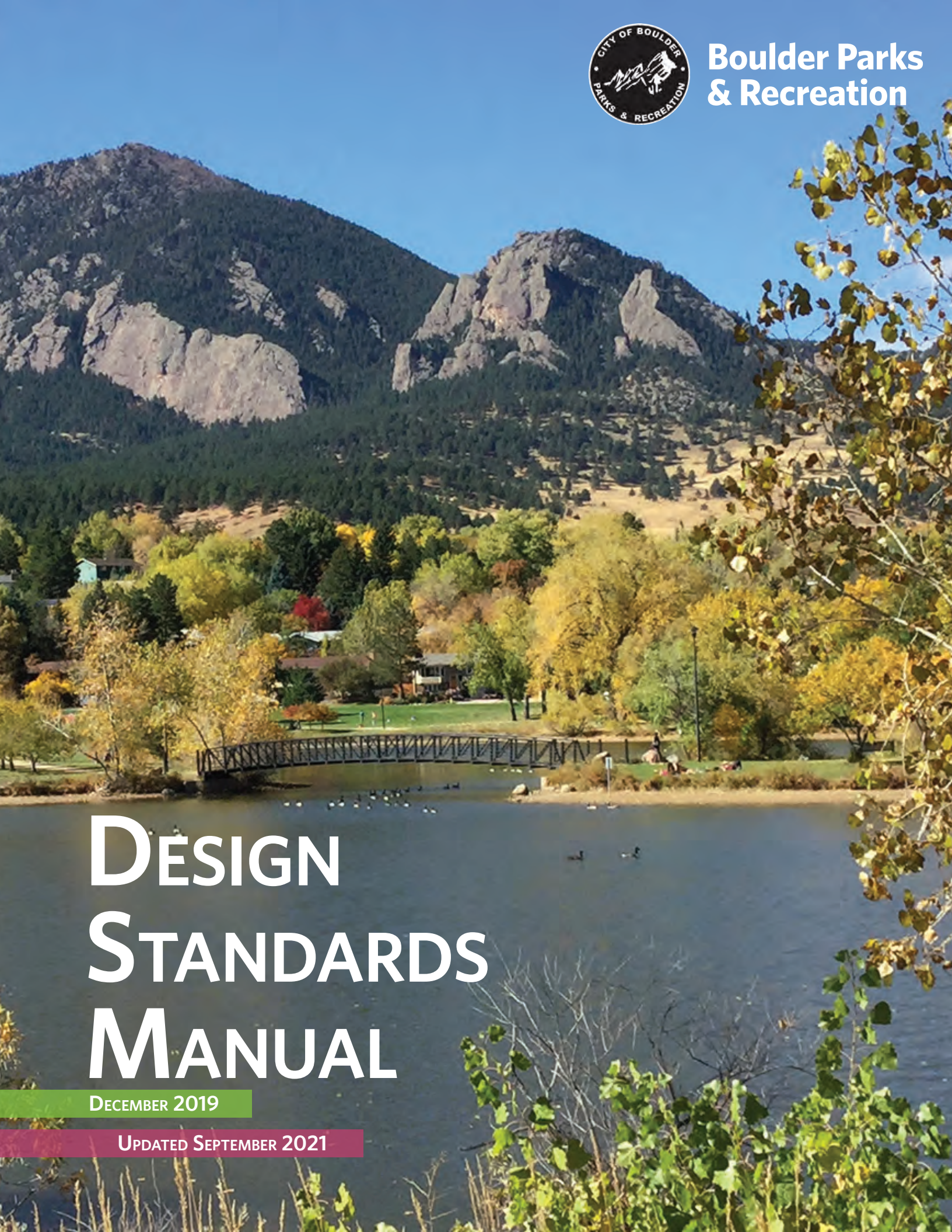

Boulder Parks & Recreation

Design Standards Manual

December 2019

Updated September 2021

City of Boulder

Pearl Street Mall | Photo by City of Boulder

"Boulder Parks and Recreation promotes the health and well-being of the entire Boulder community by collaboratively providing high-quality parks, facilities and programs."

Boulder Parks and Recreation Department

3198 N. Broadway
Boulder, CO 80304
August 2019

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Consultants

Dig Studio
GreenPlay LLC
HydrosystemsKDI, Inc.
ECI, Site Construction

Table of Contents

1 Overview / Introduction

Civic Park | Photo by City of Boulder

Introduction

Parks and Recreation Department

The City of Boulder is known for its variety of outdoor opportunities that allow residents and visitors to experience and interact in different ways. The parks within Boulder support those outdoor opportunities by providing both active and passive recreation options for users of all age groups and abilities. To best support parks users, utilize the City's resources efficiently, and listen to the community needs for the future of parks development and maintenance, the Boulder Parks and Recreation Department (BPRD) developed this manual to streamline the park development process for design as well as simplify maintenance and replacement by standardizing the assets and elements within BPRD's system.

BPRD manages a premier park land system that consists of urban plazas, athletic fields, recreational facilities, playgrounds, trails, and natural areas. The department develops its park land to offer active and passive recreation opportunities for community members of all backgrounds, ages, and abilities. The standards within this manual are intended to be used to maximize the available resources for park development and maintenance.

This Design Standards Manual outlines how BPRD processes projects and what is anticipated for each project, depending on its complexity. Assets that are currently within the BPRD system are listed here and help to inform new park development in the future. The Standards outlined in this document detail common assets found in Boulder parks but are not an exhaustive list. The goal of standardizing the BPRD assets is not only to delineate a park aesthetic that is unique to Boulder, but also to standardize park assets for maintenance and life-cycle expectations.

Currently, BPRD manages manicured park land, natural landscapes, as well as parks that are currently managed as undeveloped but are planned for future park land. The undeveloped park areas within the City of Boulder create an opportunity for future parks to be developed to meet the resident and City needs. These future parks, as well as the upkeep and maintenance of the existing parks, is why this manual was developed. New parks will be developed to benefit the community as well as to compliment and grow the existing park system. The assets, facilities, and programs within this park land are distributed citywide and often connect to City of Boulder lands managed by other City departments.

Boulder Parks and Recreation Existing Inventory

- 43,000 Trees Owned and Maintained by BPRD
- 21 Miles of Multi-Use Paths (maintained by BPRD out of 87 miles within Boulder)
- Signage Park & Directional
- 53 Park Shelters
- Approximately 1,000 Acres of Non-Irrigated Vegetation
- 11 Satellite Diamond Fields
- 13 Basketball Courts (4 Half Courts)
- 40 Playgrounds
- 1 Premier Multi-Use Field (can accommodate up to 10 full sized fields)
- 1 Historic Band Shell
- Buildings Maintenance
- Park Lighting
- 21 Satellite Multi-Use Fields (of varying sizes)
- 11 Premier Diamond Fields
- 3 Recreation Centers
- Plazas Urban
- 3 Indoor Pools
- 2 Outdoor Pools
- 53 Acres of Paved Parking Lots
- 2 Platform Tennis Courts
- Restrooms & Other Park Structures
- 36 Tennis Courts
- 345 Acres of Irrigated Turf
- 11 Designated Historic Sites/Buildings
- Furniture Park
- 44 Other Courts (includes volleyball, handball, horseshoe, and roller sports rink)
- 2 Premier Artificial Turf Multi-Use Fields

Document Approval

Harlow Platts Community Park | Photo by City of Boulder

Document Approval

This set of Standards has been developed through close coordination within the City and BPRD. All sub-divisions of BPRD were involved in developing the standards, procedures, and construction details within this manual. The manual was reviewed and approved by the Director of BPRD and then recommended for review to the Parks and Recreation Advisory Board.

This document will be reviewed internally by BPRD on a bi-annual basis to ensure that the standards are in keeping with the best practices for design, innovation, sustainability, and industry standards. Interim changes, such as revisions or additions to the standards, are possible after discussion with staff and subsequent review and approval from the Planning Manager.

The Standards manual is considered to be a dynamic document that will continually be shaped through dialogue and demand. The practices of the Department are documented, and as practices change, so too should this manual. The responsibility for this manual is within the BPRD Planning Division. An annual review of employee input and analysis of any Standards Variance will provide updated information to consider for bi-annual changes. Any proposed changes to the manual shall be submitted to the Planning Manager for approval.

It is the responsibility of the Planning Manager that any suggested changes be reviewed and approved by other Department Managers, as necessary. The Standards manual will be revised to reflect the updated information and be distributed in the fourth quarter in order to prepare the document for the new Capitol Improvement Plan (CIP) year.

Variances and Waivers

BPRD does not intend for the standards within this manual to limit or hinder innovative design. BPRD recognizes that strict adherence to the standards herein may not be applicable or necessary in all cases. The standards do not preclude the use of different methods when special conditions or site-specific conditions are a factor provided that the alternative materials or methods of construction, design, or compliance have been approved and their use authorized by the Planning Manager. The variance/waiver must comply with the provisions of this manual and the material, method, or work must be at least the equivalent of that prescribed in this manual in suitability, strength, effectiveness, durability, and safety. The Planning Manager will review any variance or waiver request on a case by case basis and will have final approval of the variance or waiver.

There is no variance form, however any asset that is proposed to be non-standard shall be discussed with the BPRD Project Manager (PM) and noted in the drawing set for review. The proposed deviation from the requirements herein must comply with all other governing standards or documents. If a deviation from the standards is necessary or desirable, the change shall be evaluated by the staff project manager for appropriateness and applicability. If approved by the Planning Manager, the BPRD PM will add the approved variance to this manual's appendix and track it as part of an ongoing list that is updated on the BPRD server.

Purpose & Use

Design Standards Manual Purpose & Use

The Design Standards Manual (DSM) is a critical hub for other BPRD documents and processes, see Figure 1. Though all of the BPRD documents work together, the DSM outlines how park projects are coordinated, developed, processed, and built. The DSM outlines standard processes for both planning and design, as well as project management. This creates efficiency and predictability for staff as well as other users not as regularly involved in planning and design projects.

The goal of this manual is to guide users through BPRD's design process, help clarify what assets should be in a park, and establish a consistent palette of products, materials and construction methods throughout the park system. In addition, this manual outlines the implementation steps for the Master Plan goals. Once an Action Plan is determined from the CIP Process and implemented, this manual guides projects through design and construction and includes adding to the asset inventory in order to better analyze and plan how to move the City of Boulder park system forward in the Master Plan, see Figure 2.

The library of design and construction details, included in this DSM, will be utilized to streamline projects. Benefits of the standardization will be realized across the department. Specific work groups will utilize this manual for their day-to-day work as well as project review. This document will also outline a clear and consistent message to other city departments on standards involving urban park land, as well as define the primary responsibilities of BPRD.

Approval to construct park improvements will require developed designs and construction plans that comply with the standards provided in this manual and other applicable City documents. In addition to complying with this Manual, projects will need to apply for the necessary applications and meet the requirements of the City's land use regulations, permit standards, and fee assessments as prescribed in the Boulder Revised Code (BRC).

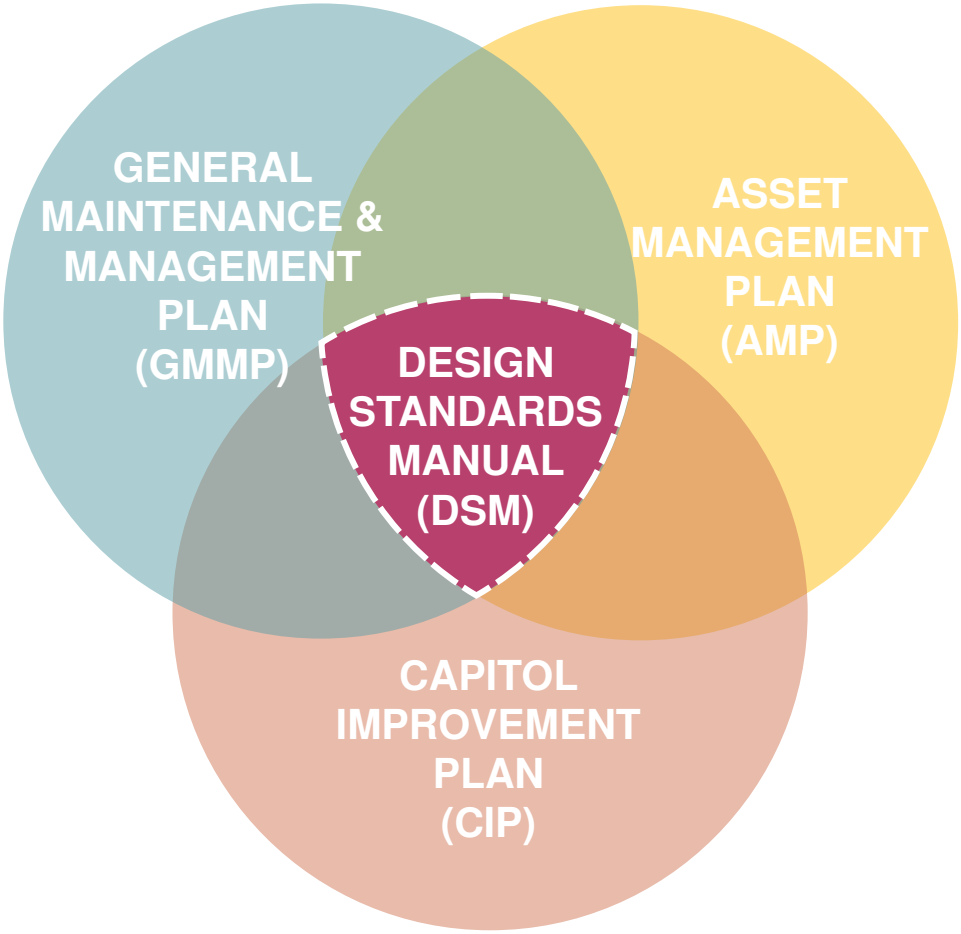


Figure 1: Document Process Diagram

Purpose & Use

Work Group Engagement

Planning, Design, and Community Engagement:

Planners, designers and project managers in this work group will utilize many aspects of the DSM. This manual will standardize processes across individual projects and project managers. Park typology definitions and examples, as well as refined asset management variables, will help planners and designers begin projects with a baseline understanding of what amenities belong where and why. The Intents, Standards, and Guidelines identified herein ensure that individual projects will have a consistent look and feel throughout the park system.

