulation turf playing fields or open lawn area at least one (1) contiguous acre in size.
5. Trails and improved scenic overlooks shall be granted half or fifty percent (50%) credit and combined shall not to exceed ten percent (10%) of the total PLDO requirement. Credit shall be granted for trail tread width only. Credit shall not be for easement width. Credit is given for scenic overlooks that are improved with park amenities that include but are not limited to picnic areas, seating, and interpretative signage. PLDO acreage credit shall not be granted for trails dedicated pursuant to County Trails Program.
6. Stormwater facilities may be co-located with PLDO recreational uses in public parks as approved by DPR. Stormwater facilities may receive half or fifty percent (50%) credit and combined shall not to exceed ten percent (10%) of the total PLDO requirement. Stormwater facilities must comply with this Park Design Manual and all other applicable regulations.
7. Credit against the Park Improvement Impact Fee for public park improvements dedicated on land owned and maintained by another governmental agency shall receive one hundred percent (100%) credit if the following are met:
 - a) Park improvements will be located on park land within 3 miles driving distance from the subdivision or development project.
 - b) The developer negotiates park design and funding of park improvements, operation, and maintenance with the other government agency.
 - c) 50% credit shall be granted against the Park Improvement Impact Fee requirement if the general public's access to the dedicated park improvements is prohibited for any duration of time between dawn and dusk.
8. Any improvements identified in the County's Capital Improvement Needs Assessment or the Department of Parks and Recreation Parks Improvement Plan that are dedicated by a developer and located within 3 miles driving distance from the associated subdivision or development project shall receive 100% credit against Park Improvement Impact Fee. Credit against the Park In-Lieu or Park Land Acquisition Impact Fee shall be granted only when land acquisition is required.



Table 1: PLDO Eligible Recreational Uses

HIGH INTENSITY RECREATIONAL USES
High intensity recreational uses shall include the following uses or other uses, as approved by the Director, that include an outdoor area, along with its incidental buildings and structures, at least part of which is designed, developed, and intended for organized sport or athletic activities and/or other activities or events to which groups of people might be attracted as participants or spectators:
<ul style="list-style-type: none"> • Adventure Courses • Exercise areas or fitness stations • Gymnasium • Sport/game court with required safety zones and associated amenities to accommodate recreational uses that include but are not limited to badminton, basketball, handball, hockey, pickle ball, racquetball, roller hockey, tennis, and volleyball • Sports rink with required safety zones and associated amenities for multiple or individual recreational uses that include but are not limited to hockey and soccer • Swimming pool with adjacent deck areas • Tot lot and children's playgrounds and play area (included nature play areas) • Turf playing field and associated amenities to accommodate recreational uses that include but are not limited to baseball, cricket, field hockey, football, lacrosse, rugby, soccer, and softball
LOW INTENSITY RECREATIONAL USES
Low intensity recreational uses shall include the following uses or other uses, as approved by the Director, that include an outdoor area, along with minimal incidental buildings and structures, designed, developed and intended for recreational use by individuals, families, or small groups:
<ul style="list-style-type: none"> • Amphitheater or plaza with seating areas • Community garden • Community gathering or event space or plaza with seating and may include a stage • Open lawn area that includes shade, seating, picnic tables, barbecue pits, trash and recycling receptacles, and hot ash containers. • Recreation facility such as a teen, senior center, or community center • Horseshoe pits, shuffleboard court, croquet, bocce ball or lawn bowling court • Scenic overlooks improved with amenities such as seating and picnic areas • Trails that are improved and located outside of dedicated open space and County right-of-way
SPECIALTY RECREATIONAL USES
Specialty recreational uses shall include the following uses or other uses as approved by the Director:
<ul style="list-style-type: none"> • Bicycle skills or mountain bike park • Dog park or leash free area • Equestrian facility (includes equine accommodations, fenced/enclosed places, such as pens or arenas) • Frisbee or disc golf • Skateboard park • Splash pad or wading pool with adjacent seating areas

1.3 PARK ACQUISITION AND IMPROVEMENT AGREEMENT

Applicants receiving credit against Park Impact Fees pursuant of the PLDO shall enter into a secured Park Acquisition and Improvement Agreement as approved by the County, prior to approval of the final map for a Subdivision or prior to issuance of a building permit for a Development. The Park Agreement shall not be completed in concurrence with the community facilities district formation process.

The Park Acquisition and Improvement Agreement shall at a minimum require the following:

1. Obtain approval from the DPR for a Final Park Site Plan.
2. Obtain approval from DPR for the grading, irrigation, landscaping, and improvement plans and construction documents in compliance with the PLDO.
3. Construct park improvements identified in the Final Park Site Plan and the grading, irrigation, landscaping, and improvement plans and construction documents.
4. Specify that the construction timeline for a public park site shall not exceed one and a half (1½) years from issuance of the first building permit or prior to issuance of fifty (50%) percent of the total proposed residential dwelling units. The specific timing of improvements shall be consistent with the conditions of approval for the associated discretionary permit.
5. Obtain approval of an Environmental Site Assessment and California Land Title Association Policy for approval by the County prior to conveyance of public park fee title.
6. Convey fee title by Grant Deed of public park site that has been constructed in accordance with the Final Park Site Plan and is free of encumbrances to the County of San Diego.
7. At least sixty (60) days prior to the anticipated date of Park Facility completion and transfer of title of the park to the County, the Developer shall provide security sufficient to cover the cost of two years operation and maintenance of a park based on the approved Final Park Site Plan and in the form and amount specified by the DPR Director. Any remaining amount of the security shall be returned two years after fee title to the park has been conveyed to the County.



CHAPTER 2 SITE PLANNING

2.1 BEST PRACTICES

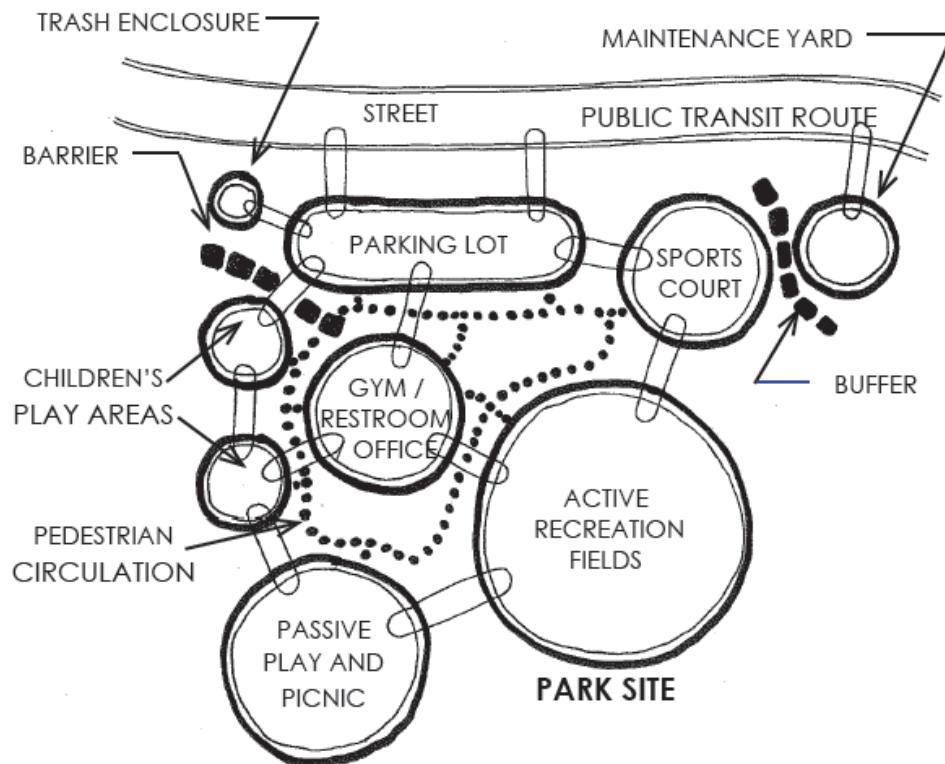
The following best practices should be considered throughout the site planning and park design process. Each concept is briefly described below. These concepts can be found throughout this document and County ordinances and policies related to the development of park land.

- 1. Proper Siting:** Locating parks and recreational facilities that can be easily accessed by residents and visitors of all ages and abilities. Locating park land and improvements dedicated pursuant to the Park Lands Dedication Ordinance within one-half (1/2) mile walking distance to all residences when densities of one (1) dwelling unit per 2 gross acres or less are proposed.
- 2. Safety:** Increasing safety and the perception of safety within parks and incorporating methods to reduce vandalism.
- 3. Universal Design:** Creating parks and recreational facilities with diverse elements that accommodate a range of demographics and users of all abilities. Creating a fun and enjoyable experience and providing inclusive play areas where feasible. Refer to Parks Master Plan for demographic information and recreational trends for each community.
- 4. Aesthetics:** Providing aesthetically pleasing and inviting parks and recreational facilities whose character is compatible and reflecting and embracing natural, cultural, and historic resources as themes or design features of its surroundings.
- 5. Innovation:** Using creative solutions for non-structured, non-traditional designs to promote physical and mental activity. Incorporate interactive components and innovative solutions that could include nature-based play, natural play, and tactile stimulation.
- 6. Connections:** Providing connections to existing transportation networks that includes roadways, pathways, trails, bicycle paths, sidewalks, and mass transit routes to promote easy access to parks and recreational facilities.
- 7. Sustainable Design:** Incorporating water and energy conservation into landscape, hardscape, and building design to reduce lifetime water and energy usage. Promote recycling and waste reduction best practices. Minimize erosion and air, water, and land pollution. Use non-toxic materials and products, where possible. Procure local materials to assist the local economy and reduce transportation emissions.
- 8. Active Living Design:** Using the built environment to positively impact the physical and mental health of residents in support of Live Well San Diego.
- 9. Durability:** Utilizing materials and technologies that are durable, easily maintained and can withstand detrimental effects of weather, time, and abuse.
- 10. Preservation:** Preserve plants, animals, endangered species, and natural habitats. Protect agricultural, cultural, and archaeological resources and make efficient use of finite natural resources.

2.2 PHYSICAL ACCESS AND ADJACENCY COMPATIBILITY

Physical access & adjacency compatibility gives consideration to requirements of safety (primary), compatibility, privacy, concentration of recreational uses, ease of operations and administration are expressed and illustrated in Figure 1. Care and consideration needs to be given to the use of each space, the relationship between recreational uses and future park expansion opportunities.



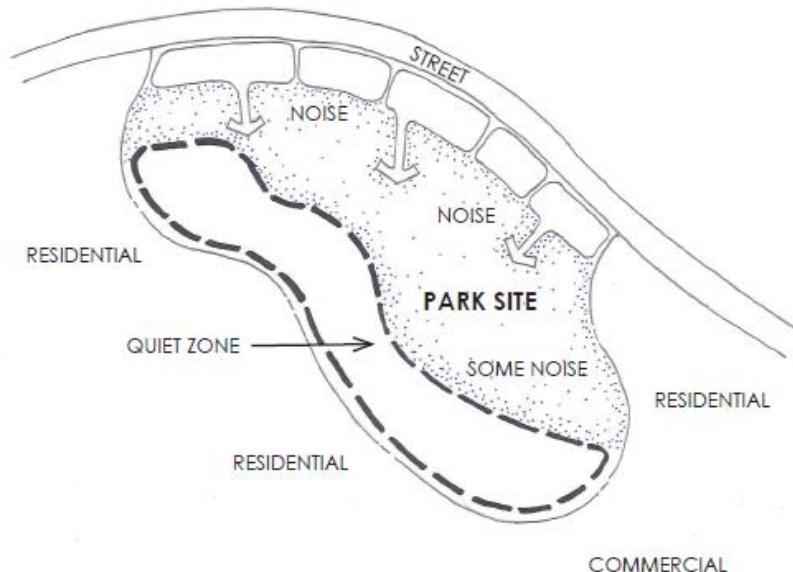
Figure 1: Site Planning Diagram

1. Parks are multi-generational spaces and consideration of park user compatibility must be evaluated when determining the adjacency of park features.
2. Spatial organization encourages social interaction and user participation, which promotes many diverse activities to occur simultaneously while facilitating site visibility and control.
3. Arrange activity areas to encourage social interaction among users by introducing transitional areas and providing visual access from one area into another.
4. Group recreational uses to maximize desirable effects (accessibility, control of participants, multi-uses) or separated to minimize undesirable effects (noise and recreational uses with varying degrees of physical activity).
5. Placement of high and low intensity spaces should allow for simultaneous diverse activities and diverse user groups safely participating in both planned activities and free play.
6. Locate facilities that draw largest number of users near or within view of established public transit routes. This encourages and facilitates alternative modes of travel to the programs and activities offered at the park facility.
7. Locate restroom buildings near recreation fields, children's play areas, and group picnic areas.
8. Locate maintenance buildings away and screened from children's play areas and adjacent activities.
9. Provide buffers and safety barriers between children's play areas and parking lots.
10. Locate parking facilities near major park features (group picnic areas, sport fields, recreation center) to facilitate park user transporting equipment, coolers, or other items to their destination.
11. Locate trash enclosures away from all buildings, except maintenance buildings.

2.3 ACOUSTICS

1. Sports activities, children's play areas, dog parks, large group gatherings, and gymnasiums are all potential sources of disturbance to the surrounding community. Locate such park features to minimize noise impacts on adjacent land uses. See Figure 2.
2. All projects should comply with the County of San Diego Noise Ordinance and the Noise Element of the County of San Diego General Plan.

Figure 2: Acoustical Considerations



2.4 SECURITY AND SAFETY

2.4.1 General Requirements

1. Provide consideration to safety and security during the site planning and design phase by understanding and utilizing the strategies of Crime Prevention through Environmental Design (CPTED). All project must comply with the DPR CPTED Checklist in the Appendix D.
2. Consult the Sheriff's Department during the design phase to ensure that appropriate law enforcement security principles are included.
3. Grading and planting shall be such that a park ranger, County Sheriff or other law enforcement officer seated in a vehicle may observe the entire park while driving through or around it. Avoid mounds, berms, or other areas that provide hiding places.
4. Treat all building walls, site walls, signage, and concrete amenities such as tables, benches, drinking fountains, etc. with an anti-graffiti material.

2.4.2 Natural Surveillance

1. Design physical features, activities and people in such a way as to maximize visibility and foster positive social interaction among park users.

2. Park is visible from surrounding properties or from a vehicle on the street or in designated parking lot. Use passing pedestrian and vehicular traffic as a surveillance asset.
3. Cluster recreational activity areas to provide surveillance, i.e. picnic area adjacent to a playground.
4. Select see-through fencing to provide views in and out of parks.
5. Use transparent weather vestibule next to the outer door of the building entrance to provide shelter in adverse weather conditions.
6. Locate restrooms near park entry and/or beside a major activity area.
7. Place windows overlooking sidewalks and parking lots.
8. Ensure potential problem areas are well-lit: pathways, stairs, entrances/exits, parking areas, kiosks, bus stops, children's play areas, recreation areas, pools, storage areas, restrooms, dumpster and recycling areas, etc.
9. Avoid poorly placed lights that create blind-spots for potential observers and miss critical areas. Place lighting along pathways and other pedestrian-use areas at proper heights for lighting faces of people.
10. Avoid security lighting that creates blinding glare or deep shadows, hindering the view for potential observers. Use shielded or cut-off luminaries to control glare.
11. Provide hi-lo security lighting for nighttime use of the park and visibility of park intruders after dusk.
12. Create landscape designs that provide viewable surveillance in proximity to designated points of entry and opportunistic points of entry. Group plantings strategically and existing planting or trees trimmed or controlled to allow clear sight lines.
13. Provide signage with park rules, hours of operations and who to call in case of an emergency.
14. Provide 'Park Watch' or 'Neighborhood Watch' signs with organized patrols by local residents, where applicable.

2.4.3 Natural Access Control

1. Selectively place entrances, exits, fencing, lighting and landscape to limit access and control flow.
2. Use a single, clearly identifiable point of entry.
3. Eliminate design features that provide access to roofs or upper levels.
4. Use low thorny shrubs to discourage intrusion or crossings of area where park guest are prohibited.
Use low thorny bushes beneath ground level windows.
5. Select see through fencing to provide views in and out of parks.

2.4.4 Natural Territorial Enhancement

1. Implement territorial reinforcement measures to make the park users feel safe while making the potential offenders aware of a substantial risk of apprehension or scrutiny. Examples include but are not limited to walls, fences, gates, landscaping, signage, and pavement treatments.
2. Place amenities such as seating or vending machines in common areas to attract larger numbers of desired users.
3. Avoid cyclone/chain link fencing and razor wire topping as it communicates the absence of a physical presence and a reduced risk of being detected.
4. Designate accessible only use areas by signage, pavement markings or specialized furnishings.
5. Display notice of security system at park access points, if applicable.



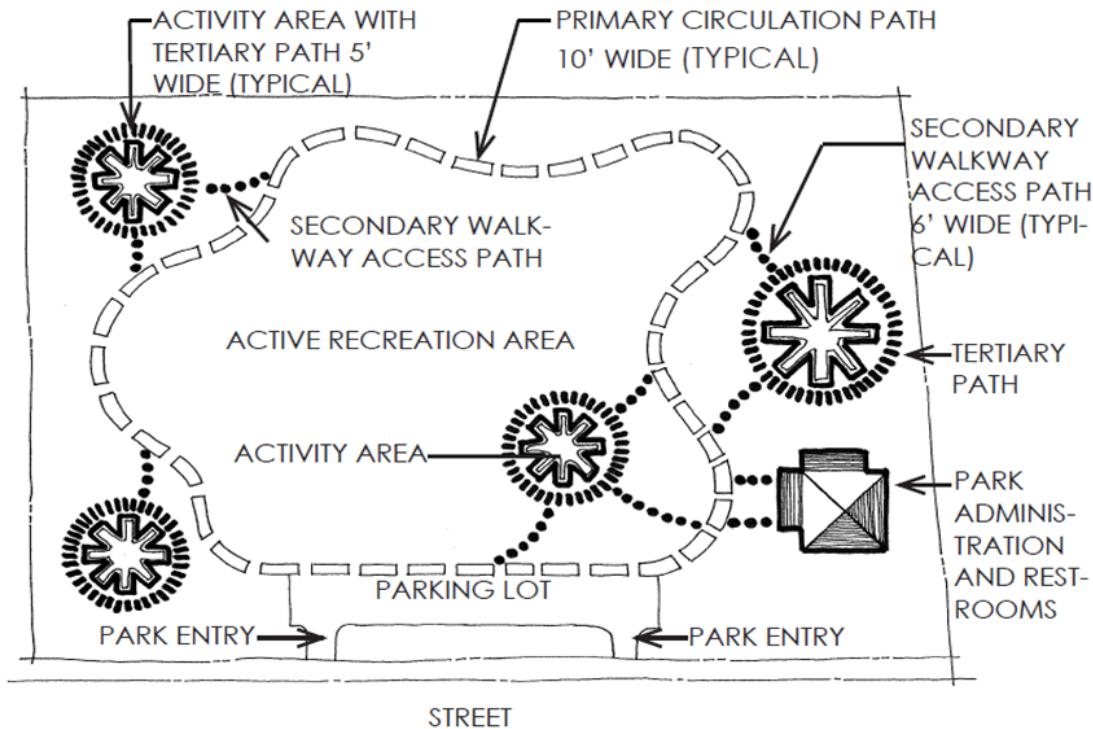
2.4.5 Additional Security Features

1. All visual overlooks must have an open unobstructed view of the park and have a pedestrian walk for law enforcement accessibility.
2. County of San Diego Department of General Services Facility Management security cameras are recommended for all staffed parks.
3. Cameras should be located per DPR instruction with monitors located in a park office or maintenance building.
4. Cameras should record at minimum frames per second required to be court legal, provide a minimum of one week record time for the surveillance system and allow for recordings to be kept for a minimum of one (1) year.
5. When gates and/or fences are proposed or required, use only open or transparent fencing and gates along corridors and trails to allow passive surveillance.
6. Park entrances should be secured at night with digital access codes and/or have common keys for emergency (fire or emergency medical technicians) and public safety personnel (sheriff or highway patrol).

2.5 CIRCULATION

A well-connected network of park roads and paths provides an effective means to accommodate all forms of travel and all users. Multiple routes through a well-connected park circulation system ensures that attractive circulation routes are safe and readily available. See Figure 3.

Figure 3: Park Circulation



2.5.1 Park Entry and Access

1. Provide ADA access to the park and path of travel to all park amenities, where feasible and required.
2. Develop one (1) highly visible, distinct park entry to establish park's identity and sense of transition.
3. At park perimeter and parking lots, walkways should be located to provide a logical, convenient, and aesthetic means of accessing the park.
4. All public parks shall be accessed via a public road. Private roads with public access easement may be considered. All public roads shall be designed and constructed pursuant to County Public Road Standards and Fire Code.
5. Provide deliberate focal points such as a circular drop-off or plaza where pedestrian paths, bicycle routes and roadways meet.
6. Provide a clear separation between the park's vehicular and pedestrian entrances.
7. Direct pedestrian entrances toward public transit centers to encourage and facilitate alternative modes of travel to the park.
8. Provide pedestrian entrances near existing or proposed crosswalks.
9. Provide sidewalks or pathways along park boundary where not currently provided.
10. Provide adequate access and egress for fire, emergency response, County Sheriff, waste management providers, and maintenance vehicles.
11. Locate emergency vehicle access and/or parking within one hundred fifty feet (150') of any recreational use, where possible.
12. If a separate entrance to the maintenance or ranger station and the parking lot is not feasible, locate the entrance off of the parking lot.

2.5.2 Pedestrian Walkways

Walkways shall be provided in all parks for functional and aesthetic purposes. Functionally, walkways provide connections to different parts of the park and lead to special landmarks. Walkways that provide a loop system are preferred. See Figure 3.

2.5.2.1 Layout

1. All park amenities shall be accessed via a primary or secondary path. Direct access shall be provided to play areas, restrooms, sport fields and courts, and other major activity areas.
2. Locate primary and secondary paths to minimize environmental impacts and outside of floodways, detention basins, and other stormwater treatment facilities.
3. Primary walkways provide at least one path of travel within the park connecting all major use areas.
4. Avoid abrupt and/or protruding edges or abrupt grade changes on all walkways and bicycle paths.
5. Locate all park fixtures (restrooms, benches, fountains, security lights and trash receptacles) outside the limit of any walkway and ADA path of travel.

2.5.2.2 Design and Construction

1. Primary and secondary walkways shall be accessible to all users. Ensure compliance with ADA and California Title 24 Building Code (Title 24).
2. Aesthetically, walkways should be designed to allow users to enjoy views and different park amenities.



3. Pedestrian paths and bicycle routes should be clearly marked, and where possible separated from equestrians or vehicular travel.
4. Provide textured paving where walkways and paths of travel intersect to discourage skateboarding, especially at restroom buildings and children's play areas.
5. Primary walkways shall meet the following requirements unless specified by DPR:
 - a) Concrete paving, pavers, or stabilized decomposed granite without color that can support large maintenance vehicles with load weights of up to twenty (20) tons.
 - b) A minimum of ten feet (10') wide multi-use walkways/vehicle access. Width may be less than ten feet (10') if vehicle access is not required.
 - c) Curves with radii no less than ten feet (10') for walkways.
 - d) ADA accessible.
 - e) Secure walkways from public vehicular access via removable bollards or automated gate entry.
6. The walkway types listed below shall meet the minimum widths identified unless specified by DPR:
 - a) Secondary: six feet (6').
 - b) Tertiary paths (non-circulation routes around amenities): five feet (5').
 - c) Walkways adjacent to sport fields: 12 feet (12').
7. Unpaved walkways or trails may be proposed as a secondary component of a park's circulation system and shall be decomposed granite unless otherwise specified by DPR and constructed pursuant to County Trails Program Trail Design Guidelines.
8. Walkway shall be constructed pursuant to the following:
 - a) Walkway construction and reinforcement shall be based on the geotechnical report prepared specifically for the project. Geotechnical testing shall occur during the design phase. When no geotechnical report is available, walkways shall be constructed in accordance with the San Diego Regional Standard Drawings and Greenbook specifications.
 - b) Walkways that are required to support maintenance vehicles shall be clearly identified on the plans and designed to support maintenance vehicles. The minimum thickness shall be six inches (6") for these walkways. Walkways adjacent to sport field lights and site security lights shall be designed to meet this criterion.
 - c) Construction joints shall be per San Diego Regional Standard Drawings and Greenbook specifications.
9. All walkways and edging should be installed flush with surrounding grades with the exception of the following:
 - a) Finish surface elevation of planting areas should be two inches (2") lower than adjacent edging or paving to allow for mulch.
 - b) Finish surface elevation of turf areas should be one inch (1") lower than adjacent edging or paving to allow for thatch build-up.

2.5.3 Decomposed Granite

1. Decomposed granite (D.G.) paving should be contained with an eight inch (8") wide concrete mow strip on both sides of the paving, and flush with the paving surface. Refer to San Diego Regional Standard Drawings.
2. Provide eight-inch (8") wide concrete mow strip for D.G. path edge adjacent to lawn areas and six-inch (6") depth aluminum edging between plant beds and D.G. paths.
3. D.G. walking paths and paving should be stabilized and pre-mixed by the plant at the rate recommended by the manufacturer prior to delivery, unless otherwise specified by DPR.



4. Provide a weed barrier below all D.G. The preferred walkway edging is concrete. Edging adjacent to turf areas shall be concrete.
5. D.G. used as mulch for planting areas should be unstabilized.
6. Direct irrigation away from D.G. walkways and paving to prevent erosion.
7. D.G. should be brown, gray or match existing color.

2.5.4 Roadways

1. Where roadways are part of a park plan, they should be designed to control vehicular speeds. Automobiles are usually restricted to the perimeter of the park site. This can pose problems when programmed recreation events demand equipment to be delivered.
2. Provide traffic calming design solutions where public roads travel through a park. Traffic calming measures may include but are not limited to the following:
 - 1) Signage
 - 2) Speed bumps
 - 3) Textured decorative paving
 - 4) Traffic circles or roundabouts
 - 5) Roadway narrowing
3. All road ways shall comply with Department of Public Works Public Road Standards.
4. Where a pedestrian path crosses a vehicular road, provide a pavement warning tile system and identify the path with visible signage and/or striping.
5. Avoid abrupt and/or protruding edges or abrupt grade changes on all roads and bicycle paths.
6. Approved root barriers should be used along the edge of new roadways paving within the drip line of existing trees, or within ten feet (10') of newly planted trees, and span a minimum of ten feet (10') in both directions along the roadway from the center of the tree.
7. Please reference Signage (Section 9.12) and Gate (Section 9.13) sections for additional guidance.

2.5.5 Parking

2.5.5.1 Location

1. Parking may be provided by on-site parking facilities or on adjacent streets. If parking is provided on adjacent streets, only those spaces immediately adjacent to the park may be included; parking spaces located across the street or on non-adjacent streets will not be included.
 - a) When parking is provided, on-site ADA parking must be provided. On-Site ADA stalls shall be perpendicular to direction of traffic pursuant to San Diego Regional Standard Drawing.
 - b) Parks constrained by topography, sensitive resources, or other constraints or parks less than one-acre in size may not require on-site parking if there is accessible pedestrian access from surrounding development.
2. Parking lots should not bisect or segment a park.
3. Provide parking lots that service and support park facilities by locating close to major activity areas.
4. Provide maintenance vehicle access to the primary park circulation system off the parking lot. The entrance from the parking lot should be protected by locking removable bollards or gates.
5. Provide preferred parking stalls and signage for low-emission, fuel efficient and electric vehicles at high use park sites such as community buildings, nature centers, sport parks and botanical gardens.
6. Provide bicycle parking along the perimeter of the park near high visibility areas to prevent theft.



7. Provide barrier between parking lot and any children's play areas.

2.5.5.2 Amount of Parking

1. Amount of parking spaces per park will vary depending on several factors such as park size, amenities offered, recreational programming, surrounding area, space requirements, etc. Provide adequate parking at each park location to minimize parking on residential and arterial streets.
2. Refer to the Sections 6762 and 6764 of the County of San Diego Zoning Ordinance for a schedule of off-street vehicle and bike space parking requirements.
3. Overflow parking should be provided, as directed by DPR, for parks intended to host special events.

2.5.5.3 Design

1. The design of the parking lots, stalls, aisle dimensions, and angles shall conform to the [County of San Diego Parking Design Manual](#), ADA, and San Diego Regional Standard Drawings.
2. Parking lots must comply with the most current ADA standards and guidelines, which includes providing signage that clearly delineates ADA parking stalls and path of travel. ADA stalls cannot be decomposed granite.
3. Provide two points of ingress/ egress access drives, a turn-around, and/or a "hammer head" for all size vehicles. Other methods may be required by the applicable Fire District.
4. Where parking spaces are adjacent to landscaped areas, provide a twelve inch (12") wide concrete or asphalt strip of paving for user and maintenance access.
5. Parking lots must remain visually unobstructed and highly visible at all times.
6. Parking lots should not have a slope exceeding five (5) percent, (where possible) except for access ramps or driveways which should not exceed a slope of twenty (20) percent.
7. Provide a barrier gate at park vehicular entries.
8. Provide access barriers at parking lot perimeters. Perimeter barrier material is typically but not limited to a six inch (6") high concrete curb.
9. The parking lot tree canopy should provide at least fifty percent (50%) shade coverage in the open parking areas within fifteen (15) years.
10. Provide vegetated screening or visual barriers or orient parking lot to prevent vehicle headlights from shining into residential areas. Landscape plants should not block the view of motorists, pedestrians, park staff, or law enforcement personnel.
11. When possible use cool and permeable pavements to mitigate the heat island effect and stormwater run-off.
12. All parking lots must include security lighting, meeting current applicable regulations and all local building codes and standards.

2.5.5.4 Trash Enclosures

1. The trash enclosures opening should be oriented so that front-load disposal equipment can head in directly to access the container without removing it from the enclosure.
2. The area in front of all enclosure types should be kept clear of obstructions; should not be utilized for parking; and should be painted, striped, and marked "no parking."
3. Trash enclosures should be located so that front-load equipment can enter and exit the parking lot using through driveways, to avoid backing maneuvers. If through driveways are not practical,



sufficient maneuvering area should be provided to allow collection equipment to turn around.

4. Enclosures should not be placed in areas where collection equipment will have to back into the street to exit the parking lot.
5. Trash enclosures shall be screened on three (3) sides with a CMU block wall and landscaping and have a lockable gate.
6. See Section 9.7 for additional information regarding trash enclosures.



CHAPTER 3 SITE PREPARATION

3.1 GRADING

1. All park projects shall comply with County of San Diego Grading Ordinance and all other applicable local, state, and federal regulations.
2. An on-site soil analysis for nutrients and organics may be required to determine type and quantity of soil amendments necessary. Analysis shall be provided by a qualified laboratory approved by DPR. A minimum of three test locations shall be sampled and provided to the laboratory for analysis. Designer may contact the County of San Diego Department of Public Works Materials Laboratory for soil inspection/testing prior to installation of topsoil.
3. All park projects shall have positive drainage and provide necessary components to treat stormwater.
4. Minimize grading and reduce soil disturbance to the extent feasible. Park site should be designed to balance soil cut and fill where feasible.
5. Avoid grading turfed slopes steeper than the maximum mowing slope of five to one (5:1).
6. Include level areas for formal or informal spectator seating adjacent to the athletic field sidelines.
7. Land with constraints, including but not limited to irregular shape, utility encumbrances, environmentally sensitive resources, or topography that render land unsuitable for parks and recreational purposes shall not be eligible for credit against the amount of land dedicated or the fee in lieu of land paid.
8. Land intended for recreational uses other than bike and skate parks, trails, or other PLDO eligible recreational uses, as approved by the Director, shall have a maximum slope of ten percent (10%), unless less than ten percent (10%) slope is required for accessibility purposes or required by these Park Design Manual.
9. Do not exceed twenty to one (20:1) or five percent (5%) longitudinal slope gradient on walks. All walkways exceeding a slope gradient of twenty to one (20:1) or five percent (5%) slope shall be provided with handrails per ADA regulations and the California Title 24 Building Code.
10. Remove all rocks greater than one-inch (1") in size from final soil surfaces.

Table 2: Grades by Use

Use:	Grade:
Walkways and Pedestrian Paving: Pedestrian walkways and monolithic surfaces of concrete, asphalt or unit pavers	1.5% minimum, 5% maximum; 2% maximum cross slope, no exceptions; Paving outside of road right-of-way shall meet current Title 24 and ADA requirements
Sports Courts (except tennis and pickle ball)	Drain end-to-end at 1%
Tennis and Pickle ball Courts	Drain side-to-side or end-to-end at 1%; No high point at net
Athletic/Sports Fields	1.5% minimum, 2% maximum <i>Note: Synthetic turf shall slope per manufacturer's recommendations and DPR approval.</i> <i>Note: Refer to national design standards of each sport for preferable design of the grading, drainage, and orientation.</i>

Softball and Baseball Fields	Skinned and turf infields: 1% crowning from edge of pitching circle; Provide positive drainage away from home plate in all cases; 1% minimum and 2% maximum for turf outfields; Crown grading at centerfield towards foul lines <i>Note: Synthetic turf shall slope per manufacturer's recommendations and DPR approval.</i>
Parking Areas: Asphalt	2% minimum, 5% maximum in any direction; 2% maximum slope in any direction where accessible parking is required including accessible aisles, no exceptions
Natural Turf or Open Lawn Areas	2% minimum, 10% maximum
Shrub and Groundcover Areas	2% minimum, 10% maximum
Mulch Areas	2% minimum, 10% maximum
Unpaved Trails and Paths within local parks Note: Trails and pathways outside of local parks shall meet County Trails Program design standards.	2% minimum, 33% maximum, 2% maximum cross slope; ADA: 2% minimum, 5% maximum, 2% maximum cross slope

3.2 DRAINAGE AND STORMWATER

1. Stormwater facilities may be co-located with PLDO recreational uses in public parks as approved by DPR. Stormwater facilities may receive fifty percent (50%) credit against PLDO requirements, not to exceed ten percent (10%) of the total PLDO requirement. Stormwater facilities must comply with these Design Manual and all other applicable regulations.
2. All park projects and drainage systems shall be designed to meet requirements of the [County of San Diego Grading Ordinance](#) and the [County of San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance](#). Please reference the [County of San Diego BMP Design Manual](#) and [Low Impact Development Manual](#) for additional stormwater information.
3. Projects are required to incorporate Low Impact Development design practices and strategies to the extent feasible. Stormwater runoff prevention and treatment for water quality is required for a park development to minimize a project's impact on receiving waters in terms of erosion, sedimentation, and degradation of habitat.
4. Incorporate the following decorative Low Impact Development (LID) Best Management Practices (BMPs) where feasible and approved by DPR:
 - a) Bioretention Area
 - b) Dry Stream Beds
 - c) Vegetated Buffers
 - d) Vegetated Swales
 - e) Porous Pavers
 - f) Planter Boxes
 - g) Tree Wells & Tree Grates
 - h) Other natural/passive stormwater facilities as approved by DPR.
5. Drainage catch basins, manholes, irrigation boxes and other structures at or protruding above surface level shall not be located within or immediately adjacent to the field of play.
6. Minimize impervious surfaces, removal of native vegetation and trees, and unnecessary compaction.



7. Maximize natural infiltration capacity where possible.
8. Preserve existing drainage patterns, vegetation patterns, and sensitive areas.
9. The design for water quality and flow control should be coordinated at the earliest stages of design (e.g. with development of the site grading and drainage plans). Avoid water sheet flow over sidewalks or walking paths.
10. Drainage shall be directed away from buildings, electrical enclosures, backstops, and irrigation controllers.
11. All drainage drop inlets should be concrete boxes furnished with metal grate covers.
12. Do not locate drain inlets or clean outs within or immediately adjacent to playing fields.
13. Do not use drop inlets smaller than sixteen inches (16") square or diameter for landscape areas, and twenty-four inches (24") minimum for all other areas.
14. Manufactured sediment traps (e.g. gabion cages, grass barriers, ornamental rock check dams, and raised curbs) should be used to intercept stormwater runoff carrying silt and other debris from landscape areas to drainage devices.

3.3 MOW CURBS

1. Mow curbs shall be designed and constructed pursuant to the San Diego Regional Standard Drawings.
2. Provide concrete mow curbs to separate turf areas from shrub, groundcover or mulch areas; contain decomposed granite paving, under fencing adjacent to turf or groundcover that requires edging or mowing; and as an integral component of any wall (both at the top and bottom) where turf is proposed or exists.
3. Mow curb width shall be eight inches (8") minimum, 16 inches (16") minimum beneath fences.

3.4 FINISHED GRADE

1. Finish grade for natural turf areas shall be one inch (1") below walks, mow curbs or other paving.
2. Finish grade for synthetic turf shall be per manufacturer's recommendation.
3. Finish grade for shrub, groundcover or mulch areas shall be two inches (2") below walks, mow curbs or other paving, if adding bark mulch.

3.5 TOP SOIL

1. All turf areas shall have a minimum six-inch (6") layer of Class "A" topsoil per the "Greenbook" Standard Specifications for Public Works Construction.
2. Shrub areas shall have a 12-inch (12") minimum layer of Class "A" topsoil per the "Greenbook" Standard Specifications for Public Works Construction. Class A topsoil shall be rototilled into the top 12 inches (12") of the existing soil.
3. Topsoil sourced from within the project limits (Class "B" topsoil) may be approved by the County as long as the material meets all characteristics and requirements of Class "A" topsoil.
4. An on-site soil analysis for nutrients and organics may be required to determine type and quantity of soil amendments necessary. Analysis shall be provided by a qualified laboratory approved by DPR. A minimum of three test locations shall be sampled and provided to the laboratory for analysis. Designer may contact the County of San Diego Department of Public Works Materials Laboratory for soil inspection/testing prior to installation of topsoil.

CHAPTER 4 BUILDINGS

Building design strategies can contribute to conservation efforts in a number of ways. Consideration should be given to building the minimum space necessary to satisfy the functional space requirements and designing multi-functional spaces. In addition, considerable electrical and thermal energy can be saved through building design that incorporates day lighting and other energy-conserving strategies.

4.1 GENERAL REQUIREMENTS

1. All buildings, structures, restrooms, showers, kitchens, plumbing, and all building fixtures shall meet current ADA requirements and comply with Board Policy G-15: Design Standards for County Facilities and Properties, DPR current California Code of Regulations, Title 24, County of San Diego building code, fire code, and other applicable codes and regulations.
2. See Board Policy G-15 and DPR's Green Building/Park Checklist regarding green building techniques that should be incorporated into all park design to the extent feasible.
3. Provide an ADA ramp or stage lift, when required by ADA and California Building Code, the lift may be fixed in place or portable (provide storage space for portable lift). Portable lifts must be available at all times and must comply with building codes and ADA requirements.
4. Provide key card access to restricted or employee only areas.
5. All kitchens and other required fixtures shall comply with County of San Diego Department of Environmental (DEH) requirements.
6. The consultant and developer should perform an analysis of all new building construction and all roof replacement projects to determine the potential benefits of using photovoltaics or solar arrays. If feasible, design and construct buildings to allow for installation of photovoltaics or solar arrays.
7. Site all structures to recognize, preserve and protect established vistas and scenic resources.
8. All structure designs and historical restorations should be sensitive to environmental, cultural and historical context.
9. All structure designs should consider the distinctive qualities and character of the surrounding community's architectural design and incorporate into park design where appropriate. All design of structures and park elements should implement unifying architectural features such as repeating details, colors, and materials in these elements throughout the park.
10. Building colors and materials shall be selected by the consultant or developer and approved by DPR.
11. The exterior design treatment should relate well to the cultural context of the neighborhood, be durable and vandal-resistant, should embody a hierarchy of elements to relate to human scale, and create an inviting environment for the users and general public.
12. When locating a new park building, give consideration to site variables (size, shape, topography, orientation, views, and natural features) and climatic variables.
13. Provide vandal resistant exterior security lighting on or near the building. Security lighting must be compatible with County of San Diego Department of General Services system.
14. Provide a heating, ventilation, and air conditioning (HVAC) system with vandalism protection for all heating and cooling vents.
15. Provide natural lighting whenever possible.
16. Provide data links and Wi-Fi access as requested by DPR.
17. All bulk items, new or used, should be covered (and elevated on a palette). Particularly trash, and other waste items such as oil, grease or other miscellaneous materials.
18. Follow all governing agency codes and requirements for proper smoke and fire detection systems.



19. Provide a smoke detection system, cross zoned and interlocked to shut down ventilation systems and dampers as required. Alarms should transmit signal to the central alarm panel.
20. Provide a fire alarm system with a central alarm panel near the lobby in all new buildings.
21. Provide a heat sensor on the discharge side of air handlers. Two (2) smoke sensors are required in the supply duct, and two (2) smoke sensors are required in the return duct to shut down unit and transmit an alarm to the local Fire Department, along with carbon monoxide detectors.
22. Provide water flow alarms, one (1) for each sprinkler riser, installed and connected to the central alarm panel.
23. Minimize protrusions, including door knobs, in high use areas.
24. The ceiling height of each room shall be sufficient for the activities intended. Ceiling height should take into consideration and suspended lighting, ventilation, fire sprinkler systems and other building systems.
25. Design buildings and eaves to discourage bird nesting. Any openings where birds can nest shall be lined with anti-perching spikes.
26. Building shall be treated with anti-graffiti and/or vandal resistant coating up to ten-feet (10') high.

4.2 RECREATION BUILDINGS

The recreation building is intended to support indoor organized community events, meetings, and activities and other uses as approved by DPR.

4.2.1 Recreation Buildings Spatial Considerations

1. The building entry shall be visible from the public street and be reasonably close to a parking lot.
2. Provide parking area on the side of building to maintain view of building entrance.
3. Provide a drop off/pick-up zone near the main entrance where possible.
4. Provide a paved plaza near the main entrance or the multi-purpose room as required by DPR.
5. Provide ample paving around the perimeter of the building for ease of entry, to prevent pedestrian paths of travel through planted areas and prevent water infiltration into the building.
6. The building's perimeter, both impermeable and permeable, surfaces should have a minimum two-percent (2%) slope away from exterior walls within the first ten feet (10') for positive drainage.
7. Rooms used for loud activities shall be acoustically insulated and located away from less intense uses.

4.2.2 Recreation Buildings Amenities

1. Provide multi-functional activity rooms for a variety of activities throughout the day.
2. Recreation building may include a lobby with a reception counter, offices for at least three staff members, a gymnasium, multi-purpose rooms, a kitchen (to provide warming of food only), a large storage room for athletic equipment with access from outside and inside, small storage rooms for maintenance equipment, a set of restrooms near the lobby and one set in the back of the building, and an electrical room.
3. Each meeting or classroom should accommodate a minimum of twenty (20) people.
4. Provide folding room dividers as directed by DPR.
5. Provide one (1) standard and one (1) ADA compliant drinking fountain in an alcove located adjacent to restrooms or one (1) high-low drinking fountain in an alcove.
6. Provide a kitchen that meets all County of San Diego Department of Environmental Health (DEH) requirements and ADA requirements.



7. General office shall be equipped with a building-wide pager system.
8. Provide a storage room and separate, adjacent storage space. The storage room is for the storage of normal day-to-day paper products, cleaners, and equipment.
9. Provide a storage room adjacent to or within the multi-purpose and classrooms. This room should be sized to accommodate all tables and chairs from both adjacent rooms (approximately 15% of the total square footage of both rooms).
10. Provide ventilation in maintenance and storage room to eliminate permeating odors.
11. Provide a floor sink and a floor drain in the maintenance room.
12. Provide built-in heavy-duty shelving in maintenance and storage rooms to contain equipment and materials used to support park programs and activities.
13. Provide resilient flooring such as linoleum, vinyl composition tile or rubber tile floor.
14. Provide bicycle racks, trash receptacles, and drinking fountains near the building entrances.
15. Provide directional signage from the street to the main entrance.
16. Provide signage indicating facility hours at main entrance.

4.2.3 Recreation Building Security and Utilities

1. Provide a minimum of four (4) electrical wall outlets and two (2) floor outlets, total of six (6) in each multi-purpose room.
2. If security cameras are installed, locate monitors in the staff office.
3. Staff must have visual access to corridors from the staff office.

4.3 GYMNASIUMS

The gymnasium is intended to support indoor sports including basketball and volleyball. Additional large-venue, non-fitness events may also occur in the gymnasium.

4.3.1 Gymnasium Spatial Considerations

1. The gymnasium building should be visible and reasonably close to a parking lot and public street.
2. Provide an exterior gathering space in close proximity to the gymnasium entrance. Amenities in this space should include; shaded seating, drinking fountains, bicycle racks and information kiosks. The size of these amenities should be determined by the size and needs of the facility.
3. The gymnasium office should have visible access to adjacent gymnasium through an interior window.
4. The building's perimeter, both impermeable and permeable, surfaces should have a minimum two-percent (2%) slope away from all exterior walls within the limit of the first ten feet (10') for positive drainage.

4.3.2 Gymnasium Amenities

1. Provide a minimum of one (1) general office in all gymnasium buildings. The general office will be equipped with a building-wide pager system.
2. Provide a conveniently located equipment storage space for folding chairs, nets, goals, and other sports equipment. The storage space size should be dependent on the size of gymnasium.
3. Provide an additional exercise/ auxiliary room adjacent to the gymnasium. This room should be a minimum 450 square feet.



4. Provide portable room separators, folder room dividers, or mat hoists as directed by DPR.
5. Provide a roll out protective gymnasium floor cover for use during special events.
6. Provide at least one double-door building entry for the delivery of equipment.
7. Provide heating, ventilation, and air conditioning (HVAC) system.
8. Provide restrooms, showers, and locker rooms as directed by DPR.
9. Provide a controlled and secured entrance to all showers and locker rooms.
10. Provide privacy walls between each shower.
11. Provide natural ventilation and lighting whenever possible.
12. Provide scoreboard with hinged polycarbonate protective cover.

4.3.3 Gymnasium ADA

1. Provide ADA accessible seating adjacent to the bleachers.
2. Provide companion seating, one (1) for each ADA seat.
3. Provide one (1) standard, one (1) ADA compliant drinking fountain, located adjacent to the gymnasium restrooms in an alcove or one (1) high-low drinking fountain.

4.3.4 Gymnasium Basketball Court

1. Provide a minimum of one (1) standard size basketball court with striping.
2. Provide telescoping bleachers (on both sides of the basketball court) to maximize the flexibility of the space and to allow sideline space for gymnasium events.
3. Provide ample spectator circulation space around the perimeter of the basketball court to prevent spectator interference during sporting activities.
4. Provide electronic scoreboard with score keeper's console. Scoreboard shall have a hinged protective cover installed to prevent damage and vandalism.

4.3.5 Gymnasium Stage

1. Provide a stage and changing rooms as directed by DPR.
2. Provide a minimum of two (2) ten feet (10') by twelve feet (12') stage changing rooms, one (1) for women and one (1) for men, if required by DPR.
3. The stage size must accommodate a variety of activities. The minimum size is sixteen feet (16') by sixteen feet (16'). This size can accommodate a five (5) piece musical band.
4. The width of the stage should be approximately one third (1/3) the total width of the gymnasium.
5. The minimum size of the off-stage waiting area is a minimum of eight feet (8') in depth.
6. Where practical, provide LED lighting for all stage lighting.

4.3.6 Gymnasium Security and Utilities

1. If security cameras are installed, locate monitors in the gymnasium office.
2. Provide sufficient electrical supply for the gymnasium to accommodate the additional circuits necessary for stage lighting and audio/visual equipment.
3. Provide a minimum of four (4) electrical wall outlets and two (2) floor outlets, total of six (6).

4.4 RESTROOM BUILDINGS

Restroom buildings are typically located in local parks, regional parks, campgrounds, and at primary trail heads. Restrooms shall be family friendly or gender neutral unless otherwise specified by DPR.

4.4.1 Restroom Buildings Spatial Considerations

1. Restroom buildings should be visible and in close proximity to a parking lot and public street.
2. The restroom building should be visible and located within a 100' radius of children's play areas.
3. The restroom building should be visible and located within a 150' radius of sport fields.
4. The restroom building's perimeter, both impermeable and permeable, surfaces should have a minimum two-percent (2%) slope away from all exterior walls within the limit of the first ten feet (10') for positive drainage.
5. Provide vehicle access to the building from the parking lot or internal circulation roads. Access road may be AC paving, PCC paving, or stabilized decomposed granite (at a depth/design per manufacturer's recommendations for vehicle use).
6. Entrance to access roads may be via a rolled curb or driveway apron from parking lot or road way.
7. Provide ample paving around the building perimeter for ease of accessibility and entry.

4.4.2 Restroom Building Design

1. The restroom building's exterior and interior walls shall be constructed of split-faced or precision CMU block, with natural or painted surfaces, and shall be coated with anti-graffiti finish. Other materials may be considered by DPR.
2. Exterior wall treatment shall be as directed by DPR and may include split-faced block, smooth-faced block, cementitious board siding, or other veneer.
3. Roofs should be constructed of steel seam metal, minimum 29-gauge. Thicker gauge may be required for certain applications (e.g. high vandalism area, near pine trees).
4. Floors shall be reinforced concrete slab foundation with a concrete sealer, sloped toward drainage and have a vapor barrier beneath.
5. Floor drains shall be a drainage channel located at the base of the wall on which plumbing fixtures are mounted. The drainage channel shall be continuous, have a minimum two percent (2%) slope, and have an ADA compliant drainage grate.
6. Ventilation and lighting should be natural, wherever possible.
7. Provide interior electrical overhead lighting with timers in all restroom buildings.
8. Fixtures shall be wall hung and of heavy duty stainless steel construction.
9. Provide secured maintenance room or closet for cleaning and maintenance supplies that is a minimum width of five feet (5').
10. Pipe fittings shall be screw-on instead of slip-on.

4.4.3 Restroom Building Amenities

1. Restroom buildings shall include unless otherwise specified by DPR:
 - a) Provide floor drains and keyed hose bibs in each room and stall.
 - b) All fixtures, including sinks, toilets, handrails and surface hand dryers should be stainless steel and vandal resistant.



- c) All sinks, handrails, hand dryers, shall be installed per ADA and CALIFORNIA BUILDING CODE heights, and components.
- d) Toilet Paper Dispensers shall be provided in each stall and shall be anti-theft multi-roll with two or more roll storage capacity.
- e) Soap Dispensers: Provide at least one wall mounted soap dispenser in each restroom.
- f) Hand dryers or paper as determined by DPR. Provide at least one electric hand dryer in each restroom. Remove the heating element from dryer. All hand dryers should be electric.
- g) Doors should be three quarters of an inch ($\frac{3}{4}$ ") solid phenolic with self-closing stainless steel hinges hung twelve inches (12") above finish floor.
- h) Integral floor to wall curbs to allow for cleaning of restrooms.
- i) Baby changing tables/stations in all restrooms.
- j) Waterless urinals in all men's restrooms and uni-sex restrooms to reduce costs. At least one (1) shall be ADA compliant for height and access.
- k) Privacy walls between stalls/urinals.
- l) A minimum five-foot wide utility chase/storage area that includes a minimum of one duplex 120v GFCI outlet.
- m) Metal reinforced solar tubes or skylights in all rooms including the utility chase to save on-going utility costs.
- n) Lights shall be on timers to reduce energy consumption.
- o) Deadbolt locks with exterior security plates.
- p) Stainless steel mirrors.
- q) Signage for restrooms.

4.4.4 Restroom ADA

1. One (1) standard and one (1) Americans with Disabilities Act (ADA) compliant drinking fountain or (1) high-low drinking fountain should be located outside of each restroom building in an alcove.
2. Provide a minimum of two (2) standard and one (1) ADA compliant hand washing sinks outside the restroom building in an alcove.
3. Provide a minimum of one (1) ADA compliant toilet and partition with door per ADA and California Building Code requirements for height and components.
4. Provide a minimum of a sixty-inch (60") diameter access within the restroom, adjacent ADA toilet, urinal and/or sink.

4.5 CONCESSION STAND

4.5.1 Concession Stand Spatial Considerations

1. Locate the concession stand in close proximity to the sport fields and other spectator areas.
2. Provide a vehicular access pathway to the concession stand building.
3. The concession stand should be reasonably close to a trash enclosure.
4. Provide ample paving around the building perimeter for ease of entry and accessibility.
5. The building's perimeter, both impermeable and permeable, surfaces should have a minimum two-percent (2%) slope away from all exterior walls within the limit of the first ten feet (10') for positive drainage.

4.5.2 Concession Stand Building Design

1. The exterior and interior walls shall be constructed of split-faced or precision CMU block, with natural or painted surfaces, and shall be coated with anti-graffiti finish. Other materials may be considered by DPR.
2. Exterior wall treatment shall be as directed by DPR and may include split-faced block, smooth-faced block, cementitious board siding, or other veneer.
3. Roofs should be constructed of steel seam metal, minimum 29-gauge. Thicker gauge may be required for certain applications (e.g. high vandalism area, near pine trees).
4. Floors shall be reinforced concrete slab foundation with a concrete sealer, sloped toward drainage and have a vapor barrier beneath.
5. Ventilation and lighting should be natural, wherever possible.
6. Provide a minimum of four (4) GFCI electrical wall outlets.

4.5.3 Concession Stand Amenities

1. Provide kitchen facilities for warming pre-packaged food only that complies with County of San Diego Department of Environmental (DEH) requirements
2. Provide in-unit storage space within the building.
3. Provide double-door entry for delivery of products and equipment.
4. Provide roll-up window(s).
5. Provide single stall restroom as required by DEH.

4.6 MAINTENANCE BUILDINGS

4.6.1 Maintenance Building Spatial Considerations

1. Provide vehicle access to the building from the parking lot or internal circulation roads. Access road may be AC paving, PCC paving, or stabilized decomposed granite (at a depth/design per manufacturer's recommendations for vehicle use).
2. Where possible provide separate entrances to the maintenance building and the parking lot.
3. Provide screening between the maintenance building and the park.
4. If a separate entrance to the maintenance building and the parking lot is not feasible, locate the entrance to the maintenance building off the parking lot.
5. Access roads entrances may be via rolled curb or driveway apron from parking lot or road.

4.6.2 Maintenance Building Design

1. Maintenance building should be a minimum of five hundred (500) square feet.
2. Access should include a thirty six-inch (36") wide pedestrian door and a 60-inches (60") wide and eighty inches (80") high roll-up door. Both shall have security measures to prevent break-ins.
3. Provide key card access for restricted areas as directed by DPR.
4. Exterior and interior walls shall be constructed of split-faced or precision CMU block, with natural or painted surfaces, and coated with anti-graffiti finish. Other materials may be considered by DPR.
5. Exterior wall treatment shall be as directed by DPR and may include split-faced block, smooth-faced block, cementitious board siding, or other veneer.



6. Roofing shall be metal with a minimum 26 standing seam. Thicker gauge may be required for certain applications (e.g. high vandalism area, near pine trees).
7. Provide space in the maintenance building to accommodate the storage of maintenance tools, supplies, materials, and vehicles as directed by DPR.
8. Provide office space for staff in the maintenance building. The office size shall be approved by DPR.
9. Provide metal reinforced solar tubes or skylights in all rooms to save on utility costs.

4.6.3 Maintenance Building Amenities

1. Where utilities are available to the site, maintenance buildings shall include a restroom, floor drains, mop sink, and 200 amp electrical service.
2. Provide at least four (4) 120v duplex outlets, one at each wall, and at least one 240v outlet.
3. Provide secured gates and fencing around the perimeter of all maintenance buildings as directed by DPR.

CHAPTER 5 CHILDREN'S PLAY AREAS

Children's play areas fall into two age group classifications: Pre-school age children of two to five (2-5) years and school age children ages five to twelve (5-12) years. Each age group category must have a distinctly different space with required separations.

5.1. GENERAL REQUIREMENTS

1. Playgrounds shall be designed to offer the greatest "play value" possible within the budgetary constraints and physical restrictions of the site. The play experience should challenge the users by addressing their physical, social and mental development while providing entertainment.
2. Playgrounds shall be designed to be fully inclusive.
3. The play environment shall be safe, durable and vandal resistant, and require minimal maintenance.
4. At the time of product submittals, any substitutions of play equipment specified on construction plans must fit the designed play area and be approved by the DPR. Shop drawings or catalog cuts and a revised layout plan showing the substituted equipment and safety zones are required in order to determine acceptability of the substitution.
5. Pre-school age children play areas, often referred to as tot-lots, should have an area of 2,500 square feet, and should be designed for pre-school age children of two to five (2-5) years of age, and have a maximum deck height of forty-eight inches (48").
6. School age children play areas should have a suggested area of 5,000 square feet, and should be designed for five to twelve (5-12) years of age and have deck heights ranging upwards of six feet (6').
7. Composite play areas that serve children of both two to five (2-5) years and five to twelve (5-12) years should be a minimum of 7,000 square feet in size with functionally separate play structures.
8. For play structures designed for ages two to five years old, posts shall be 3- 1/2 inch minimum diameter steel or aluminum, or recycled plastic with aluminum framing.
9. For play structures designed for ages five to twelve years old, posts shall be five inch minimum diameter steel or aluminum (no plastic).
10. Develop playgrounds that provide enhancement of children's total developmental needs, including physical, social, creative, reflective and tactile experiences.
11. Design facilities to permit use by the physically disabled by providing ground play opportunities, transfer points to elevated play, and/or ramps, with engineered wood fiber or poured-in-place rubberized surfacing.
12. Recycled plastic structures are not prohibited, but should be limited to low-volume playgrounds, unless reinforced with metal bracing.
13. Play equipment design should consider durability and the long-term maintenance requirements of the specific equipment, as well as the potential for vandalism and graffiti.
14. All proposed play equipment is expected to be in place for a minimum of fifteen (15) years.
15. Exposed bolts shall be cut off flush at the nut and spot welded, and shall be three to six inches below finish grade.
16. All posts should extend to the bottom of the footing with a minimum clearance of three inches (3") on all sides of concrete footing. Provide a clamp or other acceptable mechanism to anchor the post inside the footing.
17. Posts for play structures within one mile of the coast or bay shall be aluminum or recycled plastic with aluminum framing.
18. Use a pervious base under all rubberized playground surfaces.



5.2 SPATIAL CONSIDERATIONS

1. In single composite play areas that service children of both two to five (2-5) years and five to twelve (5-12) years, provide space and/ or a barrier to separate the two age groups and ensure that play patterns do not interfere with one another.
2. Maintain one hundred and fifty (150') from vehicular travel or provide a forty two to forty eight inch (42"-48") high fence to prohibit children from running into vehicular traffic.
3. Maintain a minimum distance of fifty feet (50') between children's play areas and sport courts and fields or provide adequate screening and fencing.
4. Provide restrooms with hot water preferably, within one hundred feet (100') of play area. Restrooms must be in a clear line of sight from play areas.
5. Drinking fountains shall not be located near playgrounds with sand safety surfacing, but should be in close proximity.
6. Drinking fountains should be visible from play areas.
7. Develop natural barriers to segregate play areas from conflicting or incompatible uses.
8. Barbecues, hot coal receptacles and plant materials with thorns or stickers, or that attract bees, or other potential hazards shall not be located adjacent to playgrounds.
9. Linkage children's play areas and equipment to open space/lawn areas, where possible.
10. Provide unobstructed lines of sight between separate play areas for ease of supervision.
11. Locate irrigation quick-couplers outside the perimeter of play areas. The distance between quick couplers should be fifty feet (50').
12. Playgrounds with sand safety surfacing shall not be located adjacent to gymnasiums or recreation centers to prevent tracking of sand indoors.
13. Do not locate benches within the playground unless they are an integral component of the play structure.
14. Trees shall not intrude either into or above required safety zones for play equipment.

5.3 LAYOUT

1. Provide age designation signage at the entrance of each play area that states the age appropriateness of the play equipment and recommendations for adult supervision.
2. Provide an ADA compliant access ramp near the play equipment transfer deck per the Consumer Product Safety Commission (CPSC) Guidelines.
3. Provide a two inch (2") clearance between the finished surface of the engineered wood fiber and the top of adjacent play area curb.
4. Orient the swing area away from the active play area to avoid conflicts in play circulation. Swings can be either visually or physically separated from the active play area.
5. Provide an additional two feet (2') between the required fall zone of a play component and the play area containment edge.
6. Equipment layout including fall zones must follow current CA State Law AB1144 Harmon, ADA regulations, Consumer Product Safety Commission (CPSC) Guidelines, and ASTM.
7. As a general rule, provide a one hundred and fifty cubic foot (150 cu. ft.) drain sump per one thousand five hundred square feet (1,500 sq. ft.) of play area surface.
8. All sumps should follow the San Diego Regional Standards Drawings, with a drain pipe connecting all sumps within the play area to a sump outside the play area.

9. Where possible, an overflow drain pipe should be used to connect the drain sump out-side the play area to the nearest storm drain. An alternate drainage outlet may be located through a curb to the storm drain or to a rip-rap outfall.
10. All play structure footings should be per the manufacturer's details, and are to be a minimum of eighteen inches (18") diameter by three feet (3') deep.
11. Where non-standard manufacturer footings are required, the County prescribes that the volume of concrete be multiplied by one and one half (1 ½), with minimum depth to remain at three feet (3').
12. Curbs and ramps should all be as per San Diego Regional Standard Drawings.
13. New playgrounds shall be contained by a minimum four foot wide concrete walkway with a deepened footing at the edge to retain loose fill material; the deepened footing may be omitted where poured-in-place rubberized safety surfacing is adjacent to the walkway. The walkway shall maintain a continuous elevation around the perimeter of the playground. The walkway shall slope 1.5% away from the playground. Sand shall be a maximum four inches below the walkway. Engineered wood fiber may be flush, or up to four inches below the walkway after settlement.