Park Operations:

This manual will assist field staff to identify specific park features that are not standard. When these features are found to be in poor condition based on the GMMP and AMP, a decision can be made to keep the asset unique, or replace with the standardized asset outlined herein. The standardization of amenities throughout the park system will increase efficiency in operations and maintenance as most parks will utilize the same criteria for these amenities. As Parks and Recreation moves into a new asset management framework and program, standardization of amenities will improve the capacity of the asset management program to track work, depreciation, and replacement of amenities across the system.

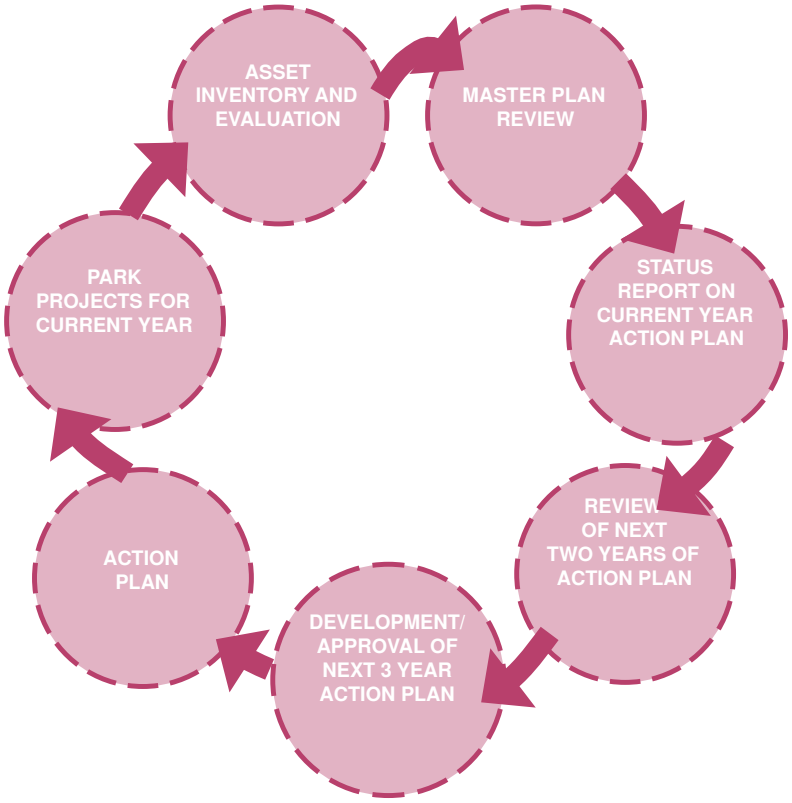


Figure 2: Planning and Implementation Diagram

Park Project Jurisdiction

Parks are a place where lands managed by different City departments are blended into seamless landscapes for users to enjoy. The development of these spaces is often complicated as there are many regulations, standards, and City departments that dictate how parks are developed. Overall, City development is guided by the Boulder Valley Comprehensive Plan and parks projects are further guided by the BPRD Master Plan, see Figure 3. Additionally, departments within the City have developed standards to guide the development of lands under their jurisdiction. This DSM is BPRD's set of standards that will guide the future development and re-development of Boulder's parkland.

Frequently, parks abut both Public Works property and Open Space and Mountain Parks (OSMP) lands at the edge of the City. While landscapes managed by different departments may look similar, the design, use, and maintenance of them varies. Many urban parks will have streetscape elements that overlap with Public Works standards. Parks at the City edge or near natural features have natural landscape areas within them that are similar to OSMP properties. This DSM is intended to develop a set of governing standards for lands owned and maintained by BPRD that will, over time, be incorporated into other Boulder department regulations.

Parks within the City of Boulder are also governed by additional regulations: local, regional, state-wide, and national. These documents will continue to be followed to meet standards and safety requirements, as applicable.

Federal, State & Local Documents

Columbine Park | Photo by City of Boulder

Documents Governing BPRD Infrastructure

These standards are intended to be used throughout the life-cycle of parks and assets for design, maintenance, and replacement. This manual outlines the typical construction details and products that will be utilized throughout the park system. The assets within the parks will adhere to this manual, but will also be required to follow additional existing standards, both national and local. This section outlines some of the other documents and standards required and what assets are impacted by those standards.

The standards in this DSM should be followed at all times for urban park projects unless approved otherwise by BPRD. If the park asset will be maintained by another Boulder department, that department's standards should be followed.

There are several existing Boulder jurisdictional documents that influence and/or govern park projects. In addition to City of Boulder documents, there are supplemental documents that govern park elements that are not Boulder specific. These standards, on the following page, are nationally recognized and are updated periodically. The most current version of the standards shall be referenced and adhered to in all City of Boulder park projects, as applicable.

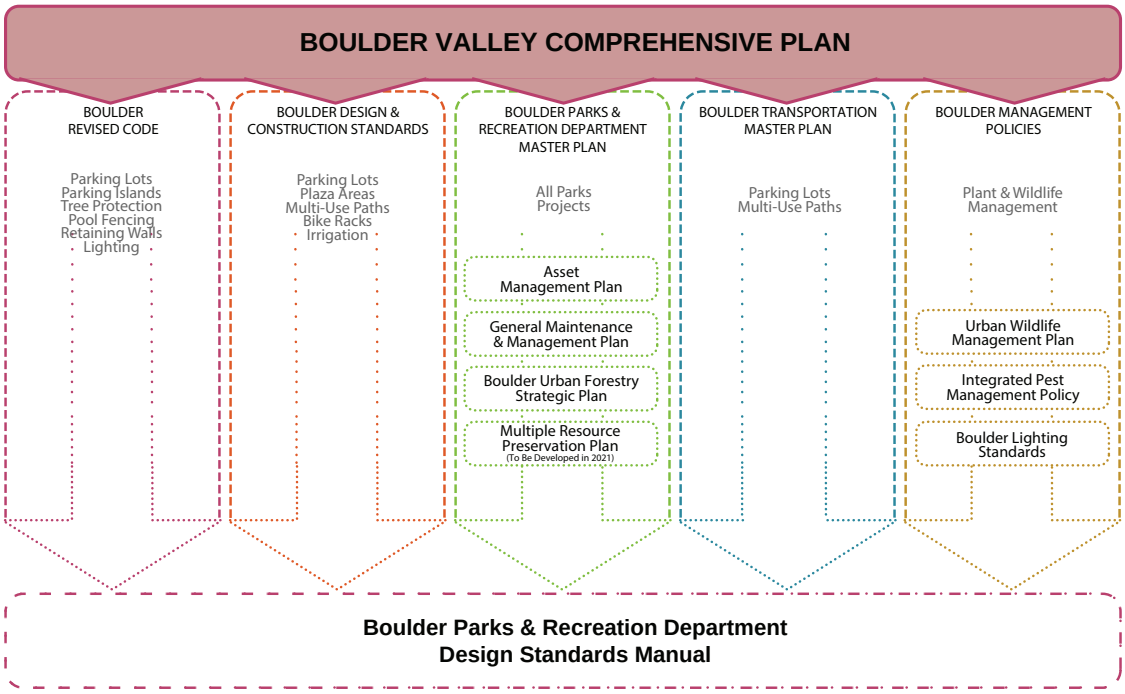


Figure 3: City of Boulder Document Relationship

Federal, State & Local Documents

Guiding Documents

- Boulder Valley Comprehensive Plan (BVCP)
- Boulder Parks and Recreation Master Plan (BPMP)
- Recreation Programs and Facilities Plan (RPFP)
- Boulder Urban Forestry Strategic Plan (UFSP)
- Aquatics Feasibility Plan
- Athletic Field Study
- Capital Investment Strategy
- Boulder Reservoir Master Plan
- Boulder Reservoir Biological Assessment
- Green Infrastructure Strategic Plan
- City of Boulder Climate Commitment Document and Sustainability Standards

Additional Governing Documents

- City of Boulder Revised Code (BRC)
- City of Boulder Design and Construction Standards (DCS)
- City of Boulder Transportation Plan
- Transportation Landscape Guidelines
- Downtown Urban Design Guidelines (DUDG)

Boulder Asset Assessment and Maintenance

- BPRD Asset Management Program (AMP)
- BPRD General Maintenance and Management Plan (GMMP)
- Urban Wildlife Management Plan (UWMP)
- Integrated Pest Management Policy (IPMP)

State Standards to Follow

- Colorado Department of Public Health and Environment (CPDHE)
- History Colorado
- Field Guide to Colorado's Historic Architecture & Engineering

National Standards to Follow

- Universal Building Code (UBC)
- Americans with Disabilities Act (ADA)
- American Society for Testing and Materials (ASTM)
- American National Standards Institute (ANSI)
- U.S. Consumer Product Safety Commission (CPSC)
- American Association of State Highway and Transportation Officials (ASSHTO)
- Occupational Safety and Health Association (OSHA)
- Clean Water Act
- National Association of City Transportation Officials (NACTO)
- National Historic Preservation Act

ASSET CATEGORY	Boulder Design & Construction Standards	Boulder Transportation Master Plan	Boulder Revised Code	IPM Policy	Urban Wildlife Management Plan	American Association of State Highway & Transportation Officials	US Consumer Product Safety Commission	American National Standards Institute	Americans with Disabilities Act	American Society for Testing & Materials
Parking Lots, Paths & Plazas	✓	✓	✓			✓			✓	✓
Park Structures			✓						✓	
Courts										✓
Fields	✓		✓	✓						
Playgrounds							✓	✓	✓	✓
Fencing & Barriers			✓		✓				✓	
Furniture								✓	✓	
Waste	✓		✓							
Signs										
Lighting			✓							
Facility Water Distribution	✓									
Vegetation	✓		✓	✓						
Horticulture	✓			✓						
Trees	✓		✓	✓						

Figure 4: Required Documents to Follow by Asset Category

2 Project Process

Emma Gomez Martinez Park | Photo by City of Boulder

Identification of Projects

Foothills Community Park | Photo by City of Boulder

Upcoming Projects

Identification of future projects and prioritization of those projects is essential to maintain the BPRD park system as one of the premier park systems in the country. Development of new parks within the Boulder Parks system, redevelopment of existing parks, and maintaining existing assets within the system must be evaluated and weighed against budgets and resources. BPRD is continually assessing the needs of the community, the distribution of existing parks and park typologies, the quality and condition of existing assets, and the long-term park development outlook from the Master Plan in order to determine which projects to undertake each year.

Annually, a list of prioritized projects is developed by the Department that includes needed maintenance projects, redevelopment projects, and new project development. This list is then assessed in coordination with the Capital Improvements Projects (CIP) process. At that time long-range capital projects are also planned for and projected out over a five year time-frame.

This CIP process identifies which projects are a priority for the City for the upcoming fiscal year. Once established as a priority project, a Project Manager and/or Project Team is assigned to oversee the project through planning, design, construction, and close-out.

The following section outlines the various processes a project must go through within BPRD and the steps along the way. From project identification to planning through design and construction this chapter walks staff and designers through typical project requirements and expectations.

Capital Planning Process

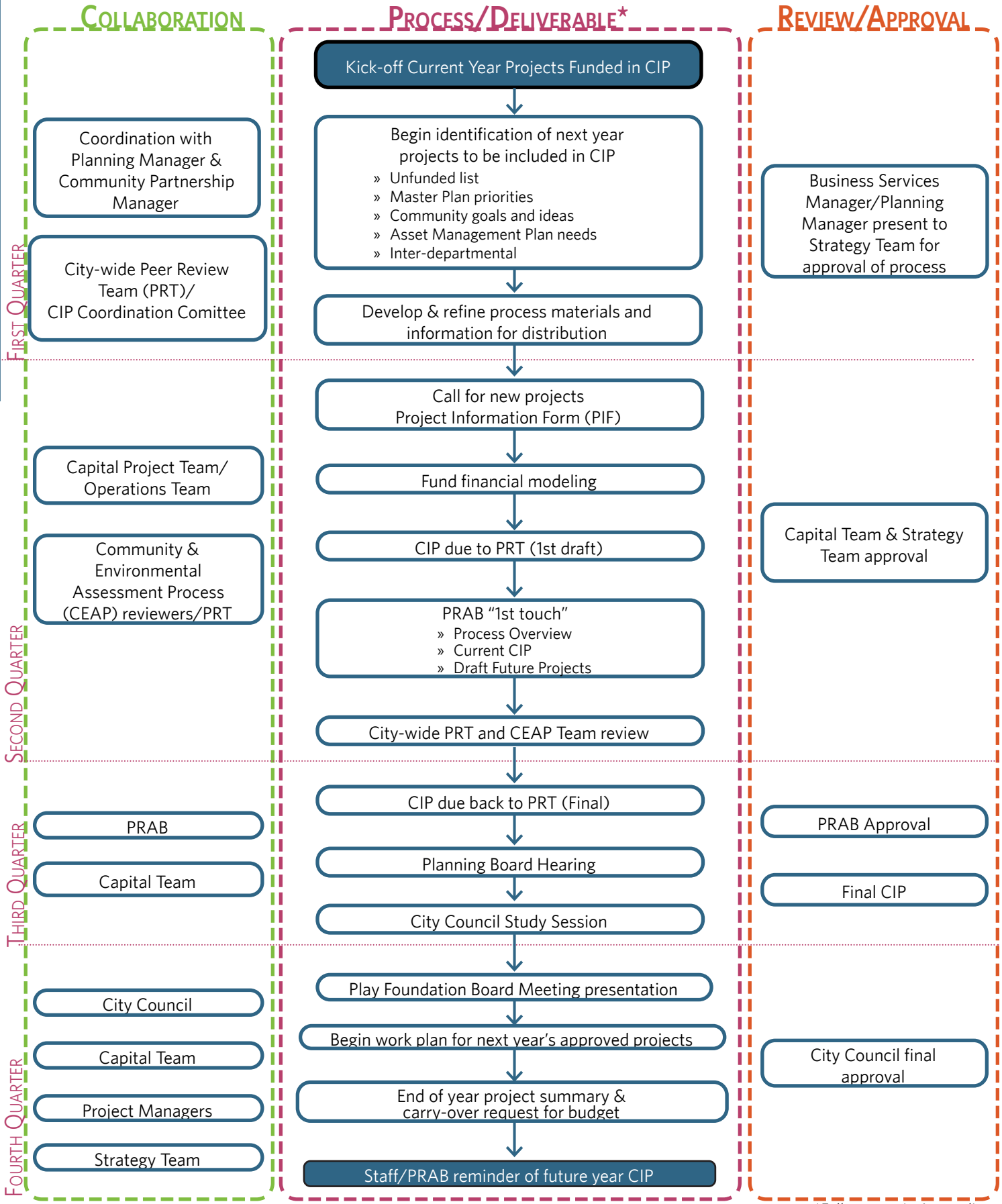


Figure 5: Annual Capital Planning Process

*Full process in Appendix

Planning Process

Parkside Park | Photo by City of Boulder

Project Planning

Once identified as a priority project for the fiscal year, the project is classified by size and type. Within BPRD there are four categories of project types that define what level of requirements a project must meet. The requirements for each category type can be found in the BPRD - Project Management Policy document. Figure 6 outlines the typical BPRD Project Management Approach for each project type and Fig. 7 is a Project Management checklist to ensure all project requirements are met. These figures outline the approach to all BPRD projects, by project type, to confirm what steps a project is to follow.

The following process in figures 8 through 12 depict typical pre-planning through construction bidding for a typical complex project. Additional project specific requirements not outlined here may also be necessary based on the unique features of the project. This should be discussed as a project team at the project kick-off meeting. Projects that fall within the other categories will follow a similar process; however, some steps will be eliminated based on the project scope and complexity.

	Routine Project	Minor Project	Moderate Project	Complex Project
Required Documents	•Schedule •Cost estimate/Bid/ Proposal •Requisition/ Purchase Order (PO)	•Project Plan ~ Includes Schedule •At least 3 informal quotes •Requisition/PO •Permits	•Project Plan ~ Includes Schedule •Public Engagement Plan •P&DS Technical Documents Review •Permits •RFP(s)/Contract(s) ~ Includes competitive bids	•Project Plan ~ Includes Schedule •Public Engagement Plan •Communication Plan •P&DS Land Use Review •P&DS Technical Documents Review •Permits •RFP(s)/Contract(s) ~ Includes competitive bids
Project Duration	Less than 1 month	Less than 3 months	Approximately 1 year	Multi-Year
Project Budget	Less than $10,000	Less than $50,000	Less than $1,000,000	Over $1,000,000
Project Completed by	Internal Teams On-call contractors Pre-approved vendors	Internal Teams, with input from technical experts, contractors, consultants	Consultant/ Contractor Team led by City PM	Consultant/ Contractor Team(s) led by City PM
Example	Bench replacement Minor repairs Consulting	Shelter replacement Playground replacement Small construction project	Complete park renovation Facility repairs	New park development Major facility repair

Figure 6: Project Management Approach

Planning Process

PROCESS STEPS	Routine Project	Minor Project	Moderate Project	Complex Project
Pre-Planning Initiation				
Confirm Funding Sources	✓	✓	✓	✓
Background Information	✓	✓	✓	✓
Public Engagement Plan			✓	✓
Project Scoping and Plan		✓	✓	✓
Consultant Procurement		✓	✓	✓
Project Charter and Refine Schedule			✓	✓
Site Analysis/Data Gathering		✓	✓	✓
Initial Public Outreach			✓	✓
Concept Planning				
Initial Concept(s) Development			✓	✓
Public Feedback Summary			✓	✓
PRAB Presentation (Matters from the Department)			✓	✓
Preferred Concept			✓	✓
Public Engagement			✓	✓
Strategy Team			✓	✓
PRAB (Discussion Item/Action Item)			✓	✓
Public Feedback Summary			✓	✓
P&DS Concept Plan Review			✓	✓
Approved Concept Plan			✓	✓
Design Development				
Refine Consultant Scope			✓	✓
50% Design Development Documents			✓	✓
Internal Review			✓	✓
90% Design Development Documents			✓	✓
P&DS Land Use Review			✓	✓
Refine Costs and Schedule			✓	✓
100% Design Development Documents			✓	✓
Construction Documents				
50% Construction Documents		✓	✓	✓
Internal Review		✓	✓	✓
90% Construction Documents		✓	✓	✓
P&DS Technical Document Review	✓	✓	✓	✓
100% Construction Documents	✓	✓	✓	✓
Identify Permits	✓	✓	✓	✓
Prepare Bid Documents and Specifications			✓	✓
Develop RFP for Contractors			✓	✓
Bidding and Construction				
Contractor Procurement	★ Material Procurement	★ As Applicable	★ As Applicable	✓
Award Contract/Issue Notice to Proceed			✓	✓
Confirm/Finalize Construction Schedule	✓	✓	✓	✓
Construction	✓	✓	✓	✓
Field Capture of Assets for Beehive	✓	✓	✓	✓
Project Monitoring/Execution	✓	✓	✓	✓
Final Punchlist		✓	✓	✓
As-Builts Provided by Consultant		★ As Applicable	✓	✓
Final Survey			✓	✓
Operations Hand-off		✓	✓	✓
Final Inspections	✓	✓	✓	✓
Warranty Period (2 years)		✓	✓	✓
Certificate of Occupancy			✓	✓
Purchasing Closeout/Release of Retainage	✓	✓	✓	✓
Post Occupancy Review (1-2 years after construction)				✓
	✓ Required			
	✓ Suggested			

Figure 7: Project Category Checklist

Pre-Planning and Initiation

Process Components

Pre-planning for a project develops the ultimate goals, budget, and timeline for a project within the BPRD. This process outlines the steps each project must take to prepare both the team and the project for design and construction. During this process the project is confirmed, the team is assigned (both internal and external), outreach plans are developed, and the site is assessed.

Process Outcomes

- Fully developed project plan
  - » Departmental leadership buy-in/approval
- Consultant selected
- Initial site analysis completed
- Initial Planning and Development Services (P&DS) conversations completed

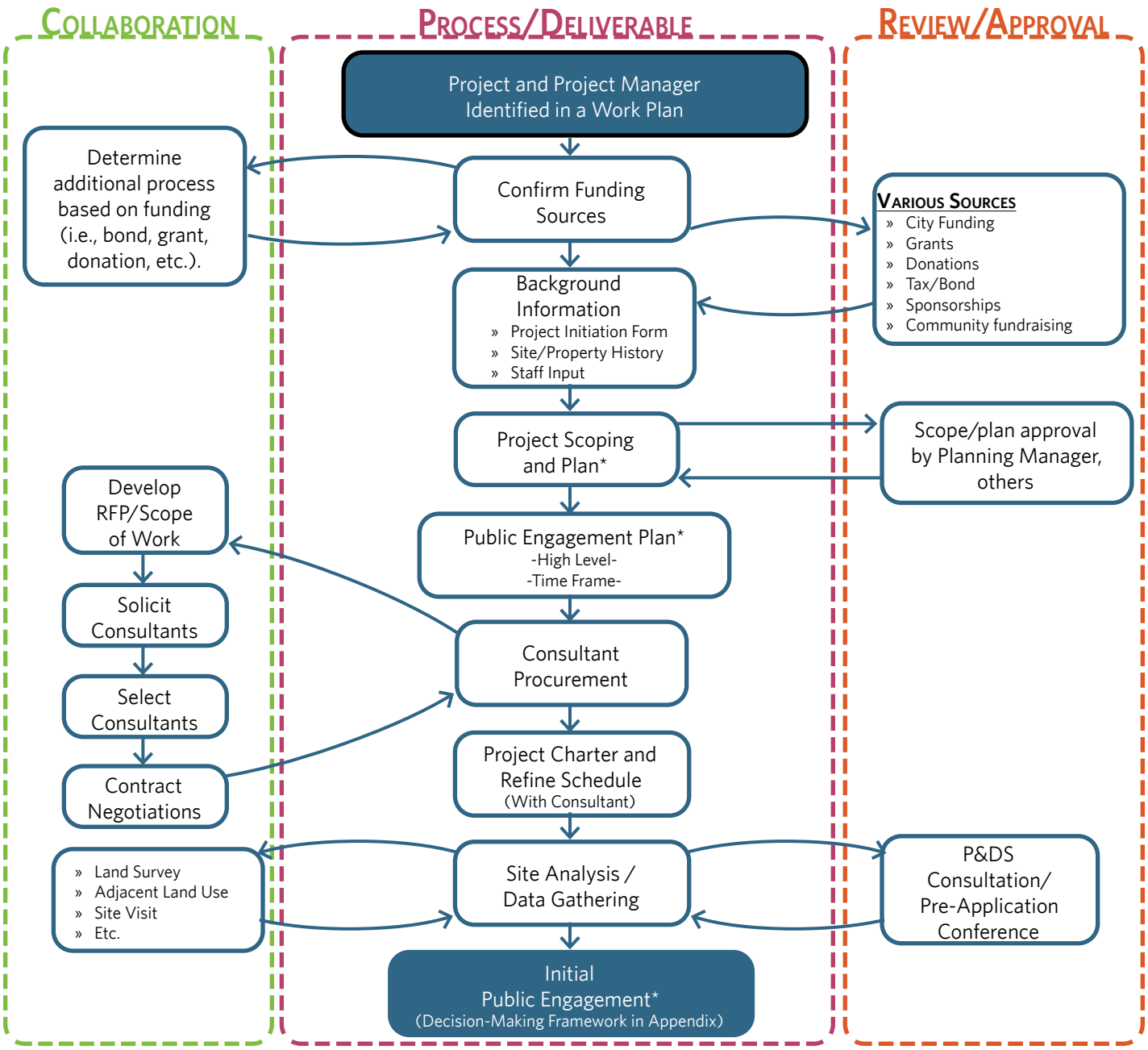


Figure 8: Pre-Planning and Initiation Process

*Template in Appendix

Planning and Design Process

Pineview Park | Photo by City of Boulder

Project Development

After a consultant is selected, the BPRD Project Manager coordinates a project schedule with the consultant based on the stages of design and anticipated work products required, as stated in the Request for Proposals (RFP). The consultant then works with BPRD, the community, park needs, park requirements, and knowledge of the site and surroundings to develop a plan for the park. This plan will incorporate park settings and assets based on the identified park typology and the unique needs of the community and the park.