5.4 EQUIPMENT

1. Scale equipment and apparatus to the size of the intended users.
2. Limit products to those available within the United States.
3. DPR must approve colors of the play components.
4. The design and equipment should include a variety of play elements that encourage:
 - a) Swinging
 - b) Spinning
 - c) Hand over hand and side to side climbing
 - d) Balance challenges
 - e) Overhead activities
 - f) Sliding
 - g) Sensory development
 - h) Crawling
 - i) Imagination
 - j) Adventure
5. Alternative play equipment such as climbing boulders or concrete animal sculptures may be used as directed by DPR.
6. Playground equipment and design must meet current U.S. Consumer Product Safety Commission (CPSC) guidelines and standards as set forth in the Handbook for Public Play-ground Safety, as intended by SB 2733, and updated as per AB 1144 (Harmon), and must meet or exceed ASTM standards.
7. Playground design must comply with the latest requirements of ADA for public agencies, which include accessible elevated, and ground level events.
8. Playground equipment components should be specified of durable construction with:
 - a) Five inch (5") primary post size minimum.
 - b) UV stabilized rotomold polyethylene.
 - c) All plastic components should be constructed with UV inhibitors for longevity.
 - d) Hardware should be of an uncommon head type or have an insert/cover for van- dal deterrent purposes.
 - e) Ropes should be constructed of nylon with a steel core.



9. Wooden play equipment should not be utilized except when proposed for nature based play.
10. All play equipment shall be installed in accordance with the manufacturer's specifications. The construction documents shall specify the play equipment be installed as late in the construction process as possible.
11. Metal play equipment shall be colored by electrostatically applied powder coating or hot dipped galvanized with fused vinyl coating, minimum thickness of five mils.
12. All decks shall be punched steel; expanded metal mesh is not acceptable.
13. All decks shall have a non-skid surface.
14. Decks and steps over 30 inches in height shall have 3/16 inch maximum diameter holes to prevent fingers protruding up from below being stepped on, and to minimize potential for hood drawstrings being caught in larger deck openings at the tops of slides.
15. Decks, steps and transfer stations less than 30 inches in height may have larger holes to aid grasping and transfer from a wheelchair.
16. The maximum deck height shall be six feet above playground safety surfacing. Decks higher than six feet may be allowed if the unit is fully enclosed with no potential for falls from the greater height or if surrounded by poured-in-place rubberized safety surfacing with a thickness sufficient to attenuate falls per ASTM F1292.
17. Flat roofs or roofs that can be climbed on shall be set with a minimum clearance of seven feet above decks or adjacent step treads. Pitched roofs that cannot be climbed on shall be set with a minimum clearance of 6'-8".

5.5 SWINGS

1. Swings shall be free-standing with a minimum of four posts for stability; do not attach swings to modular play equipment.
2. All swings shall have five inch diameter powder-coated steel or aluminum posts, or 3-1/2 inch diameter galvanized steel posts.
3. When space permits, provide separate swings for ages two to five years old (bucket seats) and for ages five to twelve years old (belt seats). Age ranges may be combined on the same support structure but may not be combined in the same bay.
4. No more than two swings shall be hung in each bay of the support structure.
5. Swing chains shall be 4.0-gauge galvanized steel; no vinyl coating is allowed on swing chains.
6. Swiveling swing attachments that minimize chains wrapping around the top bar are preferred.
7. Belt seats shall be slash proof. Hard seats are not acceptable.
8. Fully enclosed bucket seats shall be molded rubber, reinforced with steel. Half bucket seats with chain restraints are not acceptable.
9. Provide a safety zone for the swing set equal to two times the height of the top rail in front and in back of the centerline of the swing, and six feet clear between the support posts and other structures. Where space is limited, the safety zones for bucket seats may be sized per ASTM and CPSC standards.
10. Provide nominal three foot by three foot (3'x 3') rubber mats under all swings, and at all slide exits when engineered wood fiber or sand are used for the fall surface.
11. Provide two "Adaptive Seats" for inclusive swing structure to replace "bucket seats".

5.6 CLIMBING EQUIPMENT

1. Rungs or climbing bars shall be cylindrical, smooth and sized per CPSC and ASTM guidelines.



2. Climbing wall chains may be coated with a non-slip heavy duty coating.
3. Climbing boulders may be freestanding or attached to modular play equipment. The maximum height of climbing boulders shall be six feet above the playground safety surfacing.

5.7 SLIDES

1. Free-standing and attached slides shall be single-piece units with plastic beds; sectional slides and metal slides are not acceptable.
2. Light colors (yellow, tan or light gray) shall be used for slide beds, even in coastal areas.
3. Stairways and ladders shall have continuous handrails on both sides and be placed at a height which will allow the child to stand erect over each step.
4. The preferred orientation for slides is facing north to northeast.
5. All slide exits shall be located in uncongested areas with a clear safety zone per ASTM and CPSC standards.

5.8 SURFACING

1. The preferred surfacing is rubber tile or poured-in-place rubberized surfacing with the stipulation that the critical fall height be increased by one foot (+/-1') from the actual equipment requirements, and all tile in the same play site be the same thickness.
2. Rubber tile should be installed over a four inches (4") nominal slab with #4 rebar at eighteen inches (18") on-center each direction.
3. All rubber tiles should be provided with a fifteen-year warranty (not pro-rated) to ensure the surfacing meets the required fall attenuation.
4. Provide nominal three foot by three foot (3'x 3') rubber mats under all swings, and at all slide exits when engineered wood fiber or sand are used for the fall surface.
5. Engineered wood fiber with a minimum depth of sixteen inches (16") may be used as an alternate surface material as approved by DPR.
6. With the exception of spring toys, the top of all play equipment footings located in loose fill material shall have a smooth finish, and be a minimum of twelve inches below finish grade of safety surfacing.
7. The subgrade for loose fill playground safety surfacing (sand, engineered wood fiber) shall be sloped to a subsurface drainage system at 1.5% minimum.
8. The subgrade for poured-in-place rubberized safety surfacing shall be compacted to 90% minimum.
9. A subsurface drainage system shall be provided for all playgrounds. The drainage system shall be designed for positive drainage to the site storm drainage system.
10. The playground drainage system shall connect to the site drainage system at a catch basin when possible. If connection at a catch basin is not possible, a clean-out shall be provided at the connection directed toward the play area.
11. Leach lines or sumps may be considered if a site storm drainage system is not available; leach lines or sumps must be approved by DPR. If sumps are used, locate them outside the playground whenever possible.
12. Site grading shall direct run-off away from the playground.



5.9 SEATING

1. Play areas should include shaded seating for parental supervision such as benches under tree canopies or in close proximity to group picnic areas. Seating shall be designed to meet ADA requirements, and shall be designed or located to discourage skateboard damage.

5.10 SAFETY AND INSPECTIONS

1. All safety zones set by the most current CPSC and ASTM guidelines takes precedence over safety zones noted in this document.
2. The contractor or developer shall be responsible for providing an independent third party audit of the playground area, safety surfacing and all play equipment. The audit shall be conducted by a NRPA/NPSI Certified Playground Safety Inspector in accordance with NPSI standards. The audit shall determine compliance of the playground area, safety surfacing and all play equipment with the most current versions of accessibility and safety standards, including the following: Americans with Disabilities Act (ADA); Consumer Product Safety Commission (CPSC) Handbook for Public Playground Safety; the American Society for Testing and Materials (ASTM) Standard Consumer Safety Performance Specification for Playground Equipment for Public Use (ASTM F1487) and Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment (ASTM F1292) and Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment (ASTM F1951). Poured-in-place playground safety surfacing shall be tested on site after installation in accordance with ASTM F1292; Manufacturer's certification is not acceptable.
3. The contractor or developer shall be responsible for correcting any items found not to be in compliance with the above standards as a result of the audit, at no charge to the County. The contractor or developer shall provide to the Park Project Manager a signed letter stating that the playground area, safety surfacing and play equipment comply with all current applicable accessibility and safety standards. The letter shall include an itemized list corresponding to each audit item, describing all corrections and the date each correction was completed. If applicable, the letter may state that any equipment in question is certified by International Playground Equipment Manufacturers Association (IPEMA). (Provide manufacturer's proof of IPEMA certification.)
4. At the completion of installation but prior to opening the playground to the public, poured-in-place rubberized playground safety surfacing shall be tested for impact attenuation in compliance with ASTM F1292. Testing shall be conducted by a technician certified by the manufacturer of the testing equipment used. Testing shall be done for each age group.
5. The contractor or developer shall have National Playground Safety Institute (NPSI) certification for installers and in addition the installers shall be certified by the equipment manufacturer to install their equipment and safety surfacing. The NPSI certified installers shall be involved in the construction of the playground at all times during construction and including preparation of the subgrade

5.11 SIGNAGE

1. All signage must comply with DPR Policy: C-39 Signage (Appendix B).
2. A permanently mounted sign indicating age-appropriateness for each play area shall be set at the entrance to each play area.



3. Verbiage shall notify users and parents/guardians that supervision is required for ages two to five years old, and recommended for ages five to twelve years old.
4. A separate "No Smoking" sign shall be posted in the immediate vicinity of the playground.

5.12 DISAPPROVED EQUIPMENT

1. The following equipment is not allowed unless otherwise specified or approved by DPR:
 - a) Un-reinforced plastic decks
 - b) Decks with center access, unless rails are provided
 - c) Perforations in excess of 3/16 inch in decks over 30 inches in height
 - d) Decks which are secured with self-tapping screws
 - e) Bubble panels, Lexan or Plexiglas 'windows'
 - f) Sectional slides
 - g) Wood components
 - h) Metal slides unless shaded
 - i) Dark colored plastic slides in any orientation (tan, yellow or light gray only) unless shaded.
 - j) Movable digging shovel toys that do not have a safety stop
 - k) See-saws with fulcrum points (springs are acceptable)
 - l) Pinch-type coil spring base animals
 - m) Swings with heavy animal figures
 - n) Half-bucket swing seats with chains to secure occupants
 - o) Vinyl-clad cargo nets, except with non-slip clad, rigid horizontal bars
 - p) Vinyl-clad swing chains
 - q) Rigid swing seats
 - r) Non-reinforced swing seats (must be slash resistant)
 - s) Tire swings



CHAPTER 6 SPORT FIELDS

6.1 FIELD SIZE AND LOCATION

1. The location and orientation of recreation fields should recognize and be sensitive to the established surrounding conditions.
2. Locate field and associated amenities to avoid potential conflicts with adjacent recreational use areas.
3. The size and shape of a site can have a major influence on the types of recreation uses it can support. For example, a large, regularly shaped site may be well suited for a multiple athletic field complex (e.g., soccer or baseball) while a smaller, irregularly shaped site may not be able to support this level of development and may be better used for smaller athletic fields or courts (e.g., basketball or tennis courts). In addition to the area requirements for the selected recreational activity, additional space may be required for supporting facilities such as, parking lots, concession stands, spectator areas, and maintenance and storage buildings. At parks with multiple athletic fields, additional space may also be needed for buffer zones and drainage features between fields.
4. Adequate space shall be provided to allow for park users to enter and exit field of play safely.
5. When estimating the area needs for a sport field or court, the size of the fields/courts and spatial requirements for supporting features or areas need to be considered. The following list represents typical amenities to be considered:
 - a) Parking
 - b) Restrooms
 - c) Storage facilities
 - d) Concession facilities
 - e) Picnic tables
 - f) Bleachers or other spectator areas
 - g) Spillover noise and activity areas
 - h) Surface drainage features
 - i) Buffer zones
 - j) Maintenance access areas
 - k) Pedestrian access pathways
6. Table 3 provides the standard use and play areas, orientation, and surface required for sport courts and fields in county parks, unless otherwise directed by DPR.

Table 3: Standard Court and Field Area, Orientation, and Surfacing

SPORT	USE AREA*	PLAY AREA	ORIENTATION	Surface
COURT SPORTS				
Badminton	20' x 44' (Double) 17' x 44' (Single) 5-feet between courts and at end	20' x 44' (Double) 17' x 44' (Single)	North-South	Any hard surface or turf
Basketball (High School)	104' x 70'	84' x 50'	North-South	Concrete Hardwood (inside)
Handball	34' x 20' x 16' (one wall) 34' x 20' x 20' (three or four walls)	34' x 20' x 16' (one wall) 34' x 20' x 20' (three or four walls)	No preference	Any hard surface
Shuffleboard	52' x 10x (4' between courts)	52' x 6'	North-South	Hard/smooth concrete
Tennis	60' x 120' (doubles court) 10 to 12' between courts	36' x 78'	North-South Long axis 22 degrees west of north and east of south	Asphalt, concrete, clay, or turf
Volleyball	50' x 80' 42' x 72' acceptable	30' x 60'	North-South	Asphalt, sand, clay mix, or turf
FIELD SPORTS				
Baseball	See Section 6.1 and Table 4	See Section 6.1 and Table 4	See Section 6.1 and Table 4	See Section 6.1 and Table 4
Bocce	19' to 25'6" to 82-101'	13 to 19'6" x 78-92'	North-South	Synthetic or natural turf
Croquet	45' x 75'	40' x 70'	North-South	Synthetic or natural turf
Field Hockey	10 yards on all sides	300' x 150' (women) 300' x 180' (men)	Northwest-Southwest or North-South	Synthetic or natural turf
Football (flag)	44 yards x 104 yards	40 yards x 100 yards (includes two 10 yard end zones)	Northwest-Southwest or North-South	Synthetic or natural turf
Football (High School)	172' x 372'	160' x 360' (includes two 10 yard end zones)	Northwest-Southwest or North-South	Synthetic or natural turf
Horseshoes	20' x 70'	10' x 50'	North-South	Synthetic or natural turf
Lacrosse	200' x 350' with fence 220' x 350' without fence	180' x 330' or 160' x 360'	Northwest-Southwest or North-South	Synthetic or natural turf
Lawn Bowling	130' x 130'	19-21' x 120' alleys	North-South	Synthetic or natural turf
Soccer	10 yards on all sides	55-75 yards x 100-120 yards	North-South	Synthetic or natural turf

*Includes clear zones



6.2 BALL FIELDS

6.2.1 Ball Fields General Requirements

1. Field sizes vary from approximately three-quarters ($\frac{3}{4}$) of an acre for a little league baseball field, to approximately three (3) acres for an adult baseball field. To account for additional space required for errant balls, spectator areas, and other ball field features, a full size baseball field may need up to six (6) acres.
2. All baseball and softball fields shall comply with field dimensions shown in Table 4, unless otherwise specified by DPR.

Table 4: Ball Field Dimensions

	Left Field	Center Field	Baseline	Minimum Area
Baseball				
High School/ Babe Ruth League	320-350 Feet	400 Feet	90 Feet	3.3 acres
Pony	250 Feet	300 Feet	80 Feet	3.0 acres
Bronco	200 Feet	250 Feet	70 Feet	3.0 acres
Little League	175 Feet	225 Feet	60 Feet	3.0 acres
Pinto	150 Feet	200 Feet	50 Feet	3.0 acres
Softball				
Adult Slow Pitch	265 Feet	315 Feet	65 Feet	2.0 acres
High School	200 Feet	225 Feet	60 Feet	2.0 acres
Adult	200 Feet	250 Feet	60 Feet	2.0 acres
Youth 10 and under	150 Feet	175 Feet		2.0 acres

3. Provide infield mix of sixty percent (60%) brick dust to forty percent (40%) clay. Infield mix shall meet the following requirements:

Table 5: Infield Mix Grain Size

Grain Size Distribution	Percent Passing	
	Minimum	Maximum
No. 4	100%	
No. 8	90%	100%
No. 16	85%	95%
No. 30	65%	85%
No. 50	35%	55%
No. 100	20%	35%
No. 200	10%	25%

- 1) Sand Equivalent shall be 15 to 25 percent, as per test method California Test 217 or ASTM D2419.
- 2) The pH range shall be six (6.0) to eight and one-half (8.5).
- 3) Gold color is preferred. Red color is acceptable.



- 4) The minimum thickness of the infield mix shall be four inches (4").
4. The fields shall be crowned in the center with drainage to the sides with no more than a two percent (2%) slope for positive drainage. Certain sites and field overlay situations may make this drainage pattern unachievable. In such cases, other drainage patterns or drainage devices will be considered and approved by DPR. In all cases there shall be positive drainage away from home plate.
5. Ballfields shall be free of all rocks $\frac{1}{2}$ inch diameter or larger to a depth of twelve inches.
6. Topsoil for ballfields may be Class "C" per "Greenbook" specifications when it can be amended to meet the requirements listed in the Greenbook for Class "A" topsoil. When the existing topsoil cannot be amended to meet the requirements of Class "A" topsoil, provide a minimum twelve inch layer of Class "A" imported topsoil per "Whitebook" specifications.
7. Provide outfield fencing with poly-cap or equivalent safety fence guard.
8. Provide sports lighting and sports lighting timers, as required by DPR. All lighting shall be LED lighting.
9. Provide an infield irrigation system (pop-up rotors), when turf ballfield provided.
10. Provide a sub-surface drainage system.

6.2.2 Ball Fields Spatial Considerations

1. To address errant balls along the foul ball lines, a physical buffer or sufficient space should be provided for public safety. Refer to Table 3 for standard field dimensions.
2. Fifty feet (50') along first and third baseline is recommended when there is adjacent recreational activities such as children's play area and ballfields. See Figure 5.
3. The preferred single field orientation locates the third base line aligned with true north. However, some sites may require variations from this preferred orientation to allow for optimum utilization of a park site.
4. The preferred multiple field orientation location is a wheel design, with backstops grouped at the hub of the wheel. See Figure 4.
5. Maintenance access to ballfield lights shall be provided by concrete walkways or DG designed for heavy equipment.
6. Bleachers shall be placed a minimum of four feet from the fence line of the backstop.
7. Drainage catch basins, manholes, or other drainage or stormwater facility shall not be located within the field of play.
8. Locate all utility controls (sports lighting, infield irrigation controller, etc.) in an area convenient for operation and maintenance.

6.2.3 Ball Field Amenities

1. Baseball and Softball amenities illustrated in Figures 6, 7, 8, and 9.
2. Provide backstop fencing as specified by DPR.
3. Install ground sleeves for portable fencing, refer to the Standard Field Dimensions Chart, Table 3 for various league field dimensions.
4. Provide shaded bleachers or spectator seating that shall be hot dipped galvanized steel, three rows minimum or five rows typical and fifteen feet long. Bleachers with five rows require guardrails. Specify spot welding of seats and foot planks to the bleacher frame, free of burrs and sharp edges. Spectator areas may also be concrete tiered seating.
5. All spectator seating shall accommodate ADA compliant seating and companion seating.
6. Provide chain link fence enclosed dugouts with shade covers, player's benches, bat racks, and area for equipment bags.



7. Use Marathon II sod (Dwarf Tall Fescue).
8. Provide a manually controlled system of high-speed rotors at the perimeter of the infield to wet the infield evenly and quickly.
9. Provide irrigation quick couplers at the fence line in two locations:
 - 1) One (1) between home plate and first base
 - 2) One (1) between home plate and third base
10. Provide two quick coupler valves in the turf area just beyond the perimeter of the infield outside of foul line. These valves shall be set at finish grade. Additionally,
11. If recycled water is used, the quick coupling valves and high speed rotors shall be connected to a potable water supply with adequate backflow protection.

Figure 4: Preferred Ballfield Orientation

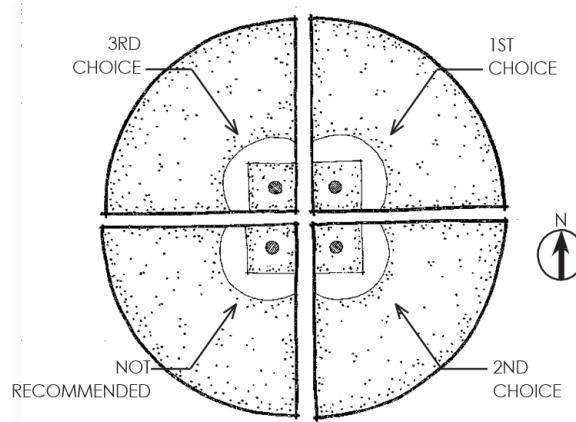


Figure 5: Ballfield Safety Zone Buffer

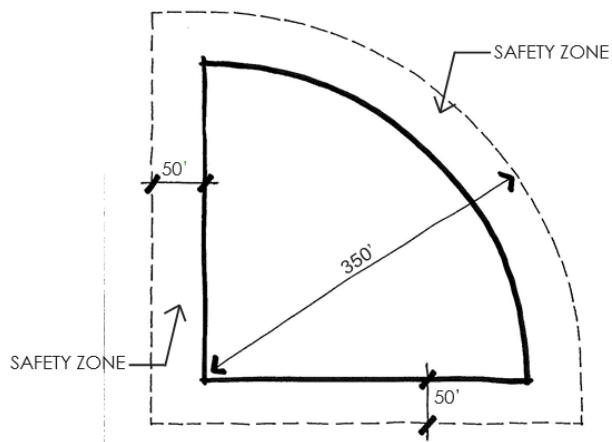


Figure 6: Baseball Field Layout

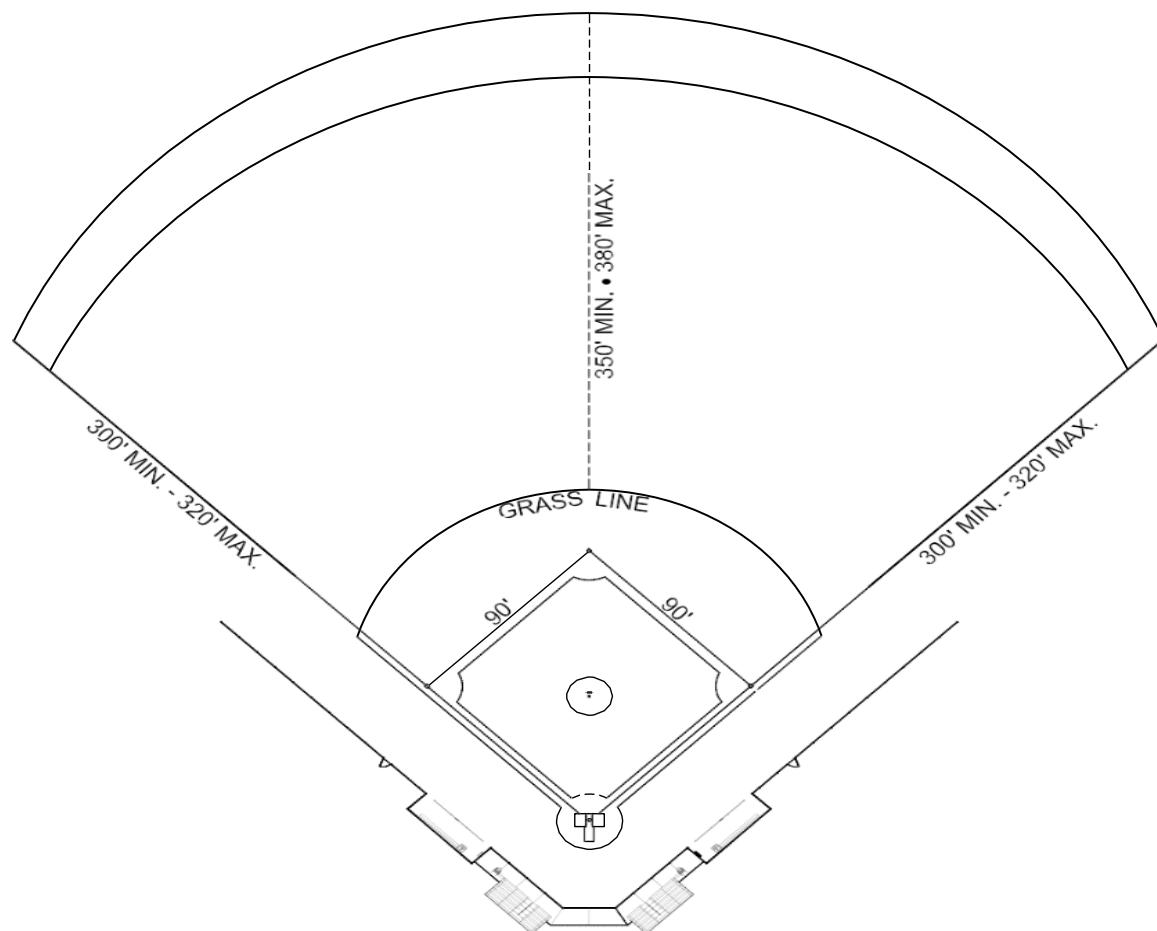


Figure 7: Baseball Field Dugout and Spectator Seating

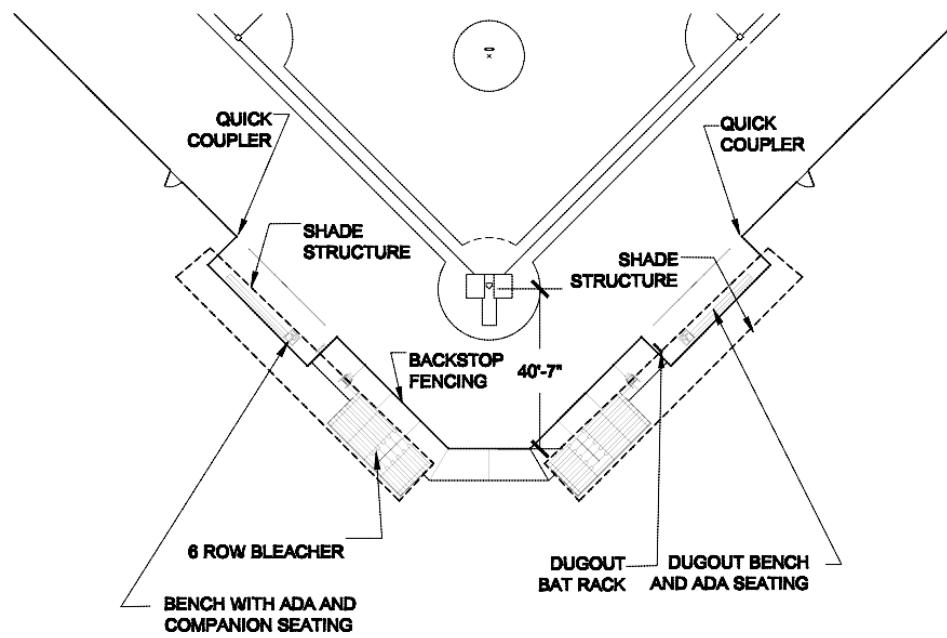


Figure 8: Softball Field Layout

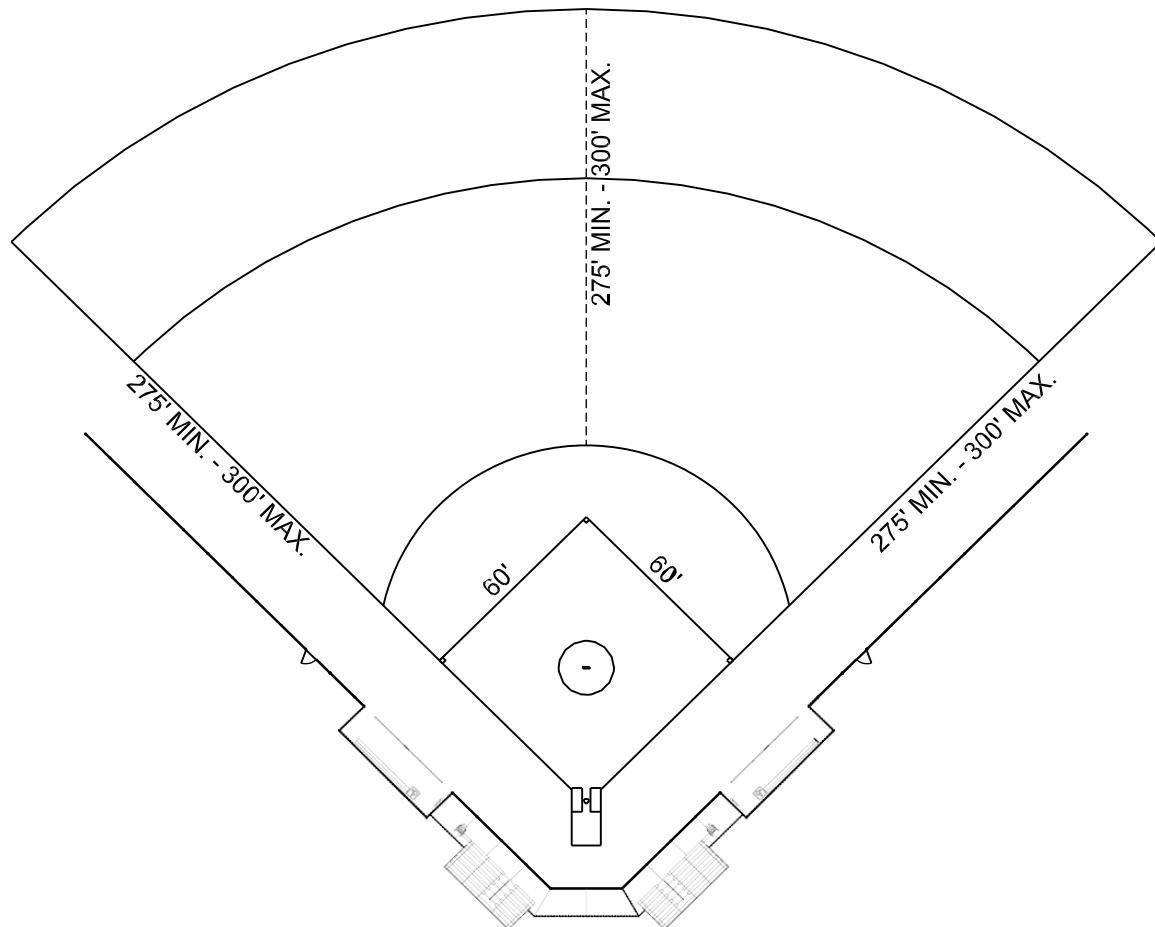
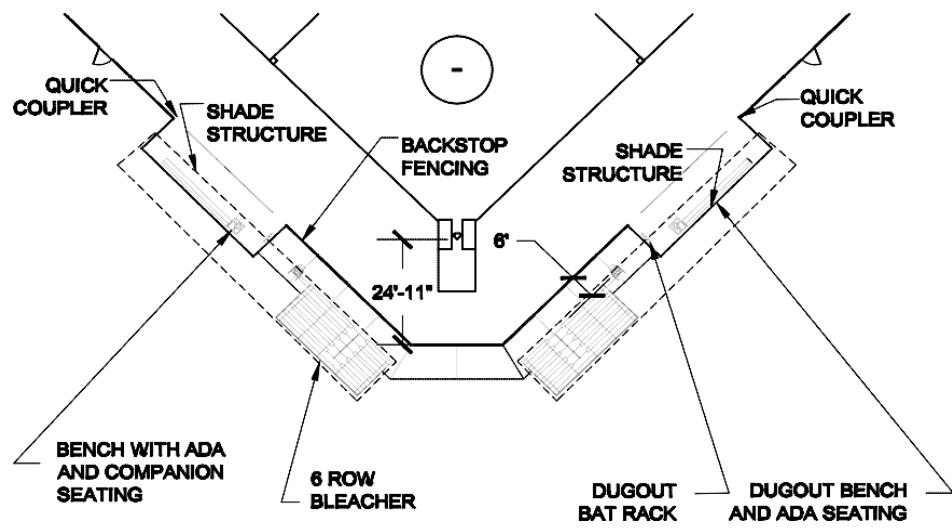


Figure 9: Softball Field Dugout and Spectator Seating



6.2.4 Ball Fields Specialized Amenities

1. Provide concession building when ballfields will if league or tournament play is anticipated.
2. Provide a public address system with announcer's table if league or tournament play is anticipated.
3. Provide electronic scoreboard with score keeper's console. Scoreboard shall have a hinged protective cover installed to prevent damage and vandalism.
4. Provide equipment storage per field with a minimum of two hundred and forty (240) square feet of capacity or size at twelve by twenty feet (12' x 20'), and a locking mechanism (lock box).
5. Provide batting cages with pitching machine electrical outlets as directed by DPR. Verify need and location for an electrical outlet for the use of a pitching machine with the DPR Department. The outlet may be located in a lockable stainless steel box behind the backstop or backstop fence.

6.3 SPORT FIELDS

Many large athletic fields can be used for multiple purposes and sports of similar sizes and dimensions. Table 3 provides standard court and field area, orientation, and surfacing requirements. Football and soccer are two of the most popular sports and their field sizes are quite compatible for dual use. Soccer fields vary greatly in size depending on the age and level of play. A field for players of age six (6) and under is approximately 0.12 acres in area while a field for adults can require nearly two (2) acres. Additional area is also required for spectator areas, missed shots, and errant passes. A typical soccer field layout is provided in Figure 10.

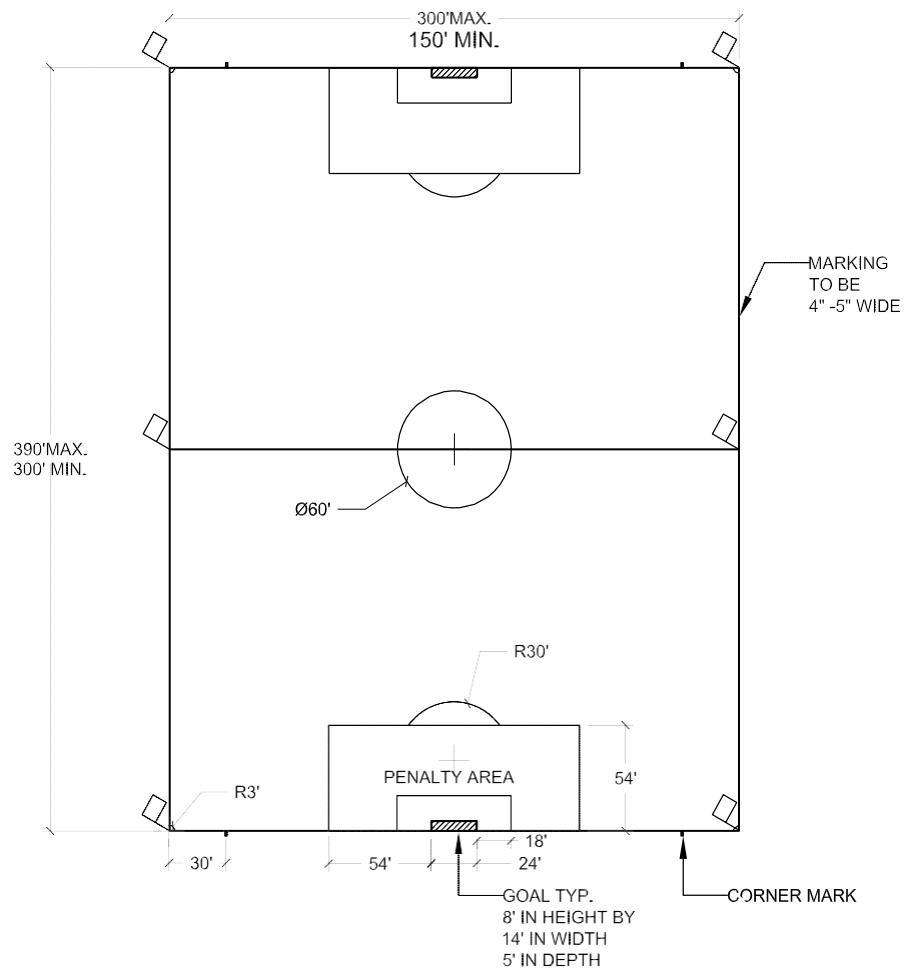
6.3.1 Sports Field General Requirements

1. Table 3 provides standard court and field area, orientation, and surfacing requirements.
2. All fields should have a one and five tenths percent (1.5%) max. Slope for positive drainage. However, if specific site conditions make this unattainable, other drainage options will be considered.
3. If synthetic turf is used with underground drainage, the soccer field should have a minimum slope of one percent (1%).
4. Markings for soccer fields are chalked prior to the game. Permanent field markings are not necessary unless the playing fields are synthetic turf.
5. The field area shall be free of drainage catch basins and manholes.

6.3.2 Sports Field Spatial Considerations

1. The long axis of the field should have a north/south orientation whenever possible.
2. Multiple fields being placed adjacent to one another shall be placed side by side. Fields may be "offset" to facilitate field layout, but may not be end to end. The minimum space between fields should be twenty feet (20').
3. Provide an area of twenty feet (20') in width around the field's perimeter ten feet (10') minimum with no trees (measured from the maximum drip line), berms, planters, sidewalks or light standards.
4. The playing surface shall not overlap onto a ballfield's skinned infield.
5. Penalty kick spot shall be thirty feet (36') from the goal line, directly in-line with center of goal.



Figure 10: Soccer Field Layout

6.4 SYNTHETIC TURF

1. All sport fields should be synthetic turf unless otherwise approved by DPR. If synthetic turf is not required by DPR, use Marathon II sod (Dwarf Tall Fescue) pursuant to these guidelines.
2. A cushioned pad shall be installed underneath the synthetic turf per manufacturer's recommendations.
- 3.
4. GMAX testing shall be completed by an independent and accredited testing company to ensure compliance with American Society for Testing and Materials (ASTM) specifications. The synthetic turf and cushioned pad underneath shall be required to meet the GMAX testing requirement for impact sports per manufacturer's recommendations.
5. Synthetic turf shall be a tufted, mono-fiber grass-like fabric coated with a secondary backing of high grade polyurethane. The fibers shall be tufted to a finished pile height of approximately one and a half (1.5") to two inches (2"). The turf fabric shall be filled with a layered system of polycoated silica sand.
6. All components and their installation method shall be designed and manufactured for use outdoors. The materials should be able to withstand full climatic exposure in all climates, be resistant to insect

infestation, rot, fungus and mildew; to ultra-violet light and heat degradation, and shall have the basic characteristic of flow through-drainage allowing free movement of surface run-off through the turf fabric where such water may flow to the existing subbase and into the field drainage system.

7. The finished playing surface shall appear as mowed grass with no irregularities and shall afford excellent traction for conventional athletic shoes of all types. The finished surface shall resist abrasion and cutting from normal use. The installed system shall be suitable for football, soccer, lacrosse, baseball, softball, PE classes, intramurals and other high intensity recreational use.
8. Pile yarn (Polyethylene) shall be a proven athletic caliber yarn designed specifically for outdoor use and stabilized to resist the effect of ultraviolet degradation, heat, foot traffic, water and airborne pollutants.
9. Sport fields and ball field outfields infill material shall be green color and ball field infield shall be tan color and foul lines and field lines shall be white.
10. Provide 'SP14' 14 mm thick expanded polypropylene composite interlocking panels for the cushion pad to be installed under the synthetic turf per manufacturer's recommendations.
11. Synthetic turf field intended for multi-use shall not incorporate game striping or skinned infields to allow flexibility in use. Using alternate synthetic turf colors to delineate infields, running tracks or other uses will be reviewed and approved on a case by case basis by DPR. Only DPR approved field marking paint or systems shall be allowed.
12. The manufacturer shall have local or regional representation capable of performing repairs and providing maintenance advice in a timely manner.
13. All components of the synthetic turf system shall meet or exceed relevant federal, state and local health requirements. Manufacturers shall be required to fully disclose all materials used in the manufacture of the synthetic turf system and provide complete information on all potentially toxic constituents.
14. The project specifications for a synthetic turf system shall include provisions to secure the necessary equipment and training to properly maintain the synthetic turf system according to the manufacturer's recommendations and warranty requirements.
15. Signs shall be posted with user health and safety guidelines at all synthetic turf fields. These signs shall include, but not be limited to, advising users how to recognize heat-related illnesses and the proper steps to take to moderate and treat such illnesses, emphasize good hygiene such as washing hands after playing and practicing, and standard first aid for skin wounds to prevent infections.
16. Signs shall be posted to indicate which activities are allowed and not allowed on the synthetic turf. These signs shall address, but not be limited to, items such as food, drinks, pets and certain types of chairs, umbrellas, athletic shoes and athletic equipment which may damage the turf and invalidate the manufacturer's warranty or shorten the product's life expectancy.
17. Sun shade and drinking fountains shall be provided near the synthetic turf field. Where shade and/or drinking fountains cannot be provided due to design or site constraints, efforts shall be taken to encourage users to provide acceptable portable shade systems and drinking water.
18. Each synthetic turf installation shall include a water system including quick coupling valves to assist in the proper maintenance of the system. Potable water shall not be used to cool the synthetic turf playing surface.
19. The recyclability of the synthetic turf and infill components shall be considered when selecting the synthetic turf type to assure the materials can be recycled at the end of the useful life.
20. Synthetic turf fields shall not be installed in flood prone areas due to potential damage to the turf and possible dissemination of synthetic turf materials, such as the infill material, into storm drains or natural drainage courses.



21. Synthetic turf may be considered for smaller areas other than athletic fields where the extensive use causes soil compaction and makes natural turf difficult to maintain, such as adjacent to playgrounds or other high use areas. In these smaller areas, synthetic turf systems that do not use an infill and are not designed for athletic use may be considered

CHAPTER 7 SPORT COURTS

7.1 BASKETBALL COURT

7.1.1 Basketball Court General Requirements

1. Table 3 provides standard court dimensions, orientation, and surfacing requirements.
2. Preferred court construction shall be a 6" thick post-tension concrete slab without expansion joints. Post tension slabs shall have appropriate markings identifying the court as post-tension. Court construction and reinforcement shall be based on a geotechnical report.
3. Paved multi-purpose courts can be plain concrete with a medium broom finish and painted striping, or can have a colored sports surfacing applied over the concrete, with painted striping. Surfacing and striping shall be wear resistant and slip resistant.
4. See Figure 11 for standard basketball court layout. Half-court configurations may be considered with approval from the DPR.

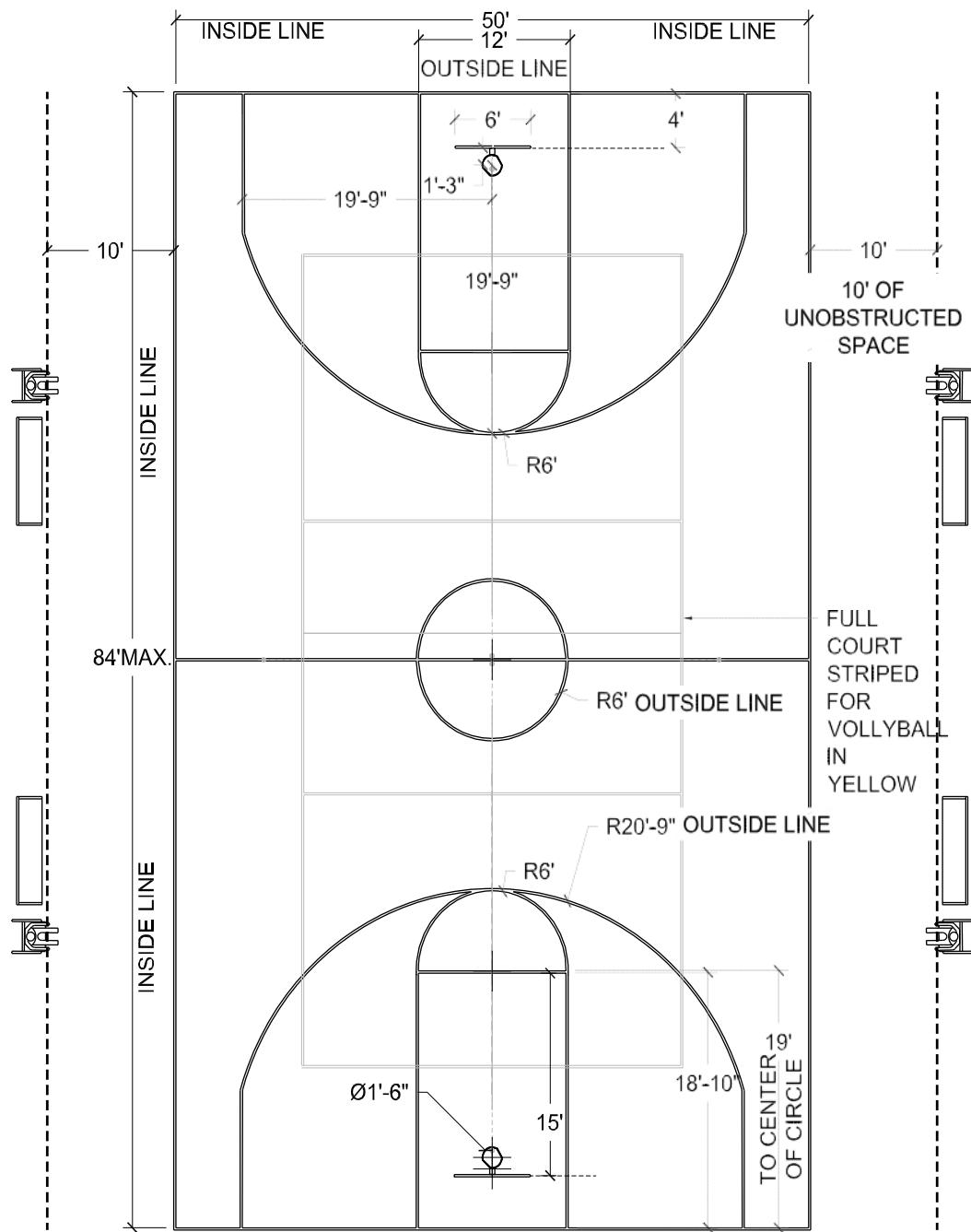
7.1.2 Basketball Court Spatial Consideration

1. Where possible, locate sports courts along park edges to maximize visibility for security.
2. Provide separation from the street with a low berm or low landscape buffer. This separation width should be a minimum of fifteen feet (15') and a maximum of twenty feet (20').
3. When possible and space permitting, basketball and volleyball courts shall be separate. When site constraints dictate, courts can be combined into multi-purpose courts.
4. Minimum distance between courts when two or more courts are side by side or end to end is ten feet.
5. Provide a minimum of ten feet (10') between courts placed side-by-side, or end-to-end.
6. Surrounding land uses must be considered for possible impacts from noise and lighting.
7. Adult/teen basketball activities should be located away from small children's and low intensity activity areas.
8. See Figure 14 for typical basketball court overlaid on a standard volleyball court.

7.1.3 Basketball Court Amenities

1. Backboards shall be all steel fan shaped with an emulsion type undercoat.
2. Rims shall be double rimmed with nylon nets.
3. Poles and extensions shall be galvanized steel.
4. Provide shaded spectator seating at the perimeter of the basketball court beyond the additional ten feet (10') of unobstructed area outside of the inside line.
5. Concrete court surface should be with medium broom finish to prevent slipping.
6. All markings on the playing surface should be applied using a wear-resistant, colored substance. All markings should be a minimum of two inches (2") in width. Color to be white.

Figure 11: Basketball Court Layout



7.2 VOLLEYBALL COURT

7.2.1 Volleyball Court General Requirements

1. Table 3 provides standard court dimensions, orientation, and surfacing requirements. A diagram of a typical volleyball court is provided Figure 12.
2. Volleyball courts can be concrete, sand or grass. The volleyball surface should be determined by DPR. Court construction and reinforcement shall be based on the geotechnical report.
3. If sand is specified, provide 20-30 mesh silica sand and affix court boundary nylon cords to sub-grade anchors. Although sand depths vary, a depth between twenty-four inches (24") and forty-two inches (42") is preferred. The sand play area should be contained by a six inch (6") wide rubberized border with a constant elevation around the perimeter of the court.
4. The twelve foot (12') zone beyond the sand area should be turf.
5. All markings on concrete playing surfaces should be applied using a wear-resistant, colored substance. Color to be determined and approved by DPR.
6. A subsurface drainage system shall be provided. Drainage systems should be directed to sumps or other bio-filtration methods that allows water to infiltrate on-site. All proposed drainage systems must be based on soil conditions and approved by DPR. If sumps are used, locate them outside the court whenever possible.

7.2.2 Volleyball Court Spatial Considerations

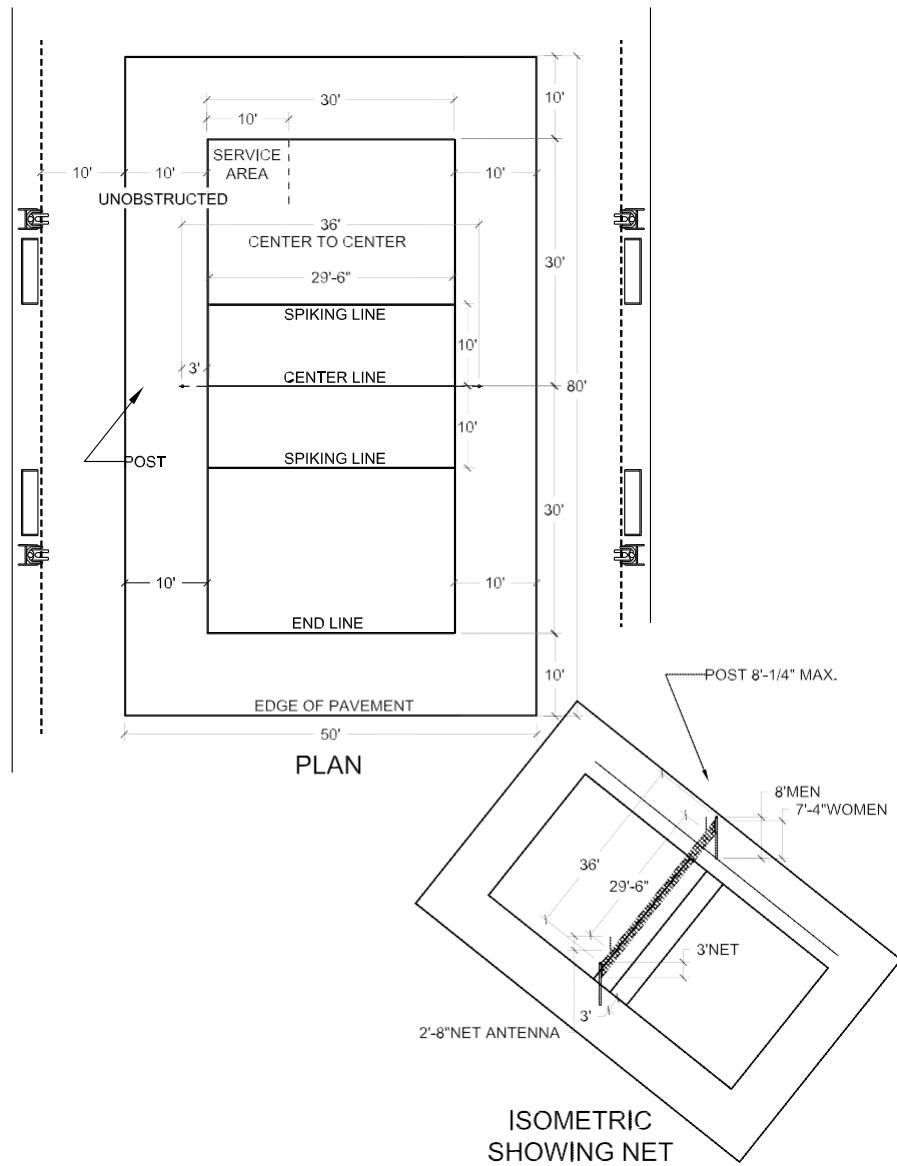
1. When placed side by side, volleyball courts should be a minimum of ten feet (10') apart and a minimum of fifteen feet (15') apart when placed end to end.
2. Volleyball should be located away from children's activities or play areas.

7.2.3 Volleyball Court Amenities

1. Provide shaded spectator seating adjacent to all volleyball courts.
2. All volleyball posts shall be galvanized. The posts and spacing shall accommodate a 32 foot wide by three foot tall net.
3. The net posts shall be eight feet (8') above the finish playing surface. The net shall have a stainless steel cable along the top and rope along the bottom.



Figure 12: Volleyball Court Layout



7.3 TENNIS COURTS

7.3.1 Tennis Court General Requirements

1. Table 3 provides standard court dimensions, orientation, and surfacing requirements. A diagram of a typical tennis court is provided Figure 13.
2. Concrete courts shall have an appropriate slip-resistant surfacing. Colors should be determined by the department during design.
3. All markings on the playing surface should be applied using a wear-resistant, colored substance, a minimum of two inches (2") inches wide. Color to be determined and approved by the department during design.
4. Preferred court construction shall be a 6" thick post-tension concrete slab without expansion joints. Post tension slabs shall have appropriate markings identifying the court as post-tension. Court construction and reinforcement shall be based on the geotechnical report.

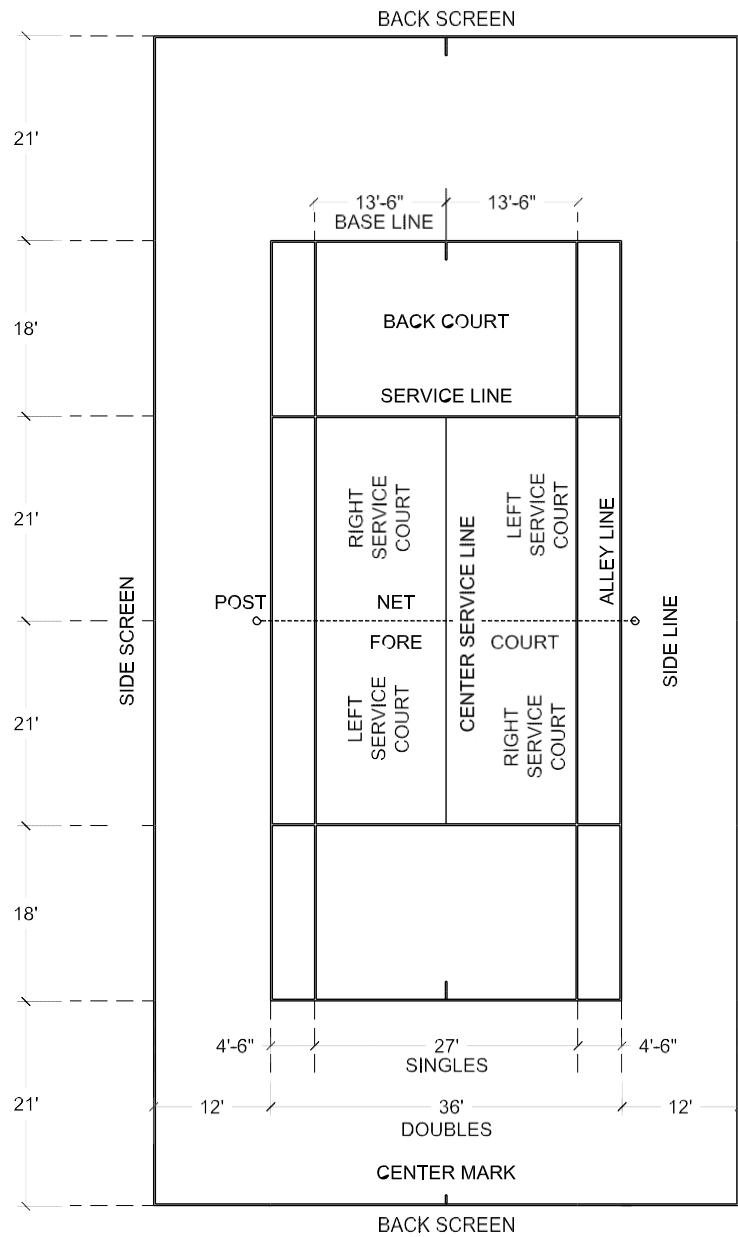
7.3.2 Tennis Court Spatial Considerations

1. Tennis courts should be oriented with the long axis north to south.
2. Side by side courts within one fenced enclosure should be a minimum of twelve feet (12') apart.
3. End to end courts within one fenced enclosure should be a minimum of twenty-one feet (21') feet apart.

7.3.3 Tennis Court Amenities

1. Provide one gate per court. Gates shall be located within the fence so as to not disrupt play on adjacent courts.
2. Provide vented windscreens fabric on perimeter fencing.
3. Provide a practice wall (without side walls) on one side or end of the tennis court.
4. Fencing shall be twelve feet high with chain link fabric installed on the court side of the posts. Fence posts, chain link, rails and hardware shall be black 'thermally-fused poly-vinyl chloride'.
5. Fine mesh wind screening shall be attached to the court side of the fence. San Diego Standard Drawings may not be used when wind screens are attached to the fencing; provide details and structural calculations when using wind screens.

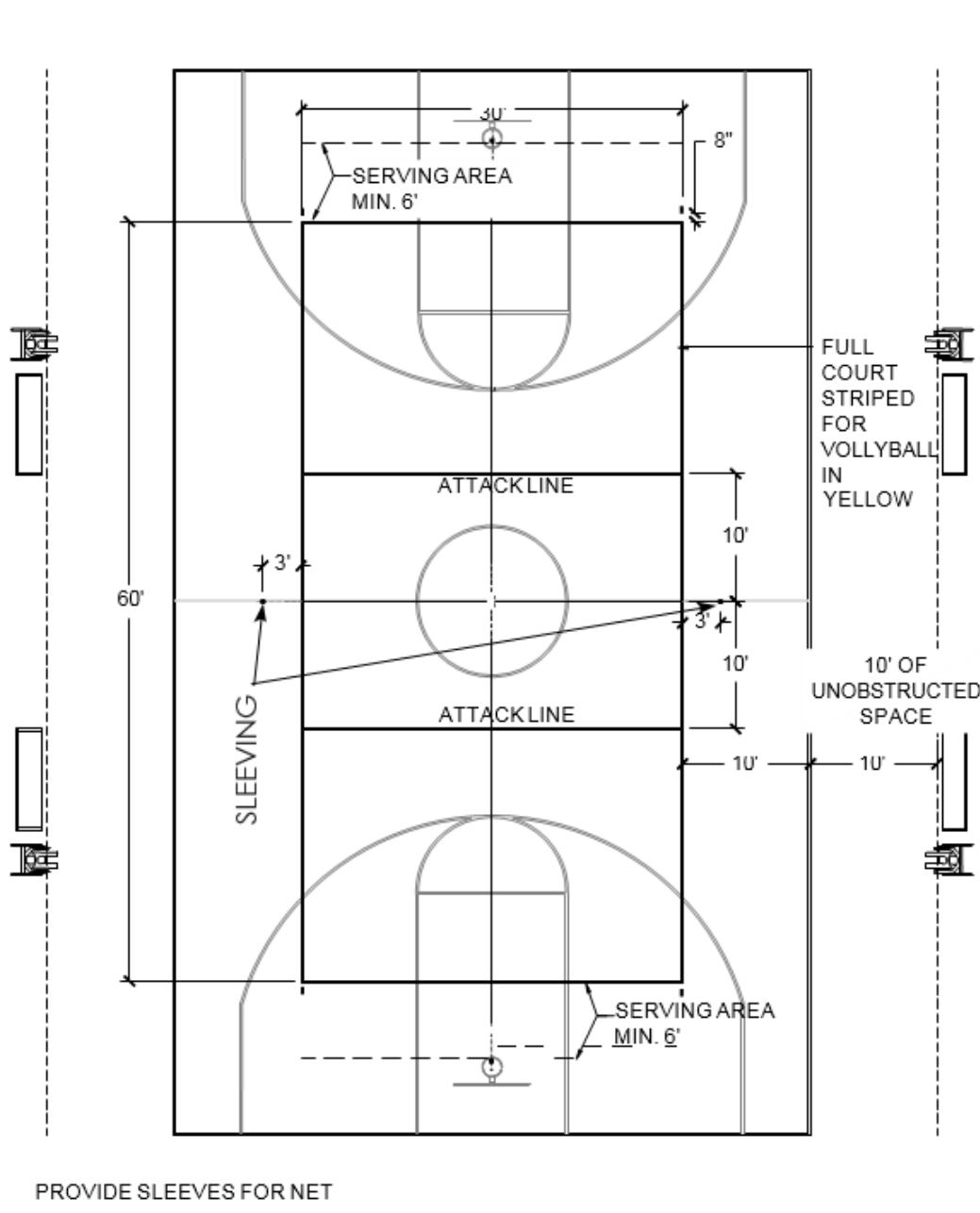


Figure 13: Tennis Court Layout

7.4 MULTIPURPOSE COURTS

- 1 Multi-purpose courts shall comply with requirements for basketball, tennis, and volleyball courts as applicable.
- 2 For multi-purpose courts, stripe volleyball court lines on a basketball court in yellow.
- 3 For multi-purpose courts, provide in-ground volleyball sleeves, sockets, caps or plates and anchors to secure one (1) removable volleyball court net.

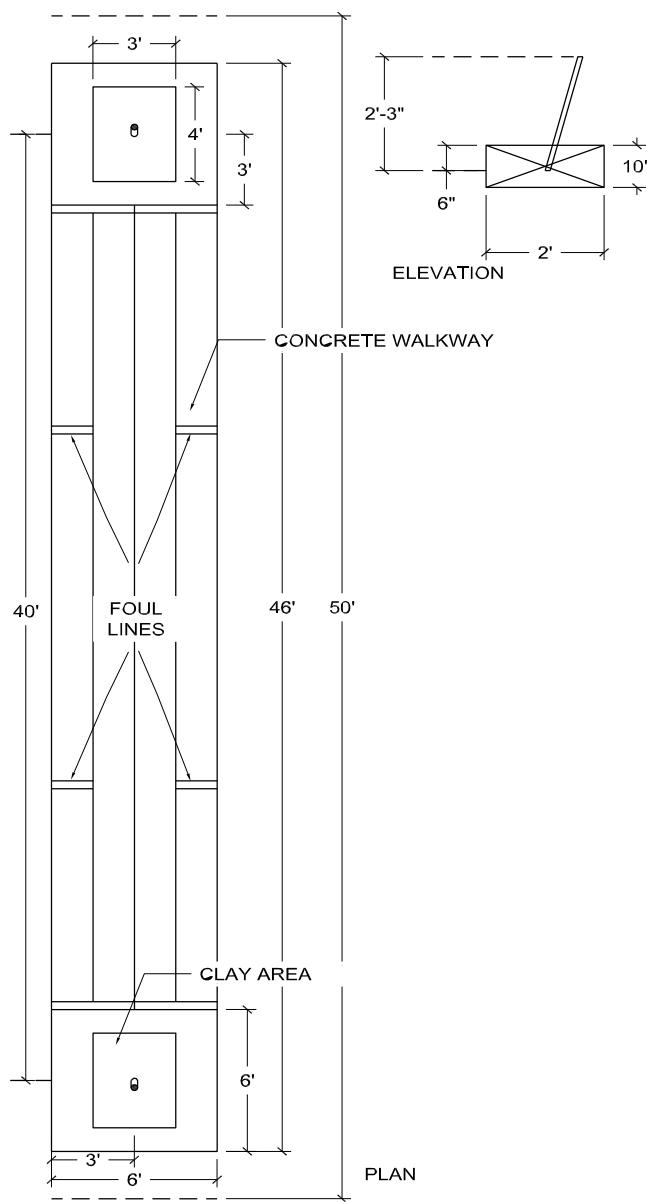
Figure 14: Multipurpose Court Striping Example



7.5 HORSEHOE PITS

- 1 The overall length of a horseshoe pit is forty eight feet (48') long and six feet (6') wide, and includes the pit, the pitching platform, and the stake.
- 2 Shaded seating should be provided in close proximity to a horseshoe pit.
- 3 Side by side pits shall be a minimum of ten feet (10') apart.
- 4 Backstop shall be provided on each end of the horseshoe pit for safety purposes.
- 5 Provide safety fencing along perimeter of horseshoe pit when in close proximity to other recreational uses.
- 6 A diagram of a typical horseshoe pit is provided, Figure 15.