In order to ensure the project is complying with all City codes, plans, and expectations, after each stage of the project, the consultant will submit the project for review by BPRD. The review process length will depend upon the project stage. Once BPRD has reviewed the project, they will issue a set of comments for the consultant to incorporate into the next stage. During the subsequent project stage the consultant will submit a comment response form on how the City's comments are being incorporated into the design.

As the design is developed, the BPRD Project Manager and the consultant work through park asset details to determine if the assets will be developed as standards and follow the details in Chapter Four of this manual, or if the assets will be unique to the park. If the assets will be unique, approval from the Planning Manager is required.

Typical Stages of Design

- Site Assessment and Analysis
  - » Site visit
  - » Review of adjacent areas
  - » Confirm Existing Entitlements with Planning and Development Services
  - » Site Background and History
  - » Identify Potential Donations
  - » Analysis of location, connections, terrain and climate
- Concept Design
  - » Public engagement
  - » Graphic Plan of site and surroundings
  - » Precedents
  - » Conclusion of Site Analysis
  - » Connections off-site
  - » Diagrams of spatial relationship of park settings
  - » Cost Estimating
- Schematic Design
  - » Plan of site and surroundings
  - » Preliminary project costs
  - » Spacial layout of project assets
- Design Development
  - » Public Engagement
  - » Estimate of project costs to Class 3 level, as defined by the US Department of Energy
  - » Document set: grading, layout, planting, irrigation
  - » Project graphics
- Construction Documentation
  - » Estimate of project costs to Class 2 level, as defined by the US Department of Energy
  - » Construction level document set
  - » Project specifications
  - » Bid document set
  - » Bidding and negotiations

Concept Planning

Process Components

Concept Development builds on project initiation by developing design ideas based on elements from the previous process (site analysis, funding/budget, background information) and developing that alongside community input and staff/team feedback. During this process an initial concept is developed. It is then considered by the community and staff to ensure that the concept reflects the site and needs.

A similar process to that outlined below is utilized for Master Plans and Strategic Plans. Rather than alternative concepts, alternative policies are vetted for a preferred policy to implement.

Process Outcomes

- Approved concept plan
  - » PRAB, Planning Board, Council (as appropriate)
  - » P&DS
- Collaboration phase of public engagement completed
- Refined schedule and costs

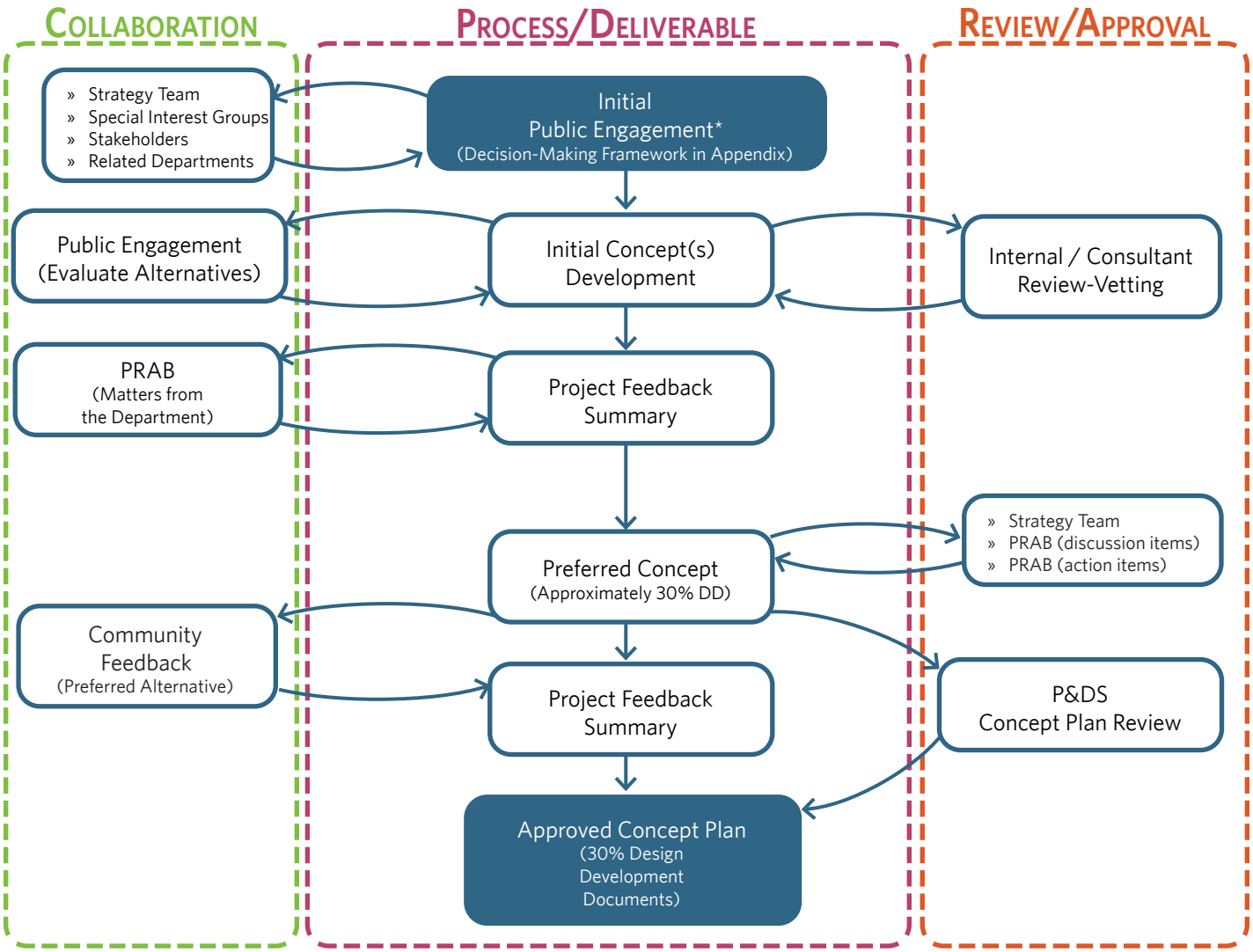


Figure 9: Concept Planning Process

Design Development

Process Components

Design development further explores and details the Concept design phase of the project. The process of Design Development is to finalize design details, secure necessary approvals, and refine the project budget prior to proceeding with construction. Prior to submitting for approvals, the design documents should have incorporated content up to 100% design. However, through the review process, adjustments to the final documentation of this phase should be anticipated.

Process Outcomes

- Land Use Review completed and approved
- Phasing and/or alternates determined
- Refined schedule and opinions of costs
- Confirmed intent from major donors
- Finalized Design Development Package

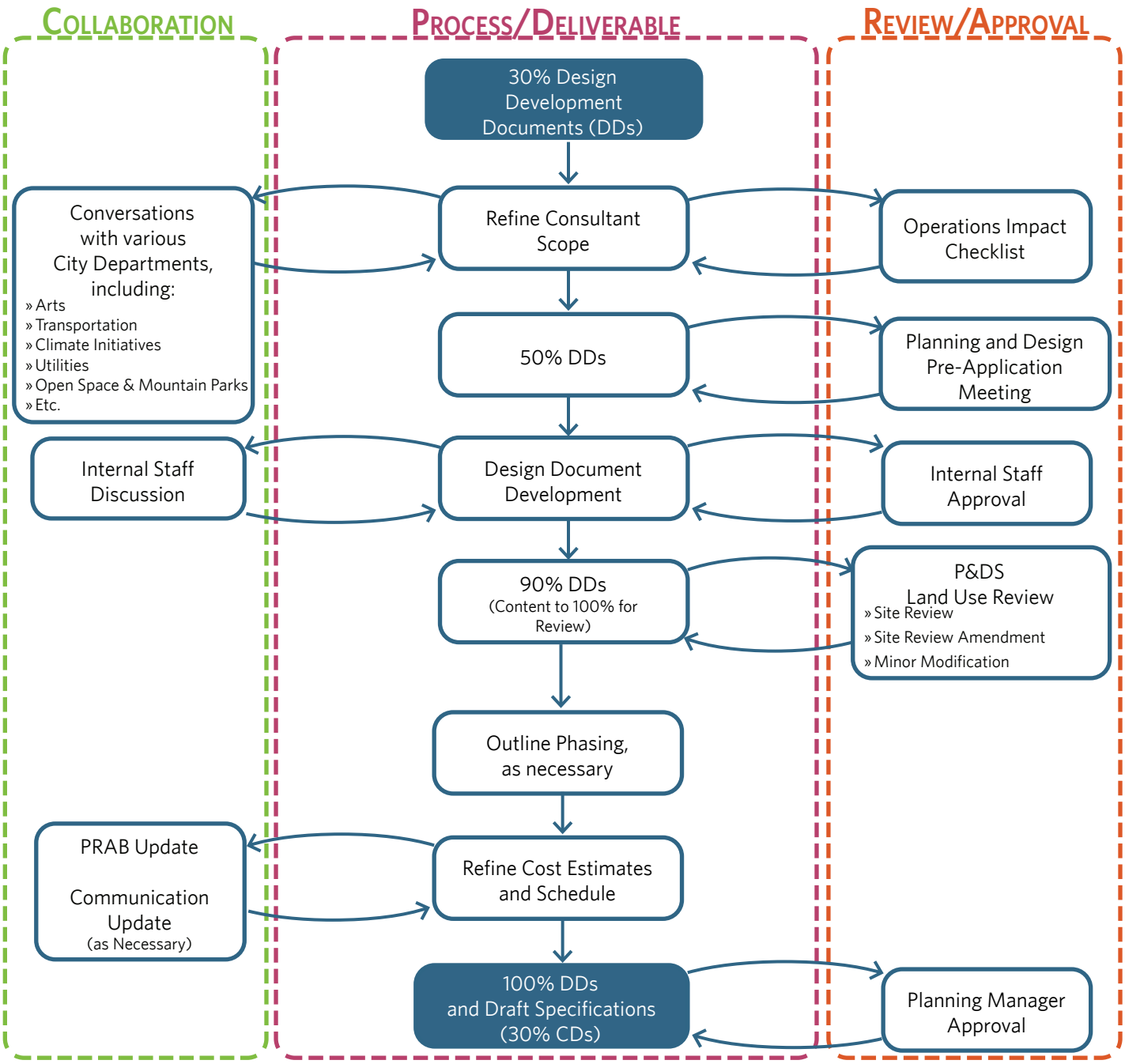


Figure 10: Design Document Process

Construction Documents

Process Components

The construction documentation process involves developing the design documents into construction-ready documents that can be bid and priced. Design review is complete for the project, but a final technical review and permitting is required to ensure the documents meet the City of Boulder and applicable standards. Final documentation also involves planning for and coordinating pre-construction activities. This may include identifying and applying for permits, reviewing and coordinating with Operations and developing a construction timeline to coordinate with project needs and other potential construction work in the project area.