Figure 15: Horseshoe Pit Layout



7.6 BOCCE COURT

1. The dimensions of the court may range in size between 8 feet to 14 feet in width and 60 feet to 91 feet in length.
2. The sub-base should be compacted after it has been cleared and grubbed of all organic matter with topsoil excavated and removed.
3. Modified base should be constructed of hard, angular crushed stone screening installed directly on top of the sub base. This stone screening layer should be a minimum of 3 inches thick after compaction and placed level so that the finished elevations do not vary more than $\frac{1}{4}$ inch in 10 feet when measured in any direction.
4. Crushed stone should meet the following gradation:

U.S. Standard Sieve Size	% Passing
3/8 inch	100%
#4	80-100%
#100	10-30%
#200	2-10%

This material should be watered and compacted to a minimum rate of 90% of its maximum potential compaction

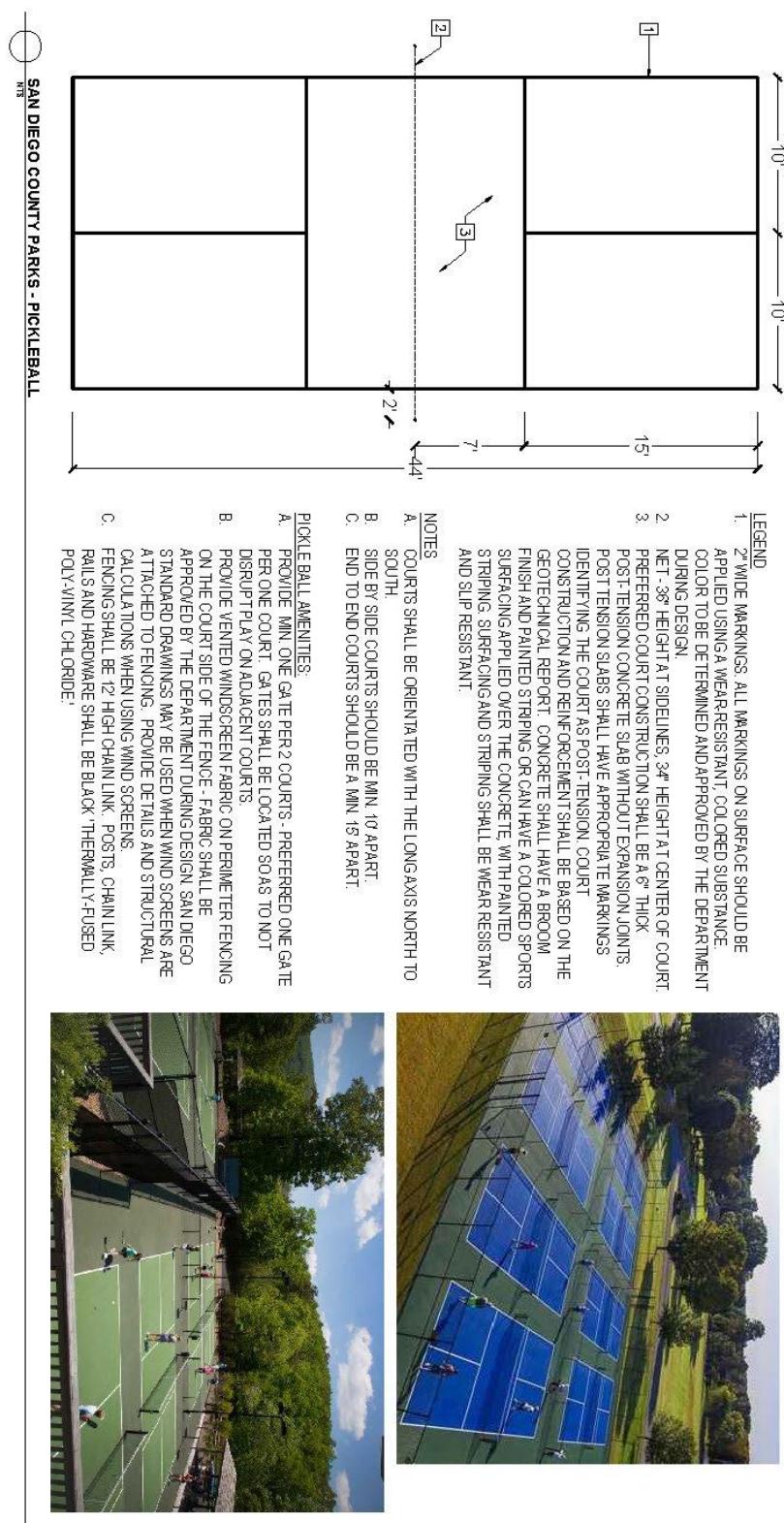
5. Surfacing course should be constructed of 1 inch to 2 inches of decomposed granite or similar mixed materials per the satisfaction of the Director of DPR.
6. Particle sizes should meet the following gradation:

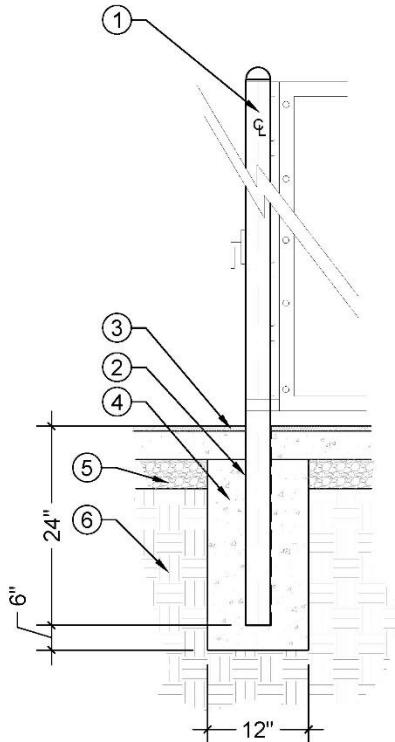
U.S. Standard Sieve Size	% Passing
#16	0-5%
#20	12-25%
#30	12-25%
#70	25-40%
#100	2-9%
PAN	23-33%

7. The surface should be flat, leveled, and watered to its full depth and compacted until an acceptable firmness is achieved.
8. Perimeter curbing should be a formed in place concrete curb with a bumper board design. The board can be made up of weather resistance wood, plastic or similar hard surface material. All fasteners to attached boards to the curb must be recessed to where they will not contact and interfere with thrown bocce balls.
9. Concrete walls that are left exposed are not acceptable as this will scare and damage the balls during play.
10. Include a drainage design by drilling or forming in place a series of drainage (weep) holes placed 1/8 inches to $\frac{1}{4}$ inches above the finished playing surface. Holes should be 1 inch in diameter and placed every 6 feet to 10 feet around the perimeter of the curb design.



7.7 PICKLEBALL COURT





LEGEND

1. PICKLEBALL STEEL NET POSTS, WITH $2\frac{7}{8}$ " OUTSIDE DIA., WITH POWDERCOAT FINISH. POST SHALL HAVE INTEGRATED STEEL LACING RODS FOR A PROFESSIONAL NET INSTALLATION AND REEL FOR ADJUSTMENT OF NET WITH REMOVABLE HANDLE
2. 24" HT. SLEEVES TO FIT POST MODEL, WITH END PLUGS.
3. POST TENSION CONCRETE SLAB WITH COURT SURFACING, SEE SPECS.
4. CONCRETE FOOTING, SEE SPEC 32 13 13.
5. CLASS II BASE
6. COMPACT SUB-GRADE TO 95%.

NOTES:

1. COUNTY PROJECT MANAGER TO APPROVE PICKLE COURT POSTS AND NET.
2. ENSURE THAT THE POSTS ARE PLACED 12" OUTSIDE THE SIDELINES OF THE COURT.
3. THE NET SHALL BE SUSPENDED OVER THE CENTER OF THE COURT AND SHOULD BE AT A HEIGHT OF 34" AT THE CENTER OF THE COURT AND 36" AT THE SIDELINES.

A

PICKLEBALL NET POST INSTALLATION

NOT TO SCALE

11.4.2019

SCALE:

AS SHOWN

PROJ. NO.

18164

FILE NO.

FELICITA COUNTY PARK

PICKLEBALL COURTS



CHAPTER 8 OTHER RECREATIONAL USES

8.1 FITNESS ZONES AND EXERCISE EQUIPMENT

1. At least three fitness stations shall be provided either grouped together or along a walkway or trail. Exercise/fitness stations on walkways should be between 50 and 200 yards apart.
2. Provide shade over exercise/fitness areas.
3. All exercise/fitness areas shall be ADA accessible. Provide a surface material and adequate spacing consistent with achieving ADA access to individual exercise apparatus.
4. Provide durable and vandal resistant equipment for uses of all ages and fitness levels.
5. All exercise/fitness equipment/stations shall be installed on concrete pads pursuant to manufacturer specifications.

8.2 DOG PARKS

8.2.1 Dog Park General Requirements

1. The size of the Dog Off-Leash Area (DOLA) will reflect the amount of available land; however, the recommended minimum is one (1) acre and should comprise an area a minimum of three quarters ($\frac{3}{4}$) of an acre for big dogs and an area a minimum one quarter ($\frac{1}{4}$) of an acre for small, timid, older or less mobile dogs.
2. It must have sufficient adjacent parking, preferably off street, that does not require users to cross a street; curbside parking is less desirable, but optional.
3. The topography must be considered, a portion of open play areas in both large dog and small dog parks must be ADA accessible and must not exceed two percent (2%) in any direction.
4. Dog park construction shall comply with Watershed Protection Ordinance requirements.

8.2.2 Dog Park Spatial Consideration

1. The location designated DOLA should be far enough away from residential or commercial land use that the single-event sound of a dog bark would generally be perceived as a background or ambient noise or would be screened by traffic noise.
2. Locate in areas of parks that are not heavily used for other recreational activities to reduce potential for conflict.
3. DOLA shall not displace organized recreational use or unstructured use in a park.
4. Organize all shade and seating areas to accommodate long unobstructed running areas.
5. Long unobstructed running areas should be provided within (both) mulch surfaced and decomposed granite surfaced portions of DOLA.
6. Existing or proposed, trees should be grouped to create ample shaded areas and leave ample open space for long unobstructed running.
7. Consider arranging benches in groups under shade shelters and trees.
8. Provide ADA access from ADA parking stalls to DOLA entrances to a shaded area with benches and ADA companion seating.
9. The dog park entrance and gates should be far from dog activity areas.
10. DOLA maintenance gate location should be near the parking lot.

8.2.3 Dog Park Amenities

1. Provide a separate large dog DOLA minimum of three quarters ($\frac{3}{4}$) of an acre.
2. Provide a separate small dog DOLA minimum one quarter ($\frac{1}{4}$) of an acre.
3. Provide separate double gated pen entrances for each DOLA. See Figure 16.
4. Provide shaded seating; consider using shade structures for sites where there are no or few existing shade trees.
5. Tree canopy should provide one hundred percent (100%) shade coverage in seating areas.
6. To avoid entrapment of dog's heads, legs or paws select bench with solid seating.
7. Additional amenities such as agility equipment may be added with the approval of DPR.

8.2.4 Dog Park Water Source

1. Each separate large and small DOLA must have a minimum of one drinking fountain which includes one standard bowl, one ADA compliant bowl and one canine bowl (with pet strainer).
2. Drinking fountains must be powder coated with stainless steel bowls and sand filters.
3. Provide Irrigation (for planted and mulched areas only). Mulched areas must be irrigated daily for a quick wash down to prevent dust and odors from accumulating.
4. Each park will be equipped with a standard locking quick coupler for each five thousand (5,000) sq. ft.

8.2.4 Dog Park Dog Waste Disposal

1. Provide biodegradable bags or biodegradable cardboard scoops or shovels and covered cans for every two thousand (2000) square feet of DOLA.
2. Provide biodegradable bags or biodegradable cardboard scoops or shovels and covered cans at all entrances and exits of DOLA.

8.2.5 Dog Park Surface

1. The preferred surface material for the DOLA's sunny open play areas is unstabilized decomposed granite (D.G.). The D.G. can be of varying size but should not be greater than one quarter-inch (.25 inches) in size.
2. The D.G. surfacing should be installed upon entering the DOLA, to the extent of providing an ADA accessible play area of equal proportion in relationship to the mulched play areas. This may be limited by the constraints of the site.
3. The D.G. will be installed six inches (6") in depth and all installation should be based on manufacturer's specifications.
4. Six inches (6") concrete curbs should be used as edging for the D.G.
5. All necessary drainage systems should be installed prior to the installation of the D.G.
6. The preferred surface material for shaded areas (beneath all trees) should be cedar wood "Walk on Chips", the particle sizes ranging from three eights inch to two inches ($\frac{3}{8}$ "-2").
7. The double gated pen entrance area should be surfaced with concrete.

8.2.6 Dog Park Fencing

1. The fencing type should be galvanized or vinyl coated chain link fencing.
2. The standard fence should be a minimum of six feet (6') above finish grade.
3. The footings should be buried to a depth of eighteen inches (18").



4. To prevent dog from digging out of the DOLA, a fence barrier (such as snake fencing) should be buried to a depth of minimum six inches (6") between all footings at all locations.
5. Alternative installation; each fence panel should be tied to a bottom rail and a twelve inch (12") mow strip will be provided at the base of the entire length of fencing except at access points. Bottom of fencing and bottom rail should be maximum one inch (1") above mow curb.

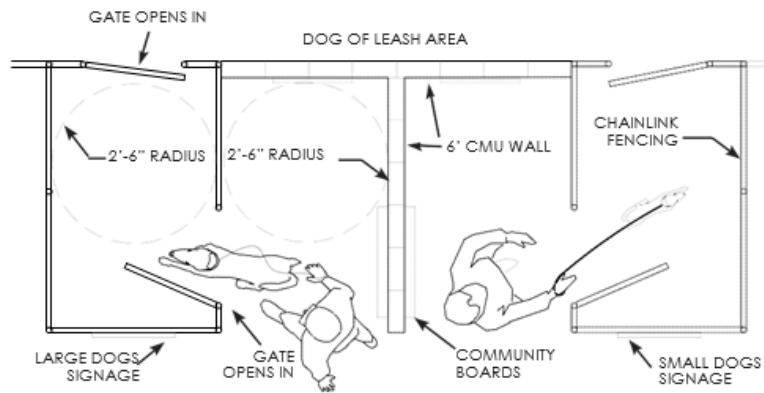
8.2.7 Dog Park Entry Gates

1. Each DOLA will have a double gated pen entrance. These gates will be the same height as the fence. See Figure 15.
2. Each entry must comply with the most current ADA requirements.
3. Each gate will open (one way) into the pen.
4. Both gates shall have self-closing hinges with self-latching and lockable mechanisms.
5. The pen should be sized a minimum of five by eight feet (5' x 8') or forty (40) square-feet. This enclosure serves as a calming area, this is where the user will remove the leash from the dog prior to entering the DOLA.
6. Provide a solid CMU wall between entrances. This area serves as a waiting zone to the entrance of the DOLA.
7. Provide a second gated DOLA entrance for maintenance vehicles. This entry will be approximately sixteen feet (16') wide to allow full access to the site.

8.2.8 Dog Park Signage

1. Each dog park should have permanent signs, stating the hours of operation, rules, and regulations for the DOLA and DPR contact information. Signage must comply with DPR signage policy.
2. Each dog park should have a kiosk to display operating, and maintenance hours. This board must be placed where it is easily seen by large dog and small dog DOLA visitors.

Figure 16: Dog Park Entry



8.3 SKATE PARKS

8.3.1 Skate Parks Spatial Considerations

1. A minimum of 0.5 acres of skating area should be allocated.
2. Locate facility away from children's activities and playground areas.
3. Facility should be located near park entrance and public road ways.

8.3.2 Skate Parks Amenities

1. Skate elements, including complexity and degree of difficulty shall be determined by DPR based on community needs and desires. Such elements may include but are not limited to slalom runs, bowls/pools, half/full pipe, or snake run.
2. Skate park surfaces materials should be made of smooth concrete.
3. Provide a five foot (5') minimum tubular steel (non-climbable) perimeter fence enclosing the entire skate area.
4. Provide a vehicular pathway and double-gate entry for vehicular maintenance and emergency access.
5. Provide shaded spectator bleachers and a drinking fountain.
6. Surfaces should slope to capture and manage storm water run-off.
7. Provide lighting that limits spill-over into the surrounding neighborhood.
8. Provide a pedestrian path linking the skate park to the park's primary circulation path.

8.4 BICYCLE SKILLS COURSE

8.4.1 Bicycle Skills Course Spatial Considerations

1. Should be located on a site with a maximum of 8 percent grade and minimum of a 2 percent grade slope. A level site may be considered under the discretion of DPR.
2. Typical sizes of bicycle skills course elements are as follows: Pump tracks, 0.25 to 2.0 acres; Dirt Jumps, 0.5 to 3.0 acres; Flow Trails, 2.0 to 5.0 acres; Slopestyle Courses, 2.0 to 5.0 acres; Skills Areas, 0.5 to 2.0 acres; Novice Tracks, 0.25 acres or less.
3. Facility should be located near park entrance and public road ways.
4. Locate facility away from and provided buffers between children's activities and playground areas.

8.4.2 Bicycle Skills Course Amenities

1. Bicycle elements, including the complexity and degree of difficulty shall be determined by DPR based on community needs and desires. Such elements may include but are not limited to bicycle parking, benches, water fountain, community gathering space, pump tracks, flow trails, slopestyle courses, perimeter trail, jump lines, skills areas, novice tracks, and a bicycle playground.
2. Provide a six foot (6') minimum tubular steel (non-climbable) perimeter fence enclosing the entire bicycle skills course area as required by DPR.
3. Provide a vehicular pathway and double-gate entry for maintenance and emergency access. Multiple points of entry may be necessary depending on location and design.
4. Parking should be located within a convenient distance from the course area.
5. Slope surfaces to manage storm water run-off and provide erosion control.
6. The site should be designed in a way to avoid multiple-user conflicts.



7. Provide signage throughout the course that clearly delineates and directs different skill levels to different trails and features.
8. Key stakeholders should be included in the design process such as local biking associations and teams.

8.5 OPEN LAWN/PLAY AREAS

8.5.1 Open Lawn/Play Areas Spatial Considerations

1. Where possible, open lawn/play areas should remain unobstructed by trees, to support activities such as throwing a ball, a frisbee, and/or flying kites.
2. Locate passive open play areas adjacent to picnic and children's play areas.

8.5.2 Open Lawn/Play Areas Amenities

1. Provide shade trees at the perimeter of open lawn/play areas.
2. Provide regulatory signs that describe the permitted uses within open lawn/play areas.

8.6 PICNIC AREAS

8.6.1 Picnic Areas Spatial Considerations

1. Small group picnic areas should accommodate less than fifty (50) people.
2. Large group picnic areas should accommodate fifty to one hundred (50-100) people.
3. All barbecue grills must be ADA accessible and have a clearance of two-foot six-inches (2'- 6") at each side of grill.
4. Provide a keyed quick coupler adjacent to the group picnic area to facilitate wash-down by park maintenance staff.
5. Provide restrooms within one-hundred fifty feet (150') of group picnic areas.
6. Locate picnic areas near parking areas.

8.6.2 Picnic Areas Amenities

1. Provide a shade shelter for all group picnic areas.
2. Provide lighting within shade shelters.
3. Provide one (1) barbecue grill for every two (2) picnic tables, or one (1) double barbecue grill for every four (4) picnic tables.
4. Provide signs with picnic area name or number for identification and rental purposes.
5. All picnic areas must be ADA accessible. Any exception must have prior approval of the Department.
6. Provide 2 ground fault circuit interrupters (GFCI) with water proof cover at small group picnic areas; provide 4 GFCI with water proof cover at large group picnic areas or as directed by DPR.

8.7 COMMUNITY GARDENS

8.7.1 Community Garden Spatial Considerations

1. The size should be large enough to support the local demand and shall have enough plots/participants to keep the gardens economically sustainable.



2. Locate facility away from children's activities, playground areas established or informal sports fields, campgrounds, or areas with day-use fees.
3. The land should be level enough to support garden activities and be ADA compliant.
4. Underground utilities and easements may prohibit a community garden location in some areas.
5. Community gardens should not be established above septic fields and in close proximity to streams.

8.7.2 Community Garden Amenities

1. Community gardening elements may include but are not limited to irrigation access for each plot, central composting area, and community gathering space.
2. Provide a perimeter fence enclosing the entire community garden area as required by DPR.
3. Provide adequate setbacks for vehicular pathway and double-gate entry for maintenance and emergency access.
4. Parking and restrooms should be located within a convenient distance from the gardens.
5. Parking must include ADA space(s) with ADA compliant access.
6. ADA parking location to the garden site and restrooms must incorporate a design distance with the shortest path of travel.
7. Surfaces shall slope to capture and manage storm water run-off.
8. Plots should be organized in a way to maximize efficiency.
9. Site should have convenient access to water while implementing all applicable water regulations and conservation strategies.
10. Water should be supplied through spring activated hose bibs with automatic shutoffs. Drip irrigation is encouraged.
11. A soil survey of previous uses for the parcel and soil testing shall be conducted prior to commencement.
12. No structures, awning, or greenhouses will be permitted within the community garden area or in individual plots.

8.8 EQUESTRIAN FACILITIES

1. Locate a minimum of 500 feet away from sensitive receptors (schools) and children's play areas.
2. Gradients shall not exceed five percent (5%); ten percent (10%) is permissible in short distances.



CHAPTER 9 PARK FURNISHINGS

9.1 GENERAL REQUIREMENTS

1. Locate site furniture outside of turf areas whenever possible.
2. Site furniture in turf areas shall be placed on a concrete pad with a minimum of eight inches of clearance around to accommodate mowers (additional clearance may be required).
3. Site furniture in turf areas shall be spaced a minimum of twelve feet from other site furniture, fencing, walls, lights, trees and other vertical obstructions to accommodate County mowers.
4. Site furniture shall be located to avoid conflicts with irrigation systems and other park improvements.
5. Boulders may be used to define pedestrian or vehicular edges and boundaries, as well as for drainage rip-rap.
6. Boulders may also be used for casual seating, decorative effects, etc.
7. Boulders should not be placed in high intensity recreational or open play areas, play area fall zones, and/or in any area where they would conflict with recreation activities or create a physical hazard.

9.2 BENCHES

1. The minimum length of a seating section should be six feet (6').
2. Material and type of bench to be used will be dependent on facility. Contact DPR for direction at the beginning of the design process.
3. Park benches shall be designed and located to discourage skateboard activity and shall be treated with anti-graffiti coating
4. Provide benches at key locations throughout the park including at the park entry, at regular intervals along the main circulation path, singular and grouped to support gathering, for viewing activities or vistas, and at recreational facilities such as organized play areas, sport courts, etc. for supporting the visual supervision of children.
5. Benches should either incorporate shade or be located near shade trees where possible. Benches should be located to maximize shade opportunities in the summer and sun exposure in the winter
6. Whenever possible, situate benches with back toward a wall, landscape planting, or trees to increase a sense of user security. Benches can be free standing or integrated into walls or other design features.
7. Set benches back from circulation paths of travel to reduce pedestrian obstructions.
8. Benches should be evenly distributed throughout the park.
9. Benches should be located adjacent to a path of travel and should be ADA accessible with adjacent ADA companion seating.
10. Provide benches designed with a center armrest or center break.

9.3 PICNIC TABLES

1. Picnic tables should be a minimum of six feet (6') long or round 4' diameter minimum top with perimeter seats.
2. Each picnic table should be located in the center of a four inch (4") thick reinforced concrete pad, minimum size of ten feet by nine feet (10' x 9'). Maximum grade two percent (2%).
3. All picnic table should be anchored into concrete per manufactures specifications.



4. Provide a four foot (4') clearance between each picnic table or other obstructions. Concrete pads shall extend four feet beyond the table/bench dimensions on all sides.
5. All picnic tables should be ADA compliant, and accessible from ADA path of travel.
6. Picnic tables at ADA accessible locations shall have one wheelchair accessible end area.
7. The orientation of picnic tables adjacent to walkways shall be perpendicular to the path of travel to discourage skateboard activity.
8. Table material may include precast concrete or metal with vinyl coating. DPR shall determine material required based on location, theme, character and use of the site.
9. Anti-graffiti coating shall be applied to all concrete tables.

9.4 BARBEQUE GRILLS

1. Provide one (1) barbecue grill for every two (2) picnic tables.
2. All barbecue grills at ADA accessible sites must be wheel- chair accessible.
3. Barbeques shall be located on a non-combustible surface such as concrete paving or stabilized decomposed granite; do not locate them in shrub/groundcover or mulch areas.
4. Group and individual barbecue grills should be in-ground mounted pedestal type with a side utility shelf. Firebox size should be approximately 20" wide x 15" deep x 10" high, and is constructed with a minimum of three sixteenth inch (3/16") thick steel.
5. If located in turf areas, provide a concrete pad with a minimum of eight inches of clearance around the perimeter to accommodate mowers.

9.5 TRASH AND HOT ASH RECEPTACLES

1. Provide an adequate number of trash receptacles through-out the park. At a minimum, the trash receptacles should be located near all parking areas, at the entrances to major buildings and restrooms, playgrounds, picnic areas (at least 1 hot ash receptacle per 2 barbeques), spectator areas, and at sport fields and court and other high intensity recreation areas. DPR may adjust the number of receptacles required based on location and grouping of barbeques.
2. Provide hot coal receptacles no more than thirty feet (30') away from all picnic areas having barbecue grills.
3. Locate hot coal receptacles away from and not under any trees for fire prevention purposes.
4. Trash receptacle design should match park furnishings, wherever feasible.
5. Hot coal receptacles with bottom clean out doors shall be concrete and visible from the barbecue area(s).
6. Trash and hot coal receptacles shall be located on a non-combustible surface such as concrete paving or stabilized decomposed granite; do not locate them in shrub/groundcover areas or mulch areas. Concrete pads must have a twelve inch (12") unobstructed perimeter on all sides for ease of mowing.
7. If located in turf areas, provide a concrete pad with a minimum of eight inches of clearance around the perimeter to accommodate mowers.

9.6 BICYCLE RACKS

1. Bicycle racks should be located near park amenities accessible by vehicular roadways
2. The number of bicycle racks shall be determined by the County of San Diego Zoning Ordinance.



9.7 TRASH ENCLOSURES

1. Trash enclosures shall be located within parking lot areas where feasible.
2. Locate dumpsters away from park users, to minimize offensive odors.
3. All dumpster pads must be positioned to allow the trash truck to approach the containers head on. Ensure that the turning radius, truck length, and angle of approach are adequate.
4. Dumpster pads should be positioned with long axis perpendicular to vehicular access.
5. Provide a level access approach, and a minimum ten feet by twelve feet (10' x 12') concrete pad for each dumpster.
6. Maintain a twelve foot (12') wide opening to the enclosure, and provide gate stops to secure the gates in an open position.
7. Provide a securable and gated enclosure around the dumpster pad. Maintain a ten foot by 12 foot (10' x 12') clearance within the enclosure.
8. Trash enclosures shall be sized to house a minimum of two dumpsters; one for trash and one for recycling.
9. Minimum 6" wide curbing shall be required around all enclosures.
10. Trash enclosures should be constructed with concrete masonry block or chain link with privacy slats if enclosed.
11. If enclosed, curb shall be located inside walls to protect the walls from damage.
12. A heavy vehicle load paving section for the drive lane and the concrete apron shall be provided at the head of the enclosure. Minimum size of the concrete apron shall be sufficient to allow refuse vehicle access to the trash receptacles. Specific dimensions, location and design shall be reviewed and approved by DPR.
13. The walls of the trash enclosure shall be treated with anti-graffiti coating inside and out.
14. The enclosures shall have solid steel doors or chain link doors with screening slats with locking ability.
15. All trash enclosures shall be sited and designed to conform to applicable stormwater and landscaping requirements.
16. See Section 2.5.5.4 for additional requirements related to trash enclosures in parking areas.

9.8 WATER FOUNTAINS

1. All drinking fountains must be ADA compliant and positioned so that pathways are not obstructed by the drinking fountain user.
2. One (1) standard and one (1) ADA compliant drinking fountain or one (1) high-low fountain are required outside of each restroom building or located in an alcove.
3. Drinking fountains are required near (with a clear line of sight from) athletic courts, group picnic areas, restrooms, sports facilities, and children's play areas.
4. All drinking fountains located within close proximity to children's play areas should be visible from parent seating areas.
5. All drinking fountains should be vandal resistant.

9.9 SHADE STRUCTURES

1. Prefabricated picnic shelters shall be all steel construction (two tiered if possible) to allow wind flow; unless approved by DPR.
2. The finish shall be an electrostatically applied powder coat (minimum 11mm thick).
3. Roofs shall be standing metal seam or similar, with no exposed screws.



4. Design to reflect park and community character.
5. Ornamental stone or other column additions may be considered.
6. Provide shade structures that are free standing or attached to the play structures.
7. Provide shade structures with steel posts, and rigid metal roofing or shade fabric.

9.10 WALLS

1. Skateboarding and graffiti vandalism should be considered when designing walls. Walls designed to avoid the need for skate stoppers are preferred to straight walls with skate stoppers. Walls and caps shall have anti-graffiti coating applied.
2. All concrete masonry walls shall be finished with a wall cap made of precast concrete units that are sized for the block, or shall have a custom cap designed for the wall; mortar caps are not acceptable. Caps for walls less than 36 inches in height and adjacent to walkways or turf areas shall have radii or chamfered edges for safety.
3. Retaining walls shall be installed with perforated pipe drains with clean outs and earthen swales behind the wall per San Diego Regional Standard Drawings.
4. Walls adjacent to turf shall have a concrete mow curb to reduce weed trimming at wall base.
5. Walls shall be designed and located to discourage skateboarding and graffiti vandalism. Walls designed to avoid the need for skate stoppers are preferred to straight walls with skate stoppers.
6. Guard rails or fencing shall be provided at the top of walls when walls are over 30 inches in height with turf or walkways adjacent to the top.

9.11 FENCING

1. Parks shall be designed functionally and visually as open as possible with as little fencing as possible.
2. Guard rails or fencing shall be provided at the top of walls when walls are over thirty-inches (30") in height with turf or walkways adjacent to the top.
3. For park refurbishment projects, new fencing should match existing park fencing unless otherwise specified in the facility program.
4. Provide a sixteen-inch (16") wide concrete mow strip per San Diego Regional Standard Drawings, tubular steel and chain link fencing placed in landscaped areas.
5. Fencing shall only be provided for multipurpose fields, joint use areas or where there is a safety issue that cannot be reasonably addressed by some other means.
6. Fencing shall be used where a tot lot is in close proximity to streets, parking lots or other high volume vehicular use areas that pose a safety concern.
7. For security reasons, solid fencing shall not be used.
8. Fencing should match the existing fencing, historic theme, or community character. For example, accent pilaster may be designed with natural stone representative of the local geology
9. Security fencing is required when necessary to secure a site from public access.
10. Ornamental fencing shall be used to maintain views or to be consistent with a project's design theme. Materials can vary:
 - a) Tube Steel - All components shall be tubular steel or heavy duty aluminum. Tubular steel components shall be hot dip galvanized after fabrication (free of burrs and sharp edges). Steel posts and rails shall be minimum 14-gauge, and steel pickets shall be minimum 16-gauge. Fence color shall be a powder coated (min 9 mil thick) paint applied electrostatically.
 - b) Lodge Pole – ACQ treatment for ground contact, post minimum 5" diameter and rail min 3" sizes



- c) Split Rail – Shall be cedar or other species that resists rot and termites such as redwood.
- 11. Chain link fencing may vary in height and detailing as per the specific site use(s) and requirements. Chain link fabric shall be located on the side adjacent to play or use areas. Refer to San Diego County Regional Standard Drawings.
- 12. If a fence exceeds eight feet in height a mid-rail will be required.

9.12 GATES

- 1. Pedestrian gates shall be a minimum of four feet wide.
- 2. Gates for maintenance vehicles shall be a minimum of twelve feet (12') wide; use double swing gates.
- 3. All gates must be designed pursuant to San Diego Regional Standard Drawings or as otherwise specified by DPR.

9.13 SIGNAGE

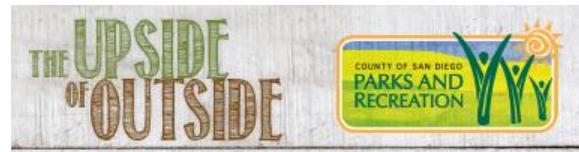
- 1. Provide signage pursuant to DPR's signage policy and ADA requirements.
- 2. Each park or trail head should have a park identification sign at its main entry with the park facility name and appropriate County seals.
- 3. Park identification, information, and regulatory signage should be uniform in design and compliment the overall park design.
- 4. Provide a park information board and/or kiosk to promote park events and activities, as indicated by DPR. Include "Park Rules and Regulations" and "Park Hours" signs in kiosk.
- 5. Provide an educational kiosks as indicated by DPR.
- 6. Signage should be kept to minimum sizes necessary to clearly direct and inform park users.
- 7. Signs are typically one sided and parallel to the most prominent public street, or angled if located at the intersection of two streets.
- 8. Provide building identification signage and street address in cast metal, of sufficient size to be read from the public right of way.
- 9. Provide room identification and capacity signage at the entrance to each room.
- 10. Provide interior and exterior directional and wayfinding signage.
- 11. Provide parking lot signage, including accessible parking spaces and tow-away signs at parking lot entrances.
- 12. See Appendix B for DPR monument sign and entry sign specifications.

CHAPTER 10 LANDSCAPING AND IRRIGATION

10.1 LANDSCAPED AREAS

10.1.1 General Requirements

1. Landscape designs must be sensitive and appropriate for the project site to minimize disruption to existing plant habitats. Use climate appropriate drought tolerant plants to support the design intent. Planting designs should incorporate biodiversity, and water conservation.
2. All designs should identify the most appropriate areas to include shrubs and ground cover plant materials, to maximize water conservation.
3. Landscaping along ADA path of travel shall avoid using plant materials that drop capsules, leaf litter, buds or any other plant material that impedes ADA path of travel.
4. Use plant materials and trees around buildings to create microclimates, lower energy consumption, and reduce costs associated with indoor energy needs.
5. To reduce the amount of radiant heat generated from the reflection of hardscape surfaces (urban heat island effect), provide trees or vegetated structures to shade walkways, roofs, or parking lots.
6. Select plant materials that promote and support the regional identity to the park location.
7. Park designs may include low maintenance naturalized areas. Pedestrian paths surfaces may be stabilized decomposed granite, four inch (4") in depth. Vehicular paths may be stabilized decomposed granite six inch (6") in depth.
8. Natural and naturalized areas may accommodate passive recreation activities such as picnicking, biking, nature trails with interpretive signage and rest areas, or similar activities.
9. Naturally occurring landscape features including tree groves, dry streambeds, rock features, and earth forms are desirable design elements in new park designs, and enhance the natural character of the site. These features should be protected if they are existing.
10. California Native species should be used in parks having the following natural settings: graded slopes in environmentally sensitive areas, riparian areas, wetland and watershed rehabilitation areas, wildlife fire rehabilitation areas, and demonstration gardens.
11. Locate vegetated bio-swales outside of active recreation areas to achieve stormwater management goals for the park site.
12. Foundation planting may be incorporated where planted areas occur adjacent to buildings. These areas may include raised or in-ground planters.
13. Control and remove invasive plant species to minimize damage to local plant ecosystems.
14. Mitigate potential fire hazards in designated fire threatened areas per County Fuel Modification Codes.
15. When designing planting areas adjacent to public streets, design consideration should be given to complement the existing planting design within the right-of-way, to maintain design continuity.
16. In areas where security is an issue, visibility into and out from the park should remain unobstructed by landscape plant materials.
17. A combination of dense landscaping, screen walls, berms and/or mounding may be used to screen service, loading, maintenance and storage areas, trash enclosures, utility cabinets, and other similar elements.
18. Planter areas should be planted with low maintenance, drought tolerant, hardy plants.
19. To support security and visual surveillance, shrubs planted along property line fences should not grow above eight feet (8') high, while shrubs planted in open areas should not grow over four feet (4') high.
20. Provide a two inch (2") layer of organic mulch (free of weed seed) to all planted areas.



21. Decomposed granite used as mulch for planting areas should be unstabilized.
22. Planting design shall be appropriate for the site and climate conditions and shall enhance the park site and the park user's experience.
23. All planting shall be located to permit the proper operation of irrigation systems and the effective use of mechanized maintenance equipment.
24. Plant locations and spacing shall permit normal plant development without undue crowding or trimming.
25. Shrubs, groundcover and vines shall be spaced a minimum of one half of their mature diameter from all walkways.
26. All areas requiring brush management shall be designed per County Fire Code.
27. Groundcover plants shall be planted with triangular spacing at a distance that will typically ensure 100 percent coverage within one year of installation of the proposed groundcover bed per San Diego Regional Standard Drawings.
28. Mulch shall be used to retain soil moisture and deter weed growth.
29. All shrub and groundcover areas shall have a two inch minimum layer of mulch. All non-planted areas shall also be covered with a two inch minimum layer of mulch.

10.1.2 Planted Areas Turf

1. Turf types that require less mowing and water use should be selected. Plant all sunny open turf areas and recreation fields with warm season hybrid bermuda grasses, when possible.
2. Turf areas should be graded no steeper than a 5:1 slope for easy mowing.
3. Separate planted areas from turf areas with an eight inch (8") wide poured-in-place concrete mow strip, unless otherwise directed by the facility program, per San Diego Regional Standard Drawings.
4. Turf areas shall be of a size and configuration to permit the most effective use of mechanized maintenance equipment and reduce edging.
5. Small decorative turf areas are not permitted.
6. Low water use turf shall be used in low intensity use areas.
7. Turf species shall be appropriate for the climate.
8. Turf planted from seed or stolon shall have a 120 calendar day plant establishment period. Turf planted from sod shall have a 90 calendar day plant establishment period.

10.1.3 Shrubs

1. Shrubs should be selected and located with consideration for their function and size at full maturity to minimize pruning, and maintain the natural characteristics of the selected shrubs.
2. Use only non-invasive plants that are nursery grown or legally harvested.
3. Ornamental shrub beds in parks and around park buildings may be provided with approval from DPR.
4. Shrubs and vines adjacent to building walls shall have a mature height that preserves visual access.
5. Provide a minimum two inch layer of mulch in all shrub areas.

10.1.4 Trees

1. Preserve all oak trees, native sycamores and other trees designated as natural resources by local, County, State or Federal entities.
2. Medium canopy trees with non-invasive roots should be specified for areas adjacent to paved circulation paths and parking, to provide shade, reduce heat build-up, and minimize glare.

3. Trees planted in turf areas adjacent to the street should be set back a minimum of six feet (6') from the curb face.
4. Trees planted 10 feet (10') or less from hardscape surfaces require root barrier protection. The root barrier should be placed adjacent and parallel to the hardscape, and span a minimum of ten feet (10') in both directions along the pathway from the center of the tree. Do not install root barriers around the root ball. Root barriers shall be made of a rib system, polypropylene material with a minimum thickness of 0.08 inch and a minimum depth of 24 inches, see San Diego Regional Standard Drawings. Trees planted in turf areas shall be spaced to permit the most effective use of mechanized maintenance equipment and operation of the irrigation system.
5. Trees planted in turf areas shall have a minimum of twelve horizontal feet between trees and other vertical objects.
6. For all trees installed in turf areas, provide a three foot diameter mulched area around the base of the tree; there shall be no mulch on crown of tree.
7. Dense tree groves shall not be planted in turf areas.
8. Trees in lawn areas shall be non-coniferous.
9. Trees shall be staked per San Diego Regional Standard Drawings.
10. Tree grates shall be cast iron or steel with expandable center openings, and must meet current ADA requirements. Concrete tree grates are not acceptable. Tree grates shall be a minimum 5' by 5', see San Diego Regional Standard Drawings.

10.2 PLANT MATERIAL

10.2.1 General Requirements

1. Group plant materials with similar water requirements into common hydrozones.
2. Do not use invasive plant materials. The American Society of Landscape Architects and the California Native Plant Society have prepared the Invasive Ornamental Plant Guide, listing plant materials that are considered to be invasive. Two lists are available; one listing "most invasive" species and one listing "moderately invasive" species. The Invasive Ornamental Plant Guide may be found at <http://www.asla-sandiego.org>. Plants found on the "most invasive" list shall not be used in any parks without approval of DPR. Plants found on the "moderately invasive" list shall not be used in parks adjacent to open space areas or multi-habitat planning areas.
3. Do not use plants that require greater than moderate water usage as defined in Water Use Classification of Landscape Species list (WUCOLS IV) as referenced in "A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California" (WUCOLS IV) (<http://ucanr.edu/sites/WUCOLS/>)
4. All planting designs should achieve the water conservation requirements of the County of San Diego.
5. Plant Selection shall emphasize water conservation through the use of drought-tolerant, fire-resistant, and/or native plant materials compatible with the surrounding area for new, County-owned properties and projects.
6. Landscape designs shall comply with the County's landscaping standards (Zoning Ordinance Sections 6712, et seq., or as amended), including water conservation requirements and in conformance with BOS policy G-15 to promote water conservation and reduce maintenance costs.
7. Select only those species which are considered relatively disease and pest-free, and require minimal trimming to be maintained in a safe and attractive condition.
8. DPR retains the right to prohibit any plant material generally known to require excessive maintenance due to factors such as, but not limited to, disease, pest control, troublesome root development, ultimate size and difficult growth habits.



9. The preferred turf species is one that is drought tolerant and stays green throughout the year. Consult with the DPR Department for the appropriate turf species per site conditions and use. Rate of application shall be determined by the type of turf species.
10. Trees shall be selected to provide a succession of growth, enhance the uniqueness of the site and provide shade and seasonal interest. To provide a succession of growth, an even mix of fast growing and slow growing trees shall be provided.
11. To enhance the uniqueness of the site, tree species shall be selected that create a sense of place, e.g. Sycamore trees for riparian areas.
12. To provide shade and seasonal interest, a mix of evergreen and deciduous trees should be provided.
13. All non-irrigated seed mixes shall be installed during the rainy season.

10.3 IRRIGATION

10.3.1 Irrigation Design

1. The irrigation system should be designed to prevent run-off, drainage from low head, over spray, and other similar inefficient conditions where irrigation water flows onto non-targeted areas, such as adjacent properties, paved areas, roadways or structures.
2. Irrigation head spacing should be designed to provide one hundred percent (100%) coverage and should not be farther than the maximum design radius for the specified nozzle.
3. All irrigation systems should be designed to allow for summer-peak water amounts to be applied between the hours of 10 p.m. and 6 a.m. Daytime watering should be limited to seed germination, plant establishment, and turf renovation.
4. The irrigation system should be designed to ensure the dynamic pressure at each irrigation head is within the manufacturer's recommended pressure range for optimal performance. In developed areas the residual pressure shall be 15% and in undeveloped areas the residual pressure shall be 25% of the required operating pressure.
5. When designing a new irrigation system for an existing park the static water pressure, dynamic or operating pressure, and the water supply flow rate should be measured at the point of connection by the water purveyor. This information should be obtained during the design phase and should also be field verified by the Developer or Contractor prior to installation.
6. Relevant information such as soil type and infiltration rate should be determined and referenced when designing irrigation systems.
7. The design of the irrigation system should conform to the hydrozones delineated on the landscape planting plan.
8. The irrigation system must be designed and installed to meet the irrigation efficiency criteria as described in the County's Water Conservation in Landscaping Ordinance.
9. Contact the local water purveyor for peak water operating demands on the water supply system, or water restrictions that may impact the efficiency of the irrigation system.
10. In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.
11. Overhead irrigation is not allowed on narrow or irregularly shaped areas including turf areas less than ten feet (10') in width.
12. Overhead irrigation is not allowed within twenty four inches (24") of any impermeable surface.
13. Bubblers are the preferred irrigation emitter in planting areas with conditions as described in items 11 and 12, this section.

14. The surfacing of the setback may be mulch, gravel, or other porous material with no irrigation. These restrictions may be modified if:
 - 1) The landscape area is adjacent to permeable surfacing and no runoff occurs; or
 - 2) The adjacent impermeable surfaces are designed and constructed to drain entirely to landscaping.
15. Slopes greater than twenty-five percent (25%) should not be irrigated with an irrigation system having a precipitation rate exceeding 0.75 inches per hour. This restriction may be modified if the landscape designer specifies an alternative design or technology, and clearly demonstrates that no runoff or erosion will occur.
16. Trees should be placed on irrigation control valves separate from shrubs and groundcover and be irrigated by a "Root Watering System". Provide root bubblers (root watering system) on every side of root ball, per San Diego Regional Standard Drawings.
17. No additional irrigation is required for trees planted in turf areas.
18. Individual hydrozones that mix high, moderate or low water- use plants are not permitted.
19. No drip irrigation is permitted except on narrow or irregularly shaped areas including turf areas less than ten feet (10') in width as required by County's Water Conservation in Landscaping Ordinance.
20. The irrigation system shall be designed utilizing water conservation standards and equipment.
21. The irrigation design shall be based on accurate pressure information and produce an irrigation system which efficiently and uniformly applies water throughout the site.
22. The irrigation design shall also have sufficient residual pressure and flow to accommodate site conditions, field changes and unforeseen future demands as well as anticipated future demands, if it is a phased project. Design shall be according to plant material water use requirements
23. Irrigation circuits for ball fields shall be separated from other turf areas of the park.
24. Irrigation lines shall run horizontally (level and parallel to the slope contours) to minimize line drainage and pressure differentiation.
25. All irrigation equipment shall be installed per San Diego County Regional Standard Drawings unless otherwise noted or detailed on the construction drawings. Deviation from the Standard Drawings must be approved by DPR.
26. Schedule 40 pipe type is required unless otherwise approved by DPR, and three-fourths of an inch (3/4") schedule 40 is the minimum size of pipe.

10.3.2 Irrigation Equipment

1. All new irrigation systems should include the following components:
 - a) Dedicated Irrigation Water Meter
 - b) Reduced Pressure Backflow Prevention Device
 - c) Wye Strainer
 - d) Master Valve
 - e) Flow Sensor
 - f) Irrigation Pump or Pump Station(where necessary)
 - g) Pressure Regulator (where necessary)
 - h) Manual Shut-Off Valves
 - i) Weather Based Smart Irrigation Controller
 - j) Interior Mounted Controllers
 - k) Exterior Mounted Controllers
 - l) Sensors (rain, freeze, wind, etc.)
 - m) Remote Control Valves
 - n) Spray Heads
 - o) Bubblers



- p) Double Swing Joints
- q) Check Valves
- r) Quick Couplers
- s) Isolation Valves
- t) Pipes and Fittings
- u) Irrigation Boxes

2. The design criteria for the aforementioned equipment is described as follows:

- a) Water Meter - If a park has a water meter specifically dedicated to the landscape irrigation system, water bills can be examined to evaluate water use. The maximum water meter size is two inch. If the irrigation system requires more than a two inch meter, provide an additional water meter in a manifold or separate the irrigation system for two points of connection. Provide separate meters for irrigation and domestic (potable) uses. The preferred location for water meters is in a shrub or groundcover planting area rather than a turf area.
- b) Reduced Pressure Backflow Prevention Device - This device must be included on all irrigation systems. A reduced pressure principle backflow preventer is mandatory for irrigation systems using potable water. The installation shall include a locking stainless steel enclosure (free of burrs and sharp edges) on a concrete pad. Backflow preventer enclosure installation shall be per the manufacturer's details and specifications. Refer to San Diego Regional Standard Drawings for backflow preventer installation.
- c) Wye Strainer - Provide a brass or bronze wye strainer immediately downstream of the backflow preventer. The wye strainer shall be line size, sufficient to meet the demand of the irrigation system. This device must be included on all irrigation systems. The screen shall be 300 series stainless steel with a #40 mesh. Install the wye strainer below grade in a concrete valve box with a locking cast iron cover. The wye strainer shall have an integral union or be installed with a separate PVC Schedule 80 union.
- d) Master Valve - This device is installed after the Backflow Prevention Device on the water supply line and is wired to a "master valve circuit" on the irrigation controller. If a leak should occur or a valve does not close, the master valve will shut off the water to the system. This device must be included on all irrigation systems. Provide a master control valve immediately downstream of the backflow preventer, wye strainer and pressure regulating valve. The master control valve shall be wired independently to the master valve station of the irrigation controller. Provide a flow sensor located downstream of the master control valve, installed in a concrete valve box with a locking cast iron cover per manufacturer's specifications. All transitions from mainline depth to valve box depth shall be accomplished by the use of 45° couplings. Manual control valves for use on manual irrigation systems and softball infield dust control systems shall be bronze globe valves.
- e) Flow Sensors - The installation of flow sensors which detect and report high water flow conditions. This device must be included on all irrigation systems, install per manufacturer's recommendations, with proper spacing between master valve and downstream valves.
- f) Irrigation Pump or Pump Stations - An Irrigation pump is used if the static water pressure is below the required dynamic water pressure of the irrigation system, install where required. The irrigation pump shall be enclosed in a vandal resistant marine grade aluminum alloy enclosure on a concrete pad. All piping and wiring shall be concealed within the enclosure. Provide adequate clearance around the enclosure for maintenance.
- g) Pressure Regulator - An inline regulators is used to maintain the desired water pressure and is necessary when there is pressure fluctuation that will damage the system, install where required. Provide a pressure regulating valve as required based on hydraulic calculations of the irrigation system. Specify the correct spring range (pressure range) for the pressure regulating valve. The

pressure regulating valve shall be located below grade in a concrete valve box with a locking cast iron cover, immediately downstream of the backflow preventer and wye strainer. The pressure regulating valve shall have an integral union or be installed with a separate PVC Schedule 80 union.

- h) Manual Shut off Valves - These valves (such as a gate valve, ball valve, or butterfly valve) are located along the mainline, to create isolated repair zones and to minimize water loss in case of an emergency (such as a main line break) or routine repair. This device must be included on all irrigation systems. Manual control valves for use on manual irrigation systems and ball field infield dust control systems shall be bronze globe valves.
- i) Weather Based Smart Controller - All County park irrigation systems must be installed with weather based irrigation controllers. Controller installations must be by a certified installer. Provide an automatic rain shut-off device in a vandal resistant enclosure for each controller or group of controllers. The rain shut-off device shall be located in an area subject to rainfall but out of the spray area for irrigation. Controllers shall be included on all irrigation systems and installed at locations approved by the DPR. The preferred location is wall mounted inside.
- j) Interior Mounted Controllers: When located inside a DPR storage room of a restroom, maintenance building, recreation center or other acceptable space, the irrigation controller(s) shall be mounted on a pre-assembled controller and backboard assembly.
- k) Exterior Mounted Controllers: When not located inside a permanent park building, irrigation controllers shall be installed in a vandal resistant, weather proof, stainless steel pedestal enclosure on a concrete pad. The controller(s) shall be installed in a controller enclosure located in a shrub or mulch area; do not install irrigation controller enclosures in turf areas.
- l) Sensors - Sensors (rain, freeze, wind, etc.), are either integral or auxiliary, that suspend or alter irrigation operation depending on weather conditions and evaporation rates. This device must be included on all irrigation systems.
- m) Remote Control Valves - Each hydrozone (similar site, slope, sun exposure, soil conditions, and plant materials with similar water requirements) must be irrigated with a separate remote control valve. Remote control valves shall be of brass or bronze construction; plastic valves are not acceptable. The maximum remote control valve size is two inch with a maximum pressure loss of five PSI. Remote control valves shall be installed in manifolds with a maximum four remote control valves per manifold. Install no more than one remote control valve per valve box. In multi- purpose fields, locate remote control valves along fence lines outside the field of play. All other remote control valves shall be located in shrub or groundcover areas where possible
- n) Spray Heads - Spray heads and other emission devices should have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations. Provide 100 percent (head to head) coverage for all areas irrigated with an overhead irrigation system. In larger turf areas where head spacing is 30 feet or greater, provide an additional 10 percent of overlap to allow for wind. Triangular spacing is preferred, where feasible. The irrigation system shall be designed for the optimal operating pressure of the irrigation head(s) specified. All irrigation heads shall be installed and adjusted to avoid overspray onto buildings, walkways, streets, play equipment, or other improvements. All pop-up type irrigation heads shall have an internal anti-drain valve capable of holding back a minimum of twelve vertical feet of head pressure. All fixed riser type irrigation heads shall be equipped with an anti-drain valve located in the riser assembly per San Diego County Regional Standard Drawings. Additional in-line anti-drain valves may be required based on site conditions and irrigation system design. Irrigation heads in "accessible areas" prone to vandalism or accidental breakage shall be pop-up heads. This includes irrigation heads directly adjacent to walkways, curbs, parking areas, turf or pedestrian accessible areas. All sprinkler heads in turf areas shall be pop-up type with a minimum pop-up height of four inches. Pop-up heads shall have a six inch or twelve inch riser height depending on the adjacent shrubs or groundcover.



Fixed riser heads shall be on twelve inch high risers, and provided only in areas approved by the DPR Department. All pop-up type stream rotor heads for permanent irrigation systems shall have stainless steel risers and a five year manufacturer's warranty. Stream rotors used for temporary irrigation systems may have plastic risers with prior approval of the DPR Department.

- o) Bubblers - The use of low volume bubbler irrigation systems is encouraged for shrub and groundcover planting. All low volume irrigation should be installed with double swing joints on risers. Provide a separate bubbler system for trees, with two bubblers per tree (root watering system with bubbler in 4" plastic perforated pipe with removable grate.) See San Diego Regional Standard Drawings. Bubblers shall be pressure compensating with a fixed flow rate; adjustable flow bubblers are not acceptable.
- p) Double Swing Joints - All spray heads adjacent to high pedestrian traffic areas should be equipped with double swing joints or other riser and pop-up head protection components.
- q) Check Valves - Check valves or anti-drain valves should be required at all low points in the irrigation system. Check valves should also be used for all slope irrigation systems.
- r) Quick Couplers - Provide irrigation quick-couplers outside the perimeter of play areas. The distance between quick couplers should be a maximum of one hundred feet (100') on center along main line routes. Provide quick couplers as directed by DPR. Quick couplers shall be one inch size and constructed of brass or bronze, with a locking rubber or vinyl cover. Quick couplers shall be installed with their own one-inch size isolation valve. Locate quick couplers with remote control valve manifolds wherever possible. Provide quick couplers for ball field infield dust control. The minimum main line size for quick couplers shall be 1-1/2 inch. Quick coupler valves shall be installed in shrub or groundcover areas whenever possible.
- s) Isolation Valves - Provide isolation valves along the mainline at appropriate locations to divide the irrigation system into manageable units, at stub outs for future systems, prior to crossing large expanses of pavement, prior to crossing vehicular drives, at each remote control valve or manifold, and for each quick coupler. Isolation valves for remote control valve manifolds and quick couplers shall be bronze globe valves. Valves shall be the same size as the largest remote control valve on a manifold. Valves for quick couplers shall be one inch. Isolation valves for main lines three inch and smaller shall be bronze globe valves. Isolation valves for main lines four inch size and larger shall be cast iron or bronze gate valves. Isolation valves for main lines in a looped main line system design shall be cast iron or bronze gate valves.
- t) Pipes and Fittings - Upstream of remote control valves (main lines): For pipe sizes up to and including one and one half inch (1½") pipe, use schedule forty (40) PVC or schedule eighty (80) PVC for exposed pipes such as fixed risers. For two inch (2") pipe up to and including four inch (4") pipe, use class three hundred fifteen (315) PVC or schedule eighty (80) PVC. Downstream of remote control valves (lateral lines): For pipe sizes up to and including one and one half inch (1½") pipe, use schedule forty (40) PVC. For two inch (2") size and larger use, class three hundred fifteen (315) PVC pipe. Non-Pressure Lateral Pipe shall be Schedule 40 PVC pipe with Schedule 40 fittings. All end runs, regardless of head type, shall be 3/4 inch size minimum or one inch if the sprinkler head inlet is one inch. On-grade piping is only allowed with DPR Department approval. On-grade pipe shall be galvanized iron pipe (GIP) or UV stabilized PVC pipe with gauges as noted above. All sleeves for irrigation lines shall be Schedule 40 PVC pipe sized two times the diameter of the pipe to be enclosed, two inch minimum size. Sleeves shall extend a minimum of twelve inches beyond the paved surface above. A pull box shall be provided at each end of sleeves crossing streets or driveways
- u) Irrigation Boxes - All irrigation boxes shall be concrete with a cast iron locking cover. The preferred location for irrigation boxes is in a shrub or groundcover area adjacent to a walkway. Irrigation boxes for remote control valves shall be set parallel to each other, and perpendicular to adjacent



paving or concrete curb. The contractor shall paint the identification number (controller letter and valve number) of the valve box on the cover; control wire pull boxes shall be marked "PB"; larger isolation valves in valve boxes shall be marked "GV". The paint shall be white or yellow 100% acrylic epoxy waterproof paint.

10.3.3 Irrigation Water

1. For most parks there are two primary considerations: 1) To assure that the irrigation design will meet the time constraints of the park's required operation needs; and 2) The system must be able to apply the volume of water necessary to achieve the evapotranspiration rate (ETO) for the highest demand month within a 32 hour per week watering "window."
2. For parks with sports fields it is critical the irrigation design is adequate to irrigate the site within the irrigation window and the recreational schedule of the sports fields.
3. The irrigation design must be able to irrigate the complete site within one 8 hour irrigation window. This cycle must be able to apply the volume of water needed in a peak summer condition following two consecutive days of no water. A typical condition at most sport field complexes requires that the fields not receive irrigation on Friday or Saturday nights in preparation for community use on the following morning, and therefore the irrigation design must apply three days of irrigation in a single night. To carry overtime for this condition is not effective.
4. All systems shall be designed to operate at a water velocity not to exceed five feet per second (fps).

10.3.4 Recycled Water

1. The irrigation designer shall verify the ability use recycled water use for irrigation with the appropriate water district.
2. All recycled irrigation systems shall be designed per the requirements of County of San Diego Department of Environmental Health and the local water district.
3. Cross Connection Test Station shall be a cast brass or bronze ball valve, 3/4 inch female thread, installed in a concrete valve box with a cast iron locking lid.
4. Quick couplers and manually controlled high-speed rotor heads provided for ball field dust control, shall be connected to a potable water supply with adequate backflow protection.

10.3.5 Irrigation Trenching

1. No shared use of trenches will be allowed between various trades and for incompatible uses. Pipes shall not be installed directly over one another.
2. All main line and lateral line pipe shall be encased with SE 50 plaster or mortar sand.
3. Warning tapes for irrigation main lines and low voltage control wires shall be a minimum of three inches wide and shall run continuously for the entire length of all main line piping and wire. In a trench containing both main line and low voltage control wire, both trench marker tapes shall be installed side by side.



CHAPTER 11 UTILITIES

11.1 UTILITY DESIGN

1. All Exterior Lighting must comply with California's Building Energy Efficiency Standards Title 24, Part 6.
2. Design utility corridors in close proximity to roads and major walkways, to reduce future disturbance of these areas from maintenance and repair operations.
3. Electrical design for park facilities should comply with the current adopted edition of all applicable local, state, federal codes and standards.
4. The design should provide for the efficient use of energy through proper equipment selection and system controls.
5. Oversize electrical panel by 30% for future expansion.
6. Power, telephone and lighting panels should not protrude into any aisles or corridors. No panels should be installed in fire corridors unless panels are mounted in closets with fire rated doors.
7. Lighting and appliance panel boards must have no less than one spare circuit breaker for every five active circuits.
8. All exterior receptacles must have rainproof enclosures with lockable cover.
9. All parking lot and walkway poles should be thirty feet (30') in height.
10. Provide time programmable switches with battery backup device for all exterior lights.
11. Provide interior restroom movement sensors (adjustable by field agency) for all restroom lighting systems.

11.2 LIGHTING

11.2.1 Design

1. Lighting and electrical plans and specifications shall be prepared by a State of California licensed Electrical Engineer.
2. All designs shall comply with the applicable County of San Diego requirements including, but not limited to, traffic signal and street lighting requirements, Standard Specification for Public Works Construction, and Title 24 as applicable.
3. Light fixture locations and plant locations shall be coordinated so that plants do not obscure the lights at maturity.
4. Interior sports lighting systems shall consider the use natural light to minimize electricity use during the day. The consultant or developer shall evaluate gymnasium sports lighting systems including use of pulse start metal halide and multi-ballast fluorescent fixtures.
5. Consultant or developer shall consider the merits of using occupancy sensors and lighting automatic lighting control systems to switch lights. This includes but is not limited to automatic lighting controls, day lighting controls, and programmable lighting controllers to minimize energy consumption from lighting.
6. All lighting systems shall use internal reflectors and exterior louvers to reduce light pollution. Use high efficiency lighting with low cut off angles and down-lighting and allow no direct-beam exterior lighting at the property line.
7. Underground conduit improvements shall be in Schedule 40 PVC pipe, minimum size of one inch. Above ground conduit improvements shall be in galvanized rigid steel pipe. When adjacent to a



sidewalk, conduit shall be installed parallel to the sidewalk with adequate clearance from irrigation lines and other utilities.

8. Pull boxes for high voltage site and sports lighting shall be placed in the sidewalk or within concrete areas where possible. Pull boxes are required at each light standard when light standards are placed further than 50 feet apart. Pull boxes shall be concrete with a bolt-down cover.
9. All light poles shall be located in shrub beds and mulch areas whenever possible. When light poles are located in turf areas, they shall be adjacent to walkways with a concrete pad per San Diego Regional Standard Drawings. If it is not feasible to locate light poles adjacent to walkways, light poles in turf areas shall have a concrete mow curb at the base per San Diego Regional Standard Drawings.
10. All light fixtures shall be approved by DPR.
11. Light poles and irrigation head layout shall be coordinated to allow for full irrigation coverage and to avoid spraying poles.
12. All light pole standards within or near a playing area that are not protected by a fence should have six foot (6') high pole pads.
13. Anchor bolts for light poles shall not be exposed. Anchor bolts shall be covered with grout or a metal shroud provided by the manufacturer.
14. A midget ferrule fuse shall be provided in the base of each light pole.
15. All outdoor lighting facilities shall be flush mounted and installed in lockable and vandal-proof enclosures.
16. Lights recessed in paving or landscaping are discouraged due to potential vandalism and water damage.

11.2.2 Security Lighting

1. All parks shall be designed with security lighting along walkways, on restroom buildings, and in parking areas.
2. Security lights are to be mounted on building walls where possible.
3. The minimum amount of lighting along all walkways and in parking areas shall be 0.5 foot-candles (fc), with a uniformity rate of six.
4. The fixtures shall have a Classification of Type I or cut-off per the Illumination Engineering Society (IES) standards. The refractor shall be U.V. stabilized prismatic acrylic or polycarbonate; glass is not acceptable. The mast-arm type shall be the slip-on type. Each fixture shall be individually switched by means of a twist-lock photocell.
5. Lighting circuits shall be energized by means of a time clock so each system has the capability of being switched off at a pre-determined time.

11.2.3 Multi-Purpose Field and Court Lighting

1. Lighting shall meet the current IES standards and the skill level of the highest play activity that is being provided.
2. The design shall be prepared to use the least number of light fixtures and electrical energy required to provide the specified lighting intensities.
3. Spill and glare shall be minimized. Photometric data and lighting density calculations must be provided at plan check phase.
4. Baseball and Little League lighting requirements are sanctioned and tested by Little League Baseball. This type of lighting requires written approval from DPR
5. Multi-purpose field lights shall be activated by means of an on-off switch located in a separate lockable (padlock) vandal resistant enclosure. The "On" switch shall be energized by a time clock. The



clock shall turn the lights “Off” at a predetermined time. Lighting for each softball and soccer fields shall be on separate systems. Relay switches (contactors) of more than three poles or any other exotic switching equipment shall not be used.

6. When requested by DPR, provide a proprietary control system capable of turning the sports lighting on and off from a remote location. The control system shall be compatible with the lighting and electrical equipment provided.
7. Lighting Poles shall be a maximum height of 70 feet. Field lighting poles shall be located outside the fenced play areas.
8. Control of sports lighting shall be accomplished with an “on” button only, energized by a time clock, and time clock shall turn lights off after set time. Verify all court lighting requirements with DPR. Each tennis court shall be lighted independently. Individual “On” buttons shall be located adjacent to each tennis court. The electrical power to tennis court lighting shall be independently metered by SDG&E.

Table 6: Lighting Levels in foot-candles (fc)

Recreational Use	Horizontal Illumination	Uniformity
Soccer:		
Recreational	20 fc	4:1 or less
Amateur	30 fc	3:1 or less
Softball:		
Infield	30 fc	2.5:1 or less
Outfield	20 fc	3:1 or less
Baseball		
	50 fc	2:1 or less
Infield	30 fc	2.5:1 or less
Outfield		
Tennis	30 fc	4:1 or less
Basketball and Volleyball	30 fc	3:1 or less
Swimming Pool Decks	1 fc	4:1 or less

11.3 TELECOMMUNICATIONS SYSTEMS

1. All park buildings need data links in all rooms with exceptions to restrooms, locker and dressing rooms.
2. Data links are provided using data jacks and phone jacks.
3. Multiple jacks are needed in each room depending on the size and use of the room and must be positioned strategically.
4. Wi-Fi access points and the connectivity between all buildings must also be considered. This information must be provided on the plan for all new and remodeled buildings.

11.4 TRENCHING

1. No shared use of trenches will be allowed between various trades and for incompatible uses. Pipes shall not be installed directly over one another. If shared use of trenches is required, such trenches shall comply with applicable codes and are subject to approval by County inspector.
2. All main line and lateral line pipe shall be encased with SE 50 plaster or mortar sand.
3. Warning tapes for irrigation main lines and low voltage control wires shall be a minimum of three inches wide and shall run continuously for the entire length of all main line piping and wire. In a

trench containing both main line and low voltage control wire, both trench marker tapes shall be installed side by side.

11.5 SLEEVING

1. Sleeves are required for all irrigation pipe and electrical lines below paving.
2. Sleeves shall extend a minimum of twelve inches beyond the paved surface above.
3. A pull box shall be provided at each end of sleeves crossing streets or driveways.
4. Electrical Lines: All sleeves for electrical lines shall be Schedule 40 PVC pipe two times the diameter of the wire bundle to be enclosed, two inch minimum size.
5. Pavement Marking: Where irrigation water lines cross under paving the letter 'W' shall be stamped or chiseled on the pavement or curb directly above the sleeve on both ends.
6. Where electrical lines cross under paving the letter 'E' shall be stamped or chiseled on the pavement or curb directly above the sleeve on both ends.

11.6 WIRING

1. Spare Control Wires: A minimum of two (2) spare control wires shall be run along each mainline branch to the furthest valve manifold. Bundle and tape four feet of additional wire and install in the last valve box on each mainline run. Loop the spare wires into one valve box for each manifold along that mainline run.
2. Color Coding: All control wires shall be color coded.
3. Splices: No splices will be allowed on runs of less than 300 feet. All splices are to be made with an approved splice unit, soldered, and installed in a concrete pull box.



CHAPTER 12 PARK CONCEPT PLANS

To ensure consistency and clarity, the following graphic and drafting standards apply to all park projects. These standards are to be adhered to in the preparation of Park Concept Plans, Construction Plans and As-Built Plans. If the project requires a discretionary approval, the plans will need to meet the additional criteria of the Department of Planning & Development Services (PDS).

1. The project title shall be on all Park Concept Plans and boards. The project title shall be “General Development Plan for (park name) Park”.
2. Plans shall have a north arrow pointing to the top or right side of the page, and graphic and written scale.
3. Park Concept Plans shall clearly indicate all on-site facilities including buildings, parking areas, play areas, walkways, site furniture, lighting, landscape materials, drainage, and other improvements. A legend or call-out shall be provided for all symbols.
4. Property or limit of work lines shall be shown using bold lines to delineate the area of work.
5. Conceptual planting and grading designs shall be shown on the plans. Grading and planting information may be shown on the plan or provided as separate Figures.
6. Play equipment safety zones and any critical dimensions are to be included.
7. Park Concept Plans shall be colored.
8. Conceptual grading shall be shown on the Park Concept Plans or as a separate plan for the entire project site. Clearly indicate existing and proposed contours.
9. All existing and proposed planting shall be shown on the Park Concept Plans. Trees shall be represented graphically with a mature canopy. The plant palette shall provide categories identifying the form and function of the plant material, such as Street Trees, Canopy Trees, Accent Trees, Screening Shrubs, Accent Shrubs, Groundcovers, Slope Planting, etc. Recommended plant species for each category shall be provided.
10. When buildings are part of the park design, provide a plan showing the conceptual floor plan, roof plan and all elevations to clearly indicate the design of the structure. A materials board shall be provided, showing samples of proposed exterior materials, colors and textures.
11. Provide a plan of the park monument sign, including elevations clearly indicating the sign elements and materials. Indicate the proposed sign location.
12. Provide details, plans and elevations of any custom site elements, such as seat walls, overhead trellis structures, fencing, paving, etc. The materials and finishes shall be indicated in the details along with any critical dimensions. Provide catalog cuts of all proposed manufactured site furniture, play equipment and light fixtures, etc.
13. Clearly label all utilities and easements.
14. A project cost estimate shall be prepared during the design of the park and finalized at the end of the Park Concept Plans phase. All costs shall be included in the estimate, including a cost for a 90-day or 120-day plant establishment period and a 10 percent contingency.



CHAPTER 13 PARK PLANS AND SPECIFICATIONS

Park Improvement Plans are the technical plans used for obtaining bids, estimating park construction, operation, and maintenance costs. Park Improvement Plans shall include construction, grading, drainage, demolition, planting, irrigation, and lighting plans. These plans shall be prepared in compliance with the approved Park Concept Plan. Park Improvement Plans shall meet the graphic and drafting standards listed below.

13.1 GENERAL REQUIREMENTS

1. All projects shall be on County standard 'D' sheets (24 inch X 36 inch), with the DPR title block in the lower right-hand corner. Larger sheet sizes are acceptable with DPR approval; however, the Park and Recreation title block must still be located in the lower right-hand corner.
2. Within the title block provide the Project Name and Phase (if applicable), Work Breakdown Structure (WBS) Number, Lambert Coordinates and Drawing D-sheet Number.
3. Shall be capitalized and no smaller than 1/8 inch high when hand lettered, and no smaller than 1/10 inch high when mechanically or computer lettered. The space between lines of lettering shall be not less than one-half the height of the letters.
4. The final submittal for all drawings shall be on white bond paper (24" x 36").
5. A key map shall be provided on each sheet if the project contains multiple plans.
6. Matchlines for projects requiring multiple sheets shall be labeled to provide adequate reference for identification and cross-indexing to other plans.
7. North arrow with scale shall be shown on each sheet. North orientation of plan shall be to the top or to the left side of the plan.
8. All plans shall be done at a scale no smaller than 1 inch = 30 feet. Prior DPR approval is necessary if projects require a smaller scale to fit onto sheet size. If additional detail is required, a larger scale is to be utilized to provide sufficient clarity. Provide a written and graphic scale on all plans.
9. A limit of work line shall be provided showing the project area of work.
10. Label streets that are adjacent to the project or within the project's immediate area.
11. The professional registration stamp of the architect or engineer responsible for the plan shall be provided on all plans, signed and dated.
12. Provide the following note on all plans: "SHEET SIZE AND SCALE: IF SHEET SIZE IS LESS THAN 24" X 36", IT IS A REDUCED PRINT - SCALE ACCORDINGLY."
13. Clearly label all utilities and easements.

13.2 TITLE SHEET

1. Title sheet shall include but not be limited to the following:
2. The project name and the project phase, if applicable, shall be placed at the top of the Title Sheet in 48 point font or larger.
3. A vicinity map showing nearest arterial intersection, street names, north arrow and project location.
4. A location map showing the project area and applicable street names, north arrow, matchlines, project limits, tract boundaries and scale.
5. Provide a brief legal description and street address.
6. A project directory that lists the prime consultant and all the sub-consultants firms, addresses, phone numbers, fax numbers and e-mail if applicable.
7. Provide a sheet index listing plans by Sheet Number, D-Sheet Number and Sheet Title.



8. The project name shall be provided on the right hand margin of the title sheet.
9. The survey data shall be provided by listing the applicable aerial, field survey or benchmark information on the Title Sheet:
10. 'Deductive' or 'Additive' alternates shall be listed, if applicable, on the title sheet in order of preference. Describe each alternate and reference the applicable plans for further description.
11. Reference on the Title Sheet all existing drawings affecting the project, such as prior grading or street improvement plans, with a work order number or building permit number.
12. Provide the following note on the Title Sheet: Description of the Scope of Work with a brief description of all the work to be done)
13. Provide the following note on the Title Sheet: Applicable Standard Drawings and Specifications:
 - (1) Greenbook - Standard Specifications for Public Works Construction including the County of San Diego "Whitebook" supplement to the Greenbook (current edition).
 - (2) County of San Diego Standard Drawings (current edition).
 - (3) Disabled Access Regulations, Title 24, (current edition) and California State Accessibility Standards Interpretive Manual (current edition) prepared by the Office of the State Architect and the Department of Rehabilitation.
 - (4) Americans with Disabilities Act Regulation: ADAAG (The Americans with Disabilities Act Accessibility Guidelines) issued by the Architectural and Transportation Barriers Compliance Board (current edition).
 - (5) Manual of Traffic Controls for Construction and Maintenance Work Zones, State of California Department of Transportation (current edition).
 - (6) U.S. Consumer Products Safety Commission Handbook for Playground Safety (current edition).

Note: The most current editions of the preceding documents shall be used. Where one or more sets of specifications or drawings are applicable, the more restrictive shall take precedence.

13.3 DEMOLITION PLANS

1. Demolition plans shall be included for all park sites with existing improvements that will require demolition.
2. The plans shall clearly show all improvements to remain and all improvements to be removed.
3. Improvements both above ground and below ground shall be shown.
4. Clearly label all utilities and easements.
5. Demolition notes shall be included on the plans.

13.4 GRADING AND DRAINAGE PLANS

The following shall be included on the plans.

1. Grading and drainage plans shall conform to all County requirements including the County of San Diego Grading Ordinance and Watershed Protection Ordinance.
2. Grading plans shall be prepared by a professional, as licensed and allowed by the California Business and Professions Code.
3. The following shall be included on the plans.
 - 1) Existing and proposed finish grades shall be graphically shown on the plans with minimum two foot contours and spot elevations for the entire site and within 50 feet of the site boundaries. The plan must clearly show how the site will drain and to where. All areas of the site must have positive drainage, away from structures.



- 2) Spot elevations shall be shown at all high points, low points, changes in gradients, changes in elevations (stairs, curbs, etc.), hardscape, corners of structures, finish floor elevations, drain locations and inverts, top and bottom of walls, and any other locations necessary to indicate the proposed grading design.
- 3) Slope gradients shall be labeled as a percentage or as a ratio.
- 4) Clearly show property lines and indicate all off-site grading. Provide a letter of permission from the adjacent land owners for proposed off site grading.
- 5) Areas to remain undisturbed shall be indicated on the plans.
- 6) Grading and drainage details shall be provided for all details that do not conform to the San Diego Regional Standard Drawings.
- 7) Grading notes shall be provided on the plans.

13.5 LAYOUT AND CONSTRUCTION PLANS

Layout and construction plans shall include but not be limited to the following:

1. Walkways, paving, mow curbs, fences, walls, site furniture, multi-purpose courts and fields, play areas, buildings, parking lots, signs, trails, etc., shall be graphically located on the plans.
2. All proposed improvements shall be located on a horizontal control plan.
3. Shall include all symbols used on the plan.
4. Legend shall include a symbol, manufacturer/model no., description of material, color, detail number, and other information, as required.
5. Construction details shall be provided for all details that do not conform to the County of San Diego Standard Drawings.
6. Construction notes shall be provided on the plans.
7. Construction specifications shall be provided on the plans, or provided in a specification book with the Park Project Manager approval.
8. Provide the following notes on the Playground and Equipment Plans:

CONTRACTOR EXPERIENCE:

The contractor shall have National Playground Safety Institute (NPSI) certification for installers and in addition the installers shall be certified by the equipment manufacturer to install their equipment and safety surfacing. The NPSI certified installers shall be involved in the construction of the playground at all times during construction and including preparation of the subgrade.

13.6 IRRIGATION PLANS

1. Irrigation plans shall include but not be limited to the following:
 - 1) Point of Connection and Meter: Service: Domestic or recycled. Water meter size and service lateral size. Water meter address. Installation requirements and responsibilities of the water purveyor and the Contractor. Available static water pressure at point of connection (POC). Design pressure. Peak flow through water meter (in GPM).
 - 2) Irrigation Booster Pump (If needed)
 - 3) Backflow Prevention Device: Size (sized for a maximum 7.5 feet per second velocity).
 - 4) Wye Strainer.
 - 5) Pressure Regulator Valve (if required).



- 6) Master Valve and Flow Sensor.
- 7) Recycled water test station (recycled water systems only).
- 8) Automatic Irrigation Controller: Location, number of stations, identifying letter and electrical service (or reference electrical plans for service).
- 9) Rain Shut-Off Device.
- 10) Isolation Valves.
- 11) Remote Control Valves: Size, irrigation controller letter, valve station number and GPM.
- 12) Quick Couplers (with globe valves).
- 13) Irrigation Mainline and Size.
- 14) In-line Check Valves.
- 15) Irrigation Heads (pop ups) with rotor or spray nozzles
- 16) Irrigation Lateral Line and Size
- 17) Irrigation Sleeves.
- 18) Control Wire Routing and Pull Boxes.
- 19) Drinking Fountains: Locations and water source.
- 20) Irrigation Legend: Shall include all symbols, manufacturer model number/size, description of equipment, radius, PSI, GPM, detail number or standard drawing number.
- 21) Irrigation Details: Shall be provided for all details that do not conform to the County of San Diego Standard Drawings.
- 22) Pressure Loss Calculations: Provide pressure loss calculations (incorporate residual loss factor) for the system with the highest pressure requirement for each controller. Pressure loss calculations shall take into account the need to run multiple valves at the same time to meet the irrigation water window identified in this Guide.
- 23) Irrigation Notes: Irrigation notes shall be provided on the plans.
- 24) Irrigation Specifications: Irrigation specifications shall be provided in a specification book.

13.7 LANDSCAPING PLANS

1. Landscaping Plans shall include but not be limited to the following:
 - 1) Plant materials shall be graphically shown on the plans with a symbol that represents the mature size of the proposed species. Show all existing plant material that will remain on the site as a dash symbol.
 - 2) The planting legend shall include the symbol, quantity, size, botanical name, common name, detail number, and any special remarks such as on-center spacing, tree height and width, variety or color.
 - 3) Seed mix shall include the botanical name (s), % pure live seed, total pounds per acre, mulch, binder, fertilization and inoculation requirements. Identify if the seed mix is irrigated or non-irrigated.
 - 4) Planting details shall be provided for all installations that do not conform to the San Diego Regional Standard Drawings.
 - 5) Planting notes shall be provided on the plans.
 - 6) Provide fertilization notes on the plans for both pre- planting application and post-planting (maintenance period) applications.
 - 7) Planting specifications shall be provided on the plans or in a specification book with Park Project Manager approval.

13.8 LIGHTING PLANS

1. Lighting plans shall include but not be limited to the following:
 - 1) All security and sports lighting shall be graphically located on the plans including all light poles, fixtures, pull boxes, transformers, and other components. Sports lighting poles shall be shown with dimensions from identified landmarks for each pole location.
 - 2) The service point shall be shown on the plans. If the point of connection is not within the project site, the service point shall be identified in a vicinity map detail. The San Diego Gas & Electric (SDG&E) planner and their phone number shall be identified on the plan. Any SDG&E fees shall be enumerated by an appropriate bid item.
 - 3) The light fixture legend shall include symbols for poles, fixture types, conduit size, panels and utility service points.
 - 4) The light fixture schedule shall identify manufacturer, model number, type of fixture, voltage and wattage.
 - 5) The electrical panel schedule shall designate circuits with the number of devices being served, voltage, number of phases, short circuit rating, load continues amperage, etc.
 - 6) Lighting details shall be provided for all details that do not conform to the County of San Diego Standard Drawings, including but not limited to, conduit, pull box installation, foundation installation and configuration of all panels.
 - 7) Lighting notes shall be included on the plans.
 - 8) Lighting specifications shall be provided on the plans or provided in a specification book with the Park Project Manager approval.
 - 9) Identity on the plans the foot-candle levels for each type of sports activity to be illuminated. Designate average maintained illumination levels and uniformity ratios (maximum to minimum).
 - 10) Identify on the plans the aiming point on the playing surface for each fixture.
 - 11) Provide notes on the plans indicating the contractor is responsible for testing the lighting on each sports field, and for furnishing a written report to the Park Project Manager indicating the testing results of the illumination levels in foot-candles and uniformity ratios for each field.

13.9 AS-BUILT PLANS

1. As-Built Plans are the final record of what was constructed. The Design Consultant, as part of the Consultant's contract, and the developer, as part of the park agreement, shall be responsible for correcting the original plans to show the as-built conditions.
2. All as-built changes noted on the red line set shall be incorporated on the plan set with water-proof ink.
3. The drafting shall be of equal quality to the original plans.
4. Erase all incorrect information and add any Field Engineer's comments.
5. Provide the word 'As-Built' in large lettering in the margin below the Title Block on all sheets changed.
6. The original Architect, Engineer or Landscape Architect must sign the as-built sheets.



APPENDICES

COUNTY OF SAN DIEGO PARK DESIGN MANUAL

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Introduction and Purpose

San Diego is in a semi-arid region with very limited local surface or groundwater supplies, with about 80% of its water supply for urban and agricultural purposes currently being imported. The potential for droughts in the Colorado River Basin and in California, as well as environmental limitations on the importation of Sacramento Delta water can place increasing stress on the region's water supply.

The Board of Supervisors has recognized that importation of water from outside the region must be continued, and maximum use should be made of existing water supply and conveyance systems. The public health impacts and economic losses to agriculture, business, and industry resulting from the loss of imported water would be considerable and cannot be dismissed.

Under normal conditions the San Diego region has enough local water storage capacity (assuming reservoirs are full) to supply water for at least six months to one year in an emergency. However, this available supply of water is not distributed uniformly and some areas could run out of water sooner than others. During prolonged droughts the available supply of water in storage may be considerably less than under normal conditions.

It is important to recognize that although the County, with the exception of a small area served by the Campo Water District, is not a water purveyor, it can set a positive example to others in its commitment to conservation.

Water conservation and prudent management of this scarce resource must become a way-of-life for present and future generations of County citizens. As such, the Board of Supervisors has directed the Chief Administrative Officer (CAO) to initiate a Water Management Plan and Program to conserve water throughout all County-owned and operated facilities. Policies and action programs to achieve this goal are identified in Section I.

Because of the long-term nature of the problem and severe adverse potential consequences, it is necessary for the County to regulate water-using activities of private development projects in unincorporated areas. Therefore, the Board's water conservation and reclamation policy shall apply to both public and private projects.

In 1986, the Board established a Water Supply, Conservation, and Reclamation Policy. This Policy serves to direct and guide various water-related uses at County facilities and discretionary actions of the Board of Supervisors.

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This Policy serves to inform San Diego County's State and federal representatives that the County of San Diego, working in concert with the San Diego County Water Authority (SDCWA) and local jurisdictions, can provide the proper response to the growing water supply problem.

Section I. Water Conservation and Reclamation in County Facilities and Parks.

Policy

It is the policy of the Board of Supervisors that:

- a. The Director, Department of General Services shall manage County-owned and occupied buildings and facilities to standards established by this policy.
- b. The Director, Department of Parks and Recreation shall operate County parks to standards established by this policy.
- c. The goals and objectives of regional and subregional water conservation plans developed by local water authorities, water districts, and cities shall be endorsed by the Board and incorporated into this policy as necessary.

Procedures

1. Low-flow toilets (1.28 gal. or less), low-flow urinals (0.125 gal. or less for wall-mounted urinals) (or approved retrofit devices), and self-closing faucets for lavatories or hand-washing fixtures with a maximum flow of not more than 0.5 gallons per minute will be provided in all new County facilities, or in remodeled facilities where the remodeling includes replacement of the plumbing fixtures. Low-flow showerheads that use 2.0 gallons per minute or less at 80 psi shall be installed in showers. Existing flush valves and toilet tanks shall be modified to use the minimum amount of water practicable.
2. All sprinkler systems providing landscaping irrigation to an area of 500 square feet or larger shall be equipped with an automatic flow-control device (such as a timer or moisture sensor override unit) or other acceptable irrigation management system in accordance with CalGreen and the County Regulatory Code Title 8, Division 6, Chapter 7, Section 86.701 et seq. (Water Conservation in Landscaping Ordinance). Drip irrigation and/or automated irrigation management systems shall be used to the maximum extent practicable. Irrigation systems should be monitored to ensure proper performance.

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3. All new landscaping installations shall make extensive use of low-water and drought-resistant plantings in accordance with the County Regulatory Code Title 8, Division 6, Chapter 7, Section 86.701 et seq. (Water Conservation in Landscaping Ordinance), the Department of Planning & Development Services Water Efficient Landscape Design Manual, and Board Policy G-15, Design Standards for County Facilities and Property, or as amended.
4. Water use shall be minimized during peak electric demand periods (10 a.m. to 5 p.m. summer and 5 p.m. to 9 p.m. winter). Landscape watering should be done at night or in the early morning to the extent practicable to minimize evaporation. Laundries should be operated at night or in the early morning.
5. Water leaks shall be reported immediately and repaired as quickly as possible.
6. The Department of General Services shall be responsible for ensuring that new and remodeled buildings conform to water conservation requirements, and that conservation measures required, by County Regulatory Code Title 8, Division 6, Chapter 7, Section 86.701 et seq. (Water Conservation in Landscaping Ordinance) and the Department of Planning & Development Services Water Efficient Landscape Design Manual, or as amended, are carried out in all County facilities.
7. The Department of General Services and Department of Parks and Recreation shall investigate and test irrigation equipment and drought-resistant plantings to assess the potential for water conservation.

Section II. General Water Supply and Conservation Policies

1. The Board of Supervisors shall support projects and programs that provide the citizens of the region with a long-term supply of local and imported water.

Discussion. Completion of the State Water Project (SWP), restoration of full flow to the Colorado River Aqueduct from water savings in the Imperial Valley, conjunctive groundwater storage in large underground basins (outside San Diego County), and other exchanges would provide for continued use of existing imported delivery systems. Obtaining long-term storage agreements in Lake Mead and other reservoirs is a good example of non-structural-type solutions that would enhance San Diego County's water supply. Such approaches might minimize environmental damage while preserving prior public investments.

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The Board recognizes court decisions and public concern over potential environmental impacts to the Sacramento Delta region and upstream counties of origin, with large-scale water exports out of the area. Implementation of the Federal/State Bay-Delta Ecosystem Partnership Agreement, Federal Central Valley Project Improvement Act, construction of storage reservoirs along the SWP Aqueduct, water transfers/exchanges, and other mitigating measures will help to preserve and improve environmental conditions in the Delta. This should allow for SWP-contracted entitlements to be delivered to the Metropolitan Water District of Southern California (MWD) and other contractors as previously authorized by the State's voters.

2. The Board shall support development of cost-effective and environmentally acceptable surface and groundwater storage facilities.

Discussion. These facilities are needed to conserve surplus wet-weather flows for delivery to water users during periods of peak demand. Due to the potential for disruption of both the State Water Project and Colorado River Aqueducts from earthquake activity along the San Andreas and other nearby fault zones, and levee failures in the Sacramento/San Joaquin area, the Board shall support efforts of the SDCWA and MWD to develop cost-effective storage facilities located near demand areas within San Diego County and/or away from known earthquake hazard areas.

3. The Board shall support efforts by members of the California Legislature and public and private organizations to establish voluntary water exchanges and free water markets in California and other Western states.

Discussion. Water marketing, while containing several unresolved institutional, legal, and economic questions, may have significant water supply benefits for semi-arid regions like San Diego County. The extent to which conveyance facilities are or could be made available to transport the water is a limiting factor. In most cases, facilities currently exist to transport water over long distances to the County. Because of this, development of additional conveyance systems might be postponed resulting in substantial cost savings to present and future water users. MWD and the SDCWA have the financial ability to compete for surplus agricultural or other water supplies. The Board shall actively support their efforts.

4. The Board shall, where appropriate, require water reclamation and reuse facilities that are shown to be cost-effective as part of new projects.

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Discussion. Water reclamation provides a significant source of new irrigation water to offset import demands or local water supplies for non-potable purposes. This Policy shall be carried out in concert with the County Administrative Code entitled, "Water Recycling Ordinance" (Sec. 67.501, et seq.) and the Water Quality Control Board - Region 9 adopted reclamation policies. In the event the basin in which a project is to be located has an adopted water reclamation and reuse program, the Board shall require conformance to provisions of that plan. The Board shall also support development of water repurification facilities that meet or exceed public health standards.

5. The Board shall, together with the SDCWA, support necessary changes in the water right allocations that will:
 - 1) Increase San Diego County's preferential water entitlement to a level commensurate with actual use or otherwise obtain assurances that any future water shortages will be spread evenly throughout the MWD.
 - 2) Provide agriculture with assurance that those who undertake conservation and/or water-reclamation programs will be entitled to an adequate water supply during water shortages unless those areas are subject to groundwater restrictions pursuant to the Sustainable Groundwater Management Act of 2014, or other applicable laws, and have no ability to receive imported water from a SDCWA member agency.

Discussion. San Diego County water users, through the SDCWA, purchase approximately 18.7% of all water sold by the MWD each year, yet the SDCWA only has firm entitlement to approximately 18.27% of available MWD supplies.

During normal years there is little cause for concern. However, during dry or drought-year conditions, this could create serious problems for the region. It is important that any future shortages be shared equally among all imported water users.

The County, through its legislative program, shall provide greater assistance to the SDCWA in correcting any regional imbalances.

The other area of concern is with agriculture. Agriculture contributes significantly to the economic diversity and well-being of the San Diego region. In the event of water shortages, agricultural water deliveries could be severely reduced.

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From 2005 through 2016, agriculture in San Diego County uses approximately 44,000 to 110,000 acre-feet of water per year for irrigation, depending on weather conditions, or about 8% to 15% of the region's total annual water use. This contrasts sharply with other regions such as the Central Valley where agricultural water use is a substantially greater percentage of total water deliveries.

San Diego County farmers have demonstrated a commitment to efficient water use. If agricultural water cut-backs are required, the burden of such reductions should be borne by the most inefficient users in the State.

6. The Board shall encourage and support environmentally acceptable research and demonstration projects that utilize non-traditional water production and conservation techniques.

Discussion. Incentives are needed to encourage public and private sector research and demonstration programs in such non-traditional water development areas as brackish water treatment, repurification, desalination, weather modification, watershed management, and non-structural programs. Innovative conservation programs are also needed.

The Board shall direct its representatives in Sacramento and Washington, D.C. to actively support legislative measures that will accomplish this goal. However, these demonstration programs should only be considered for public funding after a thorough review of environmental impacts and efficiencies in existing water management and water-right allocations.

7. The Board shall direct its representatives on the SANDAG Board and SDCWA Board to work with other local agencies in order to establish and maintain a uniform policy approach to water supply and conservation in the San Diego region.

Discussion. The SDCWA and SANDAG serve as the proper regional forum for local officials to address regional water problems. Those agencies are actively responding to assure the region's voice is heard at the State and federal levels. The Board shall continue to support these efforts and to provide staff support as needed.

8. The County will cooperate with water districts, cities, and other agencies on water issues of mutual concern, including the ongoing evaluation and monitoring of the adequacy of the regional water supply. If deemed necessary, the County will participate in efforts to improve coordination between land use approvals and the region's water supply.

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Discussion. In spite of development of new sources of water and reduction in per capita consumption, the potential still exists for water demand to exceed supply.

It is important to monitor projected growth in conjunction with regional water availability. If it is determined that there is insufficient supply to meet the needs of projected growth, the rate of development might have to be slowed, and/or the types of development permitted may have to change. Since this issue involves regional facilities and supply, the County cannot act effectively on its own. While the County has land development jurisdiction over a large amount of territory in the San Diego region, a substantial percentage of new construction occurs within the cities.

Therefore, policies and procedures to regulate the allocation of water service need to be instituted on a regional basis.

The cities and the County are directly responsible for making land use decisions. The SDCWA together with its members, the water purveyors, would be the appropriate agencies to gather information on the status of the regional water supply. Coordination among these entities is needed to determine whether water supply will be sufficient to keep pace with currently projected growth, and to jointly determine appropriate land use actions in anticipation of, or in the event of, a water shortage.

9. The Board shall use its powers to assure that local water supplies and distribution facilities are protected.

Discussion. San Diego County has a number of dams and reservoirs that store local and imported water. The quality of the water in some of these reservoirs is threatened by encroaching urban developments. The Board shall not approve a subdivision map or development unless adequate provisions are made to protect water supply reservoirs from urban runoff.

10. The Board will incorporate water conservation requirements into the planning review process.

Discussion. The Board intends to significantly reduce water waste in new development through land development policies and regulations that mandate indoor and outdoor water conservation and water reclamation measures where appropriate.

Sunset Review

This policy will be reviewed for continuance by December 31, 2024.

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Board Action

06/10/86 (163)

12/03/86 (7)

12/12/89 (49)

06/05/90 (43)

12/04/90 (56)

06/12/90 (120)

02/01/95 (23)

03/12/2002 (10)

04/07/2009 (7)

09/25/2012 (11)

11/14/2017 (16)

CAO Reference

1. Department of General Services
2. Department of Planning and Development Services
3. Department of Public Works
4. Department of Parks and Recreation
5. Department of Environmental Health
6. Agriculture, Weights & Measures
7. Strategy and Intergovernmental Affairs Office

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Utilization of Park Lands Dedication Ordinance Fees and Interest	F-26	1 of 3

Purpose

The purpose of this policy is to establish guidelines and procedures for the acquisition and development of parkland with fees and interest derived from the Park Lands Dedication Ordinance (PLDO).

Background

The Park Lands Dedication Ordinance (County Code sections 810.101 through 810.129) collects fees for park land and park improvements pursuant to the Quimby Act and the Mitigation Fee Act. As authorized by the Quimby Act (Government Code section 66477 et. seq.), the PLDO requires subdivisions to dedicate land, pay a Park In-Lieu Fee, or a combination of both, for local park or recreational purposes. As authorized by the Mitigation Fee Act (Government Code section 66000 et seq.), the PLDO requires non-subdivision residential development to pay the Park Land Acquisition Impact Fee for acquisition of park land; and requires both subdivision and non-subdivision residential development to pay the Park Improvement Impact Fee for the provision of park improvements. The words or phrases defined in the Park Lands Dedication Ordinance shall have the same meaning when used in this policy.

Policy

It is the policy of the Board of Supervisors that:

1. To provide maximum possible park acreage and recreational opportunities for present and future County residents, Park In-Lieu fees based on the Quimby Act will be used for land acquisition and development of new, or rehabilitation of existing. Park Land Acquisition Impact fees will be used only for park land acquisition as required to mitigate for new development. Park Improvement Impact fees will be used for development of new or rehabilitation of existing park facilities as required to mitigate for new development. PLDO-funded projects will proceed only after all capital costs, and operations and maintenance funding have been identified. Future PLDO projects will be included in the County's Capital Improvements Needs Assessment (CINA) process.
2. No more than twenty-five percent (25%) of Park In-Lieu fees, Park Land Acquisition Impact fees, or Park Improvement Impact fees may be used in a fiscal year to acquire land for trails and/or develop new trails.
3. Fees received pursuant to the PLDO may be used, if available, to reimburse developers for half of their public park improvement costs that exceed three acres per 1,000 residents, if five acres per 1,000 residents or more of improved public parks are dedicated to the County. Reimbursements shall only be eligible for public parks improved with PLDO Eligible Recreational Uses as defined in the PLDO. The cost of grading, drainage, utility, landscaping and infrastructure improvements required for the County to accept land to be dedicated for a public park shall not be eligible for reimbursement. The developer shall secure all required permits and environmental clearances and pay all fees and costs for public park

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construction. Prior to construction, the County and developer shall agree on an approximate reimbursement cost of proposed park improvements. After construction and acceptance of the installed facilities by Department of Parks and Recreation (DPR), the County shall reimburse the developer for the value of fixed improvements to public parks, installed or constructed by the developer, provided that the reimbursement is deemed reasonable by DPR staff and shall not exceed the value of improvements normally authorized by the County for similar public parks or the park construction cost per acre in the Parks and Recreational Facilities Development Impact Fee Study on file with DPR.

4. The Board of Supervisors may create local park and recreation advisory committees in each Local Park Planning Area or may utilize Community Planning and Sponsor Groups to advise and assist in recommending priorities, site selection and development of park facilities within a Local Park Planning Area. Input from other citizens and community organizations may also be solicited and utilized.

5. On an annual basis, DPR shall request a 5 year priority list from each Planning and Sponsor Group or other approved entity within the unincorporated county, for purposes of defining community recommendations for use of PLDO funds.

DPR shall review these lists for conformance with the requirements of the PLDO ordinance and this Policy. DPR will consider projects on these lists, as well as general community park needs, when determining whether to bring PLDO recommendations forward to the Board of Supervisors for consideration. In some instances, DPR may recommend park improvements not on the lists provided by the local Planning and Sponsor Groups or other approved entities. Park projects in the Park Improvement Plan and Capital Improvement Needs Assessment constitute the County's plans to spend down accrued PLDO fees.

6. The County encourages the joint use of publicly owned lands and facilities and will cooperate with other public agencies to pursue joint programs or projects for planning, acquisition and development of park facilities where such cooperation will result in better service to the public or a more effective use of public funds, and when the other agency provides maintenance and operation services.

7. The DPR shall manage and administer funds received pursuant to the PLDO.

Responsible Departments

1. Department of Parks and Recreation
2. Chief Financial Officer / Auditor and Controller

Sunset Date

This policy will be reviewed for continuance by 12-31-23.

References

Board Action
 12-6-73 (3)

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05-22-79 (150)
08-04-81 (12)
09-27-83 (82) to be effective 11-3-83
06-20-89 (63)
12-05-95 (36)
08-07-02 (5)
02-24-10 (2)
12-14-16 (16)
06-20-17 (24)
07-25-18 (4)

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Naming of County Park and Recreation Amenities	F-52	1 of 3

Purpose

The intent of this policy is to set forth criteria and parameters to guide naming rights opportunities for amenities within County of San Diego Department of Parks and Recreation (DPR) facilities. This policy provides DPR the authority to consider and approve the naming of park amenities after an organization, business or individual that has provided a financial contribution to support park and recreation capital or major maintenance projects.

Definitions

In the context of this policy, the following definitions apply:

- a) "Amenity" means a smaller support structure or park feature located within a larger County park facility such as, but not limited to, sports fields, conference rooms, playgrounds, pools, decorative or water play fountains, gardens, gazebos, pavilions, tennis courts, basketball courts, volleyball courts, or trails.
- b) "Naming or Naming Rights" refers to the opportunity to name a DPR park amenity.

Policy

1. DPR shall pursue alternative funding to achieve appropriate levels of cost recovery in accordance with County of San Diego Board of Supervisors Policy B-55 and DPR's cost recovery business plan.
2. The naming of DPR facilities will continue to be covered by Board of Supervisors Policy F-46, which states the naming of County buildings and structures shall be done only by the Board of Supervisors, by resolution adopted with a majority vote.
3. This policy shall supersede F-46 and authorize the DPR Director to consider and approve park amenity naming rights that are for a term of 5 years or less or that will result in \$15,000 or less in total revenue for the duration of the naming term.

Guidelines and Criteria

In all cases, DPR will ensure that naming rights will not be in conflict with or run counter to DPR's mission and goals including, but not limited to:

- Promote healthy lifestyles or civic responsibility
- Recreational programs and services that increased physical, intellectual, social and/or emotional abilities
- Promote environmental awareness and responsibility
- Acquire, preserve, or enhance significant natural or historical/cultural resources

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- Promote resource sustainability
- Increase environmental stewardship
- Educate public about resources, conservation or sustainability
- Support multiple species conservation program
- Improved energy and water efficiency
- Protect tree population
- Promote acquisition, development or maintenance of facilities that support community needs, provided safe and accessible opportunities to gather, promoted park stewardship or celebrated diversity while connecting communities.
- Supports healthy families, sustainable environments or safe communities
- Foster community ownership in the maintenance and security of the County's trail systems
- Supports accessible places for recreation
- Promote government agency partnerships and community involvement
- Promotes volunteerism
- Enhance park safety
- Strengthen connection between people and the outdoors
- Support providing affordable recreation options
- DPR's mission or objectives that are adopted annually by the Board of Supervisors

Naming rights proposals that shall **not** be considered are those which:

- a. Promote practices that, if they took place, would violate U.S. or state law (i.e. - dumping of hazardous waste, exploitation of child labor, etc.), or promote drugs, alcohol, tobacco, gambling or adult entertainment.
- b. Discriminate on the basis of race/ethnicity, color, religion, national origin, sex, disability, medical condition, sexual orientation, marital status, veteran status or age.
- c. Include religious references or political statements.
- d. Endorse products or services that do not comply with DPR policies and procedures, County, State or federal regulations, ordinances, codes, or statutes.
- e. Appear to be in direct competition with DPR services or products.
- f. Endorse products or services that conflict with DPR's mission or Board of Supervisors approved objectives or goals.

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Subject	Policy Number	Page
Naming of County Park and Recreation Amenities	F-52	3 of 3

All park Amenities eligible for naming rights shall be determined by the DPR Director or designee. If a naming right opportunity includes signage, a detailed proposal of the signage, including design, layout, verbiage and cost will need to be provided, in writing, for review and approval by the DPR Director or designee. DPR can specify sign size, sign, type, and font of any naming rights signage or displays. DPR reserves the right to terminate any naming right agreements not in accordance with this Board Policy.

Sunset Date

This policy will be reviewed for continuance by 12-31-18.

Board Action

01/29/14 (2)

CAO Reference

1. Department of Parks and Recreation

COUNTY OF SAN DIEGO, CALIFORNIA**BOARD OF SUPERVISORS POLICY**

Subject	Policy Number	Page
Design Standards for County Facilities and Property	G-15	1 of 5

Purpose

To establish general principles and objectives for the design, construction and improvement of owned or leased County facilities and property.

Background

In January 1990, the Board of Supervisors adopted a policy and work program for space requirements that recognized the need for centralized, prudent management of County property and facilities. A significant issue identified by the Board was the need to establish design standards for County facilities that set forth appropriate techniques, materials and technology to improve public accessibility, energy performance, resource utilization, and the work environment. An additional critical consideration is the need to balance capital cost requirements with operating and maintenance costs.

The environmental performance of facilities has significant impacts on resources, costs, and occupant/public health and well being. A Green Building means one designed, constructed and operated to give a high level of environmental, economic, and engineering performance. Occupant health, energy, and transportation efficiency; resource and material conservation (air, water, land, fuel); as well as reuse and recycling during building construction, operation, and demolition are important areas of focus. The concept applies to all types of buildings, including residential, commercial, institutional, and industrial, and addresses these principles:

1. Make appropriate use of land.
2. Minimize erosion and air, water, and land pollution.
3. Make efficient use of finite natural resources.
4. Reduce total lifetime energy and water usage.
5. Be economical to build and operate.
6. Enhance health for contractors and building occupants.
7. Use non-toxic materials and products, where possible,
8. Procure local materials to assist the local economy and reduce transportation emissions.
9. Preserve plants, animals, endangered species, and natural habitats.
10. Protect agricultural, cultural, and archaeological resources.
11. Demonstrate recycling and waste reduction best practices.

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Subject	Policy Number	Page
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Policy

It is the policy of the Board of Supervisors that:

1. Design guidelines and standards shall be established for County-owned and leased facilities to promote the following objectives:
 - a. Provide safe, healthy, functional, aesthetically pleasing facilities at a reasonable cost.
 - b. Maximize flexibility to easily accommodate changes in use, configuration, and/or occupants of a facility, including information technology infrastructure, mechanical, electrical and plumbing systems.
 - c. Utilize appropriate and flexible office design to include opportunities for multiple and after-hour use of suitable facilities where feasible.
 - d. Provide features that promote client convenience and access, including clear identification, signage, flagpoles and appropriate adjacency of services.
 - e. Ensure the safety and security of employees and the public, including measures to prevent or reduce unauthorized or undesirable activities, and adequate measures to prevent injury to employees and the public.
 - f. Provide accessible and safe facilities and environments for disabled employees and members of the public.
 - g. Promote aesthetics in interior and exterior building design, including public art and landscaping.
 - h. Include features that promote employee physical and mental fitness, where practical.
 - i. Provide public transportation access and other strategies, such as bicycle storage and changing facilities and electric vehicle charging stations to reduce vehicle use, where practical.
 - j. Provide leadership to the region in green building design and operation. Incorporate educational elements regarding sustainable design in public areas of green buildings. Inform the public of new facilities' features and benefits to promote innovative design.
 - k. Seek incentives, grants and rebates to enhance energy efficiency and sustainability in new construction and major renovations.
2. Maximize the exterior and interior life of facilities while considering facility planning, design, construction, maintenance, operation, and replacement costs.

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Subject	Policy Number	Page
Design Standards for County Facilities and Property	G-15	3 of 5

- a. Obtain U.S. Green Building Council (USGBC) LEED Building Rating System Certification for “green building” design for new construction and major building renovations over 5,000 square feet and require LEED Enhanced Commissioning on buildings over 20,000 square feet. Selection of finishes, materials and equipment shall be made based on balancing acquisition costs with operation and maintenance requirements. Emphasize longevity, value and life-cycle in the selection of materials and equipment.
- b. Maximize the use of high-quality exterior and interior furnishings and equipment to promote effective ergonomic function, and healthy, supportive workplaces. Recognize color as an important design element and consider its effect on behavior and performance.
3. Set environmental standards that maximize energy efficiency and resource conservation, thereby minimizing the impact on the environment, while providing a comfortable, healthy, safe and efficient workplace for building occupants and visitors.
 - a. Maximize the use of natural resources, including air movement/temperature, wind energy, solar energy, geothermal characteristics and landscaping, in the design of heating, air conditioning, ventilation, and lighting systems, without compromising the comfort, health, and efficiency of employees and the public.
 - b. Evaluate technologies to reduce energy consumption and peak electrical demand including cogeneration systems, renewable energy resources, building energy management systems (HVAC, lighting and plumbing), smart appliances and office equipment, shading devices, cool roofs (roofing materials that very effectively reflect the sun’s energy), vegetative roofs (a roof at least partially covered with vegetation and soil protected by a waterproof membrane), and other applicable technologies. Coordinate with the Chief Technology Office and utilities to optimize Smart Building and Smart Grid technologies.
 - c. Evaluate and incorporate cost-effective technologies to reduce water consumption, including ultra-high efficiency plumbing fixtures, cooling tower water treatment equipment, irrigation devices and controllers, and other applicable technologies.
 - d. Compare alternative heating, ventilation, and air-conditioning (HVAC) systems based on life-cycle cost analysis. Use passive ventilation, evaporative cooling, envelope thermal mass (heat storage in walls, roof and flooring), shading and other strategies to reduce energy consumption, where applicable and effective.
 - e. Incorporate state-of-the-art lighting systems and automated controls, based on space function and occupancy. Substitute natural daylighting for artificial lighting, where feasible.

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f. For new buildings or major renovations, provide automated building controls with 365 day programmability for HVAC, lighting, and plumbing systems. Install computerized energy management systems in LEED-Certified buildings. Energy Management Systems shall comply with USGBC LEED Credit EA 5 – Measurement and Verification certification requirements and provide near real-time energy usage monitoring. For existing buildings over 5,000 square feet, evaluate and install, where feasible, automated building controls with 365 day programmability for HVAC, lighting, and plumbing systems. Provide systems that are open-protocol, so that they can be expanded or modified by multiple contractors.

g. Design facilities with building systems that provide high indoor air quality, space temperature/humidity conditions, adequate air movement, proper lighting levels, and appropriate noise levels for a productive, healthy, and safe work environment.

h. Design new buildings over 5,000 square feet with at least 2.5 percent of the estimated annual energy consumption supplied by an onsite renewable energy system. Make all new buildings over 5,000 square feet ready for the installation of photovoltaic systems incorporated as part of the design and construction of the building.

i. Perform computer simulation using utility-approved software for new construction or major renovation to optimize building energy efficiency and estimate utility consumption. Achieve at least 20% better than then-current California Energy Code Title 24 minimum energy efficiency compliance.

j. Facilitate the coordination of the design team and operations staff to integrate various design elements to maximize overall building function, maintainability, energy and water efficiency and sustainability.

4. Promote recycling and conservation of resources, and incorporate methods and systems for recycling solid and liquid waste into the planning of County facilities.

a. Use building and finishing products that contain recycled materials into County facilities where feasible.

b. Give preference to products whose recycled material content is high, raw materials are derived from sustainable or renewable resources, require the minimal amount of energy and rare resources to produce and use, require the least amount of energy to transport to the job site, and provide the least environmental impact when disposed of.

c. Implement recycling/reuse of building and construction demolition materials whenever possible, in accordance with the County's Construction and Demolition Ordinance.

d. Implement landscaping designs that emphasize water conservation through the use of drought-tolerant, fire-resistant, native plant materials compatible with the surrounding

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Design Standards for County Facilities and Property	G-15	5 of 5

area for new, County-owned properties and projects. Landscape designs shall comply with the County's landscaping standards (Zoning Ordinance Sections 6712, et seq., or as amended), including water conservation requirements. Active-use parks may be exempted from this section for the use of turf grass.

- e. Incorporate solid waste recycling stations into all facility designs.
- 5. The Chief Administrative Officer, or his designee, shall establish design standards and guidelines, which implement the preceding goals and objectives. The guidelines and standards shall be reviewed and modified periodically in order to stay current with changing technologies and lifecycle costs of systems.
 - a. The Chief Administrative Officer, or his designee, shall direct County departments to collaborate on an as-needed basis on material selections, methods, and specifications that help achieve these goals and objectives.
 - b. The Chief Administrative Officer, or his designee, shall communicate and provide these standards to all affected County offices and departments, as well as consultants, developers, and contractors involved in the planning, acquisition, improvement, or construction of County facilities.

Sunset Date

This policy will be reviewed for continuance by 12/31/2023.

Board Action

12/14/93 (50)
12/09/1997 (19)
11/06/2001 (4)
3/21/2007 (4)
07/24/2007 (13)
12/09/2008 (33)
09/22/2009 (10)
12/06/2011 (16)
11/15/2016 (15)

CAO Reference

1. Department of General Services
2. County Technology Office

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Subject	Policy Number	Page
Design Guidelines and Standards for County Parks and Recreational Facilities	G-19	1 of 2

Purpose

To establish principles and objectives for the design, construction and improvement of parks and recreational facilities.

Background

In January 1990, the Board of Supervisors adopted Policy G-15: Design Standards for County Facilities and Property, which authorized the Department of Parks and Recreation (DPR) to establish design guidelines and standards for County-owned and leased parks and recreational facilities that implement the following goals and objectives:

1. Design guidelines and standards shall be established for County-owned and leased facilities to promote the objectives identified in Board Policy G-15.
2. Maximize the exterior and interior life of facilities while considering facility planning, design, construction, maintenance, operation, and replacement costs.
3. Set environmental standards that maximize energy efficiency and resource conservation, thereby minimizing the impact on the environment, while providing a comfortable, healthy, safe and efficient building for occupants and visitors.
4. Promote recycling and conservation of resources, and incorporate methods and systems for recycling solid and liquid waste into the planning of County facilities.
5. The Chief Administrative Officer, or his or her designee, shall establish design standards and guidelines, which implement the preceding goals and objectives. The guidelines and standards shall be reviewed and modified periodically in order to stay current with changing technologies and lifecycle costs of systems.

Policy

It is the policy of the Board of Supervisors that:

1. The Director of Parks and Recreation is authorized to adopt and amend park design guidelines and standards for the design, construction, and improvement of parks and recreational facilities.
2. Parks and recreational facilities dedicated to the County pursuant to the Park Lands Dedication Ordinance shall be designed, constructed, and improved pursuant to the provisions of the Department of Parks and Recreation Park Design Guidelines and Standards and all other applicable County, State, and Federal rules and regulations.

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Responsible Departments

1. Department of Parks and Recreation
2. Department of General Services

Sunset Date

This policy will be reviewed for continuance by 12-31-23.

References

Board Action

07/25/2018 (4)

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BOARD OF SUPERVISORS POLICY

Subject	Policy Number	Page
Procedure for Designing New County-owned Local Parks	I-44	1 of 2

Purpose

The purpose of this policy is to establish a procedure to involve the public through Community Planning and Sponsor Groups, County Service Area Advisory Committees, Revitalization Committees, designated advisory groups, or other user groups when the Department of Parks and Recreation or an applicant for subdivision or development project designs a new local park.

Background

The design or improvement of County parks for recreation or open space uses is not subject to the San Diego County Zoning Ordinance. Consequently, there is not a formal permitting process that would provide opportunities for the general public to review and provide input when the County designs a new park. The formal permitting process for residential subdivisions and development projects does provide opportunity for the general public to review and provide input; despite that, public park design is not often highlighted when subdivision or development projects are shared with a community. This policy provides a procedure to ensure that the Department of Parks and Recreation, and applicants for subdivision or development projects solicits community input on the design of new local parks.

A local park is defined as a County-owned park that is intended to serve the surrounding community. A local park does not include County open-space areas or regional parks that are generally larger in size and include larger-scale improvements intended to serve residents of the greater San Diego region. Since regional parks and open space areas are not designed to specifically serve residents of a local community, they are not subject to this Policy. Similarly, improvements to existing parks are generally minor in nature, and shall not be subject to this Policy.

Policy

It is the policy of the Board of Supervisors that:

1. The Department of Parks and Recreation shall maintain and update priority lists of desired park improvements for each Local Park Planning Area, based upon needs identified through consultation with community groups, Board offices, Park Master Plans, etc.
2. Upon initiation of a project to design a new local park, the Department of Parks and Recreation shall notify, in writing, all residents within a 300-foot radius of the proposed park site of the design process and any scheduled meetings.
3. The Department of Parks and Recreation, in conjunction with the designated community advisory group (e.g., planning or sponsor group, County Service Area Advisory Board, Revitalization Committee, or other designated advisory group), shall hold a minimum of two community workshops regarding the proposed park design project in the affected community. Additional workshops may be held as needed. The workshops may be conducted as part of the regularly scheduled meetings of the designated advisory group.

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4. An applicant for a subdivision or development project submitting an application to the Department of Planning & Development Services after December 31, 2018 and dedicating park land or park improvements pursuant to the provisions of the Park Land Dedication Ordinance shall present the conceptual park design as an informational item at a minimum of one regularly scheduled meeting of the applicable and designated community advisory group (e.g., planning or sponsor group, County Service Area Advisory Board, Revitalization Committee, or other designated advisory group).

Responsible Departments

1. Department of Parks and Recreation
2. Department of Planning & Development Services

Sunset Date

This policy will be reviewed for continuance by 12-31-24.

References

Board Action
7/9/03 (9)
11-10-10 (7)
6-20-17 (24)
12-06-17 (6)
07-25-18 (4)

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BOARD OF SUPERVISORS POLICY**

Subject	Policy Number	Page
Comprehensive Goals and Policies for Community Facilities Districts	I-136	1 of 10

Purpose

In compliance with Section 53312.7 of the Government Code, the County of San Diego (County) has developed the following Goals and Policies where special taxes may be levied within the boundaries of a Community Facilities District (CFD). It is the County's goal to support projects that address a public need and provide a public benefit. Proposed projects requesting CFD financing of public facilities and/or services will be evaluated to determine if such financing is viable and in the best interest of the County and current and future County residents.

As an alternative, the California Statewide Communities Development Authority (California Communities) has adopted Goals and Policies that meet the requirements of Section 53312.7. This means that the County of San Diego may turn all functions of a particular CFD formation over to the California Communities, which would then be the lead agency for formation and financing of the District. This County set of goals and policies is meant to align with and supplement the California Communities' adopted Goals and Policies.

1. Definitions

Unless the context otherwise requires, the terms employed in the following policies shall have the meanings specified below:

“Ad valorem Property Tax” means any source of revenue derived from applying a property rate to the assessed value of property.

“Bonds” means bonds authorized and issued under the Mello-Roos Act.

“County” means the County of San Diego, California.

“District” means a community facilities district formed under the Mello-Roos Act. The term “District” may also refer to a separate improvement area of the District.

“Lien” means, in the case of public debt imposed on a parcel or parcels, the amount of debt attributable to a parcel or parcels, based on an apportionment of the debt to such parcel or parcels in relation to the probable debt service to be borne by such parcel or parcels.

“Mello-Roos Act” means the Mello-Roos Community Facilities Act of 1982 (Mello-Roos Act) as amended.

“Public Facilities” means improvements authorized to be constructed or acquired under the Mello-Roos Act, including, but not limited to, fees for capital facilities.

“Public Services” means any service authorized by the Mello-Roos Act.

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“Value” or “Fair Market Value” means the amount of cash or its equivalent which property would bring if exposed for sale in the open market under conditions in which neither buyer nor seller could take advantage of the exigencies of the other, and both have knowledge of all the uses and purposes to which the property is adapted and for which it is capable of being used, and of the enforceable restrictions upon uses and purposes.

“Value-to-lien Ratio” means a calculation to measure the number of times the value of a property exceeds the sum of the Liens, including any proposed liens.

2. General Policies

The County will consider applications requesting the formation of CFDs and the issuance of bonds to finance eligible public facilities pursuant to the Mello-Roos Act. An application to form a CFD must be completed prior to any determination that a CFD will be formed. The County reserves the right to request any additional reports, information or studies reasonably necessary in evaluating the application. All applications and their proposed facilities and services will be considered on a case by case basis.

These Goals and Policies contain the following requirements:

- A. A statement of the priority that various kinds of public facilities and services shall have for financing through the Mello-Roos Act.
- B. A statement concerning the credit quality to be required of bond issues, including criteria to be used in evaluating the credit quality.
- C. A statement concerning the disclosure requirements to ensure that prospective property purchasers are fully informed about their tax obligations.
- D. A statement concerning criteria for evaluating the equity of tax allocation formulas, and concerning desirable and maximum amounts of special tax to be levied against any parcel pursuant to the Mello-Roos Act.
- E. A statement of definitions, standards and assumptions to be used in appraisals. The County may confer with other District consultants and the applicant to learn of any unique District requirements such as regional serving facilities or long-term development phasing prior to making any financial determination.

All County and consultant costs incurred in the evaluation of new development, District applications, and the establishment of Districts must be paid by the applicant(s) by advance deposit increments. The County will not incur any non-reimbursable expense for processing Districts. Expenses not prepaid and chargeable to the District shall be solely for the account of the applicant.

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3. Eligible Public Facilities and Services

In accordance with the Mello-Roos Act, improvements eligible to be financed must be owned by a public agency, public utility or private entity, and must have a useful life of at least five years. The County will retain final determination as to any Public Facility's eligibility for financing, as well as the prioritization of Public Facilities and/or Public Services to be included within a given proposed District's financing plan.

Except for Public Facilities completed to the satisfaction of the County prior to formation of a District, all Public Facilities to be acquired or constructed by the CFD will be required to be constructed in a manner as if it had been constructed by the County or other government entity that will own or operate the facilities.

Public Facilities eligible to be financed by a District include any facility eligible to be financed under the Mello-Roos Act as it now exists or may be amended in the future. These include, but are not limited to, construction of:

- Streets, highways and bridges
- Street lighting
- Traffic signals and safety lighting
- Parks, trails, pathways, open space and recreation facilities
- Governmental facilities
- Sanitary sewer facilities
- Storm drain facilities
- Potable and reclaimed water facilities
- Flood control facilities
- Fire stations
- Libraries
- Public utilities

Subject to limitations set forth in the Mello-Roos Act, Public Services eligible to be financed by a District include any service eligible to be financed under the Mello-Roos Act as it exists now or may be amended in the future. These services include, but are not limited to:

- Police, fire protection, emergency medical services including paramedic services
- Operation and maintenance of recreation facilities including golf courses
- Biological mitigation measures involving land acquisition, dedication and revegetation
- Street lighting and public rights of way landscaping
- Road maintenance

Public Services are subject to limitations set forth in the Mello-Roos Act. In those instances where Public Services necessary to support a development are not eligible for Mello-Roos Act financing, or where the County elects not to form a CFD, the County may require a developer as a condition of approval to form a special district pursuant to applicable law or provide for private maintenance

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by a homeowner's association or other mechanism acceptable to the County. The County may also require annexation into an existing special district, such as a Permanent Road Division Zone or Landscape Maintenance District Zone to provide ongoing maintenance of facilities.

4. Special Tax Formula

Tax Burden Limit. The total of the following burdens, when taken in the aggregate, at the time of adoption of the special tax, may not exceed 1.86 % of the estimated sales price of the subject properties to an end user within the District:

- A. *Ad valorem* property taxes levied by the County.
- B. Voter approved *ad valorem* taxes levied by the County in addition to the *ad valorem* property taxes described above.
- C. Special taxes levied by any existing District for the payment of bonded indebtedness or on-going services.
- D. Assessments levied for any assessment district or maintenance district for the payment of bonded indebtedness or services.
- E. The assigned special tax for the proposed District.
- F. The maximum special tax shall include the reasonable and necessary annual administrative costs of the County to administer the District (a portion of these costs may be established as superior in lien position to the debt service).

The assigned special tax for any parcel within a District may escalate annually, but not by more than six percent (6%) per year if used to fund Public Services and not by more than two percent (2%) if used to fund Public Facilities or Bonds secured by the District.

The County shall retain a special tax consultant to prepare a report which:

- A. Recommends a special tax method for the proposed District, and
- B. Evaluates the special tax proposed to determine its ability to adequately fund identified Public Facilities, fees, County administrative costs, services (if applicable) and other related expenditures. Such analysis shall also address the resulting aggregate tax burden of all proposed special taxes plus existing special taxes, *ad valorem* taxes, and assessments on the properties within the Districts.