Process Outcomes

- 100% CDs and bid documents completed
- Technical Document Review completed and approved
- Construction phase communication plan developed
- Refined schedule and costs
- Building Permit ready drawing set

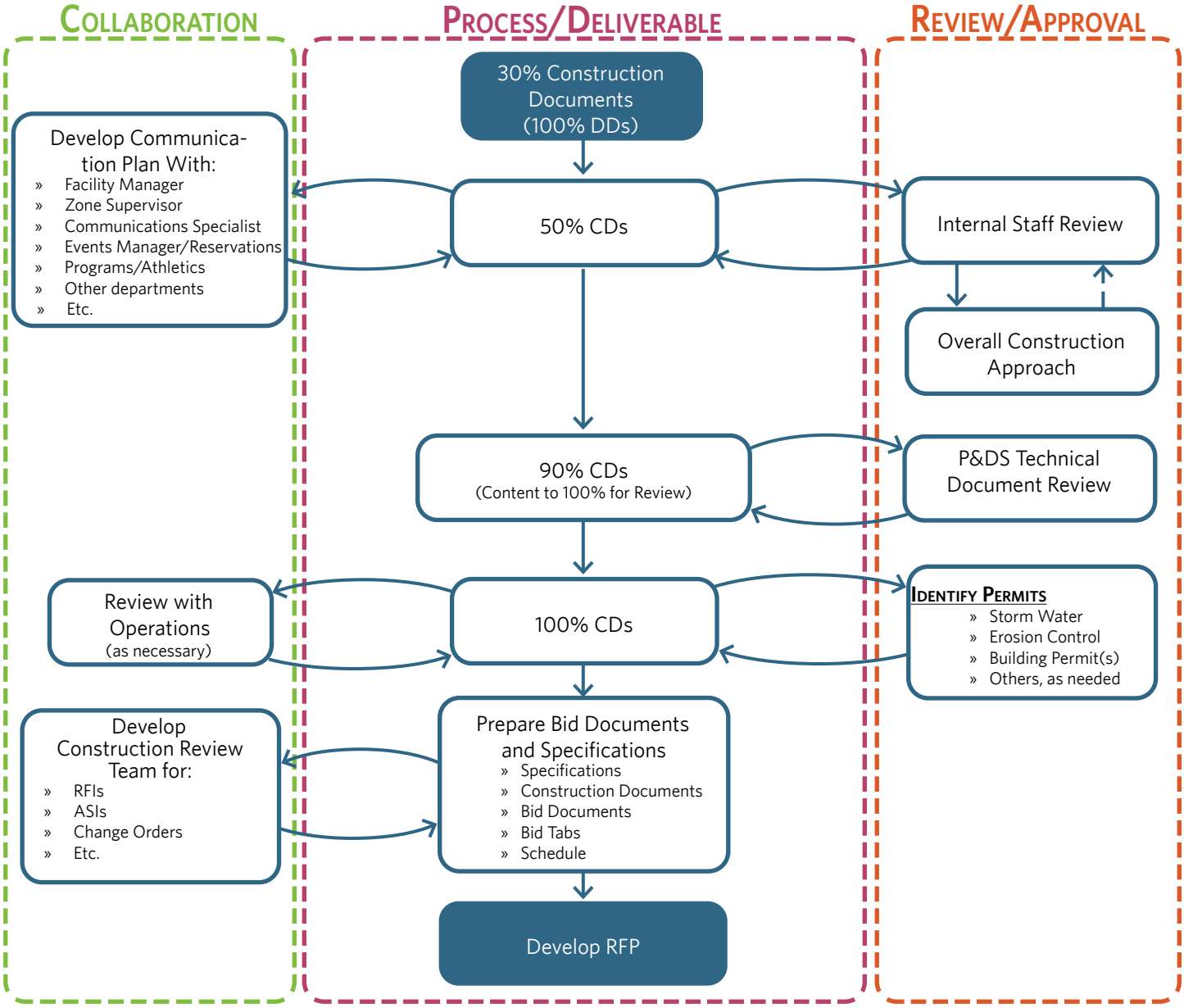


Figure 11: Construction Document Process

Construction Process

Scott Carpenter Park | Photo by City of Boulder

Procurement, Construction, and Close-Out

The construction process is a highly monitored and engaged portion of the project. It is often complicated and can be unpredictable due to unknown site factors. Often, these factors are addressed prior to construction starting by the construction review team resolving any questions and clarifying design elements through ASIs and RFIs. The construction team is typically comprised of the BPRD Project Manager, the consultant and the contractor's project manager. Resolving questions with the construction review team prior to construction starting helps the construction process to be more streamlined and to ensure that the park or facility is built as-designed.

Unforeseen issues may develop during the construction process. If so, the team will coordinate to find a solution in-keeping with the intent of the park or facility design and all applicable City requirements. If it is not possible to construct the project as designed or if clarification is needed for the design, an RFI, ASI, change order, or similar process may be used to clarify the design and have the construction review team evaluate the changes. If this occurs and a change in overall project cost is warranted, the Team will work collaboratively to come up with a cost-effective solution that is in keeping with the original design intent of the project.

At the end of construction the contractor and consultant will develop a set of record project documents that incorporate any changes that occurred to the approved design during construction. This set of documents will be submitted with all associated plans, specifications, and digital files. This final set of documents assists the City of Boulder in its Operations and Maintenance of the park during its life cycle.

Typical Components of Construction

- Permitting
  - » Submit for applicable permits to City, State, and any other governing agency
  - » Request Weed Management Plan Approval
- Construction Kick-off Meeting
  - » Site visit
  - » Review of questions
  - » Review of submittals process
- Submittals, Request For Information (RFI), Architect's Supplemental Information (ASI), Proposal Request (PR/CPR)
  - » Submittal to Boulder PM
  - » PM to submit to Consultant
  - » Change Orders
  - » Record changes in project documents
- Meetings and Site Visits
  - » OAC Meetings
  - » Site Visits
  - » Field reports
  - » Punch Walk
- Project Closeout
  - » Final punch walk review
  - » Final set of record documents (As-Builts) to BPRD from Consultants and Contractor
  - » Final set of specifications, if changed, to BPRD
  - » Schedule Walks at 12 months and 24 months for Plant Material Replacement

Bidding & Construction

Process Components

Construction bidding and project completion is the culmination of all the planning, outreach, and design work for the project. This process is highly collaborative involving participation and coordination from all team members as well as the community and additional City entities.

Process Outcomes

- Final inspections completed and/or Certificate of Occupancy issued
- As-Builts, provided by consultant, electronically filed
- Asset Management Software (Beehive) updated
- Post-occupancy review scheduled (1-2 years following construction)
- Facility transferred to Operations/Facility staff for operations and maintenance

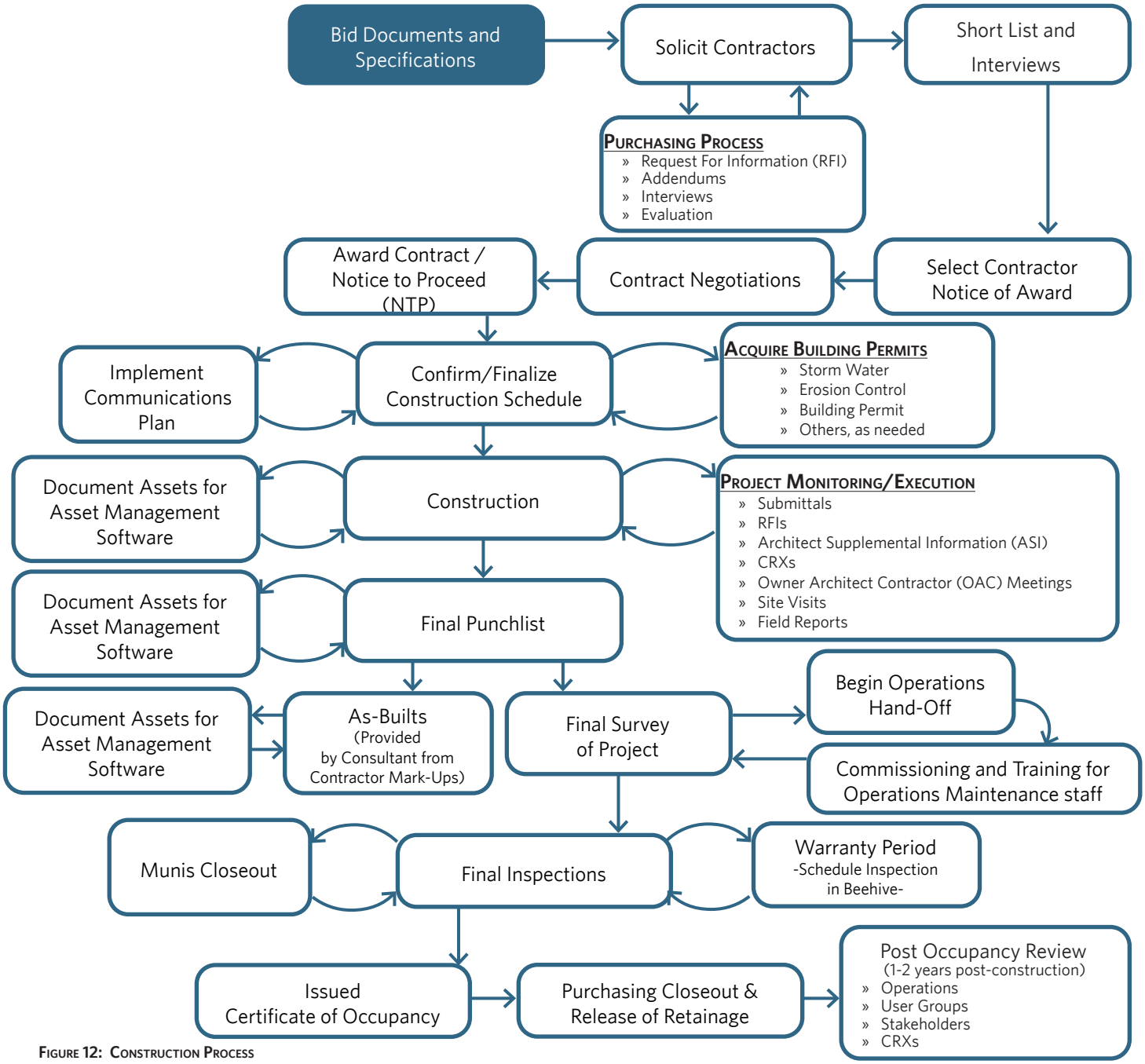


Figure 12: Construction Process

Maintenance & Operations

Valmont City Park | Photo by Tom Jones

Life-cycle of Parks

Each park asset has associated costs for purchase, installation, potential additional staff, on-going maintenance, and ultimate replacement within its life-cycle. The life-cycle of parks depends on the tracking and maintenance of its assets and all projects should be designed and planned with maintenance in mind. Effective upkeep and maintenance of park assets, coupled with adequate park staffing, can minimize replacement costs and maximize user experience. Eventually, renovation and replacement of assets is more cost effective than continual maintenance.

The maintenance and operation of the Boulder Parks system is governed by the Asset Management Plan (AMP) and the GMMP. These documents work together to create a standard rating system for assets that BPRD manages (AMP) and how these assets are managed, maintained, and ultimately replaced (GMMP). This Standards Manual creates a further link to outline what should be installed at BPRD properties in accordance with how the GMMP ensures that the operations and maintenance practice standards are met.

Existing parks and assets are evaluated for replacement and renovation based on the AMP. This program details how to identify the condition of existing assets. If the condition is deemed to be Poor or Serious, based on Assessment Scoring, the asset and/or park is listed on the overall Matrix of Conditions that the Parks Department manages. This matrix assists the Parks Department in prioritizing the list of replacement and capital projects to the CIP.

Asset Condition Rating

- Serious
- Poor
- Fair
- Good
- Excellent

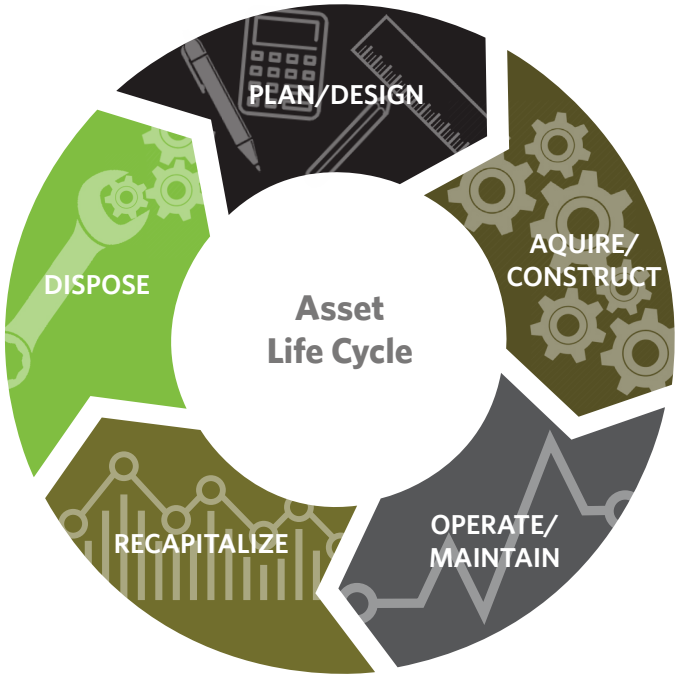


Figure 13: Park Life-cycle

3 Asset Management

East Palo Park | Photo by City of Boulder

Defining Park Typologies

Wonderland Lake Park | Photo by City of Boulder

Defining Features of Each Typology

The Boulder Park system is classified into eight distinct park typologies based on a variety of factors such as: size, use, assets, location, density of users, facilities and vegetation. The typologies are: Neighborhood Parks, Community Parks, City Parks, Civic Spaces, Recreational Facilities, Specialized Facilities, Natural Areas and Community Use Areas. These typology categories assist BPRD in determining how to prioritize the management of existing parks, facility programing and the development of new parks.