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5. Property Owner Support

In the instance of multiple property owners, the District applicant shall be required to produce letters evidencing other property owner support for the scope and establishment of the District as an attachment to the District application. The County will require that developer-initiated Districts have concurrence of not less than two-thirds of the property owners to be included in the proposed District.

6. Disclosure to Purchasers

Statutory requirements of disclosure to property purchasers are contained in the Mello-Roos Act, most notably, but not limited to, Sections 53328.3, 53328.5 (including the referenced sections of the California Streets and Highways Code), 53340.2 and 53341.5. The following County Policy is meant to ensure compliance with State law.

The applicant or property owner will be required to demonstrate to the satisfaction of the County that there will be full disclosure of this and any other special tax, assessment, or other liens on individual parcels of which the seller or lessor has knowledge to existing and future property owners. In addition to all requirements of law, the County shall require the applicant to provide disclosure of such information as the County deems appropriate to the purchasers of property within the District, with respect to the existence of the District, amounts of assessments or special taxes to be levied within the District, and the terms and conditions of bonds issued on behalf of the District. Such disclosure shall take place prior to sale, and may include homebuyer notifications requiring signature prior to home sales, as well as methods to notify subsequent home purchasers.

The County will require that the applicant provide the County with copies of each and every signed disclosure within 90 days of close of escrow.

7. Security

For new development, the applicant or property owner must demonstrate its financial plan for the property within the District and ability to pay all special taxes during the build-out period. Additional security such as credit enhancement may be required by the County in certain instances. If the County requires letters of credit or other security, the credit enhancement shall be issued by an institution in a form and upon terms and conditions satisfactory to the County. All fees payable on the letter of credit or other security shall be the sole responsibility of the applicant or developer, not the County or District.

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8. Bond Financing Requirements

A. Value-To-Lien

The County requires a District-wide value-to-lien ratio of at least 4:1 for a District. The District property value-to-lien ratio for each individual parcel within the District may be less than 4:1, but not less than 2:1, as long as the overall valuation of the District is at least 4:1. Valuations shall be determined based upon an independent appraisal of the proposed District properties. Assessed valuation data from the County may be used for valuation purposes in lieu of an appraisal report.

The County shall have discretion to retain a consultant to prepare a report to verify market absorption assumptions and projected sales prices of the properties which may be subject to the maximum special tax in the District. Such a report may be used by appraisers in determining the value of property to be taxed.

B. Credit Enhancement

The County may, at its discretion, require additional credit enhancement or lower the threshold at which a letter of credit must be provided in order to increase the credit quality of any bond issue. Credit enhancements may be required in additional situations where there is an insufficient value-to-lien ratio, a substantial amount of property in the District is undeveloped; tax delinquencies are present on parcels within the District; and in any other situation as required by the County. As a practical matter, such additional requirements will generally be the result of recommendations made by the County's bond counsel, financial advisor, bond underwriter, or other members of the County's financing team.

The form of credit enhancement is subject to the approval of the County and the County shall impose specific requirements (including but not limited to an absorption study) with respect to such credit enhancement on a case-by-case basis.

If the California Communities forms a Community Facilities District within San Diego County, the California Communities' Goals and Policies provisions regarding credit enhancement shall prevail.

Significant Property Owners. Owners of the property in a District who are deemed responsible for 33% or more of the debt service obligation of a given bond issue (Significant Property Owner) secured by the District are required to provide a letter of credit or cash deposit in an amount equal to one year's special taxes on their property based on current assessed value (Credit Enhancement). The letter of credit may be drawn on if and to the extent that the landowner is delinquent in paying its special taxes.

A Significant Property Owner may submit a request to reduce or terminate the Credit Enhancement provided pursuant to these Goals and Policies. This request shall be accompanied

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by documentation in support of such request. The County will review such request to determine (a) the percentage of annual special tax payment obligation applicable to property owned by the property owner submitting the request and (b) the annual amount of special taxes applicable to such property. These requests shall not be submitted more frequently than such Significant Property Owner is providing reports pursuant to a continuing disclosure undertaking under Securities and Exchange Commission Rule 15c2-12.

If the County determines, based on its review of the information submitted, that the percentage of debt service the Significant Property Owner is responsible for has fallen below 33%, the County shall notify the Significant Property Owner and release the Credit Enhancement. If the County determines that such percentage remains at 33% or above but that the amount of one year's special tax payment obligation has decreased, the County shall notify the Significant Property Owner and cooperate with the Significant Property Owner in obtaining a reduced amount of Credit Enhancement.

C. Terms and Conditions of Bonds

Unless otherwise authorized by the County, the following shall serve as bond requirements:

1. A reserve fund shall be set at the lesser of the three tests:
 - i. 10% of par amount,
 - ii. maximum annual debt service, or
 - iii. 125% of average annual debt service.
2. Interest may be (capitalized) for up to 24 months.
3. The maximum term of the bonds issued shall not exceed 35 years.
4. Debt service on the bonds may increase by not more than two percent (2%) per year.
5. The maximum special tax shall be established to assure that the annual revenue produced by levy of the maximum special tax shall be equal to at least 110% of the average annual debt service.
- 6 All statements and documents related to the sale of bonds shall emphasize and state that (i) the Bonds are limited obligations of the County and neither the faith, credit nor the taxing power of the County is pledged to security or repayment of the bonds, (ii) the sole source of revenues are special taxes, the debt service reserve fund or proceeds raised by foreclosure proceedings, and (iii) the County shall not be obligated to make payments of principal, interest or redemption premiums (if any) from any other source of funds.

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BOARD OF SUPERVISORS POLICY**

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7. Bond indentures may include provisions allowing for immediate collection of delinquent taxes, including provisions for the subject district to cause judicial foreclosure proceedings to be filed in the Superior Court, within 90 days of determination of delinquency, against any such property for which Special taxes remain delinquent.

The County retains the right to withhold public financing in its sole discretion.

9. District Cost Deposits and Reimbursements

All County and consultant costs incurred in the evaluation of District applications and the establishment of Districts will be paid by the applicant by advance deposit increments. Except for those applications for Districts where the County is the applicant, the County shall not incur any non-reimbursable expenses for processing and administering applicant initiated Districts. Expenses not chargeable to the District shall be directly borne by the applicant.

Each application for formation of a District shall be accompanied by an initial deposit in the amount determined by the County to fund initial staff time and consultant costs associated with District review and implementation. Deposit terms and conditions will be defined by a deposit and reimbursement agreement to be executed by the applicant and the County, as soon as practical after receipt of an application, with amount of deposit to be commercially reasonable. If additional funds are needed to off-set costs and expenses incurred by the District, the County shall make written demand upon the applicant for such funds and the applicant shall comply with each demand within ten (10) business days of receipt of such notice. If the applicant fails to make any deposit of additional funds for the proceedings the County may suspend all proceedings until receipt of such additional deposit.

The deposits shall be used by the County to pay for actual costs and expenses incurred by the County relative to the proceedings, including but not limited to, legal, engineering, appraisal, special tax consultant and financial advisory expenses; documented County staff time, administrative costs and expenses; required notifications; and printing and publication of legal matters.

The County shall refund any unexpended portion of the deposits upon the following conditions:

- A. The District is not formed;
- B. Bonds are not issued and sold by the District;
- C. The proceedings for formation of the District or issuance of bonds is disapproved by the County; or
- D. The proceedings for formation of the District or issuance of bonds are abandoned in writing by the applicant.

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E. Except as otherwise provided herein, the applicant shall be entitled to reimbursement for all reasonable costs and expenses incident to the proceedings and construction of the Public Facilities as provided under the Mello-Roos Act, provided that all such costs and expenses shall be verified by the County as a condition of reimbursement.

The applicant or property owner shall not be entitled to reimbursement from bond proceeds for any of the following:

- A. In-house administrative and overhead expenses incurred by the applicant, or expenses of applicant's counsel or consultants; and
- B. Interest expense incurred by the applicant on moneys advanced or expended during the proceedings and construction of public facilities;

The County shall not accrue or pay any interest on any portion of the deposit refunded to the applicant or the costs and expenses reimbursed to the applicant. Neither the County nor the District shall be required to reimburse the applicant or property owner from any funds other than the proceeds of bonds issued by the District and moneys remaining in the deposit account as provided above. Excess funds on deposit after the formation of the proposed District will be refunded to the depositor.

10. Use of Consultants

Only in cases where the California Communities is not involved, the County shall select all consultants necessary for District formation and bond issuance, including the underwriter(s), bond counsel, financial advisor, appraiser, market study consultant, assessment engineer, and the special tax consultant. Prior consent of the applicant shall not be required in the determination by the County of the consulting and financing team. However, the applicant may make recommendations to the County on an advisory basis in their application.

No firm may serve as both design engineer and engineer of work and special tax consultant on the same District.

11. Exceptions to These Policies

The County reserves the right to amend or modify these policies at any time as well as to make exceptions or changes for specific financing projects, as facts or circumstances so warrant.

The County may find in limited and exceptional instances that a waiver to any of the above stated policies is reasonable given identified special County benefits to be derived from such

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waiver or in the case of resident-voter Districts. Such waivers are granted only by action of the County Board of Supervisors based on specific public purpose, health and safety findings, and/or financial matters.

Sunset Date

This policy will be reviewed for continuance by 12-31-2022.

Board Action

02-28-07 (9)

05-14-08 (9)

12-09-08 (33)

09-25-12 (11)

12-16-15 (8)

CAO Reference

1. Department of Planning and Development Services
2. Assistant Deputy Chief Administrative Officer/Auditor and Controller
3. Department of Public Works
4. Department of Parks & Recreation
5. County Fire Authority

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Purpose

To define priorities and criteria for formation of Landscape Maintenance Districts and zones utilizing Landscape and Lighting Act proceedings (Streets and Highways Code, Section 22500, et seq.) for needs other than street lighting.

Background

The Landscape and Lighting Act of 1972 (Act), Sections 22500, et seq., provides the County the ability to form an assessment district, and zones within that district, for several purposes, including street lighting, landscaping, parks, trails, and open space easements. The County's existing Street Lighting District, formed pursuant to the Act conducts proceedings under the Act to annex properties where owners wish additional streetlights in their area.

This policy specifies other enhanced services that can be provided through the Act. If a new district is formed pursuant to the Act to implement this policy, the district will be called the Landscape Maintenance District (District), in order to distinguish the District from the San Diego County Street Lighting District.

The need for the District is based on the following:

The County may require Developers, or a developer may desire, to provide perpetual maintenance of a particular land feature. For example, the County may require a Developer to establish an open space easement or dedicate a trail, and require that the Developer ensure maintenance in perpetuity. Existing mechanisms to fund ongoing maintenance are limited. The developer could establish an endowment, or ensure that homeowners form a homeowners' association. The first option can be so expensive as to make a particular development condition infeasible. The second does not guarantee long-term maintenance because the associations can easily be dissolved or choose to change practices. Both options also fail to address the question of responsibility for contract administration and quality assurance.

Formation of the District and zones therein may provide a source of funds to ensure long-term maintenance of land features. Providing this revenue is important for communities and the environment well into the future. For organization and efficiency purposes, it is in the County's interest to provide for formation of the District to fulfill these needs distinctly and separately from the County's Street Lighting District. It is also in the best interest of the County to establish a policy specifying the allowed uses of these procedures.

Definitions

1. *Assessment Engineer's Report* is a report prepared by an assessment engineer pursuant to California Streets and Highways Code Sections 22500 et seq., and California Constitution Article XIIIID. The Engineer's Report contains the plans and specifications for improvements and/or maintenance required of a proposed Zone, cost estimates, a diagram showing the area boundaries, and the assessments proposed to be levied in each parcel within the Zone. The Report may be required to have other information determined by the engineer or by the County to be relevant with respect to the Zone.

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2. *Developer* is an applicant for a subdivision map or a change in land use regulations requiring discretionary approval by the County
3. *Developed Community* means an existing community in which no developer-initiated Landscape Maintenance District or zone exists.
4. *District is a Landscape Maintenance District* formed pursuant to California Streets and Highways Code Sections 22500 et seq., and California Constitution Article XIID.
5. *Maintenance* is defined pursuant to California Streets and Highways Code Section 22531, generally the furnishing of services and materials for the ordinary and usual maintenance, operation, and servicing of any improvement.
6. *Zone* means a specified area with the District in which rates of assessment may vary from other portions of the District.

Policy

It is the policy of the Board of Supervisors that:

The County of San Diego has the authority, under the Landscape and Lighting Act of 1972, and may initiate proceedings to form the District to provide the enhanced maintenance activities specified in this policy. The purpose of the District will be to provide an ongoing funding mechanism for maintenance of specified public improvements. District funding is necessary because the special maintenance of these features is more intense than that provided generally by the County and provides special benefits to adjacent property owners.

To ensure efficiency, the District will include only those facilities that the County is competent to maintain. The District may fund long-term maintenance of biological open space, trails, parks, or special landscaping. Such facilities will be declared public and must meet County specified standards before being accepted for maintenance.

Procedure

Formation and Annexation

- A. Proceedings to form the District or a zone of that District (Zone) may be initiated by the County, developers, civic groups, or other parties provided that (a) a funding mechanism is provided to cover all County formation costs, whether or not the formation is successful, and (b) the Director of Public Works or Director of Parks and Recreation, as appropriate, determines that the proposed maintenance through this mechanism is an appropriate use of the District.
- B. Petitions may be initiated by residents, community groups or governmental agencies.
- C. Developers interested in formation must deposit sufficient funds with the County prior to initiation of proceedings to pay for all costs of formation, including balloting and administration, and each proponent is responsible for producing an independent Assessment Engineer's Report prior to formation hearings unless waived pursuant to the Act. The County may require a Developer, or a Developer may desire, to annex to the District or to a specified zone of the District or to form a zone as a condition of annexation. In such cases, the Developer may be required to provide written consent from all owners of property

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within the development waiving the notice, hearing and right of protest and consenting to the annexation and zone formation, if any. (Streets and Highways Code §§ 22608, 22608.2.)

- D. There is a limited amount of Special District formation funding available, which can be used to assist Developed Communities, and which would be reimbursed upon successful formation and collection of assessments. In general, front funding is limited to \$3,000 per zone, with full reimbursement upon formation and assessment collection.
- E. The purpose of the District and its zones is generally to provide revenue for ongoing maintenance, and not to fund new construction. Community members should follow existing planning methods for new construction. Funding for construction of new facilities will be considered on a case-by-case basis.
- F. In Developed Communities, proponents will follow guidelines provided by the County for formation activities, including:
 - 1. All steering committee meetings must be open to the public, with all affected property owners invited.
 - 2. Provide the County with a community-initiated petition containing valid, non-weighted signatures of significant numbers to represent probable success of formation. Petitions must accurately describe the proposal, including the facilities to be maintained, and the approximate assessments for each property.
- G. Once a petition is received and approved, County staff will bring a Resolution of Intention to the Board and request approval to conduct assessment ballot proceedings, with a hearing date set in accordance with the provisions of Proposition 218.
- H. Proceedings may be initiated by the County in cases where landscaped medians are included as part of a County road improvement project or when the Board of Supervisors determines that is in the public interest to initiate such proceedings.
- I. Ballot results will be will be tabulated after a Board hearing and the Board of Supervisors may form the zone if there is not a majority protest weighted in accordance with the provisions of Proposition 218.
- J. As a condition of acceptance of maintenance responsibility, the County will require a Developer to provide funds for 24 months of district administration and maintenance costs, or until assessments placed on the tax roll are collected, whichever occurs later. Civic groups forming Zones may obtain loans to cover administrative and maintenance costs prior to County receipt of tax roll assessments.

Assessments

- A. Landscape Maintenance District property owners will be assessed via placement of levies on the tax roll, seeing their assessments as a line item of their property tax bills.
- B. Open space or other facilities required of developers as a condition of development will only be included in district zones if measures are taken to protect the County and ensure the requirements will continue to be met.

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Acceptance as a Public Facility

When a district forms, the open space, trail, park or landscape facility will be declared public. Therefore, the facility must meet specified County standards.

- A. Open space easements will only be accepted if they meet standards set by the County's Resource Management Plan Guidelines and Department of Parks and Recreation standards. Trails must also meet Department of Parks and Recreation standards for resources. These standards include, but are not limited to, fencing, stormwater erosion control devices, public access, vegetation plans and passive use.
- B. Proposals to form zones to maintain parks will be evaluated by the Director, Department of Parks and Recreation. Acceptance will depend on types of use and facilities. Parks must be open to the public and provide a special benefit to the community.
- C. Landscaping and landscaped medians must be located within public road rights of way and be constructed in accordance with County Road Standards, and will be evaluated by the Director, Department of Public Works. These standards include, but are not limited to, adequate irrigation and drainage systems, maintenance walkway, erosion protection measures, and concrete curbs and gutters.

Responsible Departments

1. Department of Public Works
2. Department of Parks and Recreation
3. Department of Planning and Development Services

Sunset Date

This policy will be reviewed for continuance by 12-31-2022.

References

Board Action
05-18-05 (3)
12-09-08 (33)
09-25-12 (11)
12-16-15 (8)

TITLE: Signage

Date issued/revised: March, 2016

Authorized by: Brian Albright, Director

Signature:



IT IS THE POLICY of the County of San Diego Department of Parks and Recreation (DPR) that park signage design, content, and installation methods be uniform, to the extent practicable, throughout all park and recreation facilities. The intention is to minimize the amount of signage and preserve the natural aesthetic of the park, while conveying necessary information to the public.

Background

The County of San Diego Department of Parks and Recreation (DPR) uses a variety of types, styles, and sizes of signage. These signs communicate a variety of information, including facility identification and general information, park rules, hazard information, fee rates, and interpretive information. In the absence of uniform sign standards, a variety of types, styles, and colors of signs have materialized throughout the park system. Similarly, a lack of standardized information and associated review of the proposed language has resulted in incorrect and/or outdated information being displayed on park signage.

The intent of this Policy is to provide uniform guidelines on the design, content and display of facility signage, to ensure consistency of signs from one park to another, improve Department identification, and display accurate and current information.

Policy

1. **Entry Signs:** DPR has an approved standardized monument entry sign that will be used at all park facilities. The sign is available in three sizes. Park location, facility size, and sign visibility should all be considered when selecting the appropriate size of sign for a particular facility. Detailed specifications for the entry signs are attached to this Policy.
2. **General Facility Signage:** General facility information signage (e.g., rules, fees, hours of operation, misc. park/dept. information, etc.) will be in accordance with the following information
 - A. **Material:** Signs to be installed outdoors will be made of metal. Signs designed to be displayed indoors may be made of metal, wood, plastic, or paper.
 - B. **Color:** Signs will consist of a green background with white lettering.
 - C. **Size:** Size of signs will vary, depending on location, amount of text, and readability. To avoid "sign pollution," signs should be designed to be as small as possible while still remaining functional.
 - D. **Location:** Generally, signs should be displayed at entry points into parks, trailheads and junctions or other facilities. However, the uniqueness of each site may affect installation

TITLE: Signage

locations. Signs will be located in such a fashion as to be clearly visible but not physically or visibly intrusive.

E. Installation: Signs may be installed in a variety of fashions, including within kiosks, on fences, on buildings, or on stand-alone posts.

Samples of various standard park signs may be found on the DPR Shared drive under the park signage file. In the event a standard sign is not suitable, and a new sign is to be designed, the design/text of the new sign will be submitted to the Deputy Director for review and approval.

While the number and size of signs should be kept to a minimum, the specific signage identified below will be displayed in the identified park types:

- A. All Parks: Monument entry sign. Signs identifying applicable rules and regulations shall be posted on a site specific basis, based upon the needs of a specific facility. Any applicable County ordinances should be referenced on the sign.
- B. Camping Parks: In addition to the signage identified in "A" above, signage identifying fee rates and signage addressing campfire hours and quiet hours will be posted.
3. **Warning/Hazard Signage:** Signage intended to provide warnings to facility visitors about hazards (e.g., rattlesnakes, mountain lions, ticks, etc.) will consist of a yellow background with black lettering. Such signs will be installed/displayed at facility entrances, park offices/entry booths, and/or at locations within a facility so as to clearly communicate potentially hazardous/dangerous conditions to users. On occasion, other agencies/departments may request permission to install warning signs within DPR facilities (e.g., Department of Environmental Health posting water contamination signs after sewage spills). DPR staff, with approval from management, will cooperate with such requests.
4. **Specialty Signage:** On occasion there will be a need or requirement to install specialty signage at a park facility. These signs may be permanent (e.g., bond act funding signs) or temporary (e.g., related to a special event being held at a facility). Such signage will be approved by the Deputy Director and installed in accordance with any mandated installation method. In the absence of any mandated installation instructions, installation will be in accordance with this Policy. Temporary signage will be removed promptly after the conclusion of the event that it is associated with.
5. **Kiosks:** Kiosks will be cleaned regularly to ensure that displayed material is visible and easily readable. To ensure that materials displayed in kiosks are up-to-date, the information displayed in kiosks will be reviewed at minimum once per quarter. All outdated material will be removed/replaced.
6. **Naming Rights Signage:** All signage related to the naming rights of a park amenity shall be in accordance with DPR Policy C-45.

TITLE: Signage

7. **Limitation on Signage:** The presence of a high number of signs or overly large signs detracts from the aesthetics of a facility and, when used to communicate rules and regulations, can result in a negative first impression on facility visitors. All efforts should be made to minimize the number and size of signage displayed at a facility. When considering the installation of regulatory and warning signage, content should focus on the rules and/or hazards that are relevant to a specific facility. Only those regulations/warnings that are germane to a facility will be included on signage. Further, signage should focus on things a visitor can do, not only what is disallowed. When feasible, combine information onto single signs to reduce the number of signs displayed in a facility.
8. **Annual Review:** To ensure that information displayed is accurate and current, all signage within a facility will be reviewed a minimum of once per year. Upon identification or notification of outdated/incorrect information, corrections will be made as soon as reasonably practical.

END

**TECHNICAL SPECIFICATIONS
FOR INSTALLATION OF
SAN DIEGO COUNTY PARK ENTRY SIGNS**

TECHNICAL SPECIFICATIONS

1.1 General

San Diego County Department of Parks and Recreation is soliciting bids for the installation of park entry signs. Park entry signs will be picked up at the El Cajon Operations Center- 1840 Weld Blvd, El Cajon, CA and installed at the specified park facility entrance with direction from San Diego County Department of Parks and Recreation staff. Quote will indicate complete installation cost for three different sized entry signs; with sign posts (for 5'x 3' County provided signs), with stone and pilaster base (for 7'x 3', 8'x 4' County provided signs) and as indicated on attached drawings, plans and technical specifications.

1.2 Site Conditions

Contractor shall take whatever measures are necessary to protect existing trees, structures, above and below grade site features. Extreme care shall be exercised around existing utilities. Contractor shall familiarize self with entry sign site conditions and shall consider all factors affecting construction and installation work.

1.3 Public Access and Construction Fencing

Project area shall be closed to the public; however, public may use adjacent facilities during construction. All areas under construction shall be closed by installing barricades with caution tape or temporary 6' construction fence during entire construction period as necessary to protect the public.

In addition to the above protections, Contractor shall not create any attractive nuisances. Areas used for storage of equipment, supplies, dangerous or harmful substances and any other items that can be deemed to create an attractive nuisance shall be contained within the project site if the temporary 6' fence option is selected.

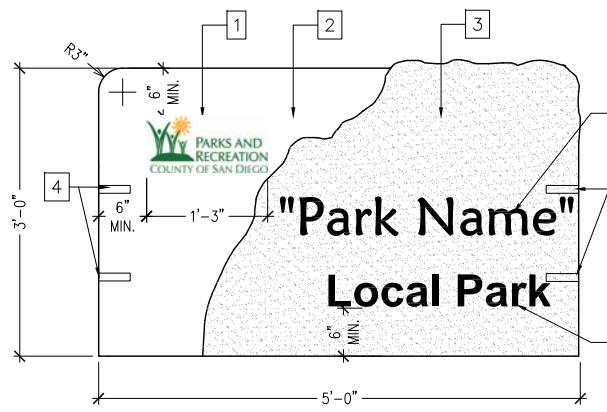
Contractor shall include in bid, all costs related to above requirements. Full compensation for all materials necessary for public safety shall be considered as included in the lump sum bid price and no additional compensation will be allowed.

1.4 Construction & Installation Specifications

- 1.4.1 San Diego County will provide each new park entry sign. Contractor shall load, unload, store and install sign, build post and sign foundation, post base and sign pilaster column as noted below, as shown on plans, drawings and at the direction of the County Project Manager. Sign posts, base and column work includes any posts, concrete, block, masonry, cultured stone, grout, reinforcement, pilaster cap and mortar. Anti-graffiti coating shall be applied to each sign as noted below. Contractor shall prepare sign site, including, but not limited to, removal of vegetation, debris and other existing items as indicated on plans and drawings. Site preparation shall be included in Contractor lump sum bid price and no additional compensation will be allowed.
- 1.4.2 Sign Installation: Contractor shall be responsible for installing each entry sign in strict accordance with entry sign manufacturer's recommendations. This shall include, but not be limited to; demolition of existing sign (if applicable), installation of sign posts or sign base (depending on the type of sign being installed); bolts, steel bars or plates, epoxy grout and caulking necessary for a complete and clean sign installation. Any damage to any park entry sign from time of pick up at the San Diego County El Cajon Operations Center through installation completion shall be the sole responsibility of Contractor.
- 1.4.3 Concrete Construction: Concrete for entry sign post or foundation shall be Type II, Portland Cement Concrete 520-C-2500 with an allowable maximum slump of four (4") inches in conformance with Section 201 of the SSPWC.
- 1.4.4 Masonry Pilaster Column and Base Construction: Masonry pilaster column and base shall be constructed in accordance with Section 303-4 of the SSPWC and as indicated on sign plans and drawings. All steel reinforcement shall be in accordance with Section 201-2 of the SSPWC.

CMU Block: Block shall be placed as shown on plans and shall conform to ASTM C90, medium weight and shall comply with the Uniform Building Code Standard 21-4, Type I, Grade N, and Title 24 of the California Administrative Code.
- 1.4.5 Reinforcement: Reinforcing steel bars for concrete construction as indicated on plans and drawings shall be in accordance with Section 201-2 of the SSPWC and shall be of the diameters and lengths specified. Reinforcement steel bars shall be placed in accordance with Section 303 of the SSPWC and as identified on the plans and drawings.
- 1.4.6 Masonry: The masonry work shall include the application of cultured stone and pilaster cap with mortar as indicated on the drawings and in these technical specifications. Masonry work shall be in accordance with Sections 201, 202 and 303 of the SSPWC and these Technical Specifications.
- 1.4.7 Cultured Stone: Cultured stone and matching pilaster cap shall be "Old County Fieldstone" by Owens Corning, or "Buckeye Blend" (S4260-8) by Boulder Creek or approved equal.

- 1.4.8 Pilaster Cap: The wall cap shall be as manufactured by Stepstone Inc., Classic Wall Cap System as available from RCP Block and Brick, or approved equal. Pilaster cap shall be installed centered on the pilaster and along sign base as indicated on plans and drawings. Mortar used to install the pilaster cap shall match the mortar color used in pilaster construction. Pilaster cap shall be approved by County Project Manager prior to installation and be made by the same manufacturer as the manufacturer supplying manufactured stone veneer.
- 1.4.8 Masonry Grout: Masonry grout shall be in accordance with Section 202-1.5 of the SSPWC.
- 1.4.11 Masonry Mortar: Masonry mortar used in the construction of the sign base and columns shall be in accordance with Section 202-1.5 of the SSPWC. County Project Manager shall approve the mortar color. Mortar shall be applied with recessed 1/2 inch (maximum width) joints.
- 1.4.12 Anti-Graffiti Coating: Contractor shall apply anti-graffiti protective coating to the entire installed entry sign. Coating shall be Monochem Perma Shield Graffiti Resistant Coating, or SEI Graffiti Proofer, SYS, by SEI Chemical, Inc. 1-800-804-3978 or an approved equal. Anti-graffiti coating shall be a one component, water-based, co-polymer protective coating. Coating shall dry to a clear, translucent, colorless film.
- 1.4.13 Excavation: Contractor shall open only those trenches or excavations for which material is on hand and ready for installation. Backfilling and compaction of trenches and excavations shall occur as soon as possible after materials have been placed and work approved. No trenches or excavations are to be left open overnight or during non-working periods unless approved by County Project Manager.
- 1.4.14 Submittals: Prior to application, Contractor shall submit for approval manufacturer's data on the posts or cultured stone, pilaster cap and anti-graffiti coating including instructions for the application and cleaning. Following application, Contractor shall provide County Project Manager a minimum one-gallon, unopened container and any remaining coating. Contractor shall also provide submittals for manufactured stone and pilaster cap.
- 1.4.15 Payment: Price paid for installation of each new entry sign shall include full compensation for furnishing all labor, materials, tools, equipment, incidentals and doing all work involved in installing each County-provided sign, constructing each sign post, sign base and column, installing manufactured stone veneer, applying anti-graffiti coating and saw-cutting required for each entry sign. Payment also includes but is not limited to, clean-up, repairs and guarantees, completed sign, in-place and no additional compensation will be allowed therefore.



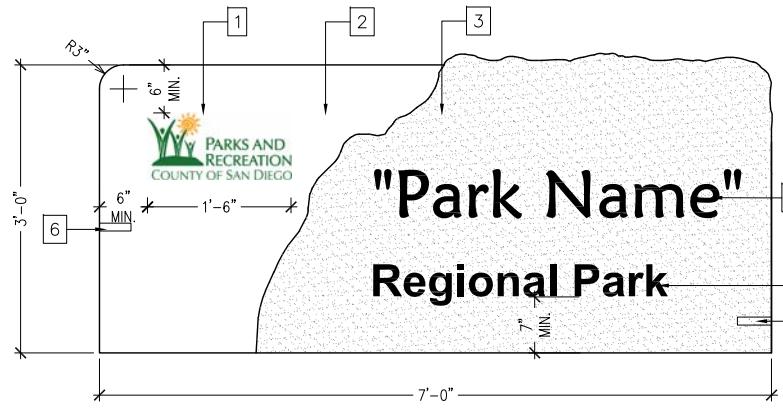
LEGEND

1. ENGRAVED AND PAINTED COUNTY OF SAN DIEGO PARKS AND RECREATION LOGO - LOGO PROVIDED BY COUNTY. MIN. 6" CLEAR FROM EDGE OF SIGN.
2. GRANITE SIGN, 4" THICK, 5' x 3'. COLOR: 'MOUNTAIN GREEN' WITH 'RUBBED AND SANDED' FINISH. GRANITE SIGN AVAILABLE THROUGH COLDSPRINGS. (800) 328-5040, www.coldspringusa.com.
3. SHADED AREA OF SIGN TO BE COLOR: 'MOUNTAIN GREEN' WITH A 'POLISH' FINISH.
4. DRILL 3/4" DIAMETER HOLES 4" DEEP IN GRANITE FOR REBAR PINS WHEN ATTACHED TO POSTS.
5. ALL PARK NAME TEXT SHALL BE ENGRAVED AND WHITE LITHOCHROME. FONT SHALL BE: MAIANDRA GD - 4.5" TO 6" TALL AND CENTERED IN POLISHED AREA OF SIGN. TEXT HEIGHT WILL VARY DEPENDING ON LENGTH OF PARK NAME. SUBMIT SCALED SHOP DRAWINGS TO SHOW ACCURATE TEXT HEIGHT.
6. 'LOCAL PARK' TEXT SHALL BE ENGRAVED IN WHITE LITHOCHROME. FONT SHALL BE ARIAL 4" TALL, CENTERED BELOW NAME OF PARK.

GRANITE SIGN NOTES:

1. PARK TEXT SIDES OF GRANITE (SHADE AREA) SHALL BE POLISHED. VERIFY WITH COUNTY ON 1-SIDED OR 2-SIDED PARK TEXT SIGN. PARKS AND REC LOGO AREA, BACK (IF 1-SIDED), AND SIDES OF SIGN SHALL BE RUBBED AND SANDED.
2. ALL EDGES OF GRANITE SHALL BE .125" CHAMFERED
3. SCALED SHOP DRAWINGS FOR SIGN SHALL BE SUBMITTED FOR COUNTY APPROVAL PRIOR TO ORDERING.
4. SEE ADDITIONAL DETAILS FOR ATTACHMENT TO POSTS.

GRANITE SIGN AVAILABLE FROM:
COLDSPRINGS
(800) 328-5040
www.coldspringusa.com



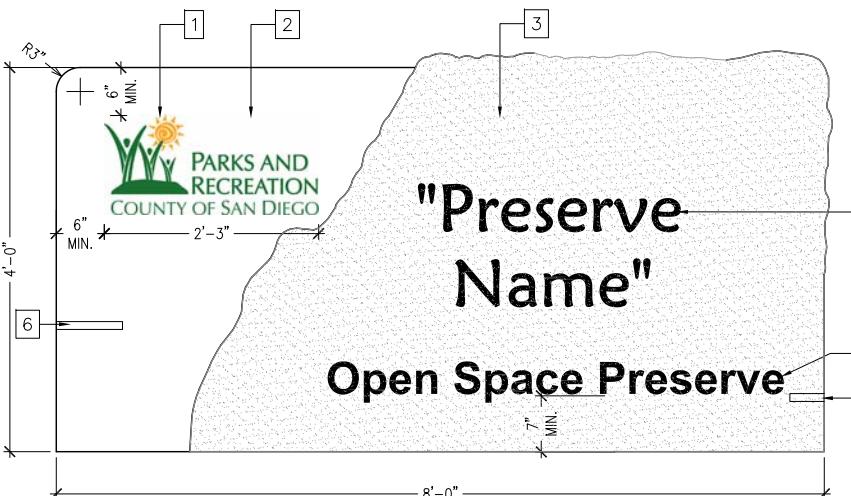
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5. 'REGIONAL PARK' TEXT SHALL BE ENGRAVED IN WHITE LITHOCHROME. FONT SHALL BE ARIAL 4" TALL, CENTERED BELOW NAME OF PARK.
6. DRILL 3/4" DIAMETER HOLES 4" DEEP IN GRANITE FOR REBAR PINS WHEN ATTACHED TO POSTS.

GRANITE SIGN AVAILABLE FROM:
COLDSPRINGS
(800) 328-5040
www.coldspringusa.com

A 3'x5' GRANITE SIGN FOR LOCAL PARKS

SCALE: 1/2"=1'-0"



LEGEND

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2. GRANITE SIGN, 4" THICK, 8' x 3'. COLOR: 'MOUNTAIN GREEN' WITH 'RUBBED AND SANDED' FINISH. GRANITE SIGN AVAILABLE THROUGH COLDSPRINGS. (800) 328-5040, www.coldspringusa.com.
3. SHADED AREA OF SIGN TO BE COLOR: 'MOUNTAIN GREEN' WITH A 'POLISH' FINISH.
4. ALL PARK NAME TEXT SHALL BE ENGRAVED AND WHITE LITHOCHROME. FONT SHALL BE: MAIANDRA GD - 5" to 6" TALL AND CENTERED IN POLISHED AREA OF SIGN. TEXT HEIGHT WILL VARY DEPENDING ON LENGTH OF PARK NAME. SUBMIT SCALED DRAWINGS TO SHOW ACCURATE TEXT HEIGHT.
5. 'OPEN SPACE PRESERVE' TEXT SHALL BE ENGRAVED IN WHITE LITHOCHROME. FONT SHALL BE ARIAL 4" TALL, CENTERED BELOW NAME OF PARK.
6. DRILL 3/4" DIAMETER HOLES 4" DEEP IN GRANITE FOR REBAR PINS WHEN ATTACHED TO POSTS.

GRANITE SIGN AVAILABLE FROM:
COLDSPRINGS
(800) 328-5040
www.coldspringusa.com

C 4'x8' GRANITE SIGN FOR OPEN SPACE PRESERVES

SCALE: 1/2"=1'-0"



DEPARTMENT OF PARKS AND RECREATION

COUNTY OF SAN DIEGO

5500 OVERLAND DRIVE, SUITE 410 SAN DIEGO, CALIFORNIA 92123



CHIEF
PARK DEVELOPMENT
CHIEF OPERATIONS & MAINTENANCE
DISTRICT PARK
MANAGER

DATE

NO.

REVISIONS

APPR.

DATE

DESIGNED BY:

JSS

DRAWN BY:

JSS

CHECKED BY:

ML

PROJECT MANAGER:

COUNTY PARK SIGN ENTRY SIGNS

COUNTY OF SAN DIEGO

DEPARTMENT OF PARKS AND RECREATION

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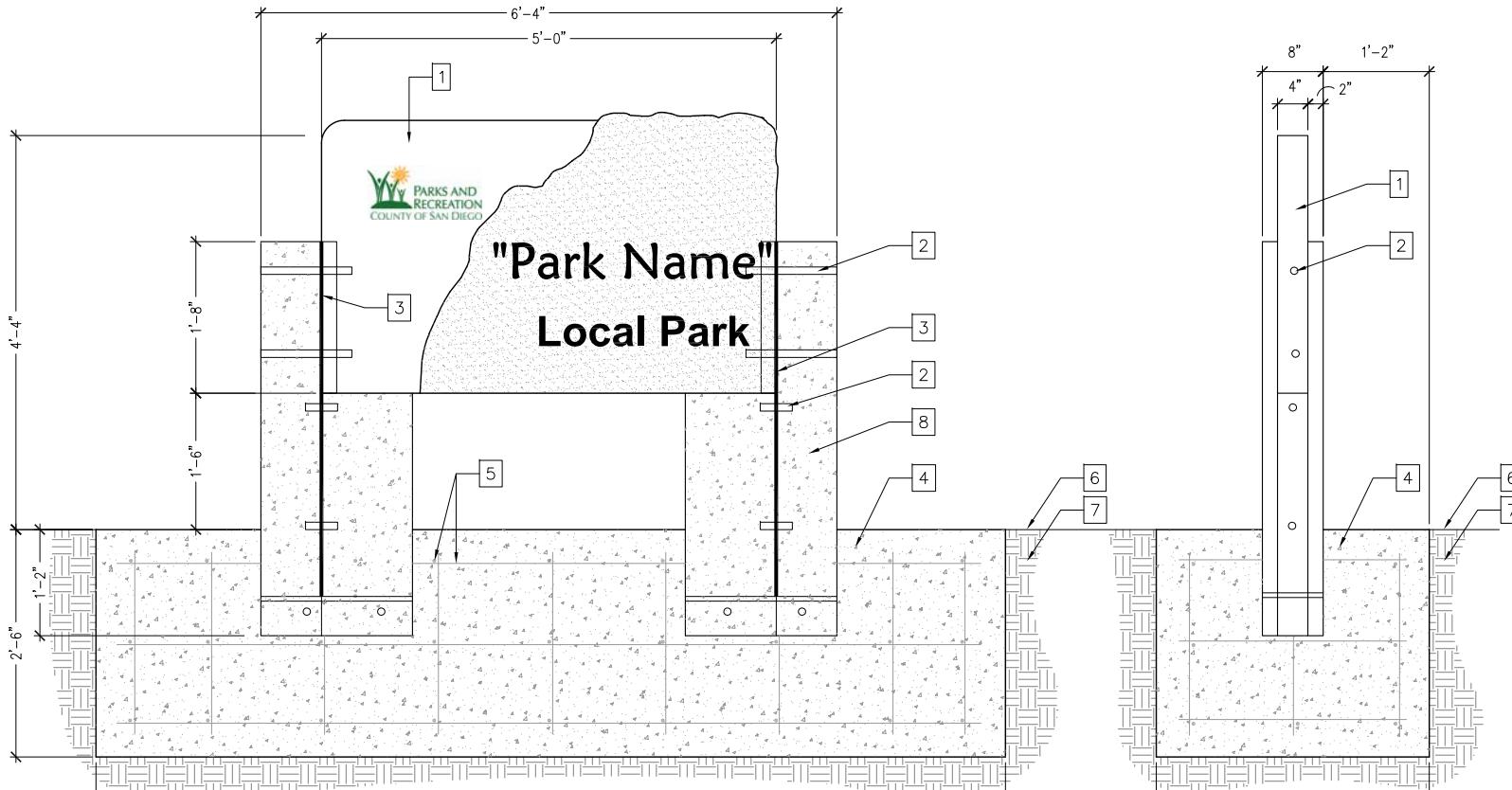
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LEGEND:

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2. 3/4" DIAMETER HOLES WITH #4 REBAR PINS SECURED WITH 50 YEAR SILICONE ADHESIVE TYP.
3. STEEL U-CHANNEL - .3/16" THICK, 4.5" I.D. WIDE, 2" DEEP, LENGTH AS REQUIRED. APPLY 50 YEAR SILICONE ADHESIVE BETWEEN GRANITE SIGN & U-CHANNEL
4. CONCRETE FOOTING, 250-C-2500
5. #4 REBAR REINFORCEMENT @ 16" O.C. MAX.
6. FINISH GRADE
7. 95% COMPACTED SUBGRADE
8. CONCRETE LEG SUPPORTS, FINISH: ACID WASH, COLOR: NATURAL GRAY.

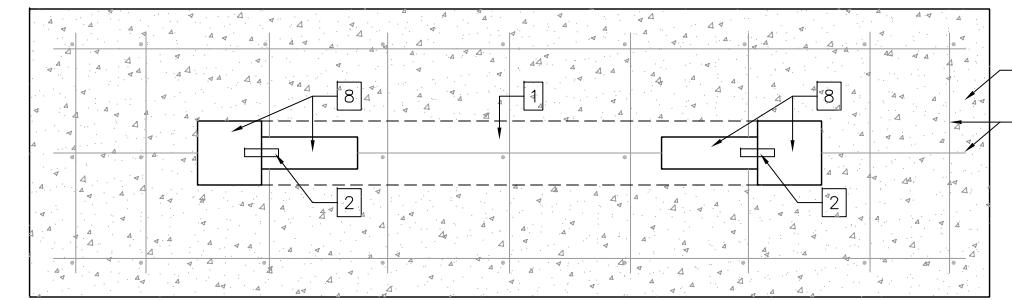
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- A. PARK TEXT SIDES OF GRANITE SHALL BE POLISHED. VERIFY WITH COUNTY ON 1-SIDED OR 2-SIDED PARK TEXT SIGN. PARKS AND REC LOGO AREA, BACK (IF 1-SIDED), AND SIDES OF SIGN SHALL BE RUBBED AND SANDED. SEE LOCAL PARK GRANITE SIGN DETAIL FOR MORE INFORMATION.
- B. ALL EDGES OF GRANITE SHALL BE .125" CHAMFERED.
- C. WHERE REBAR PINS ARE SHOWN, GRANITE SHALL HAVE 3/4" DIAMETER DRILL HOLES 4" DEEP.
- D. SCALED SHOP DRAWINGS FOR SIGN SHALL BE SUBMITTED FOR COUNTY APPROVAL PRIOR TO ORDERING.
- E. CONFIRM SURFACE AREA TREATMENTS AROUND SIGN AREA PRIOR TO SUBMITTING SHOP DRAWINGS.



FRONT SECTION

SIDE SECTION



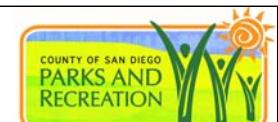
TOP SECTION

(A) LOCAL PARK ENTRY SIGN WITH CONCRETE LEG

SCALE: 1/2"=1'-0" (WHEN PRINTED ON 11x17)



DEPARTMENT OF PARKS AND RECREATION
COUNTY OF SAN DIEGO
5500 OVERLAND DRIVE, SUITE 410 SAN DIEGO, CALIFORNIA 92123



CHIEF PARK DEVELOPMENT
CHIEF OPERATIONS & MAINTENANCE
DISTRICT PARK MANAGER

DATE

NO.

REVISIONS

APPR.

DATE

DESIGNED BY:

JSS

DRAWN BY:

JSS

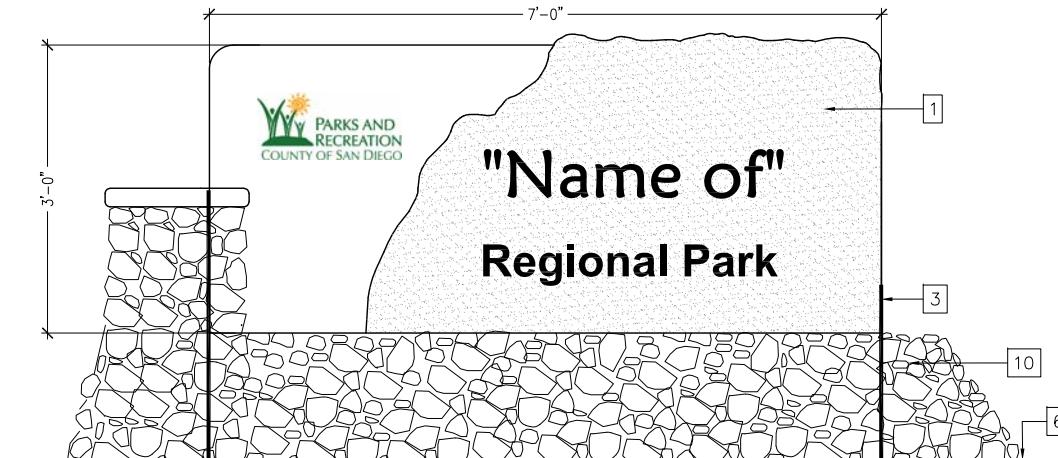
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PROJECT MANAGER:

COUNTY PARK ENTRY SIGN - LOCAL PARK
COUNTY OF SAN DIEGO
DEPARTMENT OF PARKS AND RECREATION

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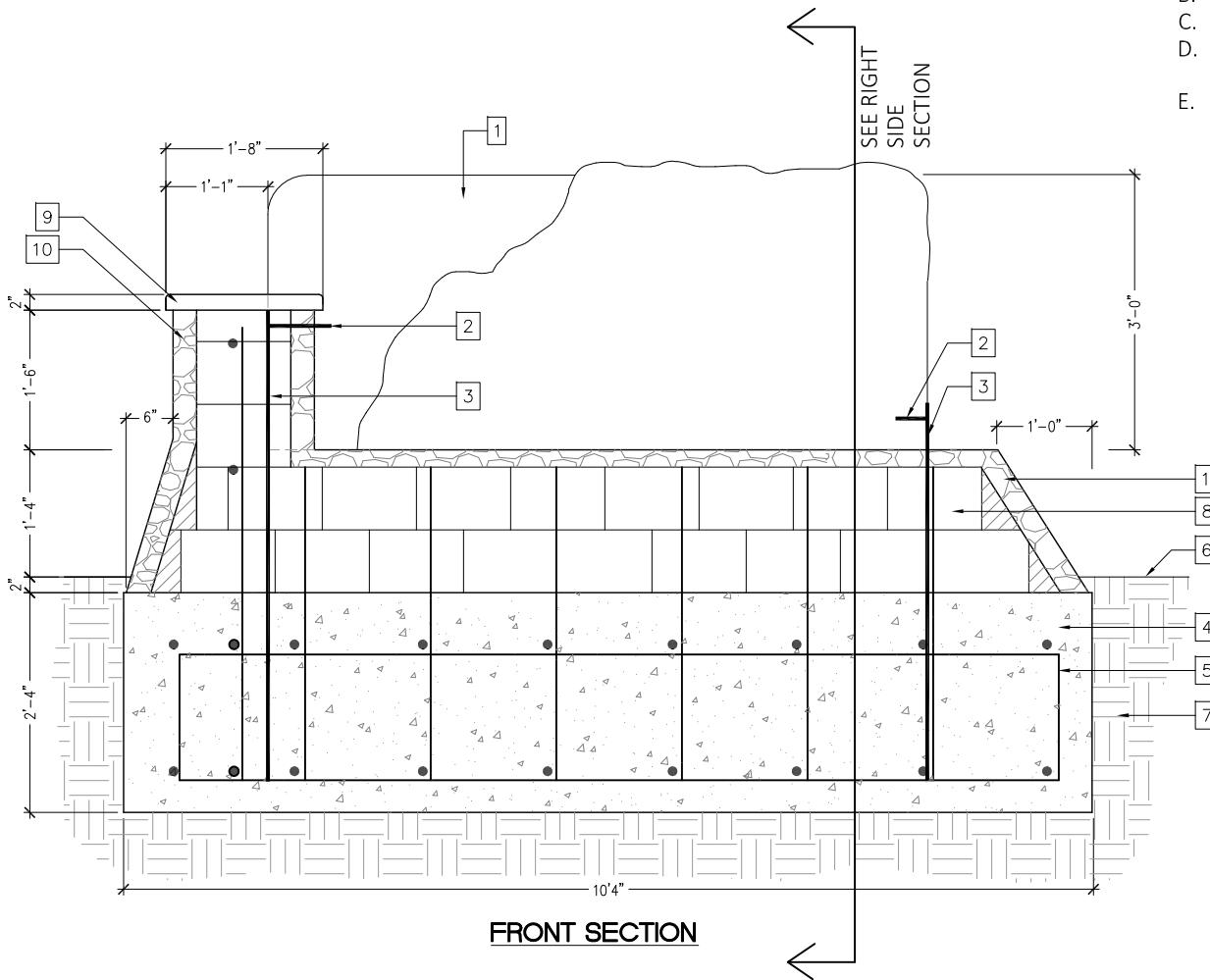
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LEGEND

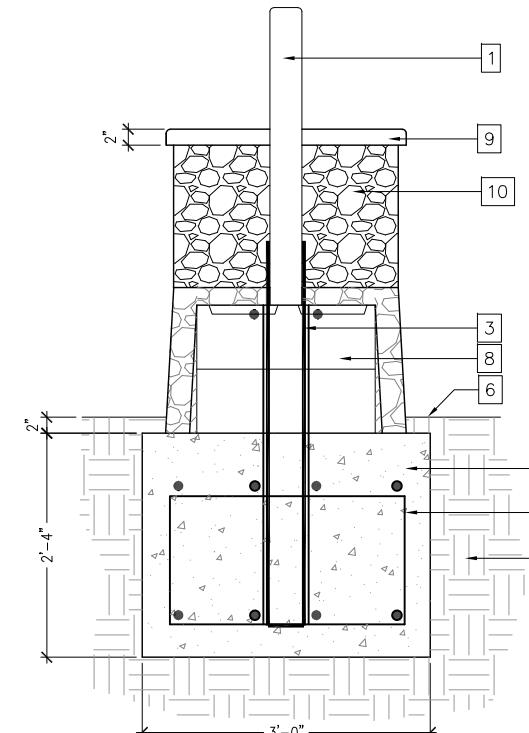
1. ONE PIECE GRANITE SIGN, 4" x 7' x 3'. SEE GRANITE SIGN DETAIL FOR REGIONAL PARKS FOR MATERIAL, COLORS AND MEASUREMENTS.
2. 3/4" DIAMETER HOLES WITH #4 REBAR PINS SECURED WITH 50 YEAR SILICONE ADHESIVE TYPICAL.
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5. #5 REBAR REINFORCEMENT, 16" O.C. MAX.
6. FINISH GRADE
7. 95% COMPACTED SUBGRADE
8. ASTM 90 CMU BLOCKS, MORTAR FILL ALL CELLS.
9. PRECAST CONCRETE CAP, 20" x 2 x 30". SUBMIT PHOTOS/SPECS FOR APPROVAL BY COUNTY PARK PROJECT MANAGER. COLOR TO COORDINATE WITH STONE VENEER.
10. STONE VENEER, TO BE SPECIFIC TO PROJECT LOCATION. SUBMIT PHOTOS/SPECS FOR APPROVAL BY COUNTY PARK PROJECT MANAGER.

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FRONT SECTION



RIGHT SIDE SECTION

(A) REGIONAL PARK ENTRY SIGN
SCALE: 1/2" = 1'-0" (WHEN PRINTED ON 11x17)



DEPARTMENT OF PARKS AND RECREATION
COUNTY OF SAN DIEGO
5500 OVERLAND DRIVE, SUITE 410 SAN DIEGO, CALIFORNIA 92123



CHIEF PARK DEVELOPMENT
CHIEF OPERATIONS & MAINTENANCE
DISTRICT PARK MANAGER

DATE _____

NO. _____

REVISIONS _____

APPR. _____

DATE _____

DESIGNED BY: JSS

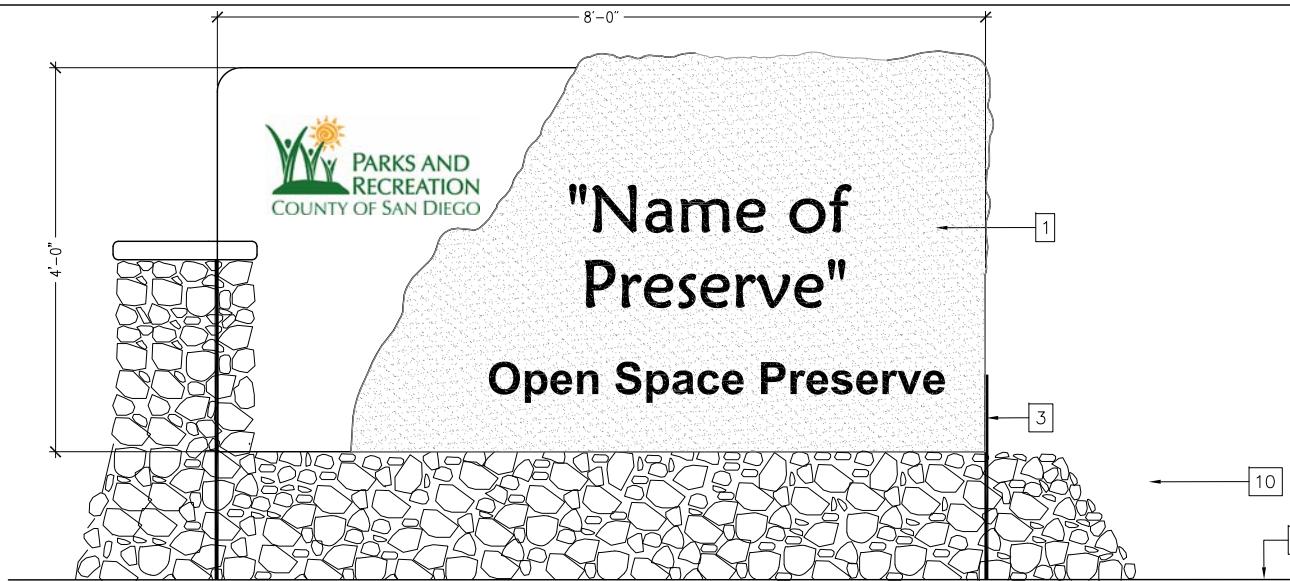
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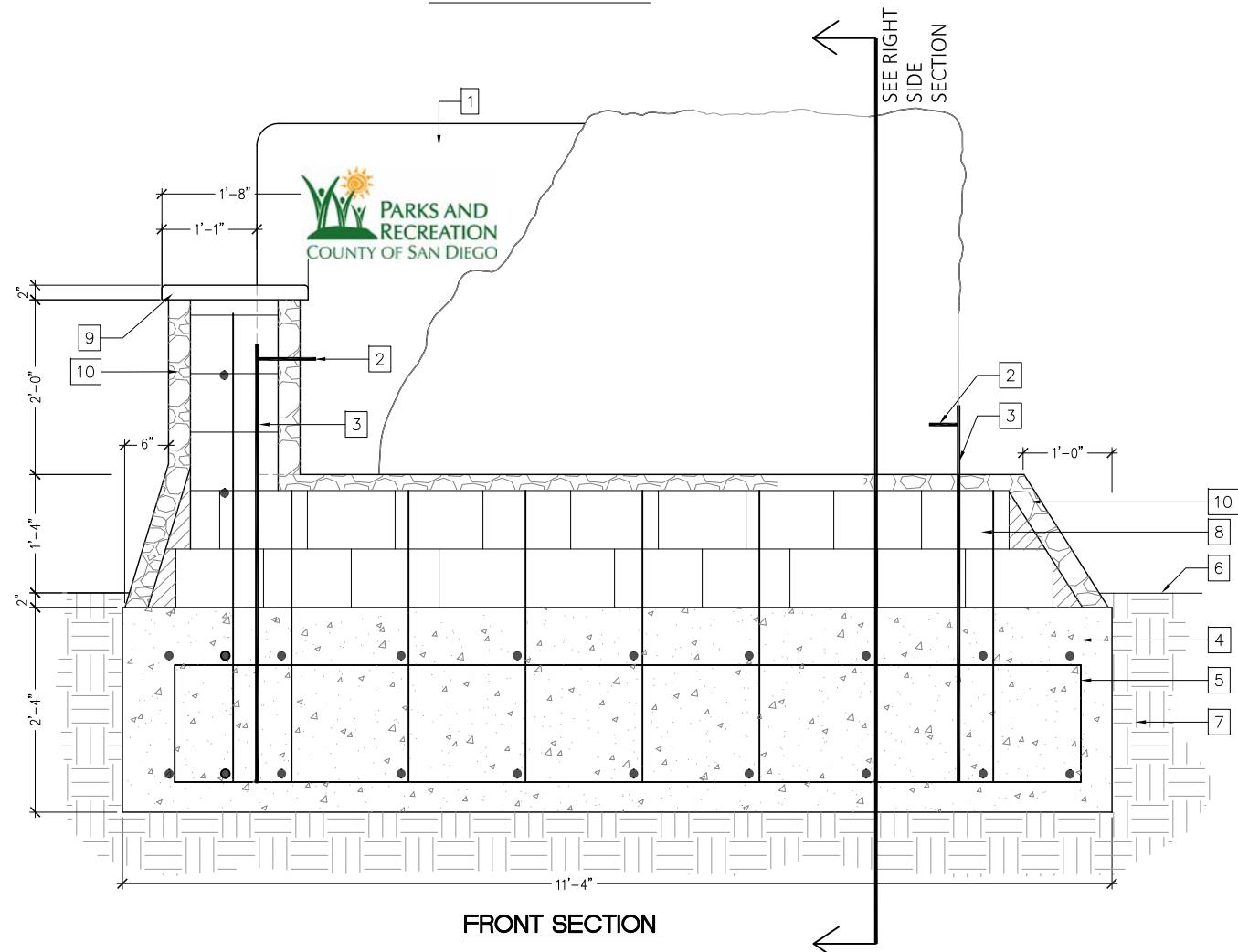
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COUNTY PARK ENTRY SIGN - REGIONAL PARK
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DEPARTMENT OF PARKS AND RECREATION

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FRONT ELEVATION



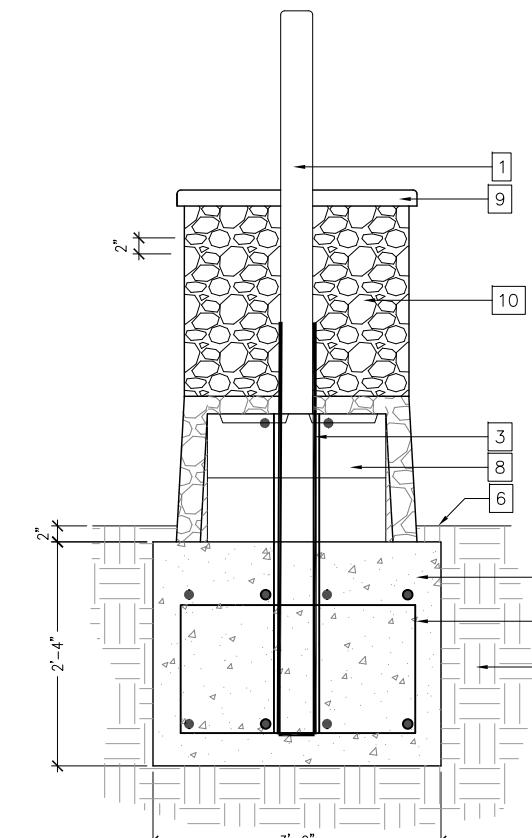
FRONT SECTION

LEGEND

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RIGHT SIDE SECTION

(A) OPEN SPACE PRESERVE ENTRY SIGN
SCALE: 1/2" = 1'-0" (WHEN PRINTED ON 11x17)



DEPARTMENT OF PARKS AND RECREATION
COUNTY OF SAN DIEGO
5500 OVERLAND DRIVE, SUITE 410 SAN DIEGO, CALIFORNIA 92123



CHIEF PARK DEVELOPMENT
CHIEF OPERATIONS & MAINTENANCE
DISTRICT PARK MANAGER

DATE

NO.

REVISIONS

APPR.

DATE

DESIGNED BY:

JSS

DRAWN BY:

JSS

CHECKED BY:

ML

PROJECT MANAGER:

**COUNTY PARK ENTRY SIGN -
OPEN SPACE PRESERVE**
COUNTY OF SAN DIEGO
DEPARTMENT OF PARKS AND RECREATION

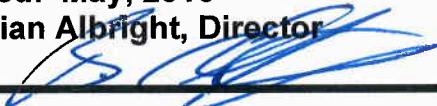
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TITLE: Establishment of Community Gardens in County Park Lands

Date issued/revised: May, 2016

Authorized by: Brian Albright, Director

Signature:



IT IS THE POLICY of the County of San Diego Department of Parks and Recreation that it is in the interest of public health to establish guidelines for the promotion and establishment of Community Gardens on Department of Parks and Recreation properties when the Community Garden complies with all applicable DPR policies and procedures, County, State, and Federal regulations, ordinances, codes, and laws.

Background

The County of San Diego Department of Parks and Recreation (DPR) recognizes the increased demand and need for the establishment of community gardens. Many parks are located in underserved neighborhoods that lack grocery retailers that offer fresh produce. Community gardens could increase local access to fresh fruits and vegetables. The purpose of this policy is to promote the establishment of community gardens while delineating guidelines and considerations. All gardens will need to be approved by the Director. Considerations include the impact to existing park amenities, needs and interests of the community, compatibility with other park elements, community support, costs, and sustainability of the proposed garden. It is intended that proposed community gardens should be at no-cost to the County, maintained by volunteers, and have minimal impact on County staff and resources. This policy is only for County park lands and does not apply to other public lands within the unincorporated areas of the County. This policy does not supersede any other County, State, or Federal regulations.

DEFINITIONS

Community Gardens

A site operated and maintained by a community or volunteer entity on DPR property for the non-commercial production of fruit and vegetable produce through shared or individual plots. Demonstration gardening may be offered and the shared tools and expenses are covered through the collection of membership fees or donations.

Community Garden Group

A local organization or group of local residents that is formed specifically to construct and maintain a community garden. The group would have a designated person who would represent the group and function as a liaison between the gardeners and DPR. The group should be able to demonstrate the capacity to effectively operate and maintain the gardens.

PROCEDURE

The following steps shall be followed to request the establishment of a community garden on DPR property. The normal process is expected to be community initiated however this does not preclude DPR from initiating its own community garden projects.

TITLE: Establishment of Community Gardens in County Park Lands

PREPLANNING

Meet with Site Supervisor or District Manager

The applicant's first step shall be to contact the Site Supervisor or District Manager for the facility where the community garden is proposed. Applicant shall meet with DPR to determine if the site meets the requirements and is suitable for a garden. DPR may recommend the garden be established in another area of the park or determine that the park is not a suitable facility for the garden.

Community Support and Organization

It is important to make sure the neighboring community supports the establishment of a community garden at the park and that there are a sufficient number of willing participants to keep the garden sustainable. The applicant group should be able to demonstrate the capacity to operate and manage a community garden.

PROPOSAL

The Community Garden Group must complete a written proposal to establish a community garden. The written proposal must contain the following information: Community Group Background

- A description of the Community Garden Group, including a primary point of contact;
- A description of the Community Garden Group's ability to effectively administer and operate a community garden including costs and expenses;
- The proposed Community Garden Site Plan;
- Any additional information requested by DPR.

Community Garden Site Plan

The Community Garden Group will develop a preliminary community garden site plan that will include the location of the garden in the park in relation to other park uses including parking and restroom location, the layout and size of the plots, location of water sources and drainage, applicable plans for ADA compliance, and indicate any proposed structures or fences. The site plan needs to consider the General Planning and Design Guidelines on the following page. The Director must approve all community garden site plans.

Department Review and Approval

Once the proposal is received DPR may request more information as needed before approving the Community Garden Group to move forward with the community garden final design. Upon written approval from the Director the Community Garden Group will work with DPR staff in developing the final construction drawings. Construction will not begin on any garden until the final construction plan is approved in writing by the Director. No work shall commence until it is demonstrated that all funds necessary are available to complete the project. Construction of the garden and related facilities will be performed by the Community Garden Group unless arranged otherwise. All improvements will be done under the supervision and

TITLE: Establishment of Community Gardens in County Park Lands

direction of DPR staff. Any utility hook-ups must be done by licensed contractor. All building codes and regulations apply. DPR staff are required to inspect and sign off on the construction before gardeners may enter and use the garden area.

GENERAL PLANNING AND DESIGN GUIDELINES

Site Selection

Community Gardens should have demonstrated support of the local community. Community gardens shall be open to the public on a first come first served basis. A waiting list should be maintained for future gardeners. Sites should be selected carefully and be appropriate to adjoining land uses. The land should be level enough to support garden activities and be ADA compliant. Water availability, access, parking and utilities are major considerations. The size should be large enough to support the local demand and shall have enough plots/participants to keep the gardens economically sustainable. All site selection must be approved in writing by the Director.

Parking and Restrooms

Parking and restrooms should be located within a convenient distance from the gardens. If necessary, additional parking may be constructed with prior DPR approval. Parking needs to be ADA compliant with ADA compliant access from the parking to the garden site. Portable restrooms may be allowed in some instances.

Availability of Water

Water is the greatest expense for most community gardens and it is the intent that community gardens on DPR land be at no-cost to the county. It is preferred that sites have well water available in sufficient quantities to supply water to the garden. In gardens supplied by a water district a submeter shall be installed to measure water use. Water and utilities must be covered by the Community Garden Group. Well water must be tested for contamination per Department of Environmental Health standards.

Soil Contamination Testing

To protect the health and safety of garden participants, a survey of previous uses for the parcel and soil testing shall be conducted prior to commencement to determine any presence of contaminants that may cause health risks.

Underground Utilities

Underground utilities and easements may prohibit a garden location in some parks.

Septic and Streams

The County Department of Environmental Health guidelines state that community gardens should not be established above septic fields and in close proximity to streams.

TITLE: Establishment of Community Gardens in County Park Lands

Compatibility with Existing Uses

Garden site considerations include impact to existing park amenities, needs and interests of the community, compatibility with other park elements, community support, costs and sustainability of the proposed garden. Gardens shall not conflict with or result in the loss of amenities or recreational opportunities. Gardens will not be built at established and informal sports fields, campgrounds, or areas with day-use fees.

COMMUNITY GARDEN DESIGN GUIDELINES

These guidelines are intended to provide design parameters in the establishment of community gardens. While it is DPR's intent to promote community gardens whenever possible certain design features must be abided by to insure a neat, clean, and organized appearance that will not detract from the overall park experience for all users.

Fencing Requirements

For safety and visibility concerns maximum height of any fence should be limited to three feet. Fence materials must be approved prior to installation.

Plant Heights and Types

Plants and supporting trellis shall be limited to four feet in height. Planting of trees and woody plants is prohibited. Planting of any poisonous or illegal plants is prohibited.

Stormwater and Drainage

Community gardens shall be located and designed to control run-on from adjacent areas that may carry contamination and prevent any run-off from leaving the site.

ADA Accessibility

All community gardens shall require ADA compliance to accommodate persons with disabilities. ADA requirements may require raised beds; widened, stabilized access to and through the garden, parking and restroom requirements, and ADA compliant access to water supplies. It is the Community Garden Group's responsibility to comply with any ADA requirements unless waived in writing by the Director.

Signage

Community Gardens should include signage that shows the name and contact information for the group managing the gardens, for any inquiries about the garden, or gardener to gardener communications.

Irrigation

DPR encourages all water conservation strategies. Water hoses should be supplied through spring activated hose bibs with automatic shutoffs. Drip irrigation is encouraged. Water use shall comply with all applicable water conservation regulations.

TITLE: Establishment of Community Gardens in County Park Lands

Structures

No structures, awnings or greenhouses will be permitted within the community garden area or in individual plots unless approved in writing by the Director. All applicable codes and regulations would apply for any approved structure. Pesticide storage must meet all applicable County, State and Federal regulations.

GENERAL TERMS AND CONDITIONS

User Agreement

The Community Garden Group and individual participants must sign the User Agreement provided by DPR. The agreement will include, but not be limited to, the following clauses:

- A defined term of length.
- A termination clause for both the Community Garden Group and individual participants.
- An Indemnification Clause that frees the county of liability.
- A clause allowing County unfettered access to inspect and control operations within the garden.
- An improvements clause stating that any additional improvements not on the original site plan must first be approved in writing by the Director; the applicant must submit the revised site plan showing all existing and proposed improvements.

OPERATIONS AND MAINTENANCE

As part of the User Agreement all operations and maintenance responsibilities will be defined and agreed upon. The operations and maintenance responsibilities will include, but not be limited to, the following clauses unless otherwise agreed to in writing by the Director:

Designated Point of Contact

The Community Garden Group will identify one point of contact for the group. This person will serve as communications liaison to DPR and the garden participants.

Collection of Fees

It is the Community Garden Group's responsibility to collect all fees to cover all utilities associated with the community garden. It is recommended that plot fees are assessed each year and adjusted accordingly to cover any water, utility and trash removal costs.

Refuse Storage and Removal

The Community Garden Group is responsible for refuse collection and disposal, including any associated costs. A refuse bin must be provided. Monthly clean-up of entire site shall be organized by the Community Garden Group. DPR staff retains the right to visit the community garden and direct gardeners to clean up their respective areas in order to maintain an orderly and appropriate appearance in the park.

Composting

TITLE: Establishment of Community Gardens in County Park Lands

Composting is highly encouraged. Compost should only be generated from the green waste on site. To prevent the inadvertent spread of plant pests, importing compost, mulch or green waste from off-site requires prior approval from Site Supervisor. The Community Garden Group must insure no nuisances or the harboring of pests as a result of composting operations.

Pesticides/Chemicals

The County strongly encourages controlling pests with non-chemical methods and only allowing pesticides compatible with organic farming per the USDA National Organic Program.

Hours of Operation

Hours of operation for community gardens shall be limited to existing park hours for the park the garden is located.

Animals and Pets

To prevent the accidental contamination of produce no animals or pets are allowed in the community garden at any time.

Prohibited Activities

Activities normally prohibited in public parks such as amplified sound and the use of machinery will not be allowed unless pre-approved by the Site Supervisor.

END

HEALTHY *Edge*



Active Living Park Design Guidelines

**Department of Parks & Recreation
County of San Diego**



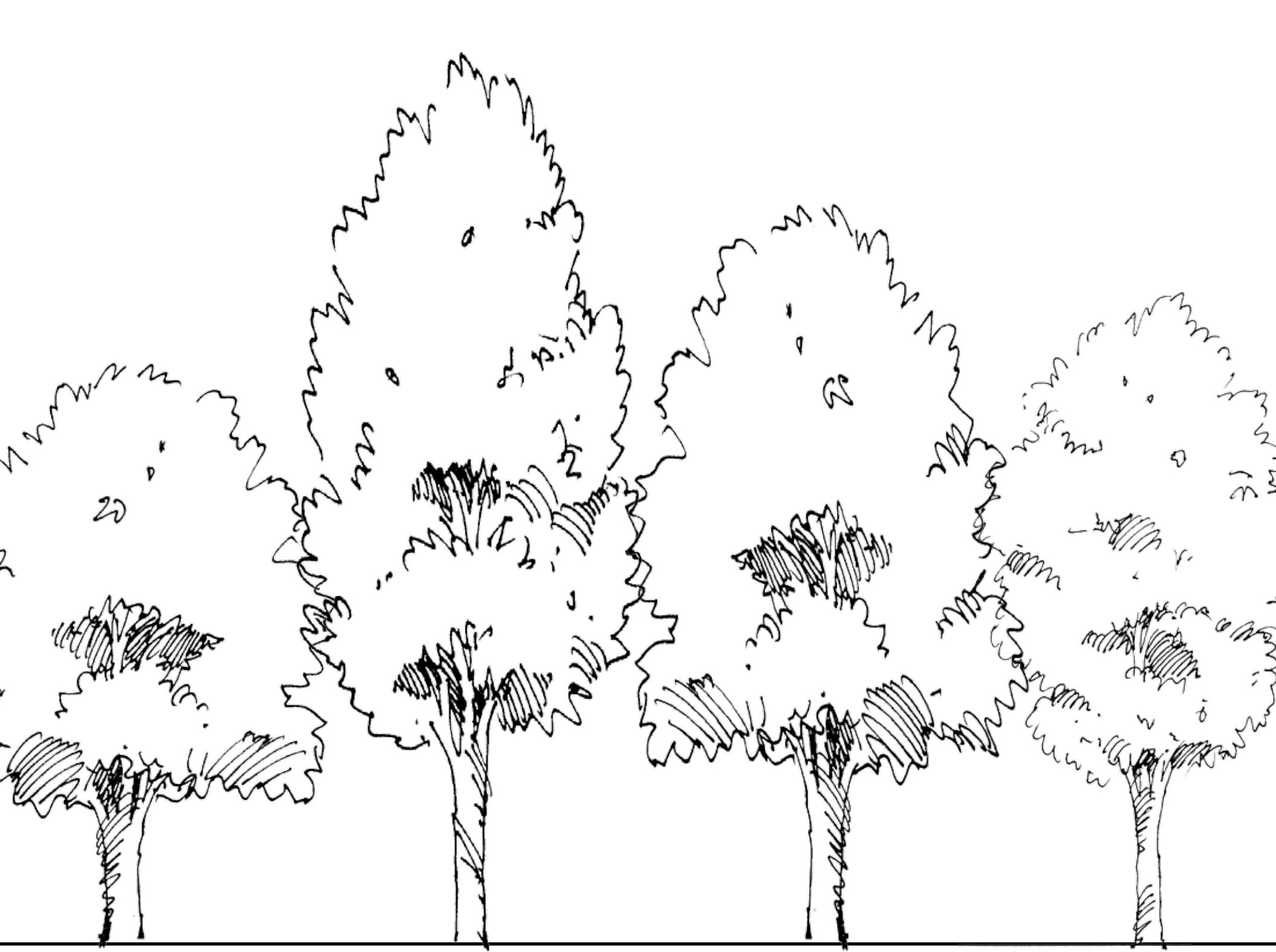


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EXECUTIVE SUMMARY

Obesity and other health issues are epidemic in the United States due to a variety of factors. The County of San Diego is taking a proactive view of the health related issues and invites the community to make healthy choices in nutrition and in increasing activity levels.

These park development design guidelines have set out to identify causes and prescribe methods through its built elements to increase activity levels in County Parks. This resolve has identified the following mission as its goal:

Develop comprehensive park design guidelines for active living that consider the health impacts on communities through accessibility, demographic needs, aesthetics, safe and clean environments, diversity, innovative design and creative partnerships.

To accomplish this goal within the built environment of parks, a design process is necessary to create a successful project. These design principles are typical within most design disciplines and require a preliminary emphasis on public participation, human needs and values as well as investigating site opportunities and constraints.

Please note, as a convenience to the reader, a summary check list is provided in blue to summarize key subject points throughout this document. Research has identified the following objectives to support the mission to increase activity levels within county parks. They include:

- Locating parks for access to multiuse trails in order to connect to schools, shopping centers and transportation venues.
- Providing safe environments to encourage park visits in which to explore new active element options.
- Providing elements to support diverse activity for all demographics.
- Providing aesthetically pleasing and clean environments.
- Providing innovative, non-structured, non-traditional design to promote both physical and mental activity.

- Establishing unique partnerships that support active lifestyles.

These design guidelines are meant to serve as a baseline to increase activity levels within County Parks. These guidelines should be dynamic, requiring revisions to meet changing times and populations. By utilizing these design guidelines to increase activity levels, County Parks can play an important role to remedy current health issues in our communities.

INTRODUCTION

The Department of Parks and Recreation (DPR) has long encouraged healthy living strategies for personal choices toward better health. These strategies have been officially adopted by the San Diego County Board of Supervisors through the “Live Well, San Diego!” initiative, a ten year health strategy to improve the health and well-being of county residents. The “Live Well, San Diego!” strategy has four major themes: 1) Build a Better Service Delivery System; 2) Support Healthy Choices; 3) Pursue Policy Changes for a Healthy Environment; and, 4) Improve the Culture from within. This initiative specifically calls upon county government to “allow people to make healthy choices” in an effort to fight three behaviors: poor nutrition, tobacco use and inactivity that contribute to four chronic diseases which kill more than 50% of Americans. This disturbing behavioral phenomenon is more commonly known as the “3-4-50” principle and is a significant source of stress on the health care system, economy, families and personal lifestyles. DPR seeks to help relieve this stress by offering an advantage, an edge up, a cutting edge...or a “healthy edge” toward a thriving and vibrant life for all park visitors.

33% of youth watch 3 hours of TV per day while those that exercise for the same period is 18%. (Source: Youth Risk Behavior Surveillance System, CDC, 2009)

The Problem

The “National Prevention Strategy: America’s Plan for Better Health and Wellness” published by National Prevention, Health Promotion, and Public Health Council confirms the childhood obesity trend throughout the United States with the following key facts:

- At least 40 percent of adults and 80 percent of adolescents do not meet the Physical Activity Guidelines for Americans.
- Less than 4 percent of elementary schools, 8 percent of middle schools, and 2 percent of high schools provide opportunities for daily physical education.
- Only 13 percent of children walk or bike to school, compared with 44 percent a generation ago.
- The average 8 to 18 year old is exposed to nearly 7.5 hours of passive screen time (e.g., television, videos, computers, smart phones, video games) every day.
- More than a quarter of trips made by car are within one mile of home.
- Physical activity levels are lower in low-income communities and among racial/ethnic minority children due in part to people feeling unsafe in their communities.
- Activity levels decline with age, despite physical (e.g., falls prevention) and emotional (e.g.,



Research shows that physically active and fit children tend to have better academic achievement.

decreased levels of depression) benefits.

- Physical inactivity is a primary contributor to one-third of the adult population being overweight or obese and one in six children and adolescents being obese.

In an effort to combat this American health crisis, 'Healthy People 2020', an initiative of the Centers for Disease Control and Prevention and the President's Council on Fitness, recommends that students be engaged in moderate to vigorous physical activity (MVPA) each day.

Moderate physical activity refers to activities equivalent in intensity to brisk walking or bicycling. *Vigorous physical activity* produces large increases in breathing or heart rate, such as jogging, aerobic dance or bicycling uphill. The Physical Activity Guidelines for Americans recommend that children and adolescents participate in at least 60 minutes of MVPA most days of the week, preferably daily, in order to attain health benefits. Engaging students in moderate to vigorous physical activity (MVPA) prepares them to lead physically active lives and can improve health and academic outcomes.

County of San Diego Response to the Obesity Problem

In October 2004, at the recommendation of Supervisors Pam Slater-Price and Ron Roberts, the San Diego County Board of Supervisors unanimously voted to support and fund the creation, co-ordination and implementation of a Childhood Obesity Master Plan to end childhood obesity. With input from multidisciplinary partners, community residents and others, the steering committee developed in 2006 the *Call to Action: San Diego County Childhood Obesity Action Plan (Action Plan)*. The *Action Plan* emphasizes policy and environmental changes with the recognition that it is easier for individuals to make healthy choices to reduce and prevent childhood obesity when their physical and social environments support these choices. The objectives of the *Action Plan* include the following:

- Building awareness about the problem of childhood obesity.
- Serving as a guide for all agencies, institutions and neighborhoods in San Diego County.
- Planting a seed and building momentum for action without being prescriptive.

- Connecting those already working on this issue with new organizations and new sectors.
- Ensuring that strategies emphasize policy and environmental changes, not just individual and family efforts.
- Creating a plan document that supports community partners.

The “Environmental” Approach

Causes for obesity have been identified from a variety of factors. The economy, existing built environment, technology, socio-cultural behaviors, litigious culture, crime and fast food have all contributed to sedentary and poor nutritional lifestyles. For example, budget cutbacks have reduced or eliminated school physical education and athletic programs; crime has forced kids indoors to watch TV; residents in under-served areas without healthy retail options are forced to shop at fast food stores; playgrounds are closed when overly litigious groups file claims; rural and suburban communities ride in vehicles rather than walk to destinations, while urban residents fear walking on unlighted paths to schools and centers.

Because of the complexity of factors affecting health, The *Action Plan* steering committee utilized an ecological model of health promotion in the development of their plan. This model takes into account the physical and social environments and their relationship to people at individual, interpersonal, organizational and community levels. The ecological model addresses multiple levels of behavioral influence and offers a comprehensive approach to preventing childhood obesity.

San Diego County Childhood Obesity Initiative

Following publication of the *Action Plan* in 2006, the San Diego County Childhood Obesity Initiative was formed to engage community partners and assure effective implementation of the strategies outlined in the plan. The San Diego County Childhood Obesity Initiative is a public/private partnership whose mission is to reduce and prevent childhood obesity in San Diego County by creating healthy environments for all children and families through advocacy, education, policy development, and environmental change. The purpose of the Initiative is to create, support, and mobilize partnerships among multiple domains; provide leadership and vision; and coordinate county-wide efforts to prevent and reduce childhood obesity. The county envisions healthy kids



Many factors contribute to obesity; including the economy, environment, technology, socio-cultural behaviors, litigious culture, fast food and crime.

and healthy options for all families no matter where they live, work, play, worship, or attend school.

Goals of the Initiative include:

- Increasing opportunities for all children and families to access and eat healthful foods in a culturally appropriate manner.
- Increasing opportunities for all children and families to engage in physical activity in an inclusive and culturally appropriate manner.
- Increasing other opportunities to enhance economic, social, service, and built environments.
- Promoting operational excellence of the public/private partnership.

“...allow people to make healthy choices”.



An activity-friendly environment is a place that makes it easy to make the choice to be physically active, through planned exercise or routine daily activity.

ACTIVE LIVING HISTORY AT DPR

DPR's 2010-2015 Strategic Plan defines its mission as enhancing the quality of life in San Diego County by providing opportunities for high level parks and recreation experiences and preserving regionally significant natural and cultural resources. Goals to accomplish this mission for the next five years are:

- Enhance the Quality of Life
- Maintain Safe and Accessible Parks and Facilities
- Create Community
- Preserve and Manage Natural, Historic and Cultural Resources
- Educate the Public

Strategic Plan Objectives to reach these goals that increase activity levels within parks are:

- Providing and promoting healthy and active lifestyles
- Offering a diverse selection of affordable and high quality choices for families to recreate together
- Creating trail networks that connect communities
- Providing inviting and accessible places to recreate
- Taking measures to increase safety and security
- Celebrating community diversity
- Designing, developing and operating environmentally sustainable facilities

By definition, a parks department encourages healthy living choices. DPR, in particular, has long employed a dynamic balance of active and passive recreation options through both its built elements and programs. Active recreation facilities such as baseball, soccer, basketball are scattered throughout the park system and encourage team and tournament play. A host of children's playgrounds exist in many of the parks. In 2006, county parks introduced a healthy option



Sweetwater Regional Park, Bonita, CA

30 minutes of moderate to vigorous physical activity (MVPA) a day for adults, 1 hour of MVPA for children.

vending program that requires 100% of all products in the vending machines at all community and teen centers to be healthy. In 2008, county park policy banned smoking on park property. Community gardens have been built at 4S Ranch and Tijuana River Valley Parks. Senior lunches are provided at three community centers. Recently, popular exercise fitness circuits have been built at Jess Martin, Spring Valley and Lindo Lake parks, while a fourth exercise circuit is soon to be constructed at Sweetwater Lane Park. Additionally, there are hundreds of recreation programs throughout the park system that promote physical activity.

However, are we doing enough? A traditional ten-acre county park has ball fields, a children's playground, picnic areas, parking lot, restroom building and lots of grass. See figure below. While the ball fields and playgrounds offer moderate activity levels for a limited demographic, the "Live Well, San Diego Initiative" calls on us to question whether we can do more to provide diverse, stimulating activity in order to promote return visits.



ACTIVE LIVING DESIGN GUIDELINES

Active living is a way of life that integrates physical activity into daily routines. The goal is to accumulate at least 30 minutes of moderate to vigorous physical activity (MVPA) each day for an adult and one hour per day of MVPA for a child. Individuals may do this in a variety of ways, such as walking or cycling for transport, exercise for pleasure and fitness, participating in sports (both organized and informal), playing in the park, working in the garden, taking the stairs, walking the dog, and using recreational facilities.

Why do we need design guidelines? The intent of design guidelines is to promote functional, attractive, and well-built park facilities, while allowing for imaginative design of the park setting. Guidelines for activity areas should be designed in an arrangement that encourages appropriate use, access, surveillance and buffers incompatible activity while providing complementary activity to create a sense of place, pleasure and unity of the whole. Please refer to the Appendix for a more complete park design process to use in conjunction with these Active Living Design Guidelines.

These design guidelines are an instrument to provide direction for implementing and enhancing activity levels within county parks and the community. Good park design should meet the needs of the users, be diverse and intriguing, connect people with place and provide the visitor with a positive identity and experience. These guidelines support and elaborate on DPR's active living mission, goals and objectives. Essentially, designers should enable the user to make the healthy choice, the easy choice.

Designers should enable the user to make the healthy choice, the easy choice.

ACTIVE LIVING FOR FUTURE PARK DEVELOPMENT

*U*nderstanding the design process can help the project manager achieve the best outcomes for a sustainable and active park. In order to apply design concepts to increase activity levels in the built environment of a park, DPR has identified its mission as:

Develop comprehensive park design guidelines for active living that consider the health impacts on communities through accessibility, demographic needs, aesthetics, safe and clean environments, diversity, innovative design and creative partnerships.

This mission statement will guide our future park development and challenge the department to not only enrich our traditional approaches, but reach out to more diverse populations by offering a variety of passive and active elements for the county resident to utilize.

In order to determine if DPR's active living mission is on course, goals and objectives are necessary. This journey should be considered dynamic and adapt to changing demographics, trends and economic environments. Below are a few objectives to begin this task. These objectives arose from a variety of active living research.

Siting.

- ❖ Site new parks near trails, transportation corridors, under-served, low-income, & denser populations

Safety.

- ❖ Provide elements that increase safety or perceptions of safety within parks to encourage park visits

Diversity.

- ❖ Provide elements to encourage diverse activity for all demographics



Aesthetics.

- ❖ Provide aesthetically pleasing and clean surroundings to encourage park visits

Innovation.

- ❖ Provide innovative, non-structured, non-traditional design to promote both physical and mental activity

Partnerships.

- ❖ Establish partnerships to increase physical activity opportunities in parks

Goals cannot be attained without measureable results to assess successes. Ongoing evaluation to determine what is working and what is not working should be in place for periodic peer review. Refer to the Appendix for a matrix of DPR's community parks with a simple checklist to assess if current conditions are satisfying active living objectives. From manager's responses, points are tallied for each park where an activity attribute is identified. Focus should be placed on those parks with low activity attribute scores in an effort to increase activity elements in that park.

Park Active Living Objectives

As was discussed earlier, major objectives that arose from current research and literature were identified. Let's examine those objectives more closely in an effort to better understand the rationale to create more vital and active park environments.

SITING

- ❖ **Objective:** Site new parks near trails, transportation corridors, denser populations, lower income populations. Seek opportunities to connect existing parks to surrounding infrastructure.

Locating a Park within a Community

A substantial body of research shows that certain aspects of the transportation infrastructure (public transit, greenways and multi-use trails, sidewalks and safe street crossings near schools,





Proposed network of open spaces surrounding the city of Milan, Italy

bicycle paths, traffic-calming devices, and sidewalks that connect schools and homes to destinations) are associated with more walking and bicycling to offer greater physical activity and lower obesity rates. Walking is an excellent exercise for all age groups. By encouraging walking between neighborhood destination zones, a synergy occurs that increases activity levels. Studies have shown that adults living in “walkable” neighborhoods are more physically active. Other studies show that children engage in more regular, sustained physical activity when they are able to walk or bike from home to school or other local destinations. Disjointed trails and transportation links discourage use within parks and activity centers. Refer to the figure illustrating the green belt around Milan, Italy which links existing parks and open zones between them. According to the map, the green belt will become the core of a more extensive system of green spaces that will link to existing public plazas and squares within metropolitan Milan, Italy. If this medieval city can provide this extensive network of green spaces, the county of San Diego should be able use Milan as a model for its neighborhoods. Refer to the Appendix for a comparison map of San Diego County ratio of populations to park lands. This map illustrates current and future housing units as of 2012 in conjunction with local and regional County Parks and points out where new parks, trails and open spaces might occur to support future linkages.

Park Siting within a Community - Design Considerations:

- ✓ Are there safe routes to schools and other destinations?
- ✓ Are there existing easements to utilize for trail networks?
- ✓ Are multi-use trails being proposed (biking, walking, equestrian)?
- ✓ Will the park have access to bus stops and other transportation corridors?
- ✓ Is the park near dense populations?
- ✓ Have lower income populations been considered when siting the park?
- ✓ Has the location been selected to take advantage of surrounding land uses?
- ✓ Are there parks near schools to encourage after school activities?

Site Specific Park Issues

Site specific park issues should begin with an opportunity and constraints analysis. This effort should consider factors such as topography, soils, prevailing winds and drainage requirements in order to identify suitable locations for specific elements within the park. Accessibility is also an important consideration for the designer to examine ADA compliance, parking, and emergency vehicular requirements that are appropriate to the proposed functions. Additional considerations should include a thorough investigation of property lines, easements, utilities, irrigation, seismic, environmental constraints and flood zone locations. All these factors are also very important to reduce costs of a construction budget

Site Specific Park - Design Considerations:

- ✓ Determine ADA accessibility requirements.
- ✓ Identify flood and seismic zones.
- ✓ Understand the natural vegetation and drainage patterns of the site to avoid erosion and soil compaction problems.
- ✓ Provide adequate street frontage for the park.
- ✓ Identify surrounding uses and neighborhood needs when locating facilities such as parking and lighting.
- ✓ Evaluate adequate parking requirements for play fields.
- ✓ Evaluate emergency access, grading, drainage and spatial requirements.

SAFETY

❖ Objective: Provide elements that increase safety or perceptions of safety

The active benefits of a park are only as good as the perception of safety it evokes. If the visitor to a park feels threatened, at risk or uncomfortable, a park stands idle and offers no activity benefit to the community or individual. Crime Prevention through Environmental Design (CPTED)



The “Broken Window Theory” suggests that one “broken window” or nuisance, if allowed to exist, will lead to others and ultimately to the decline of an entire park.

authors consider the following typical physical characteristics park users associate with high-risk environments: poor lighting, confusing layout, physical and aural isolation, poor visibility, no access for help, areas of concealment, poor maintenance, vandalism and the presence of “undesirables”. Safety considerations when planning, designing or improving a park should incorporate the following factors:

- Isolation in parks
- Layout and legible design
- Visibility and sight-lines
- Access and circulation
- Lighting

Isolation in Parks

The “eyes on the street” approach to park planning and design is to increase the opportunities for informal surveillance and reduce the number of isolated places where crime can take place unseen. But, while people feel safer when they can be seen and heard by others, it would be difficult and possibly undesirable to achieve this at all times, in all types of park settings. For example, naturalized parks can be visually and aurally isolated places, yet one study found that a diverse landscape of tall grass meadows, shrub thickets and woodlands was not only the most feared but also the most valued (Burgess et al., 1988). This paradox presents an interesting challenge: How can natural areas be planned in a manner which mitigates the apprehension and isolation associated with them? Experience has shown that no one solution prevails. What is vitally important is to provide choices and information so that users can make informed decisions. Safety should be a primary consideration along main routes through parks and between the park perimeter and the street. In more isolated natural areas, possible dangers should be recognized by means of clear signage and legible layouts that direct people toward more heavily populated areas but does not remove the freedom for users to explore alternative routes if they so choose. Factors to consider are:

Design Considerations:

Supporting Park Activity

- ✓ Has the location and design of the park been selected and planned to take advantage of surrounding land uses?

Informal Surveillance

- ✓ Is the park or areas of the park in the line of sight of nearby houses, apartments, stores or activity areas to assure visibility?
- ✓ Have “Park Watch” schemes been considered to encourage surveillance by local residents and merchants?

Balancing “Negative” Land Uses

- ✓ Have measures been considered to lessen the impact of vacant, derelict or problematic land uses near a park site?

Intensive Activity to Reduce Isolation

- ✓ Are activity areas clustered to provide greater informal surveillance within and between areas?
- ✓ Have restrooms been located beside a major activity area or park entrance to encourage surveillance?

Access to Assistance

- ✓ Have security cameras and emergency lighting devices been installed in visible locations to reduce feelings of isolation and to improve access to assistance?



*Guajome County Park,
Oceanside, CA*



Security cameras can decrease crime activity and increase the overall perception of safety.

Layout and Legible Design

Legibility refers to the clarity of the environment. It has been described as the degree to which a space is understandable; the ease with which its parts can be recognized and organized into a coherent pattern (Lynch, 1960). When a park is legible, users are able to form clear, accurate images of it. An ability to find one's way with ease, contributes to a sense of security and comfort. Conversely, feelings of being unsafe increase as chances for getting oriented are reduced. Also, unsafe feelings increase when familiar landmarks or points of reference are absent. Legibility is also vital for efficient pedestrian circulation as legible pathways convey a sense of easy access, of clear direction and of well-defined boundaries.

Design Considerations

- ✓ Is the layout of the park easily understood from the point of view of a first-time user?
- ✓ Are the entrances and exits easy to locate from both inside and outside the park?
- ✓ Do pathways connect with destinations?
- ✓ Does the signage direct users to key points of interest?
- ✓ Are focal points clearly visible?
- ✓ Do obstructed sightlines prevent users from moving comfortably into and around the park?
- ✓ Does the lighting help to direct movement between destinations at night?

Visibility and Sightlines

Visibility is an important factor in enhancing park users' feelings of comfort and security. Perceptions of safety increase markedly if people can see ahead and around them, and if other people are visible. Clear sightlines allow park users to verify the presence of persons whom they might find threatening. The ability to see into and out of an area is referred to as visual permeability. The presence of shrubbery, fences, walls, sharp corners, storage sheds or buildings can hinder

visibility and thus reduce perceived and actual safety. The degree of visibility that is appropriate has to be evaluated on the basis of the scale, function, context and user group of a park. Small neighborhood and downtown parks usually feel more comfortable if a considerable degree of openness is provided. In larger parks, clear sightlines along the frequently used pedestrian routes, between activity areas and along park edges are also important.

Regardless of park size, safety begins at the perimeter. If the perimeter is inviting and people can observe pleasing activity from the street, they are more inclined to enter a park (Whyte, 1981). An active and visible edge will encourage use and create a perimeter of surveillance for the park. An active edge can also increase park accessibility to user groups who may feel more vulnerable in the park interior and who are of lower mobility, such as women, children, older adults and people with disabilities.

Design Considerations:

Creating an Active Edge

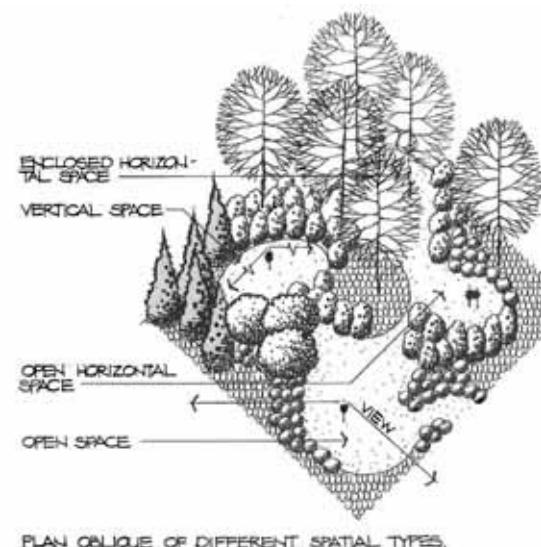
- ✓ Are the edges of the park open enough so that the passerby can see into the park and park users can see out?
- ✓ Has at least one activity or facility been located at the perimeter to create an 'active edge' visible from the street?
- ✓ Have nighttime activity nodes been located to take advantage of existing street lighting?

Legible Entrances

- ✓ Are the entrances highly visible to promote casual use by passersby?

Encouraging Surveillance

- ✓ Have activity areas such as playing fields, tennis courts and playgrounds been located so that there are clear sightlines between areas to encourage surveillance?



- ✓ Are the washrooms highly visible from nearby activity areas?

Improving Sightlines

- ✓ Have solid walls, tool sheds or plantings that reduce visibility been avoided along primary routes?

Future Sightline Barriers

- ✓ Has mature vegetation been planted close to park edges, along walkways or between activity areas that will block sightlines?

Access and Circulation

Safety can be enhanced by providing users with a choice of entrances and exits as well as routes to and from areas. The extent to which an environment allows people alternative choices of movement on a site is referred to as physical permeability (Bentley et al., 1985). A choice of direct and attractive routes will maximize legibility and physical accessibility. Alternatively, the absence of a legible and efficient circulation system may discourage use altogether or lead to a number of dead areas that are likely to become deserted creating an important precondition for undesirable activities to occur.

Design Considerations:

Alternative routes provide

- ✓ An opportunity to bypass areas perceived as threatening.
- ✓ An opportunity to avoid movement predictors: Channelized routes or “movement predictors” can be problematic because they create an opportunity for a potential attacker to calculate a person’s movement pattern and to predict their destination. Movement predictors can be especially hazardous in isolated areas.
- ✓ An opportunity to avoid entrapment areas.

Access and Circulation issues

- ✓ Does the park circulation system connect and integrate with the circulation patterns of the surrounding community to encourage maximum use?
- ✓ Are primary access routes clearly identifiable, legible and well maintained?
- ✓ Are access points clearly identifiable from the street and from within the park?
- ✓ Do major circulation routes follow “desire lines” of park users?
- ✓ Are pedestrian and vehicular routes visually connected to provide informal surveillance?
- ✓ Do park users have to travel through areas dominated by groups that might make them feel uncomfortable?
- ✓ Are pathways designed to concentrate pedestrian movement after dark along properly illuminated and well-used routes?
- ✓ Are nighttime activities clustered?
- ✓ Are pedestrian routes to recreational building entries well lit and not obstructed by landform, vegetation, structure, signage, etc.?

Lighting

The single most requested physical design modification to improve safety is usually an increase in lighting. Lighting is a key factor because it can clarify the layout of a park by emphasizing walkways, focal points, gathering places and building entrances. When planned as a coordinated system, lighting improves the night time legibility, use and enjoyment of a site. Lighting, like signage, is best developed as a hierarchy. The top of the hierarchy includes lighting activity areas and primary walkways so that they become the focus of pedestrian activity after dark. At the bottom of this hierarchy is the decision not to light some areas at all because their use at night would be un-



Lighting plays an important role in the prevention of crime.

safe or inappropriate. While lighting has been shown to reduce people's fear of crime (Middlesex, 1989), lighting alone is not the sole solution to safety-related issues. If increased park use does not result following lighting upgrades, people may feel safe in areas which are potentially unsafe.

Design Considerations:

Questions to ask about hierarchy of lighting types and intensities

- ✓ Has a hierarchy of lighting types and intensities been used to highlight activity areas and primary pedestrian routes so that they become areas of concentrated use after dark?

Enhancing Edge Activities

- ✓ Has pedestrian lighting been provided at the park perimeter to enhance the park's character, encourage use and build on the existing street lighting?

Placement of Lighting

- ✓ Are lights positioned to respond to problems of surveillance created by vegetation and topography rather than on the basis of arbitrary light pole placement?
- ✓ Does lighting need to be redirected so that it extends beyond the edge of paths to illuminate potential concealment areas and hiding places?

Consistency of Lighting

- ✓ Have lights that cause excessive glare or generate dark shadows been avoided?

Inappropriate Lighting

- ✓ Has a false sense of security been created by lighting areas that are potentially inappropriate for nighttime use?
- ✓ Has the installation of low ground-level lights been avoided where higher-level



Energy efficient solar lighting.

lighting is not also provided?

Coordination with Signage

- ✓ Is the lighting positioned to coordinate with informational and directional signage?

Other considerations

- ✓ Park pedestrian lighting should be designed to identify a person's face from 36-45 feet away.
- ✓ Strong, uneven lighting can create crimes of opportunity because users and police focus on the lit areas, but fail to notice activity in the shadows.

DIVERSITY

❖ **Objective: Provide elements to encourage diverse activity for all demographics**

Parks are for all people of various cultures, creeds, interests and religions which requires that park design continually adapt to changing demographics. Today, the county's population is highly diverse in terms of age, ability, ethnic and cultural background. The challenge is to take advantage of the various strengths offered by a diverse population while meeting their different and often competing needs. Park planning should also include the needs of children and both genders, as well as the elderly, culturally diverse and disabled. These needs can be identified at public meetings and workshops and through surveys, web site questionnaires and mailers.

Culture. Culture, which is usually linked to ethnicity, nationality and race, often influences how specific populations will be active or inactive. Participation in dance, swimming and cycling for example, can be encouraged or restricted by cultural traditions and by attitudes and beliefs re-



lated to gender, dress and sports participation.



Social-economic. Research has shown that people with lower incomes experience disproportionately higher rates of chronic diseases and obesity associated with less physical activity and unhealthy eating patterns. Disadvantaged populations are less likely to be able to afford or access a gym; user fees may prohibit low-income families from participating in recreation programming. Disadvantaged populations are less likely to have easy access to the places that encourage a healthy lifestyle, such as safe sidewalks, parks, paths and community gardens. When racial and class tensions persist, greater compactness and connected built environments may be perceived as a threat. Discrimination based on residential segregation may still influence the availability of opportunities for physical activity and active living.



Aging Populations. The number of citizens over age 85 will double by 2030. In San Diego County alone, this means an increase of more than 700,000 senior citizens. For the first time in history, seniors will outnumber children and youth. The anticipated growth in the aging population will result in an expected 25 percent rise in health care costs by 2030. As the baby boomers turn 65, health care costs will begin shifting from the private sector to publicly financed programs, including Medical, Medicare and local Health and Human Services agencies. Chronic diseases are the primary cause of health care costs and are responsible for seven out of every 10 deaths in the U.S., resulting in more than 75 percent of the \$2 trillion spent each year on health care. The good news is that chronic diseases are avoidable. According to the CDC, chronic diseases such as heart disease, stroke, cancer, diabetes, and arthritis are among the most common, costly, and preventable of all health problems. These chronic diseases among seniors can be reduced when diverse healthy and active lifestyles are pursued. However, the ‘boomer’ generation is looking for more than just traditional leisure activities. They want experiences that provide opportunity for autonomy/self-sufficiency, connectedness, altruism, personal growth, and revitalization, along with the activities they enjoyed in their youth. Seniors are using their financial resources to remain physically and mentally active when vacationing, trying new hobbies, exercising, and continuing their education.

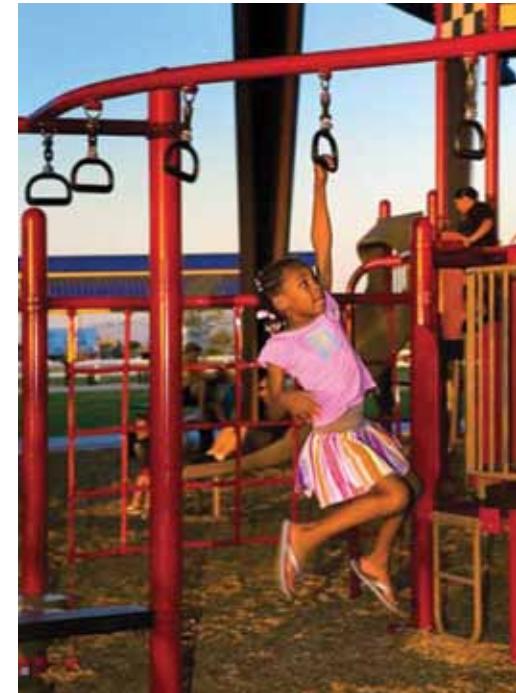
Disability. People with disabilities represent a large and growing segment of the general population. Physical activity is vital for people with disabilities, not only to promote health and prevent disease but also to reduce the number of secondary conditions that can result from an initial disability. By adapting activities, changing or modifying the environment or using additional equipment that allows greater participation, people with disabilities can participate in active living. The most obvious barriers for people with disabilities are inaccessible buildings and facilities. Others

include economic issues, a lack of transport to recreation facilities, inappropriate equipment, negative attitudes and perceptions, information-related barriers and a lack of professional knowledge and training. A lack of sidewalks and curb ramps at intersections and rough surfaces on trails, paths and greenways make maintaining balance and mobility difficult.

Gender. The literature shows that “across all countries and regions and all age groups, girls are less active than boys, and the gender gap increases with age.” Possible reasons for these disparities include: gender stereotyping, a lack of support systems and programs that specifically target girls and women, under-representation of girls and women in leadership roles related to sport and physical activity, a lack of time due to domestic responsibilities and caring for children and elderly, and concerns for personal safety, especially at night.

Diversity Design Considerations:

- ✓ Conduct equity reviews to ensure that all citizens have equal opportunity to participate in sport and physical recreation programs regardless of sex, age, race, income or ability.
- ✓ Take extra steps to ensure that vulnerable populations have access to the same choices and opportunities for physical activity and active living as the larger population. Adopt county recreation policies on gender and race equality in both services and leadership.
- ✓ Promote diverse interactions by creating safe spaces where groups can celebrate and seek out their cultural peers.
- ✓ Incorporate community and cultural symbols to create a communal sense of space.
- ✓ Provide programs with educational and cultural activities that celebrate cultures.
- ✓ Provide facilities that are inclusive despite gender, age and ability.



aesthetics are a critical reflection on art, culture and nature.

AESTHETICS

❖ **Objective: Provide aesthetically pleasing and clean surroundings**

According to Active Living Research, scenery and pleasant surroundings were linked to increased physical activity levels in a number of studies. Data found that “people with very good access to attractive public open space were 50% more likely to achieve high levels of walking, totaling 180 minutes or more per week.”

Scholars define aesthetics as “critical reflection on art, culture and nature.” Landscape Architecture is usually considered the lead in determining aesthetics of outdoor spaces. The American Society of Landscape Architects defines landscape architecture as “the art of design, planning or management of the land, arrangement of natural and man-made elements through the application of cultural and scientific knowledge, with concern for resource conservation and stewardship, in order to provide a useful and enjoyable purpose within the environment”.

Principles of aesthetic design usually include the following elements:

Unity

Unity occurs when all of the elements of a project make a balanced, harmonious, complete *whole*. Unity is another of those hard-to-describe art terms, but, when it's present, the eye and brain are pleased to see it. Aspects of unity include:

- Repetition
- Continuation
- Closure

Emphasis /Focal Point

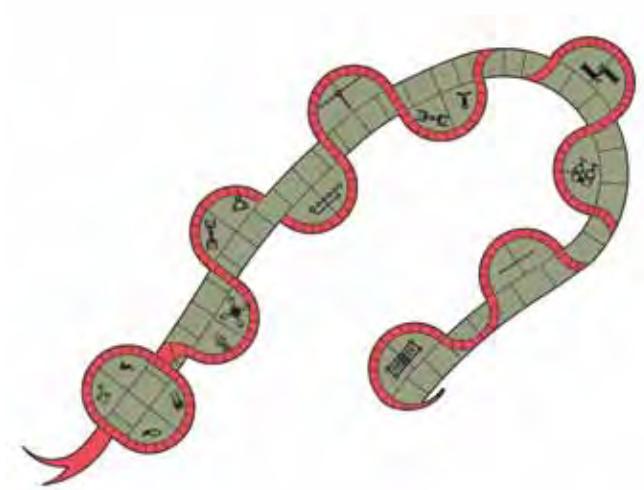
Emphasis or focal is something that is singled out or made more prominent that has emphasis. An element of a design that dominates or becomes the center of interest has emphasis. Aspects to emphasis or a focal include:



- Contrast
- Isolation
- Placement
- Absence of focal point

Balance

Balance is the concept of visual equilibrium, and relates to our physical sense of balance. It is a reconciliation of opposing forces in a composition that results in visual stability. Most successful compositions achieve balance in one of two ways: **symmetrically or asymmetrically**. Balance in a three dimensional object is easy to understand; if balance isn't achieved, the object tips over. To understand balance in a two dimensional composition, we must use our imaginations to carry this three dimensional analogy forward to the flat surface.



Lindo Lake Park Exercise Circuit, Lakeside, CA

Symmetrical balance can be described as having equal “weight” on equal sides of a centrally placed fulcrum. It may also be referred to as **formal balance**. When the elements are arranged equally on either side of a central axis, the result is **bilateral symmetry**. This axis may be horizontal or vertical. It is also possible to build formal balance by arranging elements equally around a central **point**, resulting in **radial symmetry**. There is a variant of symmetrical balance called **approximate symmetry** in which equivalent but not identical forms are arranged around the fulcrum line.

Asymmetrical balance, also called **informal balance**, is more complex and difficult to envisage. It involves placement of objects in a way that will allow objects of varying visual weight to balance one another around a fulcrum point. This can be best imagined by envisioning a literal balance scale that can represent the visual “weights” that can be imagined in a two dimensional composition. For example, it is possible to balance a heavy weight with a cluster of lighter weights on equal sides of a fulcrum; in a picture, this might be a cluster of small objects balanced by a large object. It is also possible to imagine objects of equal weight but different mass (such as a large mass of feathers versus a small mass of stones) on equal sides of a fulcrum. Unequal weights can even be balanced by shifting the fulcrum point on our imaginary scale.



Proportion /Scale

Proportion refers to the relative size and scale of the various elements in a design. The issue is the relationship between objects, or parts, of a whole. This means that it is necessary to discuss proportion in terms of the context or standard used to determine proportions.

Our most universal standard of measurement is the human body; that is, our experience of living in our own bodies. We judge the appropriateness of size of objects by that measure. For example, a sofa in the form of a hand is startling because of the distortion of expected proportion, and it becomes the center of attention in the room. Architectural spaces intended to impress are usually scaled to a size that dwarfs the human viewer. This is a device often used in public spaces, such as churches or centers of government. The same principle is often applied to corporate spaces through which the enterprise wishes to impress customers with its power and invincibility.

In contrast, the proportions of a private home are usually more in scale with human measure, and as a result it appears friendlier, comfortable and less intimidating.

Contrast

Contrast means pictorial elements that stand out because they are not alike, e.g. squares and circles and triangles. Red, yellow and blue contrast as they are so dissimilar. Contrast can be made by putting objects together that do not normally “go” together and therefore make each other stand out more than they would separately. Contrast gives variety and makes the elements livelier.

Movement and Rhythm/Pattern

Rhythm refers to the way your eye moves throughout a landscape. Some landscapes move you throughout in a connected, flowing way much like a slow, stately rhythm in music. Other landscapes move you from one place to another in an abrupt, dynamic way much like a fast, staccato rhythm in music will give you the impression of movement. Rhythm in parks is created by the repetition of elements. Similarity of elements or flowing, circular elements will give a more connected flowing rhythm to a park landscape, while jagged or unrelated elements will create a more unsettling, dynamic park landscape.

Variety

Variety gives a landscape interest and vitality, as the elements are repeated with enough change or difference to enhance each other. Variety, contrast and harmony work together to give unity. Too much variety leads to confusion and disunity, too little leads to boredom.

Harmony

Harmony brings together a composition with similar units. If the landscape composition uses wavy lines and organic shapes, you would want to stay with those types of lines and not put in just one geometric shape

The above aesthetic factors are necessary to offer not only a pleasant experience to the visitor but also to provide clarity and information of spatial relationships from which a theme may emerge. This theme would then communicate a unique character that is consistent with the park's activities and locations. The theme is implemented through the use of characteristic architectural details, colors, materials, furnishings, play equipment and plant selection.

Identity

Park identity communicates a positive or negative experience to the visitor through their thoughts, feelings, perceptions, images, experiences, beliefs, and attitudes. If a park communicates a unified, cohesive, consistent experience through its design elements, the visitor retains a positive image and will return to enjoy these experiences.

Cleanliness

Overflowing trash receptacles, graffiti coated walls, clogged toilets and drains, uncut lawns, debris and dead vegetation will most certainly communicate negligence, if not fear and danger to the potential park visitor. The consequence of a poorly maintained park limits activity opportunities to a community. It should be noted that lack of maintenance is often due to diminishing general funds for repairs, replacements and staffing. Vandalism and antiquated equipment can add further to the problem.

Disneyland, on the other hand, is a classic example of cleanliness which accounts for its huge worldwide success. Its cleanliness evokes "a happy land," a family friendly and vibrantly active place to enjoy and respect.



Consistent signage will provide the visitor with a positive identity of a park and its environs.

Design Considerations:

- ✓ Are all the elements of the park well balanced, harmonious, complete and whole?
- ✓ Have all focal points been addressed in order to utilize contrast, isolation, placement, and absence of focal point?
- ✓ Does the park have symmetrical or asymmetrical balance?
- ✓ Are the various elements of the park in proportion or scale to the user?
- ✓ Is contrast used in a way to create variety?
- ✓ Has movement and rhythm been addressed to create either dynamic movement or flowing rhythm?
- ✓ Is there variety in the landscape to create interest and vitality?
- ✓ Is the theme of the park consistent, evoking harmony?
- ✓ Is there adequate maintenance to provide a clean and welcoming environment?

INNOVATION

Innovation does not necessarily mean style, but rather there are creative solutions to site and regional challenges.

- ❖ **Provide innovative, non-structured, non-traditional design to promote both physical and mental activity**

Innovative design does not necessarily mean style, but rather there are creative solutions to site or regional challenges. An innovative park should:

- Inspire in an effort to elevate people's everyday experience and sense of community.
- Understand how to synthesize disparate or contradictory information in an energetic way so that the whole is greater than the sum of its parts.

- Demonstrate an understanding of scale and connection beyond the immediate site.
- Minimize the long-term operating expenses and create appropriate revenue generating activities to offset expenses.
- Embrace an understanding of the human relationship with the environment and demonstrate the latest best sustainable practices.
- Create a variety of experiences, that make the fullest use of the space and that attract people to use the space intensively.
- Create a sense of arrival and movement.
- Communicate the region's natural habitats, while encouraging biodiversity and ecological productivity.
- Expand on the region's farming, husbandry, natural and cultural resources and education facilities.
- Create imaginative play features to stimulate both physical and mental activity.



Innovation is creating areas within a park that excite when moving from one space to another. Innovation is providing nodes that educate, entertain and inspire. More specifically, park development innovation might include such diverse facilities for the following activities: dance contests, band contests, healthy food courts, water gardens, amphitheaters, puppet stages, velodromes, roving minstrels, freelance soap box lectures, outdoor gymnastic equipment, community retail outlets, controlled off-road vehicle courses and art walks.

Innovation can also expand both mental and physical activity to include physics play, hydrology play, observatories, farm and husbandry interaction, simulated archeological play sites, butterfly gardens, petting zoos, Koi farms, aviaries, chess tables, fire lookout towers, QR code readers for personal interpretive tours. Importantly, innovation is also about generating revenues from these



opportunities to offset operation and management expenses.

In our litigious society today, too often our playgrounds have been relegated to be a vacant sand lot or wood chip pit. From a *Metropolis Magazine* article:

“Over the past 15 years, international play safety guidelines have spawned a ubiquitous crop of red, yellow, and blue structures rooted in ‘impact-attenuating’ surfaces. The design problem is especially acute in the United States, where a litigious culture first eviscerated the seesaw, then the merry-go-round, and increasingly threatens the swing set. Critics claim that by eliminating spontaneity and risk from children’s play not only discourages physical activity, but deprives young people of the experiences they need to grow and develop as individuals.”

How can DPR get past this banality in playground and park design and put back vitality, activity and a sense of adventure in our parks? While not altogether abandoning the traditional, “safe” playground, the designer may want to investigate the following “edgier” active elements to include a larger demographic such as: zip lines, adventure playgrounds, regionally historic theme playgrounds, “geocaching” treasure hunts, rock climbing, paint ball, archery, rowing crew, boot camps, triathlon courses, hill slides, fitness obstacle courses, skate parks, stair step coasters, tree house climber, land sailing vehicles, ballooning, kite flying, radio controlled model aircraft, dude ranch camping, corporate/school team-building retreats. If that’s too much excitement, take a look at play sculptures, music walls, dog training and dog show parks, rodeos, water hydraulic play, frisbee course, tai chi programs, golf driving range, yoga and miniature golf.

Environmental sustainability is innovative but does not directly increase activity levels at parks. However, by demonstrating sustainable practices at parks, the visitor can be motivated to apply these techniques at home and work off a few pounds at the same time. Some examples of environmental sustainability and LID (low impact development) innovations in a park might include xeriscapes, bioswales, wind farms, solar installations, green roofs, community gardening, water harvesting, smart irrigation controllers and drip systems, water detention for aquifer replenishment and fire vegetation management with farm animals. As these innovations are costly to implement, a cost-benefit evaluation should be reviewed to determine long term feasibility and return on investment. More “shovel-ready” and cost effective projects could include an algae or cellulose farm for bio-energy production, medicinal garden, herb garden, poison plant identification and a healing garden. A park might also want to provide demonstration areas concerning current regulatory requirements such as watershed and storm water quality management, recycled water methods, hazardous materials identification and management, pest management,

tree pruning, mulching, and composting. All environmental sustainability innovations should be communicated to the park visitor through an easily understandable interpretive program in order to apply these sustainable practices at home.

When considering a green building or site, review the following checklist:

Green Building or Site Design Checklist

All projects including new construction or major renovations should consider pursuing a LEED rating from the US Green Building Council. Other “green” sources for information would be the LEED website or San Diego Regional Energy Office. These sources often include information about assistance and incentive programs available. There are several energy efficient options on the market that exceed Title 24 requirements by up to 30%. Consult a mechanical engineer for options. For Storm Water Pollution Prevention (SWPP), Low Impact Design (LID), County Fire Defensible Space Guidelines and County Landscape Ordinance (native and drought tolerant plants) issues, please refer to the Appendix for web site locations.



Green Design Considerations:

Natural Heating and Cooling

- ✓ Buildings and other structures should be located to take advantage of prevailing winds and solar angles.
- ✓ Provide tree shading of buildings at southwest corners in hot climates and evergreen trees to block prevailing cold winds.
- ✓ Operable windows should be utilized where possible and consider mechanical operation to reduce staffing requirements.
- ✓ Light, cool exterior colors should be utilized to further reduce heat gain.
- ✓ Consider alternative methods of heating and air conditioning of new buildings, such as hydronic radiant floor heating or swamp cooling. Coastal locations may not even need heating.

Energy Savings

- ✓ Limit heating and cooling of unused rooms to reduce energy consumption.
- ✓ Highly efficient windows will reduce loss and reduce air conditioning requirements.
- ✓ Weather stripping is also helpful to identify during design.
- ✓ Windows should be operable when possible (noted previously).
- ✓ Energy efficiency (prevention of loss and gain) can also be increased with proper foundation and roofing materials, e.g. cool roof.
- ✓ Take advantage of natural light sources via sun roofs, building angle and fenestration.
- ✓ Insulation material helps to further conserve.
- ✓ Use timed or motion sensor lighting.
- ✓ Use photocells for all exterior lighting.
- ✓ Use energy efficient light fixtures and bulbs.
- ✓ Consider the feasibility of using solar to offset energy use.

Water Conservation

- ✓ Consider gray or recycled water use for the landscape. As the upfront costs are substantial, analyze the costs/benefits over time.
- ✓ Consider native, drought tolerant landscaping.
- ✓ Consider drip irrigation wherever possible.



Pervious pavement captures stormwater and allows it to seep into the ground which then recharges groundwater, reduces stormwater runoff and meets the EPA stormwater regulations.

- ✓ Provide a “wellness check” to existing irrigation systems to assess the irrigation efficiency.
- ✓ Consider web-based irrigation master controllers using evapo-transpiration (ET) technology to monitor irrigation on a “real-time” basis and to centrally control irrigation systems during rain events in the park.
- ✓ Consider low-flush toilets, waterless urinals and faucet sensors at restroom facilities.
- ✓ Consider harvesting rainwater for irrigation from roofs and detention areas.

Recycling and Waste Reduction Methods

- ✓ Include recycling containers near all trash cans.
- ✓ Focus on main recycling items like aluminum, glass and plastic.
- ✓ Consider other recycling options if staffing available.
- ✓ Consider hand blowers in lieu of paper towels in restrooms. Hand blowers also have lower maintenance cost.
- ✓ Consider reuse of items demolished at a site, e.g. concrete, lumber, tree waste.
- ✓ When replacing old pavilions and play equipment, consider donating these structures to non-profit organizations.
- ✓ Seek to use recycled content products in new construction, including concrete, and lumber. In some instances recycled content products may be a cheaper alternative.

Reduce Impervious Surfaces

- ✓ Consider green roof on new buildings to reduce energy consumption and storm



Provide choices & information so that users can make informed decisions.

water run-off.

Use decomposed granite (DG) surfacing in lieu of pavement or concrete. Stabilizing DG with a bonding agent is ADA compliant.

- ✓ Use porous concrete or paver system.
- ✓ Use bio-swales to percolate and cleanse pollutants from run-off before reaching aquifers.

Improve Public Experience

- ✓ Provide sustainability exhibits for the park visitor to take away and employ at home.
- ✓ Allow for alternate modes of transportation including bicycle parking, equine parking and trail access.

General Improvements

- ✓ Use local construction materials where possible to reduce material transporting.

PARTNERSHIPS

❖ **Objective: Establish partnerships to increase physical activity opportunities in parks**

Increasingly partnerships are an essential and effective means for the Department of Parks and Recreation to fulfill parts of its mission and foster a shared sense of stewardship that is crucial to its future. In difficult economic times, it is additionally important to seek out groups with shared goals for both manpower and fiscal resources to create a synergy that is greater than the sum of its parts. Partnerships can help build a community vision, empowering others to contribute toward community fulfillment, while securing a sound investment for the future of the region.



A partnership is a cooperative venture between two or more parties with a common goal, who combine complementary resources to establish a mutual direction or complete a mutually beneficial project. Partnerships can be facility-based or program-specific.

Partnerships can accomplish tasks with limited resources, respond to compelling issues, encourage cooperative interaction and conflict resolution, involve outside interests, and serve as an education and outreach tool. Partnerships broaden ownership in various projects and increase public support for community recreation goals. Partners often have flexibility to obtain and invest resources/dollars on products or activities where municipal government may be limited.

Benefits of partnerships are wide and varied. A few of the more significant benefits to DPR are:

- Merging of resources to create a higher level of service and facility availability for community members.
- Making alternative funding sources available for public community amenities.
- Tapping into the dynamic and entrepreneurial traits of private industry.
- Delivering services and facilities more efficiently by allowing for collaborative business solutions to public organizational challenges.
- Meeting the needs of specific groups of users through the availability of land for development and community use.

Partnerships can help build a community vision.

Benefits to partners with DPR are:

- Land and/or facility availability at a subsidized level for specific facility and/or program needs.
- Sharing of the risk with an established stable governmental entity.
- Becoming part of a larger network of support for management and promotion of facilities and programs.
- Availability of professional DPR recreation and planning experts to maximize the facilities and programs that may result.
- Availability of DPR staff facilitation to help streamline the planning and operational efforts.

A principal partnership with DPR today is The San Diego County Parks Advisory Committee whose main mission is to advise DPR on programs, issues, and long-range budget items pertaining to the department. Another similar organization is The San Diego County Parks Society which was established in 1980 by a group of citizens concerned about the future of San Diego's county parks. The Society's objective is to also assist and review park programs. They strive to increase public awareness of county parks' resources, activities, and needs. The society is a California nonprofit corporation and has federal 501 (3) (c) tax exempt status. All donations of money, land, bequests of stocks, bonds, and securities received by the San Diego County Parks Society are tax deductible.