For management, the typology classification is a portion of the evaluation tools used by BPRD. These tools also look at the assessment of needs, conditions of assets and anticipated level of service for each park in the BPRD system when prioritizing park projects. When planning a new park, the typology of the park will be assigned by the City of Boulder based on park size, anticipated user groups, community needs and project location. The given typology will then inform what elements or assets will be anticipated in the park.

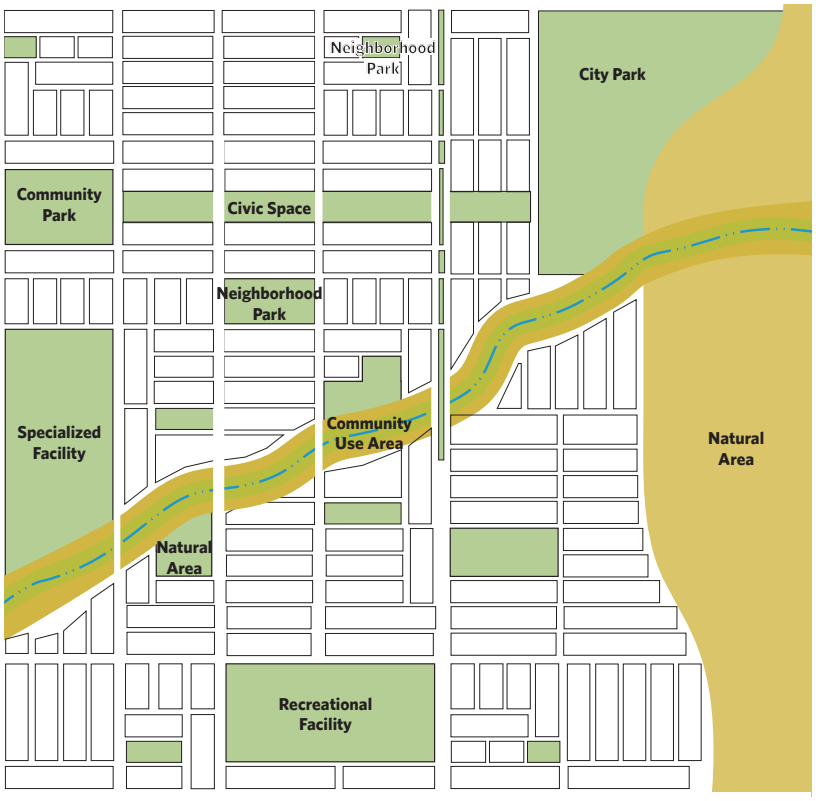


Figure 14: Typical Typology Location

Park Elements

Bear Creek Park | Photo by City of Boulder

Park Assets and Modifiers

Within each typology defined in this section there are accompanying lists of 'typical assets' and 'typical modifiers'. An 'asset' is defined as an amenity such as a playground, picnic shelter, basketball court or athletic field that allows people to exercise, socialize and maintain healthy, physical, mental and social wellbeing. In contrast, a basic site amenity that supports users during a visit to a park or recreation site is considered a "modifier". These modifiers typically include supporting elements that add comfort for the user, but not activity. Items such as restrooms, shade (both trees and shelters), parking, benches, lighting, picnic tables and drinking fountains are listed as modifiers.

Within the typology categories in this chapter there are two lists, a list of assets and modifiers that currently exist in the BPRD parks and a list of potential assets and modifiers that may either be added to existing parks through renovation, or used as a list of potential elements for a new park development. These should not be used as checklists of what should be included, rather they should be used as a starting point for potential elements to include based on the specific site and location, the voice of the community and the needs of BPRD.

The list of existing elements within the Boulder park system will assist in guiding new park development to coordinate with the existing park inventory. As park design and user interests evolve, new and additional park assets and modifiers may be desired to incorporate into the various park typologies.

Neighborhood Park

Dakota Ridge Park | Photo by City of Boulder

Typology Statistics

- Number of Parks: 45
- Total Area: 220 acres
- Average Park Size: 7 acres

Existing Park List

- Admiral Arleigh A. Burke
- Arapahoe Ridge
- Arrowwood
- Aurora 7
- Barker
- Beach
- Bear Creek
- Bill Bower
- Bluff Park
- Campbell Robertson
- Canyon Pointe
- Catalpa
- Christensen
- Columbine
- Crestview
- Dakota Ridge
- East Palo
- Eaton
- Edward Sell Smith
- Elks
- Elmer's Two Mile
- Emma Gomez Martinez
- Fitzpatrick
- Fortune
- Greenleaf
- Heatherwood
- Hiram Fullen
- Holiday
- Howard Heuston
- Keewaydin Meadows
- Lover's Hill
- Meadow Glen
- Melody
- North Palo
- Palo Central South
- Park East
- Parkside
- Pineview
- Salberg
- Shanahan Ridge
- Sinton
- Tantra
- Violet
- Washington School
- Wonderland Lake

Existing Neighborhood Park Elements

Neighborhood parks are the most prolific park type in the BPRD system and exhibit a board range of variety in size and amenities provided. Typically, neighborhood parks range in size between one and 20 acres and are often located within walking distance of neighborhood residences. Neighborhood parks often have a variety of play opportunities, but these features are smaller in scale and sometimes have multiple uses. These smaller parks within Boulder's system were further analyzed beyond size to determine what assets and modifiers are common within the current existing parks. A list of existing assets and modifiers are listed as well as an expanded list of assets and modifiers that could potentially be included in expansions, renovations and new park development.

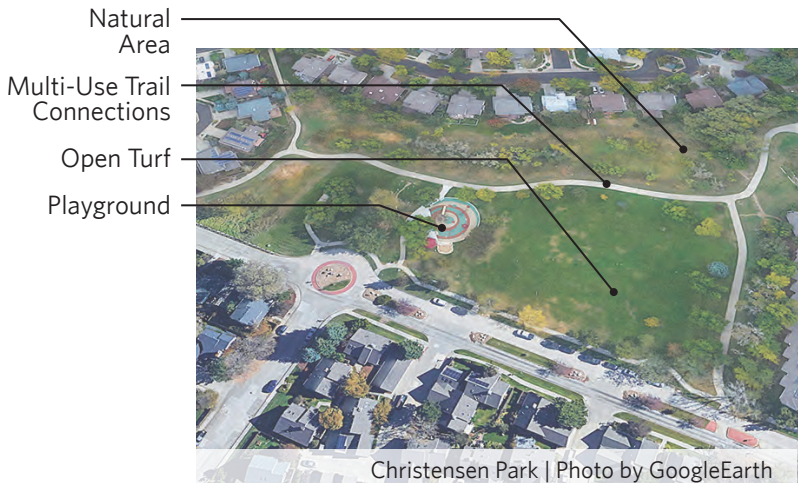
While neighborhood parks tend to serve the neighbors within a mile radius of the park, some site specific park elements may draw users from a greater area. The assets and modifiers found within these parks should be generally consistent with the existing neighborhood park site elements, but the park design and what is ultimately included in the park should be tailored to the needs of the adjacent community, the park location and the needs within the park system.

Typical Assets

- Playground, local
- Park shelter, large or small
- Athletic court or field (i.e., diamond field, tennis court or basketball court)
- Natural areas
- Open turf
- Trail, multi-use
- Garden, display
- Natural Exploration Areas

Typical Modifiers

- Seating
- Shade
- Bicycle racks



Christensen Park | Photo by GoogleEarth

Neighborhood Park

Melody Park | Photo by City of Boulder

Emma Gomez Martinez Park | Photo by City of Boulder

Potential Features of Neighborhood Parks

Desirable Assets

- Playground, local
- Shelter, large or small
- Athletic court or field (i.e., tennis court or basketball court)
- Natural areas
- Open turf
- Trail, multi-use
- Garden, display
- Water access
- Natural Exploration Areas
- Educational experience
- Loop walk
- Passive node
- Rectangular field, small or large

Not Likely Found Assets

- Aquatics, spray pad
- Climbing, designated
- Climbing, general
- Diamond field
- Diamond field, practice
- Fitness course
- Game court
- Garden, community
- Horseshoe court
- Multi-use pad
- Picnic ground
- Public art
- Skate feature
- Tennis, practice wall
- Trail, primitive
- Volleyball court
- Wall ball court
- Water, open
- Winter sport

Never Found Assets

- Adventure course
- Amusement ride
- Aquatics, complex
- Aquatics, lap pool
- Aquatics, therapy pool
- Batting cage
- Bike complex
- Bike course
- Camping
- Concession
- Disc golf
- Dog park
- Equestrian facility
- Event space
- Golf
- Horseshoes complex
- Ice hockey
- Inline hockey
- Pickleball court
- Playground, destination
- Rectangular field complex
- Rectangular field, multiple
- Skate park
- Target range
- Tennis complex
- Track, athletic
- Trail, water
- Trailhead
- Water access, developed
- Water access, general
- Water feature

Desirable Modifiers

- Seating
- Shade
- Bicycle racks

Not Likely Found Modifiers

- BBQ grills

Never Found Modifiers

- Restrooms
- Drinking fountains
- Security lighting
- Parking lot

Community Park

Foothills Community Park | Photo by City of Boulder

Existing Park List

- Area III
- Chautauqua Park
- East Boulder Community Park
- Eben G. Fine Park
- Foothills Community Park
- Harlow Platts Community Park
- Martin Park
- North Boulder Park
- Scott Carpenter Park
- Tom Watson Park

Typology Statistics

- Number of Parks: 10
- Total Area: 450 acres
- Average Park Size: 45 acres

Existing Community Park Elements

Larger and more varied in activity, community parks are less numerous then neighborhood parks within the City. Community parks are approximately 20-100 acres and serve residents from multiple neighborhoods. Typically, this larger area is accommodated by providing greater trail connection to greenways and paths as well as providing bike and vehicle parking. Community parks provide space for recreational activities that serve a wider population than the adjacent neighborhood and are intended to serve a larger geographic area of the city.

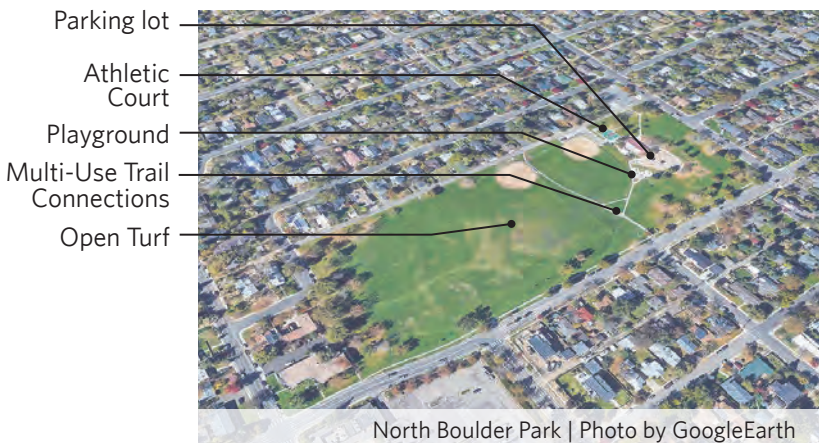
Due to the size of park within this typology, not all of the park is programmed and manicured. Often community parks include a mix of natural areas and developed facilities. These facilities may include playgrounds, open turf fields, shelters or pavilions, dog parks, hard court areas and more. Because these parks are larger, the assets and modifiers that are included may occur multiple times in various places throughout the park in order to serve different age groups, user groups, as well as to distribute use throughout the park.