Other notable park partnerships include the "Friends of the Park" programs who offer their time and services to protect and enhance park amenities. Many of these organizations who have a 501 (3) (c) status can offer useful financial partnerships for grants and donations. 501 (3) (c) (3) exemptions "apply to corporations, and any community chest, fund, cooperating association or foundation, organized and operated exclusively for religious, charitable, scientific, testing for public safety, literary, or educational purposes, to foster national or international amateur sports competition, to promote the arts, or for the prevention of cruelty to children or animals." These bodies are often referred to as "Friends of" organizations.

A few of DPR's larger "Friends of" organizations are:

The Friends of Goodan Ranch and Sycamore Canyon Open Space, Inc. strive to protect and enhance the natural and cultural resources, help identify, build and maintain a trail system sensitive to the area's open Space Park status. They promote awareness and responsible use of the two, interconnected open space parks, Goodan Ranch and Sycamore Canyon through interpretation, volunteering and educational activities.

The Friends of Otay Valley Regional Park is dedicated to the establishment of public recreation and habitat protection within the corridor of the Otay River Valley. This special membership group offers south Bay residents and others a chance to make a donation and contribute time to assist with the critical goals of:

- Acquiring land for the park
- Preserving sensitive open space



- Developing active and passive recreational areas
- Rehabilitating and maintaining park lands
- Supporting educational programs

The Friends of Hellhole Canyon Open Space Preserve is an all-volunteer, not-for-profit land trust and educational organization located in Valley Center, California. As an environmental education organization, The Friends work to raise awareness of the preserve's important natural resources and to support recreation and enjoyment of the preserve by the public. They also work to acquire and conserve ecologically important natural open space, enhancing and expanding the preserve's conservation footprint. Collaborating with state and county government, local foundations, and private donors the Friends have successfully added 190 acres of critically important open space to the now 1900 acre preserve.



The Friends of Los Peñasquitos Canyon Preserve is a volunteer organization that has been protecting the preserve for more than 25 years. The Friends assist the city and county rangers through such activities as leading interpretive walks, performing wildlife and other scientific studies, removing invasive exotics and replanting with natives, installing kiosks, and coordinating Scout projects. Past scout projects have included building small bridges, installing interpretive signs, building and installing owl boxes, and restoring trails.

The San Elijo Lagoon Conservancy (SELC) is a nonprofit land trust dedicated to protecting and enhancing San Elijo Lagoon Ecological Reserve and its watershed. Through membership and foundation support, SELC provides environmental education and research, conserves cultural and natural resources, and acquires additional acreage.

The San Dieguito River Valley Conservancy is a nonprofit, citizen-based organization helping to implement the San Dieguito River Park and its Coast-to-Crest Trail stretching 55 miles from Volcan Mountain near Julian to the ocean between Del Mar and Solana Beach.

Volunteers are an important component in the necessary operations throughout the park system. They include Live-In Hosts who provide 20 hours a week service in exchange for a campsite and hookups for a motor home or trailer. Park Patrol members assist the public with information on park resources and help to ensure visitor safety and aid in the maintenance of trails. Park Docents provide a voice to the department's interpretive programs at historic sites and include re-

search and development at the History Center. There are various volunteers at DPR's community centers that assist in clerical, maintenance, gardening, coaching and special events.

Other partnerships include Little Leagues, Soccer Leagues, and Joint Exercise Power Agreements (JEPA) between schools and jurisdictions. Other groups that coopt with parks include Boys & Girls Clubs who support athletic programming and "Save Our Heritage Organization" (SOHO) who provides custodial care over several historic park properties.

All of these existing partnerships provide useful guidance and support of the department's mission. Expanding partnerships to increase activity levels at DPR and the community will require imaginative and ground-breaking cooperatives that should complement all participating organization's goals.

Other possible partnership programs to explore that will require fiscal and legal vetting might include:

- ✓ Donors for activity infrastructure.
- ✓ Donation of vehicles for activity infrastructure.
- ✓ Membership programs for activity infrastructure.
- ✓ Trail/walk linkage partners: utility easements, storm water channels, transit departments, water districts, military, agriculture, county animal control, cemeteries.
- ✓ Public-private partnerships to develop farmer's markets, trail linkages, cafes at the park.
- ✓ Outsourced management of community gardens.
- ✓ Political bond acts to establish safe walking corridors.
- ✓ Supporting educational programs.

CONCLUSIONS

The County of San Diego Department of Parks and Recreation (DPR) is on the cutting edge to encourage physical activity that promotes fun, innovative recreational opportunities for all demographics to enjoy. It is the intent of this document to allow park visitors to make their own healthy choices by offering a wide variety of active park facilities.

These active living design guidelines are a component of a larger county effort as presented in the “Live Well, San Diego” initiative whose mission is to improve the health and well being of county residents. DPR recognizes that active lifestyles start with the individual, by “allowing people to make healthy choices”. As discussed earlier, inactivity causes health problems which are a contributing factor in the “3-4-50” principle that contributes to more than 50% of deaths in Americans today.

But what are the next steps in park design? And how do we design parks that will withstand the test of time toward active living? These design guidelines are the foundation for a new kind of park that improves health through active lifestyles.

The following are some important “active living” factors to remember when developing, designing or managing built elements in a park:

- Site new parks near trails, transportation corridors, denser populations, lower income populations and seek opportunities to connect existing parks to surrounding infrastructure.
 - Increasing access to trails and public transportation helps people maintain active life styles
- Provide elements that increase safety and perceptions of safety
 - Public areas that are well-lit have shown to make communities safer and increase use of these facilities for physical activity.
- Encourage diverse activity for all demographics through a range of elements
 - Physical activity levels are lower in low-income communities and among racial/ethnic minority children due, in part, to people feeling unsafe or to a lack of facilities in their communities
- Provide aesthetically pleasing and clean surroundings.

- People with the best access to a variety of built and natural facilities were 43 percent more likely to exercise than those with poor access.
- Offer innovative, non-structured, non-traditional design elements.
 - Unstructured imaginative play also provides the opportunity for social and emotional health as well as increasing cognitive function which is essential to academic success.
- Establish partnership within the community.
 - Create relationships with community, non-Profit and faith-based organizations to increase shared use of physical activity facilities and offer a diverse range of opportunities at little or no cost.
- Offer opportunities for physical activity across the human lifespan.
 - As activity levels decline with age, provide diverse physical and emotional benefits for all ages.

As a reminder, please examine the appendix of this document for a more comprehensive review of the design process. This design process is fundamental in implementing active living elements in parks and open spaces. Useful web sites that support active living and sustainability issues are also found in the appendix. Much of active living research can be located on the Robert Wood Johnson, "Active Living Research: Building the Evidence to Prevent Childhood Obesity and Support Active Communities" web site and should be reviewed periodically to become familiar with the latest active living research results. That web site address is activelivingresearch.org. And finally, TreeHugger.com is a web site for a plethora of innovative, cutting edge ideas in sustainability, technology and design for the built environment.



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Park Design Process

The design process usually begins with planning the project. Planning is often performed in consultation with parks staff and includes an evaluation of existing recreational resources, needs of the neighborhood, and appropriate public participation. From this evaluation, a design program that describes the objectives of the proposed park in terms of physical character, activity, and the expected user experience is developed. Following this effort, park staff will develop an activity analysis and identify the relevant participant, support, resource and facility factors that are essential to the anticipated recreational experience and proposed park plan. This will include equipment needs, activity period, user profile, participation parameters, and area, utility, access and other design considerations.

As a convenience to the reader, a summary check list is provided in blue to summarize key subject points. With the planning parameters defined, the following steps can be followed:

- ✓ Perform an appropriate analysis of relevant on-site and off-site factors and provide a site analysis report and diagram, at suitable scale.
- ✓ Investigate soils, geology, hydrology, vegetation, topography, climate, land-use, utilities, and demographic / cultural issues.
- ✓ Provide a clear statement of the design objectives derived from the design program.
- ✓ Develop alternative concepts plans that result from the synthesis of the design program and the site analysis.
- ✓ Delineate the pros and cons of each concept, indicating the different approaches, priorities and compromises of each alternative.
- ✓ Evaluate alternatives and recommend a preferred concept plan.
- ✓ Refine the selected concept plan through focused data collection, if necessary.



sary, and further design exploration.

- ✓ Develop an appropriate physical setting that promotes an attractive leisure experience for the preferred activities.
- ✓ Review of concept proposals by parks executive staff for comment is required.

Park Design Review:

The designer will need to prepare a general development plan and design that provides for visual attractiveness and stimulation in the park setting, and uses innovative design techniques to enhance site opportunities and mitigate constraints. The designer will need to further refine the park plan to meet the design program. This plan should be supported by a design report that explains the reasons for selecting or discarding of alternative and preferred concepts/ Colored sections, elevations, and perspective sketches might be necessary to show the character of key design elements such as plant materials, structures, walkways, entry view, etc. These graphics should explain the design intent to the general public, and indicate type, color and quality of materials. This plan and report should be in presentation format and be accompanied with a preliminary cost estimate.

The design drawings of the illustrative site plan, elevation, and perspective sketches, in appropriate format should be circulated to the Operations & Maintenance, Development and Executive Management for review and approval. The report should be in 8"1/2" x 11" format, typed, reproducible. Reduced size (11" x 17" of the site plan, cross-sections, elevations, and perspective graphics should be included in the report for review by the Parks Department prior to any public presentation. The public presentation of the park site plan should be at a maximum 1"=20'-0" scale, colored, notated and have supporting colored graphics such as sections, elevations, perspectives at suitable scale for public viewing.

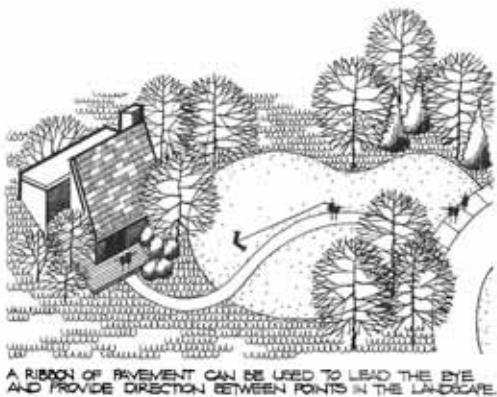
Completion and review of detailed construction drawings, specifications, and related contract documents follows approval of the development plan. Changes in character, quantity and quality of design elements and materials from those approved during the public presentation should be discussed with park staff and brought to all park divisions for review and comment, etc. and should be provided in both hard copy (with registered stamp) and digital format. Plan and detail drawings should be 24" x 36" accompanied with the digitized drawings in Autocad R2000 or later version.



Input from public meetings is essential for a successful project.

Design Principles

The following design principles create optimum park relationships and inspire good park design that produces an attractive facility and enjoyable recreational experience for the community.



- ✓ The essential elements of design, including scale, harmony, contrast, repetition, dynamic balance, color and sequence, are important to providing an attractive and interesting park experience.
- ✓ Scale and proportion of all park elements should be compatible and promote unity in overall park design.
- ✓ Human scale and visual detail should be used to stimulate enduring use of the Park.
- ✓ Entry design elements should provide useful visual cues for the visitor.
- ✓ Spatial areas should be designed to provide for a sense of relaxation, or dynamic action, or delight/enjoyment/calm, etc., through spatial modulation, sequence, and the harmonious relationship of design elements.
- ✓ Plant material color, texture, form, scale, and grouping should be used creatively to provide focus, interest, drama, and a perceptible character to the park and its features.
- ✓ Size and visual character of trees should be in proportion to their setting and the overall design intent.
- ✓ Choice & placement of plant materials should satisfy:
 - Environmental conditions (soil, water, climate, sun/wind exposure)
 - Cultural conditions (evocative impressions and images)
 - Functional conditions (durability, maintenance, longevity, conservation)

Aesthetic conditions (tree shape quality: soft, airy, bold majestic)

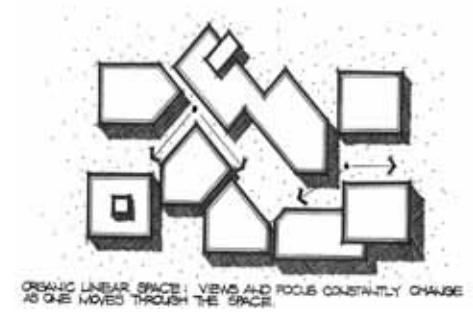
- ✓ Circulation routes for park users should be designed in relation to their function; paths should guide and encourage appropriate movement.

These areas should be designed to provide for pleasant transitions:

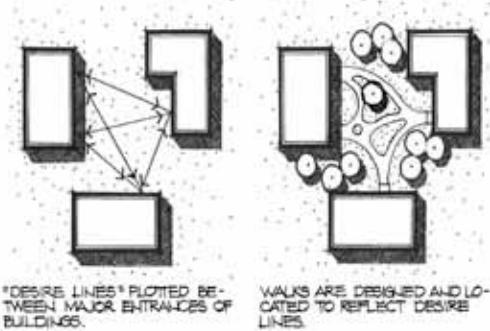
- Active-Passive
- Formal-Informal
- Natural-Structured
- Vehicle-Pedestrian

When designing consider the following criteria to develop park character:

- ✓ Structures should be designed and sited as integral components of the larger landscape setting.
- ✓ Design of play areas for children should promote curiosity, wonder, challenge, fun, safety and shelter.
- ✓ Park design should seek to create a distinctive site character, in context with its surroundings, and establish a setting that encourages neighborhood interaction.
- ✓ Park design should weigh the use of shelter/gazebo/amphitheater as focal architectural elements or visual landmarks.
- ✓ Design of a park should enhance pedestrian and bicycle access/arrival, while minimizing parking.
- ✓ Potential conflicting activities should be resolved in the design process.



APPENDIX



DESIRE LINES PLOTTED BE-TWEEN MAJOR ENTRANCES OF BUILDINGS.

WALKS ARE DESIGNED AND LO-CATED TO REFLECT DESIRE LINES.

Access:

- ✓ On street parking is preferred for neighborhood parks to allow for the greatest park-use area.
- ✓ Bicycle access/parking facilities should be provided as part of the design program.
- ✓ American Disability Act (ADA) compliance is required for all new park elements.

Circulation:

- ✓ Circulation conflicts between pedestrians, bicycles, and autos should be minimized/mitigated.
- ✓ Primary pedestrian walks should be a minimum of 4'-6' wide (width to be determined by use).
- ✓ Walkways with alternate maintenance vehicle access should be a minimum of 8' wide and designed for load.
- ✓ Concrete is the preferred hard-surfacing for primary circulation routes.

Play Zones:

- ✓ Play/Activity areas should be designed for the appropriate age and activity levels.
- ✓ Play space for children should provide an appropriate mix of play types such as challenge, discovery, enclosure, and natural play. This mix should use the appropriate setting, space and surfacing for each play type.

Site Drainage:

- ✓ Natural flow patterns of a site should be incorporated into the design of facilities where appropriate.
- ✓ To minimize maintenance, surface flow is preferred over culverts.
- ✓ Primary use areas should have positive drainage to an appropriate collector.
- ✓ Turf fields should have a minimum 1% slope to provide positive surface drainage.

Landform:

- ✓ Use landforms to create park spaces and recreational experiences.
- ✓ Park design should work with the landform and accentuate positive site features.
- ✓ Detention/retention basin slopes should be a minimum 6:1 in order to minimize maintenance
- ✓ Berms should be a minimum of 4:1, unless design feature requires otherwise.

Landscape Character:

- ✓ The design of the park should provide for coherence and quality in the use of plant materials (trees, shrubs, and ground-cover) and retain valuable trees and vegetation where appropriate.
- ✓ The use of trees in the design should provide for a recognizable landscape character such as formal/informal, rustic/urban, riparian/upland. Consider seasonal appearances of trees. Use large-scale trees where appropriate.
- ✓ Parks should have a predominantly deciduous tree cover and grouping to ac-



APPENDIX

count for climate extremes and seasonal winds.

Spatial Organization:



TALL SHRUBS CAN FUNCTION AS BLINDERS AND DIRECT VIEWS TO DESIRED POINTS IN THE LANDSCAPE.

- ✓ The design should incorporate the elements of spatial organization: appropriate area, form, enclosure, containment, grouping, and transition for the various levels of activity, and experience intended for the park.

Visual Elements:

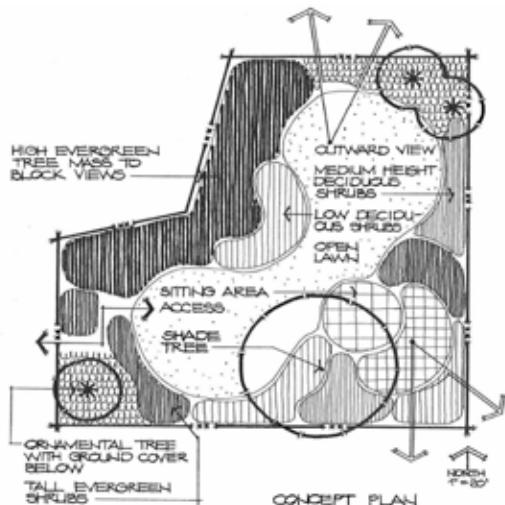
- ✓ The design should incorporate visual techniques such as screening, sequence, enhancement of appropriate visual elements and create sense of drama, interest, and exploration.
- ✓ Artistic/sculptural/focal elements can be an ingredient of good park design.
- ✓ Color, texture, and form should reinforce overall design of park.

Energy/Water Conservation:

- ✓ Energy conservation site planning should include solar access, wind mitigation, conservation of soil and water, energy efficiency, and pedestrian/bicycle accessibility.
- ✓ The following principles of xeriscape landscaping should be considered and incorporated into the park landscape areas:

Xeriscape Principles:

- Planning and design
- Soil analysis and improvements
- Practical turf areas



- Appropriate plant selection
- Efficient irrigation
- Artificial turf feasibility
- Mulching
- Appropriate maintenance

Quality of Materials/Construction:

- ✓ Materials and products should be of a durable, attractive, appropriate, and consistent quality throughout.
- ✓ To ensure park facilities satisfy jurisdictional building requirements, use current uniform building codes (UBC) and standard specifications for public works for any construction work in parks.
- ✓ Certain materials/products can be designated as standard park components to unify elements within the park system. (See Standard Park Components on page 54).
- ✓ American Nurseryman's Association standards for plant materials are the preferred standard.

Lighting:

- ✓ Lighting should serve both functional and aesthetic considerations, and be energy efficient.
- ✓ Lighting should provide appropriate illumination for secure evening use of facilities, to discourage vandalism, and to enhance the visual ambience of the park.



Xeriscaping refers to landscaping in ways that do not require supplemental irrigation. It is promoted in areas that do not have easily accessible supplies of fresh water.

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- ✓ Light standards should be appropriate in size, color, material and scale to the setting. Provide automatic sensor controls for efficiency. Reinforce the design style of the park with appropriate luminaries .

Maintenance / Vandalism:

- ✓ Maintenance should be a clear design consideration, while not impeding innovative and interesting park design.
- ✓ Principles of defensible space should be apparent in the design.
- ✓ Materials that are durable, modular, and vandal-resistant are preferred.
- ✓ Surveillance by the neighborhood and park ranger should be considered in park design development.

Detention / Retention Basins:

- ✓ Detention / retentions basins should be designed early in the development process in order to calculate size of basins to offset pervious improvements.
- ✓ Grading design should account for 100 year flood conditions in order to keep structures, recreational equipment, and support elements out of flood zones.
- ✓ Urban run-off can be hazardous requiring warning signs that indicate the quality/depth of run-off. Monitoring during flooding is necessary to protect park users from contamination.
- ✓ Soils should be tested to indicate probable 'drying out' times after inundation, and/or depths to groundwater.
- ✓ Detention / Retention basins should have naturalistic/attractive contouring. The recommended minimum slope is 6:1.



Graffiti, if not controlled, can ultimately create the demise of a park.

- ✓ A range of plant materials that can sustain short-term inundation of water and contaminants should be considered in the design of a detention or retention basin.

Linear Park:

- ✓ Linear parks should have sufficient width to buffer adjacent land-use and provide enough space for landscaping, walks and paths.
- ✓ Linear park sidewalks are not to be considered as substitutes for on-street bike lanes.
- ✓ Lighting for evening walking and security are an essential consideration.
- ✓ Walkways adjacent to roadways should be separated from the road by a minimum 10' planting buffer zone.
- ✓ Turf areas should be minimized; other living ground cover is preferred.
- ✓ Curb ramps along the primary travel path should have sensory truncated domes at curbs and landings.
- ✓ Curb ramps and sidewalks should be arranged to provide for auto/pedestrian safety and visibility at intersections/crossings.
- ✓ Curb ramps should install one (1) removable bollard on centerline for 8' or 10' wide pathways to inhibit vehicle access, when appropriate.



Bioswales are landscape elements designed to remove silt and pollution from surface runoff water.

APPENDIX

Standard Park Components

Standardizing park elements allow for efficiencies in maintenance and repairs. Standardization also provides for reliability of materials inventory and minimizing training to staff. Importantly, standardization of park elements communicates to the park visitor a unifying reassuring identity and image of the park visit. Substitutions may be appropriate to accommodate a special park design.

A List of some typical park elements that might be considered for standardization:

- Benches
- Bicycle Rack/Storage
- Camp grounds with electrical, sewer, water connections
- Drinking Fountain
- Entry booths
- Fencing
- Flag Pole
- Irrigation
- Lighting
- Other recreational elements (skate-park, exercise equipment, etc)
- Parking lots
- Playground equipment
- Playground safety surfacing
- Ramps for ADA compliance
- Restroom facilities (sewer connected, septic, vaulted)
- Retaining walls
- Security (cameras, emergency communication)
- Shade structures/pavilions/gazebo
- Signage (identifier, directional, warning, regulation)
- Sport fields/courts
- Storm drains
- Tables/Grills
- Trash receptacles
- Walks / Multi-use trails

Internal Design Review Process:

1. Understand the broad design concepts and issues (opportunities & constraints).
2. Consider the program and goals for the park.
3. Are the primary objectives of the park, as identified in the scope of work supported in the plans and specifications?
4. Evaluate how the detail of the plan realizes the goals and objective for the park.
5. Understand the concept, major use areas, circulation patterns, special structure.

Conduct an opportunity & constraints analysis of all site specific issues.

Provide a site analysis and ask the following questions:

1. What is the nature of the park to its surrounding site?
2. What is the relation of activity areas to the park site?
3. Is the relation of activity area to adjacent activity area appropriate, functional?
4. Are major structures located at strategic locations for visual clarity of the circulation system?
5. Is the circulation pattern sensible, appropriate and address security issues?
6. Are the spatial areas of appropriate size and create the intended experience?
7. Do the design details reinforce the intended aesthetic character of the park?
8. Does the design provide for order and variety?
9. Are the stated goals and objectives for the park satisfied?



APPENDIX

ADDITIONAL COUNTY OF SAN DIEGO DESIGN RESOURCE WEB SITES:

COUNTY OF SAN DIEGO LANDSCAPE ORDINANCE, INCLUDING DROUGHT TOLERANT AND NATIVE PLANT LISTS:

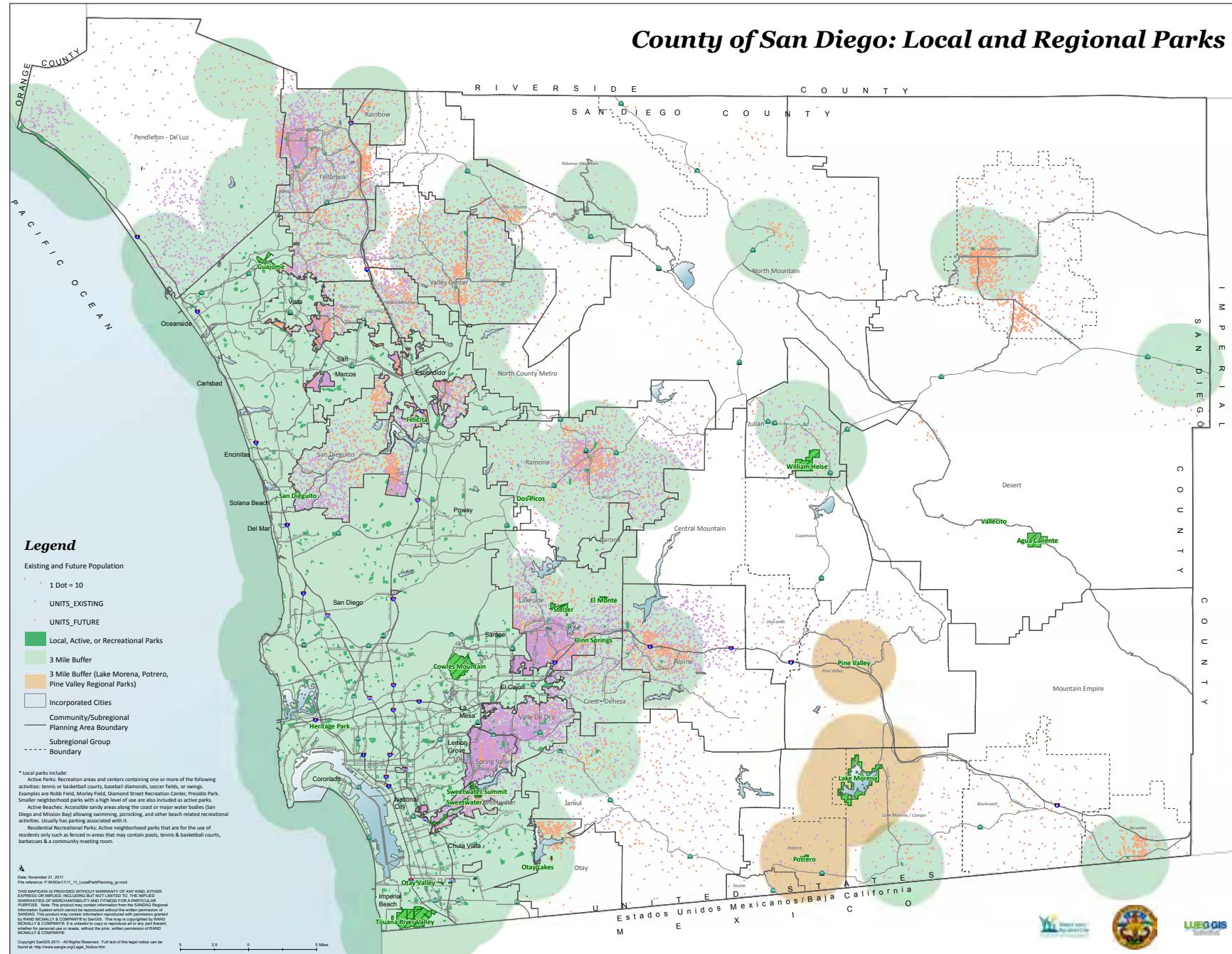
http://www.sdcounty.ca.gov/dplu/Landscape-Ordinance_Design_Review_Manual.html

COUNTY OF SAN DIEGO DEFENSIBLE SPACE DESIGN GUIDELINES FOR FIRE RESISTANT PLANNING:

http://www.sdcounty.ca.gov/dplu/fire_resistant.html

COUNTY OF SAN DIEGO LOW IMPACT DESIGN (LID) MANUAL:

<http://www.sdcounty.ca.gov/dplu/docs/LID-Handbook.pdf>



APPENDIX

SAMPLE ACTIVE LIVING ATTRIBUTE MATRIX TO EVALUATE ACTIVITY LEVELS IN COUNTY PARKS

PARK NAME:	ATTRIBUTES								
	AESTHETICS	SAFE & CLEAN	ACCESSIBLE & WALKABLE	ACTIVITY FRIENDLY FOR SENIORS	INNOVATIVE ELEMENTS	CREATIVE REC PROGRAMMING	SOCIO-CULTURAL CHARACTERISTICS	NON-TRADITIONAL PARTNERSHIPS	ECONOMIC BENEFITS TO NEIGHBORHOODS
Aqua Caliente									
Bancroft									
Cactus									
Clemmens Lane									
Collier									
Damon Lane									
Don Dussault									
Dos Picos									
El Monte									
Eucalyptus Park									
Fallbrook Comm. Ctr.									
Felicta									
Flinn Springs									
Goodan Ranch									
Goodland Acres									
Guajome									
Heritage Park									
Hillsdale									
Hilton Head									
Jess Martin									
Julian Museum, Pioneer									
Lake Morena									
Lakeside Comm. Ctr.									
Lakeside Teen Center									
Lamar									
Lincoln Acres									

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CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED) CHECKLIST



County of San Diego

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Introduction & History

The Department of Parks and Recreation (DPR) strives to use design guidelines that deter crime in existing and future parks and recreational facilities. These guidelines closely follow the 'Crime Prevention through Environmental Design' (CPTED) process formulated in 1971 by criminologist C. Ray Jeffrey and expanded upon by architect Oscar Newman in 1972. CPTED gained international acceptance in the early 2000's due to law enforcement agencies need to adapt strategies to help reduce crime rates. The three principles used to help reduce crime through environmental design include:

NATURAL SURVEILLANCE: Design the placement of physical features, activities and people to maximize visibility and foster positive social interaction among park visitors. Physical features include grading, park access, line of site from adjacent parking areas or street, landscape and structures that could limit visibility or hinder emergency vehicle access. Natural surveillance should also consider a variety of park elements that attract various types of park visitors with different interests.

NATURAL ACCESS CONTROL: Selective placement of entrances and exits, fencing, lighting and landscape to limit access. Natural access control should consider illegal points of entry, steel or iron fencing rather than chain link fence, hi-lo sensor activated lighting to assist in night time patrol and save energy, and selective landscape that will prevent vandalism at illegal entrance points.

TERRITORIAL REINFORCEMENT: Using buildings, fences, pavement, signs, lighting, and landscape to identify pieces of parkland set aside for designated park visitors.

The CPTED Checklist is a tool for Project Managers to review crime prevention options available on design and construction projects. Project Managers review the CPTED Checklist during the project planning and design development. Checklist items relevant to the site conditions are identified in the checklist and addressed prior to design to insure there are no significant safety issues preventing the design or parkland location from being abandoned. The checklist is to be kept in the project binder for each project and reviewed periodically by the Project Manager to make sure all crime prevention opportunities are pursued as the plan develops into a concept and the concept develops into construction documents.

The following checklist can assist DPR in implementing our vision "A park and recreation system that is the pride of San Diego County".

PRINCIPLE #1 - NATURAL SURVEILLANCE:

“See and be seen” is the overall goal when it comes to Crime Prevention through Environmental Design (CPTED) and natural surveillance. A person is less likely to commit a crime if they think someone will see them do it. Lighting and landscape play an important role in CPTED.

- ___ Park visible from surrounding properties or from a vehicle on the street or in Park designated parking lot.
- ___ ‘Park Watch’ or ‘Neighborhood Watch’ signs with organized patrols by local residents.
- ___ Signs that provide park rules, hours of operations and who to call in case of an emergency.
- ___ Provide a variety of park features/uses that allow the opportunity for visitors to use the park throughout the park open hours.
- ___ Activity areas clustered to provide greater surveillance, i.e. picnic area adjacent to a playground.
- ___ Restrooms located near park entry and/or beside a major activity area.
- ___ Entrances to park are limited and easy to locate.
- ___ Select see through steel or iron fencing to provide views in and out of parks.
- ___ Plantings grouped and existing planting or trees trimmed or controlled to allow clear sight lines.
- ___ Security lighting with hi-lo sensors for nighttime use of the park and/or for visibility of intruders in parks closed after dusk.
- ___ Obtain Sheriff and Fire Chief input for emergency access requirements.



Park visible from street



Picnic area adjacent playgrounds



Security lighting & open decorative fencing/gate

PRINCIPLE #2 - NATURAL ACCESS CONTROLS:

Natural Access Control is more than a high block wall topped with barbed wire. Crime Prevention through Environmental Design (CPTED) utilizes the use of walkways, fences, lighting, signage and landscape to clearly guide park visitors and vehicles. The goal with this CPTED principle is not necessarily to keep intruders out, but to direct the flow of people while decreasing the opportunity for crime.

- Use a single, clearly definable point of entry.
- Use low thorny shrubs to discourage intrusion or crossings of area where park guest are prohibited.
- Eliminate design features that provide access to roofs.
- Select see through steel or iron fencing to provide views in and out of parks.
- Signs that provide park rules, hours of operations and who to call in case of an emergency.
- Obtain Sheriff and Fire Chief input for emergency access requirements.



Single, clearly definable point of entry with open decorative fencing at park entry

PRINCIPLE #3 - TERRITORIAL REINFORCEMENT:

Creating or extending a “sphere of influence” by utilizing physical designs such as pavement treatments, landscaping and signage that enable users of an area to develop a sense of proprietorship over it is the goal of this Crime Prevention through Environmental Design (CPTED) principle. Potential trespassers perceive this control and are thereby discouraged.

- ___ Designate accessible only use areas by signage, pavement markings or specialized furnishings.
- ___ Display park signage with hours, rules and regulations, and emergency contact information at park access points.
- ___ Avoid cyclone/chain link fencing and razor wire topping as it communicates the absence of a physical presence and a reduced risk of being detected.
- ___ Scheduling events/activities increased proper use attracts more people and increases the perception that these areas are controlled.
- ___ Select a variety of park features (active and passive) that provide opportunity for all visitors.
i.e. picnic area, active sports area(s), fitness stations, children’s play area, etc.
- ___ Obtain Sheriff and Fire Chief input for emergency access requirements.



Designated accessible access- pavement marking and site signage



Avoid chain link fencing & barbwire



Park signage with park hours and signage with regulations and emergency contact information near park entry

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Green Building/Park Design Checklist



County of San Diego

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Introduction

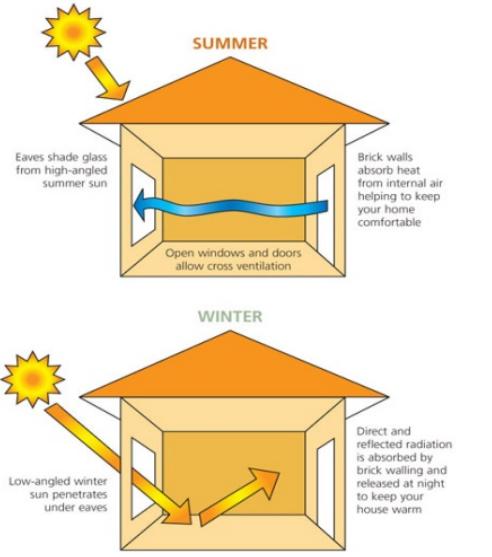
The Department of Parks and Recreation (DPR) strives to include green design features in DPR projects. The Green Building/Park Design Checklist is a tool for Project Managers to use to review green options available on their projects. Project Managers review the Green Building/Park Design Checklist as early as possible in a project, preferably in the design phase, and check all items that may apply. This checklist should be kept in the project binder for each project and reviewed periodically by the Project Manager to make sure that, if an opportunity presents itself, as more specific project information becomes known, green design features and construction practices are incorporated into the project.

All projects that consist of new building construction or major renovations should consider pursuing a Leadership in Energy and Environmental Design (LEED) rating from the US Green Building Council. Information on obtaining a LEED rating and associated costs is available in the reference section of this checklist. Additional information is also available online under "Green Building", "US Green Building Council" and the "California Center for Sustainable Energy". Online resources (some of which are listed in the reference section of this checklist) also include assistance and incentive programs for incorporating green building technology and construction practices into projects.

The following checklist can assist DPR in implementing our vision "A park and recreation system that is the pride of San Diego County".

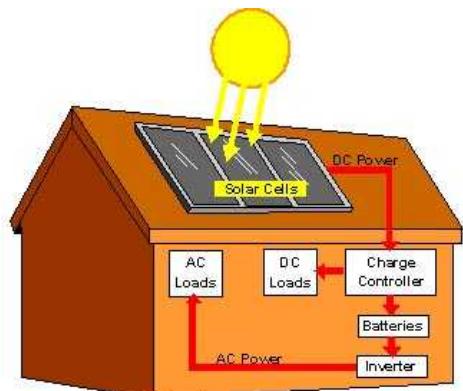
NATURAL HEATING AND COOLING

- Buildings and other recreation structures should be located to take advantage of prevailing winds and solar angle (both can greatly reduce operational costs).
- Operable windows should be utilized where possible. Consider mechanical operation to reduce staffing requirements.
- Light cool exterior colors should be utilized to reduce heat gain.
- Consider alternative methods of heating and air conditioning of new buildings:
 - Is heating and/or air conditioning necessary? May not be needed for some locations, for example coastal development may not require air conditioning.
 - Several energy efficient options are on the market that exceed Title 24 requirements by up to 30%. Consult your mechanical engineer for options.



ENERGY SAVINGS

- Highly efficient windows will reduce loss and reduce air conditioning requirements.
- Weather stripping is also helpful to identify during design.
- Windows should be operable when possible (noted previously).
- Energy efficiency (prevention of loss and gain) can also be increased with proper foundation and roofing materials, e.g. cool roof.
- Take advantage of natural light sources via sunroofs, building angle and fenestration.
- Insulation material and rating helps to further conserve.
- Controls such as timed or motion sensor lighting on the building interior and exterior will prevent wasting energy.
- Use photocells for all exterior lighting.
- Use energy efficient light fixtures & bulbs.



- ___ Consider the feasibility of using solar to offset energy use.
- ___ When using HVAC systems high efficiency systems should be installed.

WATER CONSERVATION

- ___ Always research the potential for use of gray or recycled water. Additional upfront costs can be substantial; however, operations and maintenance cost savings over time may offset.
- ___ Always consider native drought tolerant landscaping that is compatible with the wants and needs of the community, the park's microclimate and cost effective plant species available from local nurseries.
- ___ Avoid over-watering and utilize drip irrigation wherever possible. It is important to verify that the irrigation systems are properly installed and to minimize any overspray.
- ___ Utilize web-based irrigation master controllers using evapotranspiration (ET) technology where practical to monitor irrigation on a 'real-time' basis and to control irrigation systems during rain events in the park. Calsense is the preferred controller as DPR is working toward standardization to minimize operation and maintenance costs.
- ___ Consider installation of synthetic turf fields and the associated storm water runoff from these fields.
- ___ High efficiency toilets and faucets should be used in all restroom facilities. Waterless urinals should be considered as an option.
- ___ Refer to DPR's Water Conservation Plan when planning and designing projects.



RECYCLING AND WASTE REDUCTION OPTIONS

- ___ Include recycling containers near all trashcans.
 - Focus on main recycling items like aluminum, glass and plastic.
 - Consider other recycling options if staffing is available.
- ___ Consider solar trash compactors.
- ___ Consider hand blowers in lieu of paper towels in restrooms.
 - Hand blowers also have lower maintenance cost.

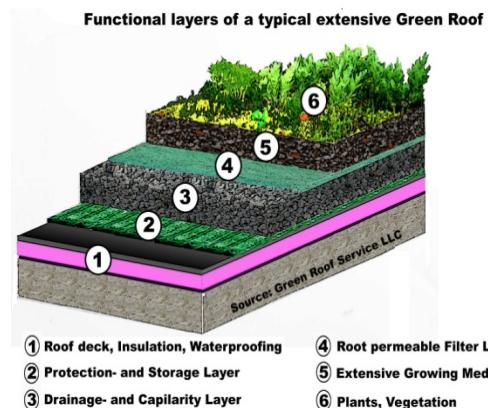


- Consider reuse.
 - Demolished concrete can be recycled.
 - Replaced pavilions and play equipment can go to other park facilities or be given to non-profit organizations.

- Seek to use recycled content products in new construction, including concrete and lumber, etc.
 - In some instances, recycled content products may be a cheaper alternative.

REDUCE IMPERVIOUS SURFACES

- Consider green roofs on new buildings.
 - Although green roofs may increase upfront costs, they can help reduce the amount of energy needed to moderate the temperature of a building.
 - Green roofs also have aesthetic value.
 - Special care is needed to select the appropriate plants considering the amount of soil available, sun angle and watering options. Green roofs may require native plants in certain areas.



- Use decomposed granite (DG) surfacing in lieu of pavement or concrete.
 - DG will still meet ADA requirements.

- Use porous concrete or pavement where possible.

- Use bio-swales to trap pollutants in run-off and allow for onsite percolation of run-off.



IMPROVE PUBLIC AND EMPLOYEE EXPERIENCE

All projects should be designed to consider the needs and convenience of the public and County staff. Special consideration of key elements below can help improve the public experience at DPR facilities and increase worker satisfaction and performance.



- Proper lighting especially over workspaces.
- Consider worker views and provide window areas, not just for security reasons.
- Provide proper amount of space. Provide what is required and a little more if possible. Staff should feel comfortable and allow for future growth.
- In general, make sure to seek input from field staff and expected users of the new facility prior to the start of design.
- Design for great air quality, via operable windows and filtration of conditioned air.
- Allow for alternate modes of transportation, including bicycle and equestrian parking and trail access.
- Evaluate project suitability for rechargeable electric vehicle charging station(s).



GENERAL IMPROVEMENTS

- One should attempt to use local construction materials where possible. This helps the local economy and reduces overall energy required to produce and transport materials to the site.
- Following the LEED Registered Project Checklist for New Construction of buildings may also be helpful in designing your project.



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Summary of the American Recovery and Reinvestment Act of 2009

appropriations.house.gov/pdf/PressSummary02-13-09.pdf

How funds from the ARRA are being distributed

www.recovery.gov

U.S. Green Building Council

www.usgbc.org

www.usgbc.org/DisplayPage.aspx?CMSPageID=2078

Green buildings, neighborhoods and infrastructure

www.greenplaybook.org

California State and federal rebates, tax credits, and incentives

www.dsireusa.org/incentives/index.cfm?re=1&ee=1&spv=0&st=0&srp=1&state=CA

San Diego County Building Incentive Program

www.sdcounty.ca.gov/dplu/greenbuildings.html

Economic recovery updates for local governments

www.icleiusa.org/stimulusfunding

Environmental Protection Agency

www.epa.gov/greenbuilding/tools/funding.htm

Department of Education

www.ed.gov/recovery

Department of Energy

www.energy.gov/recovery

Department of Energy—Energy Efficiency and Renewable Energy

www.eere.energy.gov

Department of Housing and Urban Development

www.hud.gov/recovery

Department of Labor

www.dol.gov/recovery

Department of Transportation

www.dot.gov/recovery

Internal Revenue Service

www.irs.gov

Sustainable Sites Initiative

www.sustainablesites.org/

Society of Environmentally Responsible Facilities Certification

www.serfgreen.org/

SECTION
7

Design and Construction Guidelines

Trail Design Guidelines

In this document the term “Trails” is used as a general term, which covers both trails and pathways unless otherwise noted. These guidelines apply to both trails and pathways.

This section discusses considerations and guidelines for general trail development. The trail development guidelines will be used to:

- Provide trail design continuity
- Provide trail user safety and convenience
- Minimize trail hazards, deterioration and liability
- Minimize trail operations and maintenance costs

- Protect open space, natural, cultural and historic resources

This section also provides guidance for development projects to:

- Increase recreational opportunities
- Provide trail connectivity, variety of user experiences and non-motorized transportation opportunities

These guidelines were established as an “optimal” condition intended for typical application countywide.

In the County of San Diego trail development which includes trail improvements is necessary because of the unmet trail demand (need) and trail connectivity. The process of developing a trail includes a number of complex steps

including planning, design, alignment, environmental review, clearing, grading, and construction of special structures. In conjunction with the course of physical trail development, procedural actions must also occur, such as establishing which sections of trail have construction priority, confirming a legal transfer of land if necessary, receiving the approval from multiple review boards to complete the process, and the bid process for choosing trail designers and contractors.

The guidelines are meant to be as thorough as possible, however, it is difficult to cover every situation and flexibility will be necessary. Specific site conditions must be evaluated and proper design guidelines applied to those conditions. If site conditions prohibit, or otherwise prevent general conformance with the Countywide Trail Design Guidelines, it will not prohibit or prevent the development of the trail if approved by the County Trail Manager. These guidelines are not “absolutes” and do not replace any existing codes, rules or regulations of land managing and permitting agencies that may govern trail development (i.e. state or federal agencies), but are in addition to them (see Jurisdictional Coordination). Necessary permits from these agencies will be obtained when trail alignments result in impacts to their jurisdictional areas.

The Trail Design Guidelines specifically apply to all of the County of San Diego departments and staff as well as private developers. Where references are made to

cities or special districts, these guidelines are intended to be a model and point-of-reference for those entities. They are encouraged to reference and/or make-use of these guidelines, where appropriate, as part of their own trails planning efforts.

These trail development guidelines complement the County Trails Program (CTP) goals, policies and implementation strategies by identifying:

- The need for greater definition concerning the characteristics, use and safety measures associated with countywide trails definitions that provide a level of understanding to trail users and property owners whose lands lie adjacent to countywide trails.
- How a specific trail route should be sited and designed based on a series of common trail conditions and landscape circumstances found in San Diego County; and
- Additional community specific guidelines for each CPSG (see CPSG section of CTMP) will supplement countywide guidelines where applicable. New or improved trail route will be evaluated on a case-by-case basis, taking into account existing field conditions, trail routes and land use relationships.

7.1 Trail Types

A simplified approach to trail classification was developed because of the sheer size of the County of San Diego and the desire to provide guidelines, rather than rigid standards. This approach resulted in a classification of three trail types A, B, C, and two pathway types D and D-Special (**Table DCG-1 and Figures DG-1 through DG-5**). These trail types and their associated optimal design guidelines will be utilized in the CTMP.

Regional and community trails classified as A, B, C, and D will be multi-use and accessible to all non-motorized users including equestrian, mountain bicyclists, and pedestrians. Each type has optimum guidelines such as easement, tread width, grade, and clearance that will influence construction and maintenance of trails. When conducting repair or maintenance activities on existing trails, reasonable efforts will be made to bring the trail into conformance with these guidelines.

All trails should have design guidelines established for tread width, easement width, function, cross slope, grade, anticipated user volume, horizontal clearance, and vertical clearance as well as adequate signage, fencing, staging areas and additional trail features.

The objective of the design guidelines is to be efficient, effective, and feasible with respect to

initiating, implementing and managing trails while attempting to satisfy the greatest number of users with the least amount of acquisition and construction cost per user. The placement of trails into these classifications allows a County manager to assign appropriate and optimal guidelines, funding, and work responsibility to each community's trails system.



New trail in Muth Valley overlooking Moreno Valley

Table DCG-1: Community Trails Master Plan Design Guidelines Matrix

TRAIL GUIDELINES	NOTES	TYPE A Urban / Suburban	TYPE B Rural	TYPE C Primitive	TYPE D Pathway	TYPE D Special Pathway
Tread Width	1	8' - 10'	6' - 8'	2' or >	10' - 12'	10' - 12'
Easement Width	2,3,6	12' - 20'	15' - 20'	25' - 50'>	10' - 15'	15' - 20'
Function		Recreation/ Transportation	Recreation/ Transportation	Remote Recreation	Transportation/ Limited Recreation	Transportation/ Limited Recreation
Grade	4, 5	<10%	<15%	<30%	< 15%	< 15%
Cross Slope		3-5%	5-8%	8-10%	1-2%	1-2%
Surface Material	7	DG/Binding Agent	DG/Binding Agent or Suitable Native Soil	Suitable Native Soil	DG/Binding Agent	DG/Binding Agent
Anticipated User Volume		Hi	Medium	Med - Low	Hi	Hi
Horizontal Clearance		2' Beyond Tread Edge; Min. Height 3'	2' Beyond Tread Edge; Min. Height 3'	1' Beyond Tread Edge; Min. Height 3'	At Edge	At Edge
Vertical Clearance		12'	12'	12'	12'	12'

Notes:

- 1) Tread width within the *optimum range will be based on site specific conditions.
- 2) Easement width within the *optimum range will be dependant on topographical or environmental conditions, i.e. steep slope, rugged terrain, rock outcroppings, or sensitive biological resources or habitat will require the maximum easement width.
- 3) The *optimum easement width for any class of trail identified as "Regional" is 20' - 50' and 10'-12' tread width.
- 4) These are *optimum grade ranges. The following additional criteria can be applied to Type A and B trails if warranted by site conditions.
 - Ideal : 0% - 5%
 - Acceptable: Average running grade of 10% or less, for distances over 200 feet
 - Acceptable: Average running grade of 15% or less, for distances under 200 feet
 - Acceptable: Average running grade of 20% or less, for distances under 100 feet
 - Sufficient switchbacks should be provided to avoid excessive grades
 - Type C trails may exceed 20% grade due to existing conditions or environmental constraints but for running grades of only brief distances.
- 5) Pathway grade follows road grade.
- 6) Pathways are trails within road right-of-way. The minimum width specified corresponds to the current minimum parkway/ "pathway" width in the County Public Road Standards. Depending on the discretionary project being contemplated, an additional 5 feet of road right-of-way may be required, thus providing a total width of 15 feet for pathway / parkway purposes. Optimal pathways have vertical separation from the roadway, but implementation is often limited road right-of-way widths, topographic conditions, and increased construction cost. If guard rails are required, additional right-of-way may also be required to provide a 10-foot minimum clear, unobstructed pathway (see Page 85 and 86).
- 7) Surface material shall consist of at least 4 inches of disintegrated granite compacted to 90%. Native soil may be used in lieu of disintegrated granite if it can be demonstrated to have equivalent or better characteristics for such application.

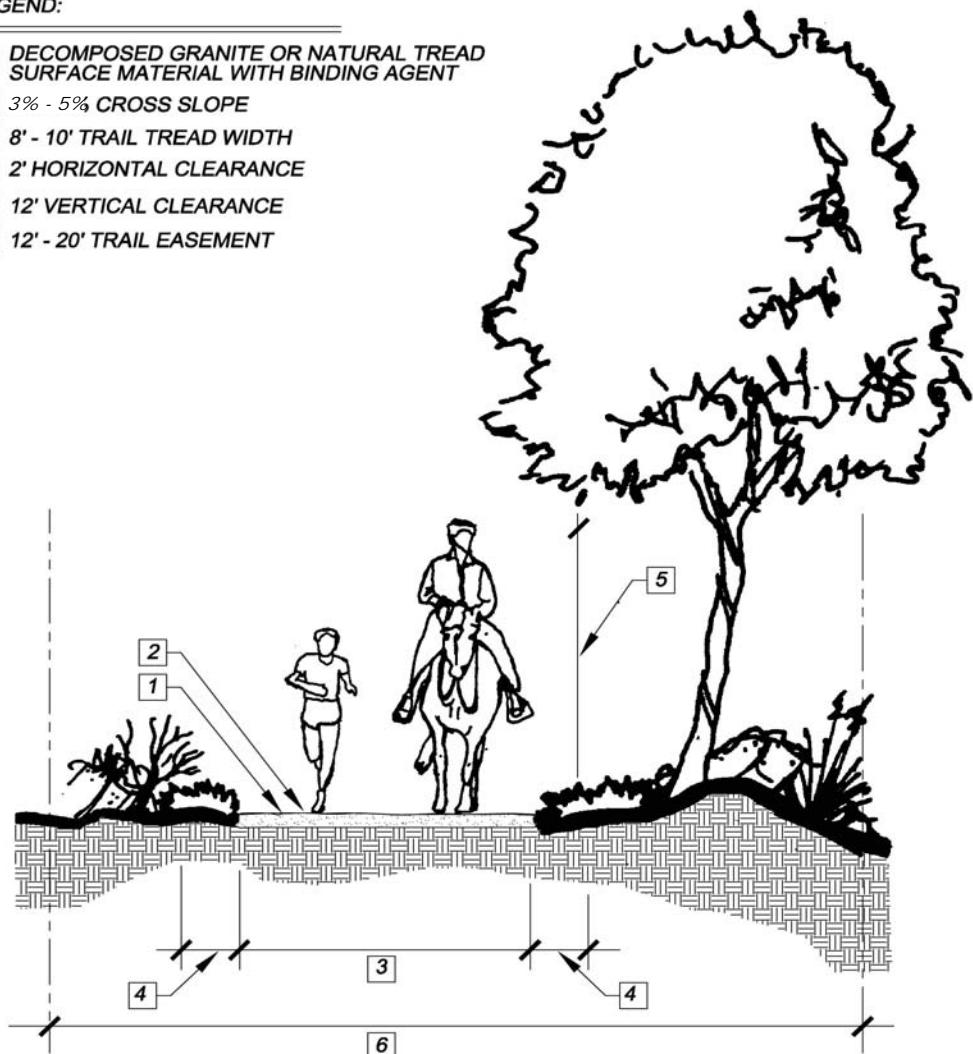
* "Optimum" means the best or most favorable condition for a particular trail situation from the perspective of responsible management

TYPE A – URBAN / SUBURBAN TRAIL

Trail type intended for an intense volume of use generally associated within an urban/suburban setting. These trails provide the widest tread so they may function as both recreation and transportation facilities and will be accessible to all trail users.

LEGEND:

- 1** DECOMPOSED GRANITE OR NATURAL TREAD SURFACE MATERIAL WITH BINDING AGENT
- 2** 3% - 5% CROSS SLOPE
- 3** 8' - 10' TRAIL TREAD WIDTH
- 4** 2' HORIZONTAL CLEARANCE
- 5** 12' VERTICAL CLEARANCE
- 6** 12' - 20' TRAIL EASEMENT



Notes:

1. "OPTIMUM" The best or most favorable condition for a particular trail situation from the perspective of responsible management.
2. See Trail Matrix Guidelines for Optimum guidelines and descriptions.

NOT TO SCALE

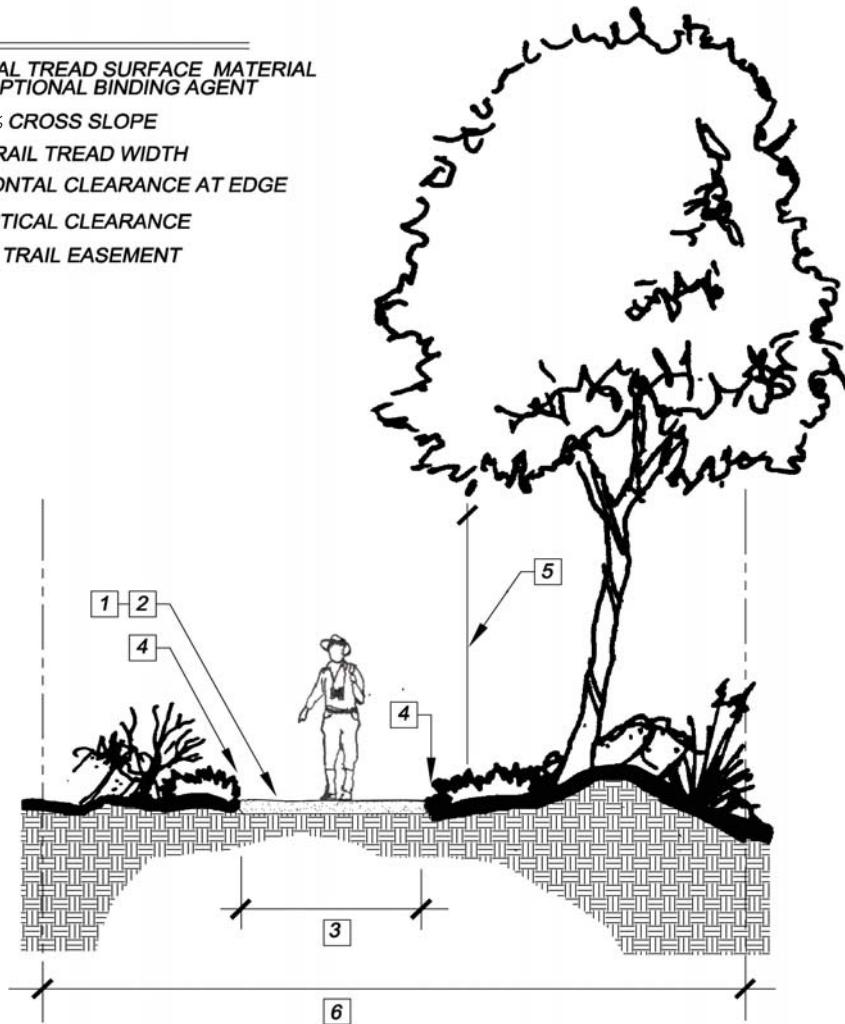
FIGURE DG-1

TYPE B – RURAL TRAIL

Trail type intended for medium volume of use generally associated within a rural setting. These trails are intended to function as recreation and transportation facilities. Although accessible to all trail users, some uses may not be practical in steep terrain.

LEGEND:

- 1** NATURAL TREAD SURFACE MATERIAL WITH OPTIONAL BINDING AGENT
- 2** 5% - 8% CROSS SLOPE
- 3** 6'- 8' TRAIL TREAD WIDTH
- 4** HORIZONTAL CLEARANCE AT EDGE
- 5** 12' VERTICAL CLEARANCE
- 6** 15'- 20' TRAIL EASEMENT



Notes:

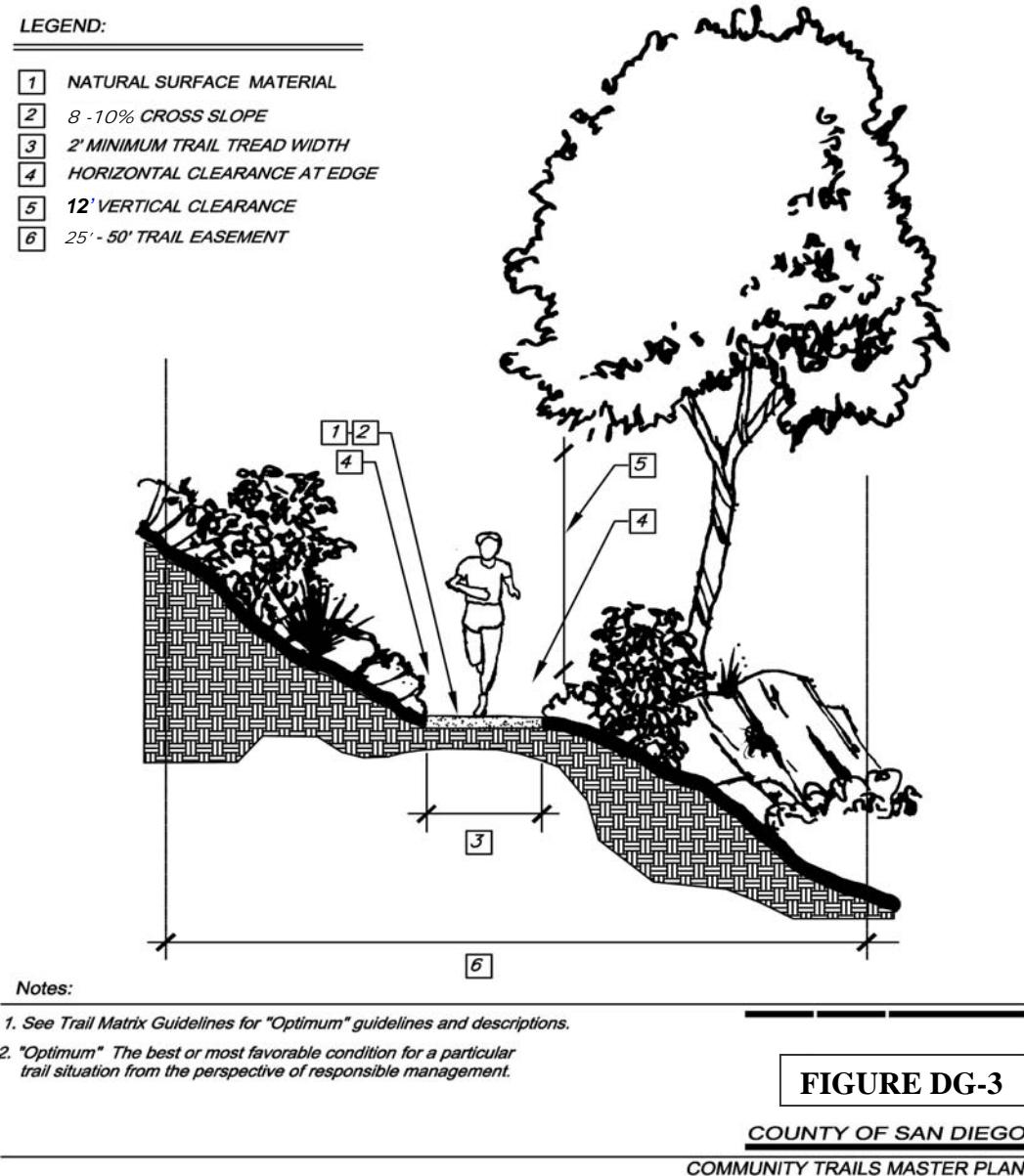
1. "Optimum" The best or most favorable condition for a particular trail situation from the perspective of responsible management.
2. See Trail Matrix Guidelines for "Optimum" guidelines and descriptions.

NOT TO SCALE

FIGURE DG-2

TYPE C – PRIMITIVE TRAIL

Trail type intended for medium to low volume of use generally associated within a primitive or wilderness setting. They have the smallest trail tread and are intended to function as low impact, remote recreational experiences, and connector trails. Steep terrain and remote wilderness areas dictate that accessibility is limited and may not be suitable for all persons or user groups.



7.2 Pathway Types

The Department of Public Works (DPW) oversees the implementation, management, and maintenance of existing and newly developed pathways. On private development projects that impact pathways identified in the Board approved Regional Trails Map (County General Plan, Public Facilities Element) or Community Trails Master Plan, DPW requires dedication and improvement of the pathway. The dedication of a pathway includes an additional five feet (or more) of public road right-of-way on one side of the road. DPW ensures that pathway dedication and improvement requirements comply with the County's Public Road Standards and Pathway Design Guidelines contained in the CTMP.

When the pathway is constructed as part of a development project, DPW conducts inspection activities to assure conformance with County standards and the adopted Resolution of Approval for the project. Once DPW issues final inspection compliance and project recordation occurs, the pathway is considered "designated" or official.

On public improvement projects impacting Board approved pathways, DPW assures that adequate additional right-of-way and pathway improvements are included in the project design and construction. Typical public projects include road widening, major road improvements, bridge construction, or flood control facilities within public road

right-of-way. For these kinds of projects, DPW is responsible for preliminary engineering, and subsequent phases of design and construction.



Type D – Special Pathway

County design guidelines for pathways are included in the CTMP (Type D and D-Special) and in the County Public Road Standards. DPW oversees conformance with these guidelines, and in areas where parkway widths are 10 feet or less, pathways are constructed in lieu of concrete or asphalt sidewalks. Concrete is replaced with 4 inches of decomposed granite (D.G.). Constructing a pathway, in addition and adjacent to, a concrete sidewalk, is only considered when parkway widths are 15 feet or greater.

Whenever possible, pathways should be located as far away as possible from the traveled portion of the roadway, preferably along and parallel to the right-of-way edge.

Pathway Encroachments

Pathways must be suitable for use by pedestrians, equestrians and mountain bikers. As such, the established surface or tread width of the designated pathway shall be a minimum of 10 feet clear and free of obstructions or encroachments such as trees, decorative rocks, ground cover, bushes, irrigation systems, above ground or at grade utility facilities (boxes, pedestals, anchor wires, cellular facilities etc.), guard rails, concrete (sidewalks), and large monument-type mailbox enclosures. Vertical (overhead) clearance shall be a minimum of 10 feet.



Utility box blocking a community trail

Also, if there is sufficient right-of-way width, pathways should be separated from the vehicular portion of the roadway by means of a physical barrier or by horizontal or vertical separation. Extreme topographical conditions, including large rock outcroppings, steep slopes or cut banks, can pose challenges for pathway construction. So can the existence of sensitive biological habitat that requires mitigation.

However, once sufficient right-of-way is secured, challenges related to topography and biological mitigation can satisfactorily be addressed, although construction costs are usually higher.

Guard Rails - Guardrails are designed to deflect vehicles back onto the roadway for the safety of the individuals in the vehicle and individuals adjacent the guardrail. Guardrails must meet Caltrans design standards. Any modifications to guardrails for the benefit of trail users must continue to meet those standards. Pathways and trail connections should be located so as to not create a conflict with the guardrail including the guardrail returns. All bolts shall be counter sunk and/or cut flush for trail user safety. A clear unobstructed 10 foot wide pathway may not be feasible at this location unless additional right of way is acquired.



Guard Rail End encroaching into Pathway

Pathways with the following features may require a fencing material, acceptable to the Director of Public Works, to be installed along the right-of-way boundary:

- The pathway is adjacent to down slope gradients of 1.5 horizontal to 1.0 vertical or greater, and
- There is a vertical differential of at least 5 feet, and
- The vertical differential continues parallel along the pathway for a distance greater than or equal to 30 feet.

The height of signs and their relative location to the pathway could be a safety hazard for equestrians. Additional right of way may be necessary to ensure safe passage.

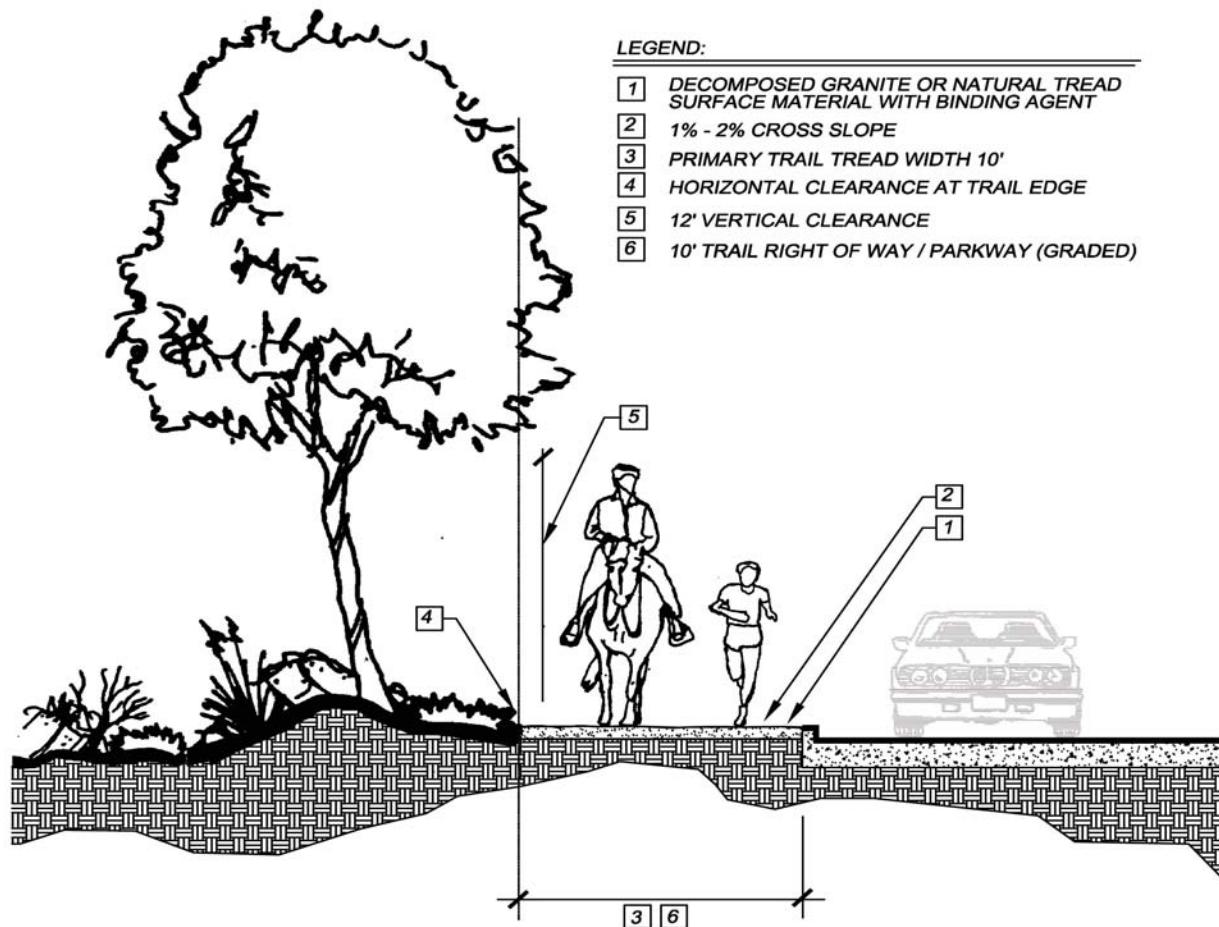
Pathway Markers/Signs - Depending on site-specific conditions, the Director may require the installation of reflective delineators (pathway markers) bearing a County trail decal along the right-of-way boundary. If required, markers will be placed at an equal distance from the face of curb and spaced at 300 foot intervals, unless specified otherwise.

Road way signs such as speed limits, warnings or reflectors should be placed so there is little interference with the pathway as possible. The placement of traffic signs must continue to meet standards as set forth in the Manual of Uniform Traffic Control Devices (MUTCD) and/or CalTrans specifications. Pathways and trail connections should be located so as to not create a conflict with traffic signs. A clear unobstructed 10 foot wide pathway may not be feasible at this location unless additional right of way is acquired.

TYPE D – PATHWAY (TYPICAL)

EXISTING CONDITIONS

A specific type of trail called a “pathway” intended for a high volume of use located within a public road right-of-way. These trails are generally intended for transportation purposes including bike, hike, pedestrian and equestrian use, although they may be utilized for establishing trail connections and recreational experience in areas with trail Type A-C constraints. Grade and accessibility will be established by the grade of the right of way. This restriction may impede the ability to provide accessibility to pedestrian traffic within the industry standards.



Notes:

1. Typically pathways are located on one side of a street. Utilities are

NOT TO SCALE

1. Typically pathways are located on one side of a street. Utilities are encouraged to be placed on the opposite side of that street.
2. Ten foot wide D.G. pathways are constructed in lieu of sidewalks.

3. See Trail Matrix Guidelines for 'Optimum' guidelines and descriptions

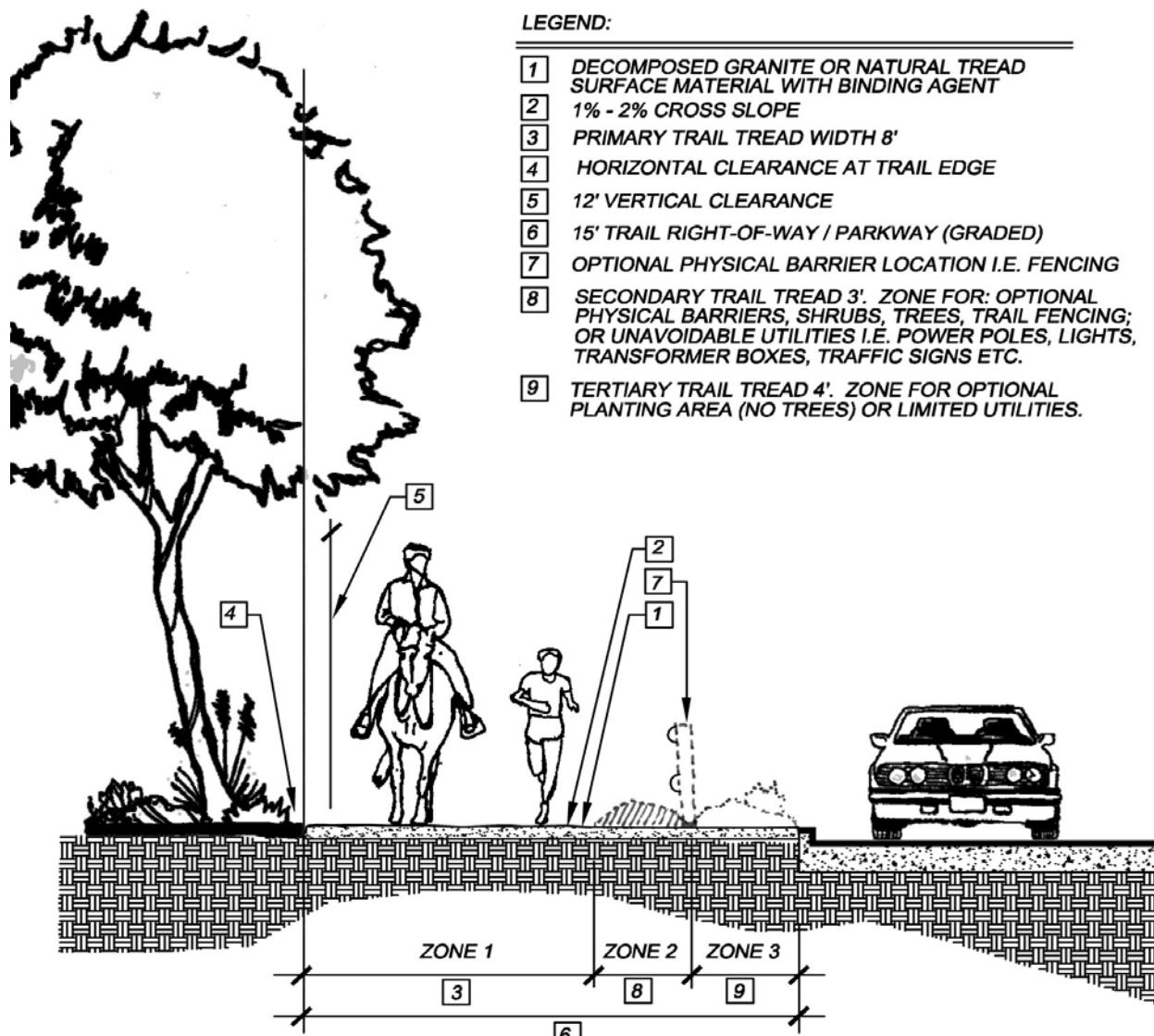
FIGURE DG-4

COUNTY OF SAN DIEGO

COMMUNITY TRAILS MASTER PLAN

TYPE D – PATHWAY (SPECIAL)

NEW CONSTRUCTION



Notes:

1. Typically pathways are located on one side of a street. Utilities are encouraged to be placed on the opposite side of that street.
2. Ten foot wide D.G. pathways are constructed in lieu of sidewalks.
3. Zone 2 and Zone 3 may be treated as trail tread unless placement of physical barrier or utilities is warranted.
4. Fencing or other physical barriers may be located in Zone 2

FIGURE DG-5

COUNTY OF SAN DIEGO

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7.3 Specialty Trails

Under certain conditions or specialized needs, the typical three trail types may not be adequate and an alternative class of trail may require trails to be managed or modified so they no longer fit within the three standard trail types. These trails will be classified as specialty trails and approved by the County Trail Manager on a case-by-case basis.

Trails that differ from typical Trail Types A – C, in that they are designed with a special condition or purpose in mind. Specialty trails may have characteristics that are significantly different from those associated with standard trail types. These trails may provide focused opportunities for disabled persons, interpretive/educational experiences, one-way directional accessibility to significant historical monuments or natural wonders, or other special needs generated by community specific conditions. They may include active recreation, interpretation, single or restricted use, one-way directional use, or they may include specialized or alternative tread material, or serve a community specific specialized need. They can be designed for specific users to avoid trail conflict and will be used in conjunction with other design consideration in the management of the trails program.

Specialty trails may or may not accommodate multiple users. Trail types are classified on geographic location, setting,

existing conditions, expected user volume, and their relationship to other developed facilities. Each CPSG should periodically review trails in their area and make recommendations to the County Trail Manager about the need for any specialty trails. Specialty trails should not be excluded from future trail planning simply because they do not conform to one of the four typical Trail Types (A-D). The planning, design, and construction of specialty trails require the review and approval by the County Trail Manager. The following are examples of specialty trails:

Interpretive

Interpretive trails differ from other trails because their primary function is to provide educational opportunities for trail users. Education and interpretation can occur in a variety of forms including signage and/or brochures.

Barrier-Free

Barrier-free trails are designed to provide opportunities for persons with physical disabilities, including mobility, visual, and hearing impairments, and will meet the standards of the Americans with Disabilities Act Guidelines (ADA). Refer to Department of Justice, Regulatory Negotiation Committee on Accessibility Guidelines proposed for accessible trail guidelines.

Support facilities for barrier-free trails, such as signage, restrooms, benches, and parking areas must be constructed to meet accessibility standards.

Preserve Trails

Preserve trails are located on land (private or public) that is acquired or designated for the purpose of habitat conservation. Trails may be incorporated in the existing County's Multiple Species Conservation Program (MSCP) Sub-area Plan and on other forms of parklands. Additional trails maybe incorporated into future North County and East County Sub-area plans. While the primary purpose of such land is to preserve and protect natural habitat, wildlife and cultural resources, passive recreational trail use is allowed and even encouraged as long as impacts to sensitive resources are minimal. These preserve lands often include existing, informal trails and/or various kinds of utility or emergency service roads that can provide valuable trail experiences.

In most cases, the County Trails Program (CTP) will not have direct responsibility or authority for the management, operation and implementation of these trails. A land management agency, such as the County's Department of Parks and Recreation, Resource Management Division, California Department of Fish and Game, U.S. Fish and Wildlife Service, other land management agency, or private conservation or land trust organizations, will have jurisdiction for these trails. The CTP will coordinate with the various communities and management agencies for trail access and connections to these lands. Modifications to existing trails or roads will sometimes be limited because of the goal of

minimizing impacts and the zone of influence to surrounding resources. While the CTP can make recommendations about development guidelines, final decisions will come from the land managing agency. Preserve trails should be designed to minimize impacts, but retaining a high quality trail user experience remains an important design feature and should not be excluded from consideration.

Typical Applications of Specialty Trails

- Historical use trails
- Unique loop experiences
- Expanded access opportunities for disabled persons
- Wildlife or habitat interpretation
- Unique types of non-motorized recreation that call for single or restricted use
- Special access to unique wetlands, desert, or mountain environments
- Special access to unique archaeological, cultural or historical resources

7.4 Trail Structure

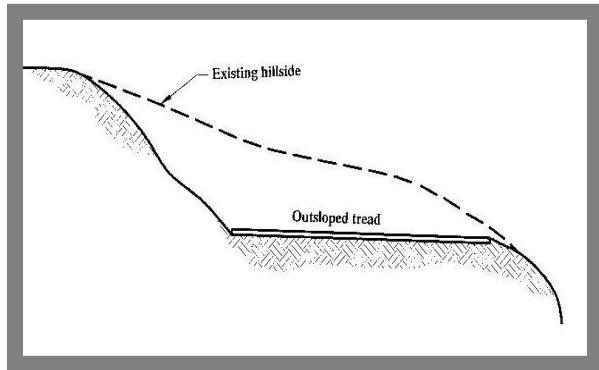
This section discusses the components of trail development (see **Figure DG-6**).

Sustainability is the number one priority for new trail construction. A well constructed

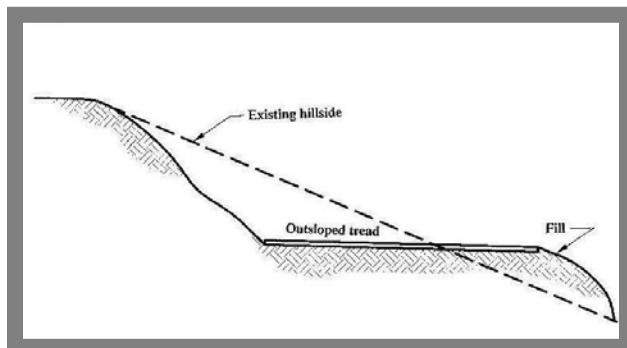
sustainable trail requires less maintenance tasks and will need to be performed less frequently. Trails should follow natural land contours and along steep slopes full bench cut construction should be used. It will provide the best opportunity for a sustainable trail.

Bench Cut

For new trails, the preferred construction method is a **full-bench cut**. A full-bench is constructed by cutting the full width of the trail tread into the hillside. Although it requires more excavation and leaves a larger back slope, the trail bed will be more stable and require less maintenance.



Partial-bench cut construction is an option to full-bench cut construction. The trail tread will be part hillside cut and part fill material. The fill-slope must be evenly compacted using solid fill material.



Cross Slope

The cross slope (the slope of the tread surface perpendicular to the longitudinal slope) is a critical factor in the design, construction, and maintenance of trails. The cross slope allows surface water to drain off the side of the trail rather than along the longitudinal slope. Cross-slope range is usually 3-5%. The three primary types of cross slopes are out-slope, in-slope, and crowned. Out-sloped and in-sloped trail surfaces typically occur on trails which traverse the side slope of a hill, and a crowned trail surface is typically found on trails which travel across relatively flat ground.

- Out-slope is the most common type of cross slope used on trails that traverse the side slopes of a hill, and occurs when the trail surface slopes downward from the uphill to the downhill edge of the trail. In-sloped trails are **discouraged** and are **not recommended** except when used as a component of switchback turns. In-slopes must be used in conjunction with rock-lined swales to collect the water and channel it away from the trail. The improper use of an in-sloped trail surface will cause extreme erosion to the trail surface and the surrounding environment; therefore, should not be built without consulting the County Trails Manager.
- Crowned is most commonly used on trails that traverse relatively level ground. A crowned trail surface slopes downward from the centerline to each outside edge for the purpose of preventing surface water from collecting on the trail surface.

TRAIL STRUCTURE TERMINOLOGY

ALL TRAIL TYPES

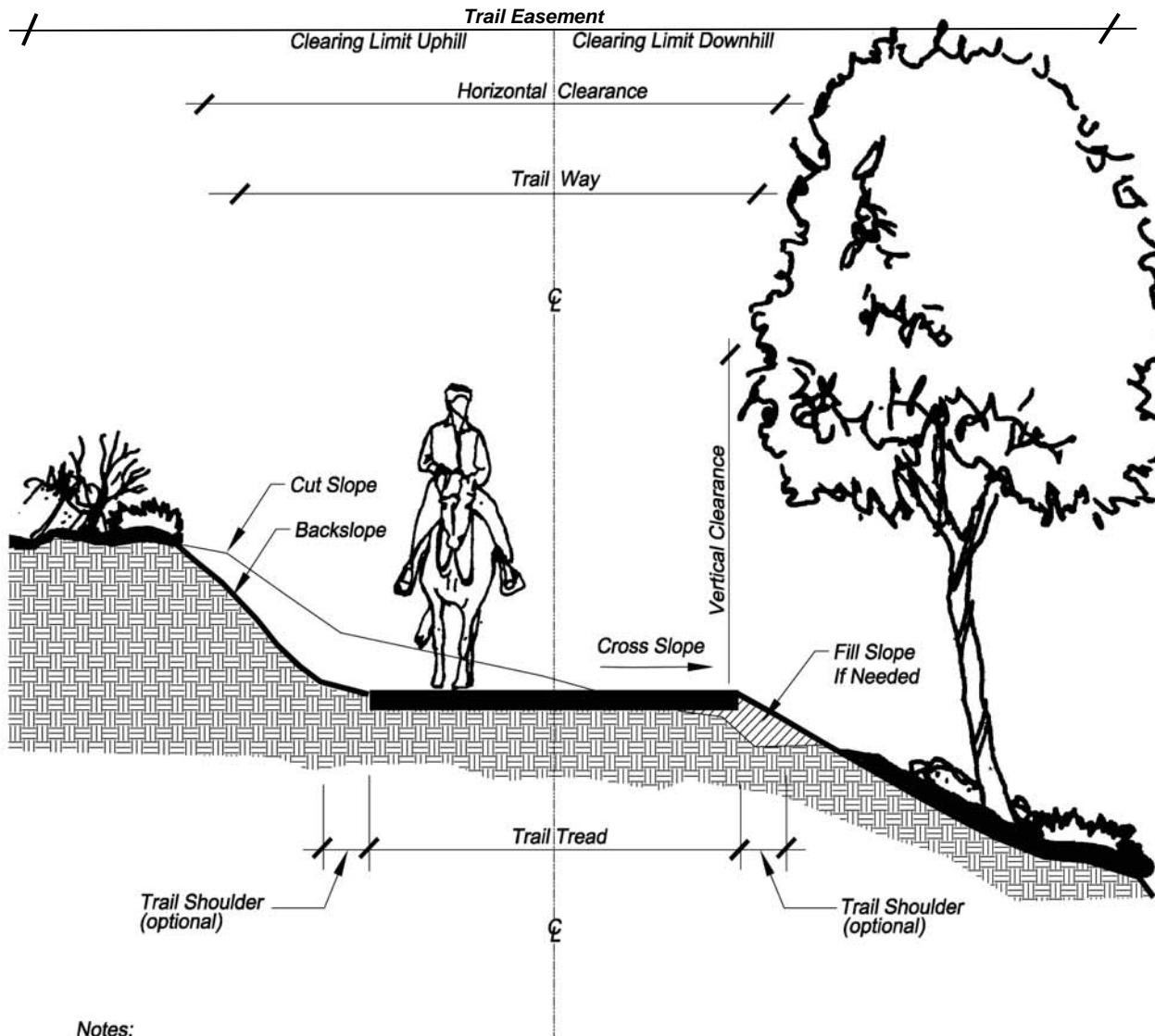


FIGURE DG-6

COUNTY OF SAN DIEGO
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Easement and Trail Tread Widths

It is necessary the easement for a trail setting provide sufficient width for management/maintenance and/or buffer space from adjacent uses so as not to preclude the viability of those uses. Easement widths requested for trail development should correspond to those contained in the Trail Design Guideline Matrix (**Table DG-1**). Trail easements are intended to accommodate multiple users (hikers, equestrians and mountain bicyclists) and to provide sufficient width as necessary to avoid obstructions such as trees, large rocks, utilities and equipment cabinets.

The width of a trail or its “tread” is based on the amount or intensity of use, field conditions such as topography and by the amount of influence or impact to surrounding sensitive environmental resources. The trail tread width shall be clear and unobstructed by the natural environment (rocks, trees, etc.) or man-made obstructions (fences, walls, equipment, utility boxes, etc.). Where treads are narrow (5 feet or less) including types B and C, occasional passing areas or turnouts should be provided at places with gentle slopes or upon approval from the County Trail Manager.

The County, based on site-specific conditions and features of the development layout, will determine appropriate locations and widths of the trail easement. Trail easements less than 20 feet wide can prove problematic both for the County and the landowner. For example, if the easement is too narrow and heavy rains or minor land slippage causes a portion of a trail

to wash out, it may be difficult to repair or replace the trail within the narrow easement. Similarly, narrow easements are more vulnerable to being blocked by the encroachment of structures, fences, or landscaping.

Where major regional trails or streamside trails are involved, the County will retain sufficient easement width to provide for higher levels of future use and/or provide greater flexibility in protecting riparian resources. Where trails correspond with utility easements, trail easement width will often be the same as the underlying utility easement for ease of legal processing. In rare instances the terrain may be so steep, the soils conditions so unstable or the biological or cultural (historical and archaeological) resources so unique that a wide easement may be requested.

Erosion Control Devices

Disturbance of the soil surface should be minimized in order to reduce erosion and associated maintenance problems. Trail designs should comply with current County drainage and storm water pollution standards.



Hiking along the Trans County Trail

Erosion control is of the utmost importance in trail design, especially for soft-surface, multi-use trails. It is important to factor the maintenance related to trails into any trail planning efforts, especially for erosion prevention but also for safety, aesthetic, and environmental reasons. Proper drainage of surface water is the most important factor in design, construction, and maintenance of trails. Grades along trail treads should be held to a minimum. Occasional fluctuations in the trail grade (grade reversals/grade dips) should be considered to provide variation for trail users and to facilitate proper drainage. Terrain and special conditions for the trail route alignment and surrounding areas should be considered. Surface erosion resulting from improper drainage will have a detrimental impact on the trail surface, causing damage to the natural environment and increasing maintenance requirements. The potential for erosion depends on three factors: soil type, velocity of water on the

trail, and the distance water travels down the trail. Alteration of any of these factors can reduce the potential for erosion of the trail surface.

If distances allow, grade dips or grade reversals are preferred over water-bars. Grade reversals are more effective at draining water off the trail than water bars. They also require less maintenance.



Contour Trail with Grade Reversal

Existing drainage patterns of the surrounding area, such as concentrated drainage channels, must be maintained. Attempts to alter the existing drainage patterns may have a negative effect on the natural environment and cause damage to the trail.

In order to limit erosion on trails, the following should be considered during trail construction:

- No large-scale grading for trail construction unless in conjunction with a

development project where large-scale grading has been found acceptable.

- The degree of cut allowed on a slope depends on the soil type, hardness, and surrounding natural resources. Ultimate cuts will be contoured to blend with the natural slopes.
- Only where necessary, earthen berms, culverts or brow ditches will be utilized to divert runoff and to eliminate erosion of the trail.
- Limited terracing or building steps to avoid large-scale grading will handle steep areas. Steps must be reinforced with stone or wood.
- In order to reduce erosion and maintenance problems, disturbance of the soil surface will be kept to a minimum. Only those rocks, stumps, and roots, which interfere with safe passage, will be removed.
- Trail designs will comply with the current County Drainage Manual. Surface water will be diverted from trails by out sloping the trail tread. Where necessary water bars may be used to divert water on running grades.
- Where trails are located near water bodies listed as impaired pursuant to the Clean Water Act Section 303(d) list, surface water shall be diverted from trails by directing runoff away from the water body.

In determining which drainage facility to use, the order of priorities may not always be possible to follow, depending on terrain features, volume of water involve, and soil characteristics¹. Each trail should be looked at individually in order to determine the best solution for drainage issues.

Water bars constructed of wood, rock or rubber members laid perpendicular (at 45 - 60 degree angle) to the path of travel should not be calculated into new trail construction. During trail maintenance, they may be necessary to add to poorly designed trails where other solutions are not available or practical.

On moderate to steep side slopes a periodic reverse in the grade should be included to create dips for drainage purposes. When grade dips are included in initial construction, the need for water-bars may be eliminated.

Function

Trails and pathways are considered a public facility like a library, school, flood channel, picnic area, or parking lot with a primary function of providing both recreational opportunities as well as alternative transportation infrastructure. The function of a trail was influential in the development of the optimal guidelines and trail types. The future planning, design, and implementation of specialty trails will consider a trail function when developing its guideline.

¹ Klamath District Maintenance Guide

Grade

The degree to which a trail rises or falls over a linear distance is an important factor in determining the length of a trail section, level of difficulty, appropriate user types, and drainage and maintenance requirements. In general, no large-scale grading should be used for trail construction. Varying trail grades are acceptable, but excessive trail grades should be minimized, as topography permits. The optimum grade ranges described in the Trail Design Guideline Matrix (**Table DG-1**) are advisory. Grades 15 percent or less are preferred but may not be feasible in some locations. Where grades exceed 10 percent for an extended length, long gradual switchbacks may be used, provided there is sufficient easement width. The County may consider varying the guidelines for grade limits with the trail settings. For example, some rural or primitive trails might be steeper and narrower than accepted standard guidelines in order to provide a different experience for users.

Horizontal and Vertical Clearance

Visible evidence of trail construction should be confined to the trail-clearing limit. This process involves the removal of vegetation (**Figure DG-7**) by clearing, brushing and pruning from within the optimal specified limits for each trail classification provided in the development guidelines. The primary goal of this process is to provide the specified clearance, while maintaining the maximum

amount of vegetation and the natural characteristics of the area.

Horizontal clearance width would vary based upon the type of trail but should generally be a minimum of 2 feet between the outer edge of a trail and physical obstructions. Vertical clearance from overhanging branches or fixed structures should also be established and can vary based upon the trail type and user groups anticipated. Trails that allow equestrians and/or bicycles should maintain a vertical clearance of 10 to 12 feet, while trails for hikers only can reduce the clearance.



Volunteer repairing an eroded community trail

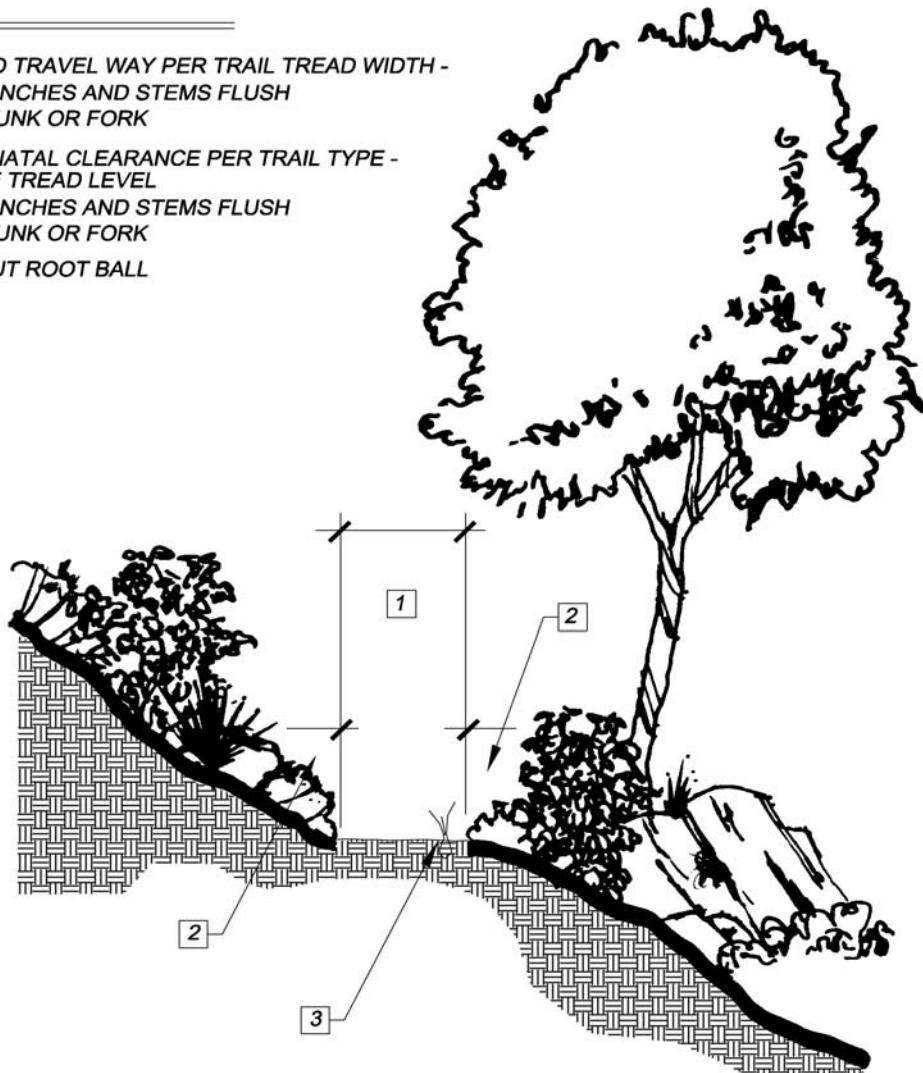
Line of Sight

Trails must be constructed and improved to certain design standards to ensure an adequate line of sight and safety for trail users. The determined line of sight will be based on a

VEGETATION CLEARANCE

LEGEND:

- 1 CLEARED TRAVEL WAY PER TRAIL TREAD WIDTH -
CUT BRANCHES AND STEMS FLUSH
WITH TRUNK OR FORK**
- 2 HORIZONTAL CLEARANCE PER TRAIL TYPE -
2' ABOVE TREAD LEVEL
CUT BRANCHES AND STEMS FLUSH
WITH TRUNK OR FORK**
- 3 GRUB OUT ROOT BALL**



Notes:

Visible evidence of trail construction should be confined to the trail-clearing limit. This process involves the removal of vegetation by clearing, brushing and pruning from within the optimal specified limits for each trail classification provided in the development guideline matrix. The primary goal of this process is to provide the specified clearance, while maintaining the maximum amount of vegetation and the natural characteristics of the area.

NOT TO SCALE

FIGURE DG-7

COUNTY OF SAN DIEGO

COMMUNITY TRAILS MASTER PLAN

case-by-case basis. However, for safety purposes, the recommended clear width of multi-use trails that includes mountain biking should be developed to allow a 100-foot average site distance. The criteria evaluated includes the speed of the user groups and their reaction time to maintain control. Vegetation clearance is another key factor affecting line of sight. If sight distances on curves, around hills or through densely vegetated areas are less than 100 feet, safety signs and reduced speed limits should be required.

Where trails intersect or cross roads, the Department of Public Works will ensure that improvement requirements include the following safety standards:

- Trails should intersect roads at approximately ninety (90) degree angles.
- Where trails cross roads, they should do so at ninety (90) degree angles and crossing/warning signage posted in both vehicular directions. If deemed necessary, the paved roadway surfaces shall be marked with a painted crosswalk and/or flashing warning lights.

Surface Material

Trail surface shall be appropriate for the intended use and shall help to minimize runoff and erosion problems. Ideally, surfaces should allow for a variety of recreational uses and should be easily maintained. Wherever feasible, trails should be of materials that provide a firm, smooth surface meeting requirements and guidelines for

accessible trails. The County generally accepts compacted decomposed granite (DG) as a typical trail surface material. Native soil may also be appropriate in some cases if it can be demonstrated to have acceptable standards to provide a firm, smooth surface.

Parking surfaces and trail materials that reduce dust will be used. Dust suppression techniques, including watering of disturbed lands, should be used in constructing regional staging areas and multi-use trails to reduce dust during trail construction. Binding agents may be added to soil to reduce dust at high traffic staging areas or trails.

7.5 Trail Support Features

Basic trail amenities listed are to provide guidance concerning appropriate support facilities for the CTMP. Support facilities for trails vary with the intended use of the trail, trail type and trail length. Trail structures such as switchbacks, climbing turns, retaining walls, grade reversals and similar trail elements are common in trail construction. Some are difficult to design or construct correctly. If proper maintenance is not performed regularly, their life-spans may be shortened and they may cause damage to the trail or facility. A good trail alignment and a correctly constructed trail with properly built trail support features can last for decades. They represent optimum conditions desired by the County for the CTMP. Individual CPSGs may require specialized “packages” for their communities. Refer to the individual community sections for more detail.

Standards for drainage crossings, trail bridges, and hardware for construction should be addressed.

- Whenever possible, use a natural water crossing. Reinforce stream banks by armoring with stone or using “geoweb” mesh.
- Trails crossing creeks and drainages may require a bridge or culvert and these structures should be carefully designed for user safety, to minimize disturbance and with the least number of crossings as feasible.
- Approaches to bridges will vary but typically should be 50 to 100 feet in length, level and straight. Bridge widths should correspond to established tread width for the various trail types. Bridges should also be carefully designed to meet the needs and weight of horse travel and maintenance vehicles and include railings when necessary. High and narrow bridges are discouraged and may frighten young or inexperienced horses. If wood members are used for bridge crossings, the planks should be oriented at 45 to 90 degree angles to the direction of travel. Gaps between planking oriented in the direction of travel may be a tripping hazard to hikers and equestrians and trap bicycle tires.

Anchor Points

Large or unusual tree, rocks or patch of shrubs that add interest and draw attention to landscape features.

Barriers

Barriers such as vegetation or fencing may provide obstruction between trail surface and grade separations, including fencing on bridges, and stream or gully crossings. Bollards, boulders, logs, stiles, trail gates and/or other structures will be used to prevent motorized vehicles from entering trail routes at any crossing of a public road right-of-way, or at any trail staging area.

Benches

Benches for resting should be provided at regular intervals within 1/2 mile of regional staging areas along trail routes. These should be located at places with aesthetic qualities, viewpoints, and particularly at the end of any long uphill stretches.

Bridges

Bridges or other structures may be provided to aid in crossing rivers, streams, creeks or vehicular roadways. The width of a trail bridge should be taken from the interior dimension; that is, inside rail to rail. Since trails are intended to be multi-use and all bridges must be designed for equestrian safety. A minimum of 8 feet wide for single or limited-use trail bridge spanning very short distances with good line of sight; 12 - 15 feet wide for natural-surface, multi-use trails and minimum 10-12 feet wide when contiguous with a vehicular roadway. Other than a single use bridge, all bridges shall be constructed to accommodate maintenance or emergency vehicles. Additional width and/or height may be required for equestrian use or on extended bridge lengths. Bridge surfaces should be solid, non-slip and all-weather surface.

Natural surface or decomposed granite is preferable. Heavy wood planks are acceptable. Stringers should be strong enough so the deck doesn't "bounce" when horses cross. Concrete and asphalt surfaces are not recommended as they may become slippery for horses. If concrete is used, it must be a heavy broom finish. All bridges on multi-use trails must have minimum 60-inch-high railings. Depending upon the location and length of the bridge, higher railing may be required.

The approach to a bridge should encourage users to naturally aim for the center of the bridge. Wing walls or approach walls should be incorporated into the bridge design especially if there are steep banks on the sides. Unprotected approaches may cause users to try to get down to the water and try to avoid the bridge entirely. An unwilling horse may begin to shy sideways, endangering himself and the rider if there are no secure approaches.

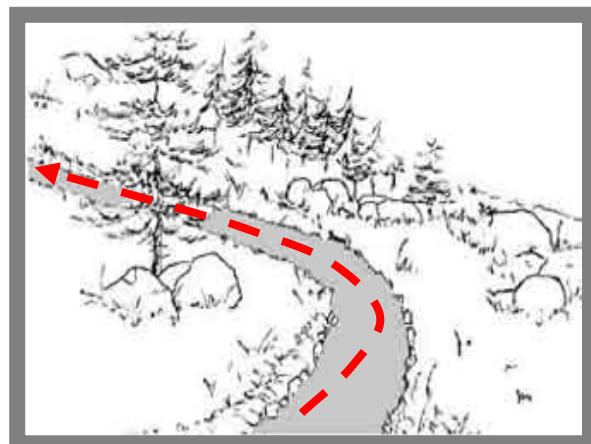
Arched bridges are aesthetically appealing, but horses are almost guaranteed to slip on the decking. A horse could slip and fall on such a bridge. For safety, the camber on equestrian bridges should not exceed 5 percent.²



Bridge with 5% camber and "rub rails"²

Climbing Turn

Next to waterbars, climbing turns are the trail structure most often constructed inappropriately. The climbing turn is a reversal in direction that maintains the existing grade going through the turn without a constructed landing. Turns should be approximately 20-30 feet in diameter and anchored around constructed features or large rocks or trees. Grades should be under 20%.



Climbing Turn³

Control Points

Control points are physical or legal constraints on a trail's location.

Drainage Crossings

Trails crossing creeks and drainages may require a bridge or culvert. Structures over watercourses will be carefully placed to ensure user safety and minimize disturbance. Surface water must be diverted from the trail surface before it builds up to an erosive force.

²USDA Trail Construction and Maintenance Notebook

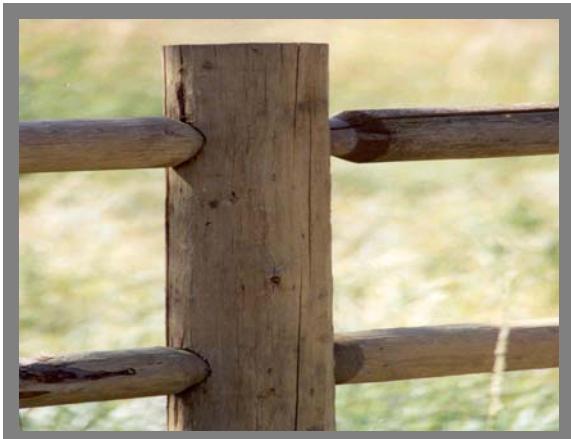
However, placement of culverts or drainage facilities within trail easements should be avoided and only placed underground. These devices are not allowed to discharge drainage on to the trail easement. Erosion control measures will be taken to prevent erosion at the outfalls of drainage structures.

Emergency Telephones

Along trails located outside of public parks and along trails that pass through more remote areas or private lands, consider installing solar-powered emergency telephones at regular intervals. Where practical, placement of emergency telephones should coincide with staging areas, emergency access points and helicopter landing sites.

Fencing

Fences (**Figures DG-8 and DG-9**) will be installed on a case-by-case basis. Fences along the trail edge will not be required on all trails, but rather where there are concerns about safety, privacy, resource protection, or aesthetic appeal.



Dowel and drill post and rails

Fences are not allowed to be installed within the trail easement. Fencing both sides of an established trail tread or easement will not be permitted unless the interior inside dimension (rail to rail) exceeds 10 feet. Exceptions should be discussed and approved by the Trails Program Manager. Each community may have different references about the extent and location of fencing.

Furniture

Trail furniture such as tables, chairs, benches, hitching rails, etc. maybe used for convenience or decoration on trails

Gates

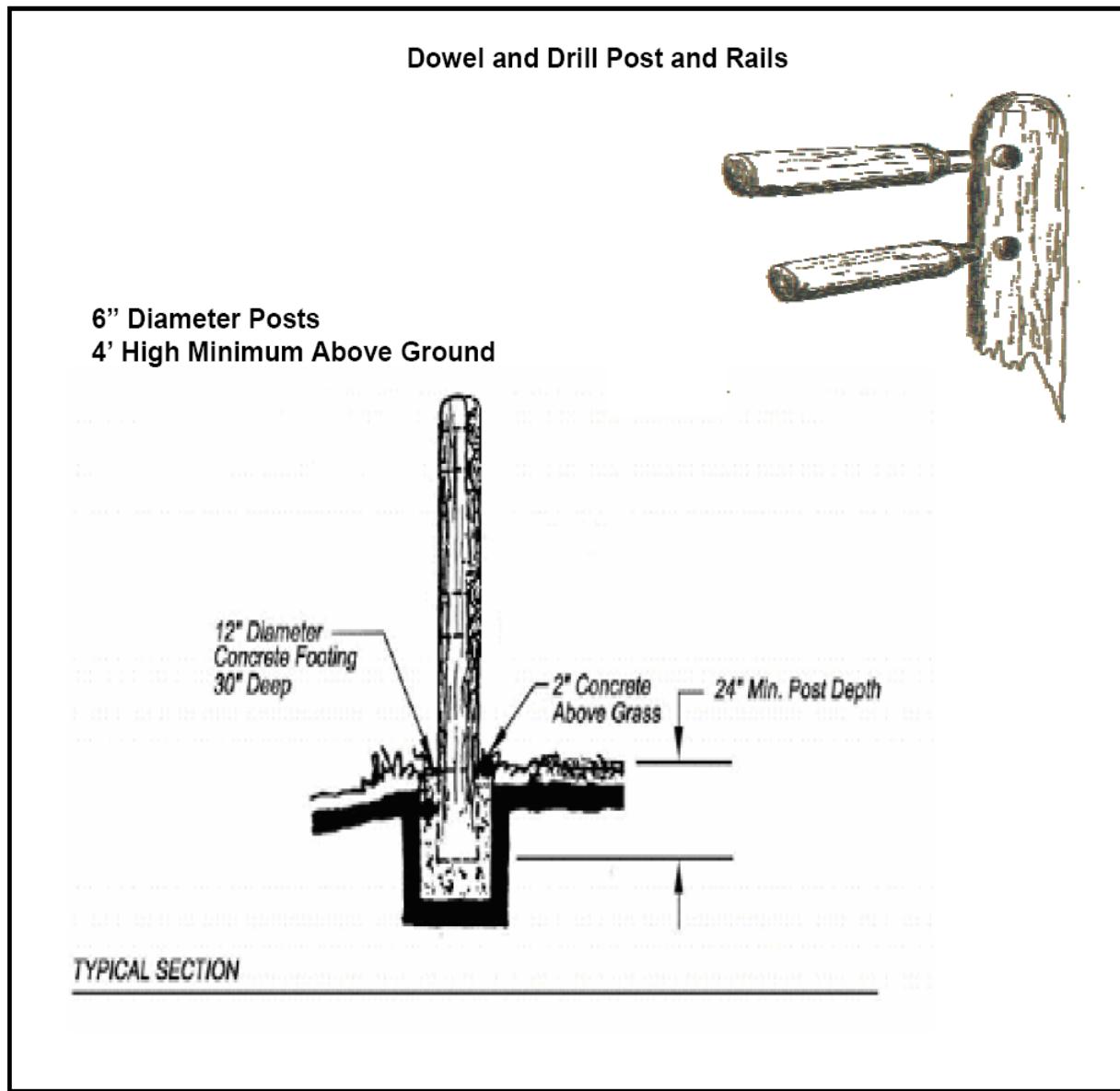
Installation of gates should be avoided unless issues of security or containment of livestock become an issue (**Figure DG-10**). Not only do gates create a management problem and a potential safety hazard, they also degrade the quality of recreational experiences by turning the focus away from enjoyment of natural surroundings. In addition, their associated costs of installation and maintenance, reduce their benefits.

Hardware

All trail associated structures should be designed to be as vandal-proof as possible. Rounded framing members, recessed bolt heads, and other hardware should be used for safety.

FENCING DETAIL (TYPICAL)

ALL TRAIL TYPES



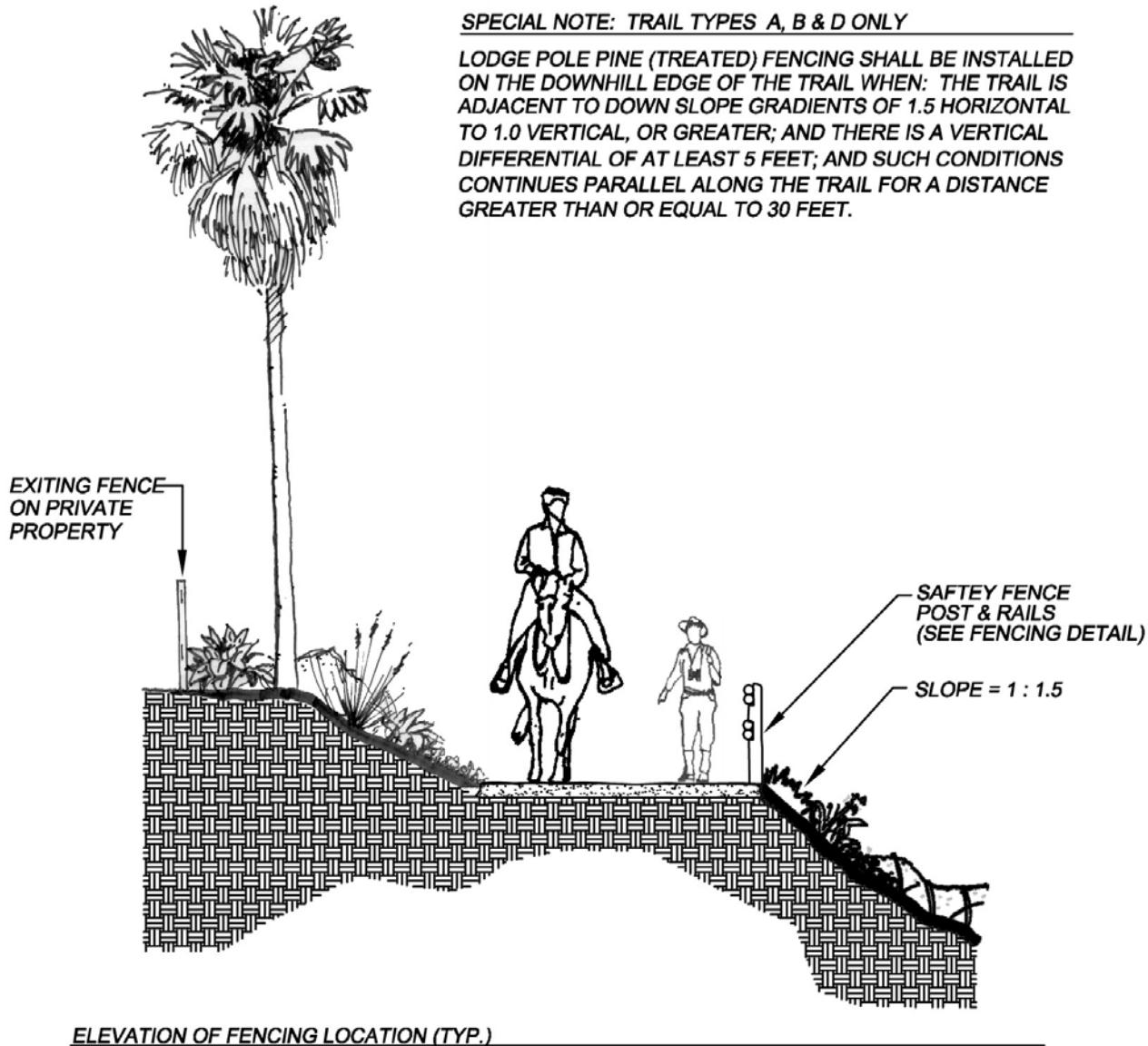
1. Vertical post to be 24" minimum below ground level.
2. Counter sink bolts or use carriage bolts.

NOT TO SCALE

FIGURE DG-8

COUNTY OF SAN DIEGO
COMMUNITY TRAILS MASTER PLAN

FENCING LOCATION



ELEVATION OF FENCING LOCATION (TYP.)

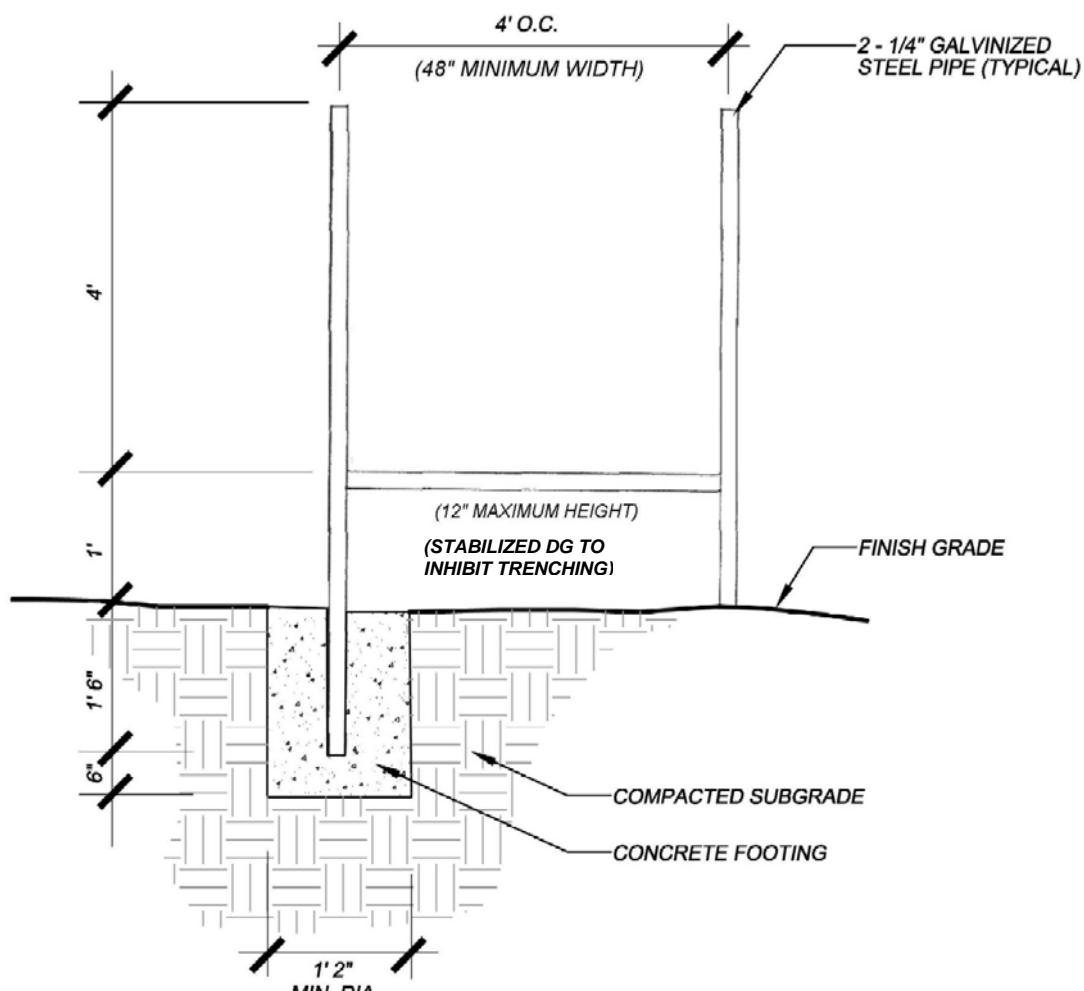
Notes:

1. *Parking Lots, Street Crossing, Railroads, and Pathways are additional areas where safety fencing may be needed.*

FIGURE DG-9

TRAIL GATE DETAIL

ALL TRAIL TYPES



TYPICAL ELEVATION / SECTION

Notes:

1. All pipe, hardware, and welds shall be galvanized.
2. Surface material under and around the step bar (approximately 6' on either side of the bar) should be stabilized decomposed granite (DG) to inhibit trenching.

NOT TO SCALE

FIGURE DG-10

COUNTY OF SAN DIEGO
COMMUNITY TRAILS MASTER PLAN

Non-Potable Water

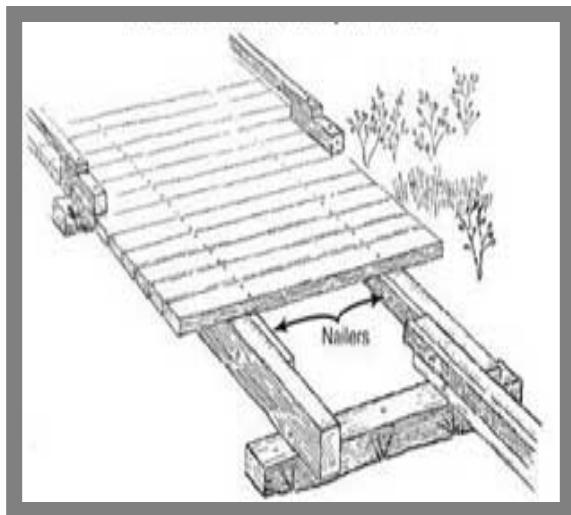
Water for domestic animals permitted on the trail should be provided at regional staging areas and, where possible, at an optimum of 5-mile intervals along regional and community trails.

Potable Water

Potable water for trail users should be provided at regional staging areas and, ideally, at least every 5 miles along regional trails. Where no potable water is available for an interval greater than 5 miles, safety signs indicating such conditions should be posted.

Puncheon

Puncheons consist of a deck or flooring made of sawn, treated timber, or native logs placed on stringers to elevate the trail across wet areas that are not easy to drain, large boulders or to cross small streams.³



Puncheon Design³

Special consideration should be given to the stability of the surface for equestrian use. The wood structure must not flex when a 1,000 pound plus horse steps on it. The ends must be secured and flush with the trail tread. A 6-foot wide tread surface (wood deck) works well for equestrians and should be considered the minimum width.



New installed Puncheon being tested in Lakeside

Sanitary Facilities

Sanitary facilities should be located at regional staging areas and, based on anticipated types and volumes of use, sanitary facilities may be located along trails when feasible.

Shelters

A structure that provides protection, safety, and screening from the sun and inclement weather.

³ USDA Forest Service Technology and Development Program, *Equestrian Design Guidebook for Trails, Trailheads and Campgrounds*, Missoula MT, 2007

Signage

Signage may provide the following information and services:

- Name, length, points of intersection and interest, and hours of operation
- Use restrictions, rules, and ADA accessibility
- Dangerous conditions such as aggressive wildlife, dry fire season, and vertical clearances
- Facility locations including water, restrooms, and location of emergency phones
- No trespassing notification to protect private property
- Identify and educate about sensitive habitat, or historical points of interest
- Direct regional traffic to staging areas away from neighborhoods that may have trail access points but do not have sufficient parking to accommodate such use
- Interpretation and resource protection by indicating natural or historical points of interest or sensitive areas
- Direct regional trail users to suitable staging areas and trailheads

Countywide Implementation Strategy 1.2:
All trails should be marked. Markers or signs should be provided which encourage responsible trail use by providing users with directional information and information regarding property rights in order to minimize public/private use conflicts and trespassing. Historically significant trail routes should have signs that include appropriate historical information.

Steps

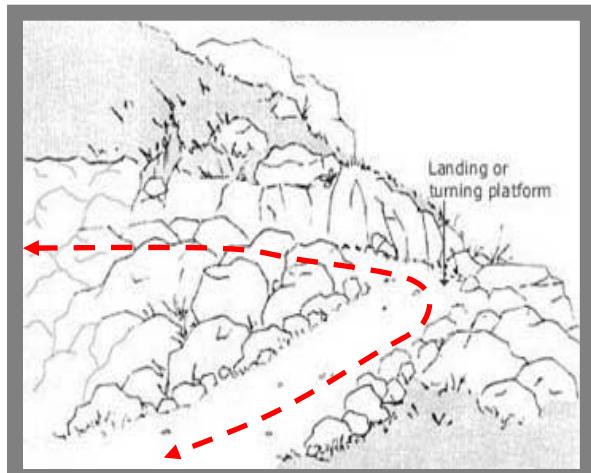
Steps can be a means to ascend a grade when no other trail construction methods such as switchbacks or climbing turns are feasible. Steps are built on-site from native or imported rock or a combination of rocks, wood and soil. New trail alignments and construction should avoid the need for steps.

Stream Access Points

In the detail design of any trail alignment parallel to a water-body, access points should be identified for environmental education and interpretive programs. Such access points should be located in coordination with the California Department of Fish and Game, the U.S. Army Corps of Engineers, and other jurisdictional agencies as appropriate.

Switchbacks

Switchbacks are a reversal in the direction of a trail on hillsides with the intent to gain elevation in a limited distance. They are used as a method of achieving elevation change in steep terrain (usually steeper than 20 percent) and providing a reduced running slope. Switchbacks have a relatively level constructed landing at the point of direction change, anchored around constructed features or large rocks or trees, usually involving special treatment of the approaches, barriers, and drainage. Both the climbing turn and switchback take skill to locate and are relatively expensive to construct and maintain. Choosing when to use each one is not always easy.



Switchback³

Trail Markers

All trails should be marked to identify trail access points, intersections, or feeder trails. The markers provide users with directional information, user restrictions and mileage. Typically, trail markers are set at approximately every quarter mile. Depending on site conditions and other circumstances, more or less maybe required

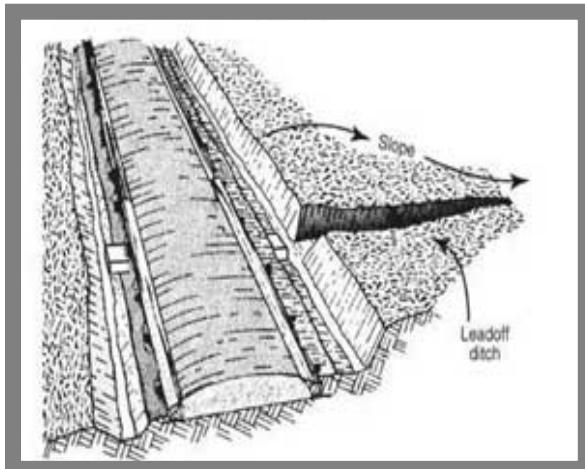
Turnouts

A place where the trail is widened to permit trail traffic traveling in opposite directions to pass.

Turnpikes

Turnpikes are used to elevate the trail above wet ground. The technique uses fill material from parallel side ditches and from offsite to build up the trail base higher than the surrounding water table. They are used to provide a stable trail base in areas with a high

water table and poor draining soils. Turnpikes are practical up to a 10 percent trail grade.



Turnpike with lead-off ditch³

Undercrossings

Where a countywide trail must pass under a highway bridge, sufficient vertical clear-space and security lighting should be provided to accommodate trail use. Optimum horizontal clearance will be site-specific and dependent on the length of the undercrossing, but should not be less than 12 feet in height in most cases. Where the provision of such space is not possible, safety signs should be placed on either side of the undercrossing to inform trail users of such conditions and advise them of precautionary measures that should be taken, such as reducing speeds (mountain bicyclists) or dismounting (equestrians).

³ USDA Forest Service Technology and Development Program, *Equestrian Design Guidebook for Trails, Trailheads and Campgrounds*, Missoula MT, 2007