Typical Assets

- Trail, multi-use
- Water access
- Open turf
- Garden, display
- Park shelter, large or small
- Playground, community
- Athletic court or field (i.e., diamond field, tennis court or basketball court)
- Natural lands

Typical Modifiers

- Parking
- Shade
- Seating
- Restrooms
- Bicycle racks
- Picnic table(s)



North Boulder Park | Photo by GoogleEarth

Community Park

Foothills Community Park | Photo by City of Boulder

Chautauqua Park | Photo by City of Boulder

Defining Features of Community Parks

Desirable Assets

- Trail, multi-use
- Water access
- Open turf
- Garden, display
- Shelter, large or small
- Playground, destination
- Athletic court (i.e., tennis court or basketball court)
- Rectangular field, small or large
- Natural areas
- Aquatics, spray pad
- Basketball, practice
- Climbing, general
- Educational experience
- Loop walk
- Passive node
- Picnic ground
- Public art
- Skate feature
- Volleyball court
- Wall ball court
- Water feature

Not Likely Found Assets

- Adventure course
- Aquatics, complex
- Aquatics, leisure pool
- Bike course
- Climbing, defined
- Concession
- Diamond field
- Diamond field, practice
- Dog park
- Event space
- Fitness course
- Game court
- Garden, community
- Horseshoe court
- Inline hockey
- Multi-use pad
- Pickleball court
- Tennis, practice wall
- Trail, primitive
- Water, open
- Winter sport
- Trailhead

Never Found Assets

- Amusement ride
- Batting cage
- Bike complex
- Camping
- Climbing, designated
- Diamond field, complex
- Disc golf
- Equestrian facility
- Golf
- Horseshoes complex
- Ice hockey
- Playground, local
- Rectangular field complex
- Target range
- Tennis complex
- Track, athletic
- Trail, water
- Water access, developed

Desirable Modifiers

- Parking lot
- Shade
- Seating
- Restrooms
- Bicycle racks
- Picnic table(s)
- BBQ grills

Not Likely Found Modifiers

- Security lighting

Never Found Modifiers

- N/A

City & Regional Parks

Valmont City Park | Photo by City of Boulder

Existing Park List

- Valmont City Park
- Boulder Reservoir
- Flatirons Golf Course

Typology Statistics

- Number of Parks: 3
- Total Area: 373 acres
- Typical Park Size: 100 to 700 acres

Existing City Park Elements

City and regional parks are large, ranging from 120 acres to over 700 acres, and serve the entire city and surrounding region. These parks often have specialized assets that were developed with a specific use in mind and modifiers that draw regional users to the park. City and regional parks often have a variety of different use areas within a larger park and provide space for both a variety of high-intensity recreational activities as well as tracts of open space and natural lands for more passive recreation. These parks provide a large enough scale, central area or other unique properties that draw users from the greater region. These properties may have the ability to host large or small events such as concerts, festivals, and are often destination points for visitors. These various recreational activities are interconnected through a network of trail and path systems that allow the user to navigate the park to utilize and enjoy the variety of opportunities a city park has to offer as well as access from throughout the region.

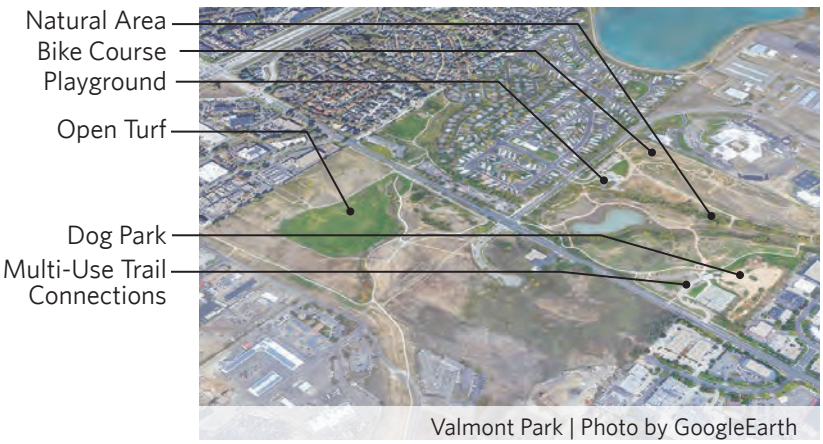
Within the BPR system, there is currently only one formally named city park, Valmont City Park. Both the Boulder Reservoir and Flatirons Golf Course are similar to Valmont City Park in terms of the regional draw and providing specialized recreation areas and programming. Though these areas have a wide variety of assets and activities, future additions to the parks should be guided by the needs of the entire community and region that is served in conjunction with the potential assets and modifiers for city and regional parks, rather than the list of existing assets and modifiers.

Typical Assets

- Open turf
- Trail, multi-use
- Natural areas
- Garden, display
- Passive node
- Trail, primitive
- Food services, restaurant, and/or concessions

Typical Modifiers

- Parking
- Seating
- Restrooms
- Shade
- Bicycle racks



Valmont Park | Photo by GoogleEarth

City & Regional Parks

Valmont City Park | Photo by City of Boulder

Valmont City Park | Photo by City of Boulder

Defining Features of City Parks

Desirable Assets

- Garden, display
- Natural areas
- Open turf
- Passive node
- Trail, multi-use
- Trail, primitive
- Aquatics, lap pool
- Aquatics, leisure pool
- Aquatics, spray pad
- Aquatics, therapy pool
- Athletic court (i.e., tennis court, or basketball court)
- Basketball, practice
- Bike course
- Climbing, general
- Diamond field
- Diamond field, practice
- Disc golf
- Dog park
- Educational experience
- Fitness course
- Game court
- Horseshoe court
- Loop walk
- Multi-use pad
- Passive node
- Pickleball court
- Picnic ground
- Playground, destination
- Public art
- Rectangular field, large or small
- Shelter, large or small
- Skate feature
- Tennis court
- Tennis, practice wall
- Trailhead
- Volleyball court
- Wall ball court
- Water feature

Not Likely Found Assets

- Adventure course
- Aquatics, complex
- Climbing, designated
- Diamond field, complex
- Garden, community
- Horseshoes complex
- Inline hockey
- Skate park
- Garden, community
- Trail, water
- Water, open
- Winter sport

Never Found Assets

- Amusement ride
- Batting cage
- Camping
- Equestrian facility
- Golf
- Ice hockey
- Playground, local
- Target range
- Tennis complex
- Track, athletic

Desirable Modifiers

- Bicycle racks
- Drinking fountains
- Parking lot
- Restrooms
- Seating
- Security lighting
- Shade

Not Likely Found Modifiers

- BBQ grills

Never Found Modifiers

- N/A

Civic Spaces

Civic Park | Photo by City of Boulder

Existing Park List

- Civic Park
- Carnegie Library
- Central Park
- Civic Plaza
- George Reynolds Library

Typology Statistics

- Number of Parks: 6
- Total Area: 26 acres
- Average Park Size: 4 acres

Existing Civic Space Elements

Civic spaces are used for community gatherings and have more passive uses rather than active uses. These areas are found in denser areas of the city and are intended for all residents, visitors and users to enjoy. They are often coupled with a building or buildings that have a civic or municipal use. Civic spaces may be more programmed than typical parks due to their centralized location and adjacency to other uses.

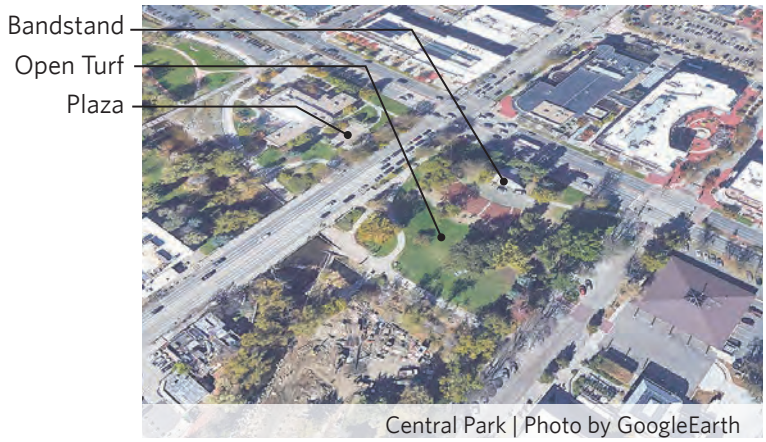
These park spaces tend to have more seating and manicured areas than previous park typologies. Shelters, pavilions and other gathering spaces coupled with plazas, seating, play areas, art and access help to make these spaces available for all community members to enjoy.

Typical Assets

- Garden, display
- Trail, multi-use
- Water access
- Playground, community
- Public art
- Education experience

Typical Modifiers

- Seating
- Bicycle racks
- Shade
- Parking lot



Central Park | Photo by GoogleEarth

Civic Spaces

Boulder Public Library | Photo by City of Boulder

Civic Park | Photo by City of Boulder

Defining Features of Civic Spaces

Desirable Assets

- Education experience
- Garden, display
- Public art
- Trail, multi-use
- Climbing, general
- Concession
- Event space
- Loop walk
- Open turf
- Passive node
- Picnic ground
- Playground, destination
- Shelter, large or small
- Skate feature
- Trail, water
- Trailhead
- Water access, developed
- Water access, general
- Water feature

Not Likely Found Assets

- Multi-use path
- Natural areas
- Playground, local
- Trail, primitive

Never Found Assets

- Adventure course
- Amusement ride
- Aquatics, any
- Athletic complex
- Courts (any)
- Batting cage
- Bike complex
- Bike course
- Climbing, designated
- Diamond field (any)
- Disc golf
- Dog park
- Fitness course
- Garden, community
- Golf
- Horseshoe (any)
- Ice hockey
- Inline hockey
- Rectangular field (any)
- Skate park
- Target range
- Tennis, practice wall
- Water, open

Desirable Modifiers

- Bicycle racks
- Drinking fountains
- Parking lot
- Restrooms
- Seating
- Shade

Not Likely Found Modifiers

- BBQ grills

Never Found Modifiers

- N/A

Recreational Facilities

Spruce Pool and Youth Services | Photo by City of Boulder

Typology Statistics

- Number of Parks: 7
- Total Area: 115 acres
- Average Park Size: 15 acres

Existing Facility List

- Centennial Tennis Courts
- East Mapleton Ballfields
- Fredrick Law Olmsted Jr. Park
- Gerald Stazio Ballfields
- Knollwood Tennis Courts
- Pleasant View Fields Sports Complex
- Spruce Pool and Youth Services

Existing Recreational Facilities Elements

Recreational facilities support both passive and active recreation for general informal use by the public as well as specialized or scheduled use for athletic competitions, recreation programs and other events. Though these facilities may vary in size, they are typically large enough to accommodate a variety of uses and may also include a building for indoor, programmed recreational opportunities.

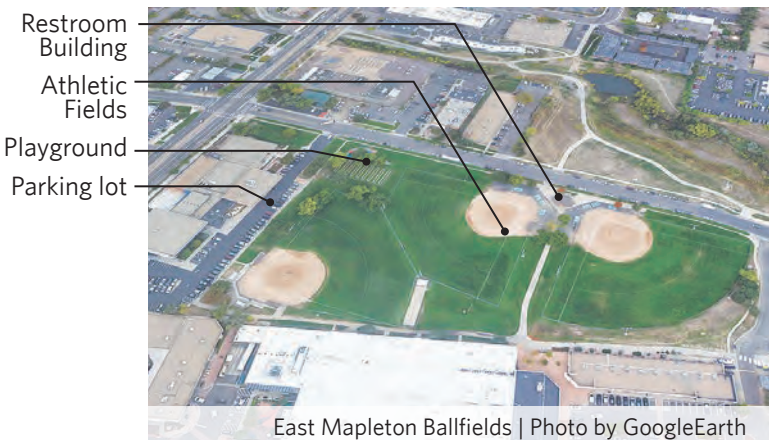
These facilities are often centrally located so that the greatest number of residents and users may access the facility. Recreation facilities have highly specialized maintenance and management requirements and are subject to different standards than urban park land. Assets within this typology are often not found in other parks, or if they have overlapping facilities the assets in the other parks are for more general use.

Typical Assets

- Shelter, large or small
- Playground
- Athletic complex (i.e., diamond field or multi-purpose field complex)
- Trail, multi-use

Typical Modifiers

- Seating
- Shade
- Parking lot
- Drinking fountains
- Security lighting
- Bicycle racks
- Restrooms



East Mapleton Ballfields | Photo by GoogleEarth

Recreational Facilities

East Mapleton Ballfields | Photo by City of Boulder

Knollwood Tennis Courts | Photo by City of Boulder

Defining Features of Recreational Facilities

Desirable Assets

- Athletic complex (i.e., diamond field, tennis court, basketball court or multi-purpose field complex)
- Playground, local
- Shelter, large or small
- Trail, multi-use
- Adventure course
- Aquatics, complex
- Aquatics, lap pool
- Aquatics, leisure pool
- Aquatics, spray pad
- Aquatics, therapy pool
- Batting cage
- Bike complex
- Bike course
- Climbing, designated
- Climbing, general
- Concession
- Disc golf
- Game court
- Garden, display
- Horseshoe complex
- Pickleball court
- Picnic ground
- Tennis, practice wall
- Track, athletic

Not Likely Found Assets

- Dog park
- Educational experience
- Equestrian facility
- Event space
- Fitness course
- Inline hockey
- Loop walk
- Multi-use pad
- Natural areas
- Open turf
- Playground, destination
- Public art
- Trail, primitive
- Trail, water
- Trailhead
- Volleyball court
- Wall ball court
- Water access, developed
- Water access, general
- Water feature
- Winter sport

Never Found Assets

- Amusement ride
- Camping
- Garden, community
- Golf
- Ice hockey
- Passive node
- Skate feature
- Skate park
- Target range
- Water, open

Desirable Modifiers

- Bicycle racks
- Drinking fountains
- Parking lot
- Restrooms
- Seating
- Security lighting
- Shade
- BBQ grills

Not Likely Found Modifiers

- N/A

Never Found Modifiers

- N/A

Special Use Areas

Fire Station No. 02 (Pottery Lab) | Photo by City of Boulder

Existing Resource List

- Columbia Cemetery
- Fire Station No. 2 (a.k.a. Pottery Lab)
- Pearl Street Mall
- Harbeck-Bergheim House
- Platt Farmhouse
- Roney House
- Glen Huntington Bandshell
- Boyd Smelter-Mill Site

Existing Special Use Area Elements

The special use classification covers a broad range of parks and recreation facilities oriented toward a single-purpose use. They often fall into two general categories:

- Cultural Facilities – unique resources offering historical, educational, visual/performance art or other similar experiences. These include museums, theaters, galleries, libraries and other civic sites.
- Unique Sites – generally a single use, but smaller than a regional park and not necessarily of a significance that might draw from a larger regional base. These may include arboretums, cemeteries, plazas, sports stadiums, farmer's markets, marinas, etc. – especially when they are not in conjunction with other typical park amenities.

Similar to Natural Areas, some Special Use Areas exist as a stand-alone resource, such as Columbia Cemetery or Harbeck-Bergheim House, while others occur within existing developed parks, such as the Platt Farmhouse or Boyd Smelter-Mill Site. The resources contained within this typology for BPR are all currently either designated or eligible historic resources at the local, state and/or national level. Criteria related to those designations and eligibility include: Districts, sites, buildings, structures and objects that:

A) are associated with events that have made a significant contribution to the broad patterns of our history; or

B) are associated with the lives of persons significant in our past; or

C) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D) have yielded or may be likely to yield information important in history or prehistory.

Special Use Areas

Columbia Cemetery | Photo by City of Boulder

Pearl Street Mall | Photo by City of Boulder

Glen Huntington Bandshell | Photo by City of Boulder

Harbeck-Bergheim House | Photo by City of Boulder

Roney House | Photo by City of Boulder

Platt Farmhouse | Photo by City of Boulder

Natural Areas

Maxwell Lake Park | Photo by City of Boulder

Existing Park List

- Ann Armstrong Park
- Boulder Reservoir Natural Area
- Coot Lake
- Maxwell Lake Park
- Tantra Environmental Park
- West Highland Park

Typology Statistics

- Number of Parks: 6
- Total Area: 620 acres
- Average Park Size: 100 acres

Existing Natural Areas Elements

BPRD manages natural areas and urban forests along stream corridors and on open parcels that are either preserved as natural lands to blend in with the surroundings or are undeveloped and reserved for future park sites. This typology is often found near the edges of the City or development, but may be found near natural features that occur throughout the City of Boulder. These areas vary in size but are typically larger than 100 acres.

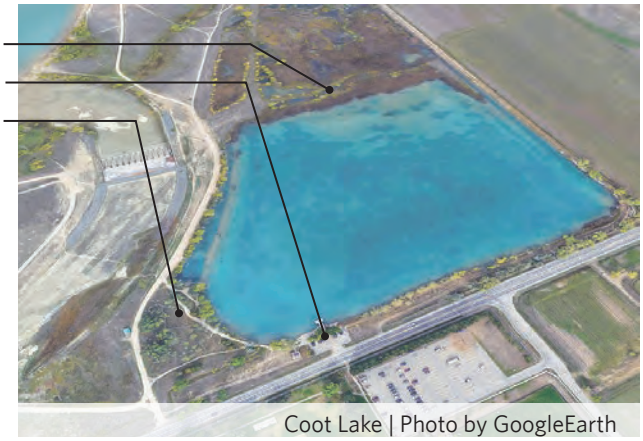
In addition to these natural areas, many of the existing developed parks have areas that have been left natural or are adjacent to other natural landscapes. Natural Areas allow for parks to incorporate passive recreation, habitat for wildlife, sustainable landscape treatment, water use reduction and a cohesive border with either native landscape or Boulder OSMP lands. These areas support wildlife and plant species through native ecosystems that require management similar to that required on Boulder OSMP property.

Typical Assets

- Water access
- Natural areas
- Trail, primitive
- Educational experience

Typical Modifiers

- Shade



Coot Lake | Photo by GoogleEarth

Natural Areas

Maxwell Lake Park | Photo by City of Boulder

Coot Lake Park| Photo by City of Boulder

Defining Features of Natural Areas

Desirable Assets

- Educational experience
- Water Quality
- Stormwater Management
- Natural areas
- Trail, primitive
- Water, open
- Loop walk
- Passive node
- Trail, multi-use
- Trail, water

Not Likely Found Assets

- Public art
- Shelter, any
- Trail, multi-use

Never Found Assets

- Adventure course
- Amusement ride
- Aquatics (any)
- Athletic courts (any)
- Batting cage
- Bike complex
- Bike course
- Camping
- Climbing (any)
- Concession
- Diamond field (any)
- Disc golf
- Dog park
- Equestrian facility
- Event space
- Fitness course
- Game court
- Garden, community
- Garden, display
- Golf
- Horseshoe (any)
- Ice hockey
- Inline hockey
- Multi-use pad
- Open turf
- Pickleball court
- Picnic ground
- Playground, destination
- Playground, local
- Rectangular field, any
- Skate feature
- Skate park
- Target range
- Tennis (any)
- Track, athletic
- Volleyball court
- Wall ball court
- Water access, developed
- Water feature
- Winter sport

Desirable Modifiers

- Shade

Not Likely Found Modifiers

- Parking lot
- Seating

Never Found Modifiers

- Restrooms
- BBQ grills
- Security lighting
- Bicycle racks

Community Use Areas

Andrews Arboretum | Photo by City of Boulder

Existing Park List

- Evert Pierson Kids Fishing Ponds
- Andrews Arboretum
- Boulder Creek Path
- Haertling Sculpture Garden
- Hawthorne Community Gardens
- Hickory Community Gardens
- Pizza Parcels
- Swoboda Memorial
- Watts Memorial
- Whittier ROW

Typology Statistics

- Number of Parks: 10
- Total Area: 40 acres
- Average Park Size: 10 acres

Existing Community Use Areas Elements

Community Use Areas are lands managed by BPRD that have specific uses and bring the community of Boulder together in a variety of ways. They are typically destination parks and do not have a specific location within the community. These parks also vary in size and the size is dependent on the intended use of the park. Often these parks have facilities or functions within them that are managed by a different department within the City. These areas tend to have specific programs that attract different users, at different times.

Typical Assets

- Open turf or natural lands
- Garden, display

Typical Modifiers

- None

Haertling Sculpture Park | Photo by GoogleEarth

Community Use Areas

Boulder Creek Path | Photo by City of Boulder

Haertling Sculpture Garden | Photo by City of Boulder

Defining Features of Community Use Areas

Desirable Assets

- Educational experience
- Garden, community
- Loop walk
- Natural lands
- Passive node
- Trail, multi-use
- Trail, primitive
- Trail, water
- Water access, developed
- Water access, general

Not Likely Found Assets

- Public art
- Shelter, large or small

Never Found Assets

- Adventure course
- Amusement ride
- Aquatics (any)
- Courts (any)
- Athletic complex (i.e., diamond field, tennis court, or multi-purpose field complex)
- Batting cage
- Bike complex
- Bike course
- Camping
- Climbing (any)
- Concession
- Diamond field (any)
- Disc golf
- Dog park
- Equestrian facility
- Event space
- Fitness course
- Golf
- Horseshoe (any)
- Ice hockey
- Inline hockey
- Multi-use pad
- Open turf
- Playground (any)
- Rectangular field (any)
- Skate feature
- Skate park
- Target range
- Track, athletic
- Water feature
- Water, open
- Winter sport

Desirable Modifiers

- Bicycle racks
- Seating
- Shade

Not Likely Found Modifiers

- Parking lot

Never Found Modifiers

- Drinking fountains
- BBQ grills
- Security lighting
- Restrooms

Asset Grouping & Location

Columbine Park | Photo by City of Boulder

Typology Settings

The size of a park, location within the community, and type of assets and modifiers within a park is what defines a Park Typology. How those assets are grouped and placed within the park are considered Park Settings. These Settings help to organize park layout, flow and adjacencies.

Each park is unique in the combination of settings that it provides, however the settings are typical components that users would expect to see within public parks. This section outlines the asset groups most typically associated with a particular park setting. Each park is unique and the asset groups will change within the park setting depending on the park users, park location and surrounding context of the park.

This section further suggests how some of these setting groups may start to organize park layout, flow and relationships to each other. Pages 44 and 45 depict the setting groups and the typical assets associated with each setting. As with the assets, settings will be unique to each park and location.

Setting Categories

- Outer Park Edges and Entry
- Structures
- Active Recreation Areas
- Passive Recreation Areas
- Playgrounds
- Pathways
- Urban Forest
- Natural Landscape

Lovers Hill Park | Photo by City of Boulder

Settings in Parks

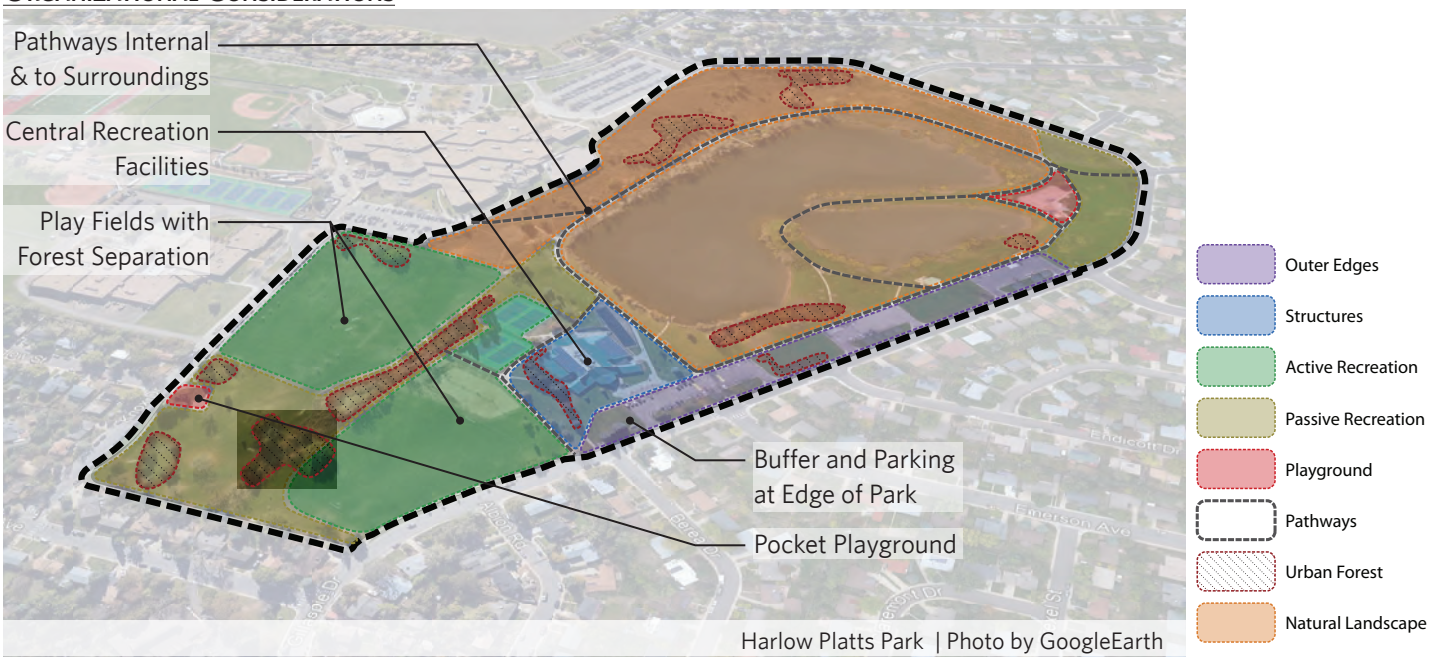
Parkside Park | Photo by City of Boulder

Setting Layout and Adjacencies

Park design is site specific and unique. However, typical Settings can be expected in parks based on their Typology. Each park layout will be dependent on the specific site conditions, access, needs and opportunities/constraints but this diagram shows the typical relationships between the park Settings. The diagram shows Setting layouts and adjacencies for how Harlow Platts Park is laid out and accessed. Each park Settings palette will be different and will depend on the specific site needs, location and intended use. For instance, park entries are typically at the edge while natural land and urban forests serve as buffers or connections to adjacent land uses.

- Passive/Active Park
- Connections off-site
- Anticipated users
- Distance of travel to park
- Potential for gathering space

Organizational Considerations



Harlow Platts Park | Photo by GoogleEarth

Assets Within Settings

Columbine Park | Photo by City of Boulder

Asset Groups	Settings	Setting Description
Fences and Barriers Horticulture Lighting Fixtures Parking Lots Signs Trees Park Structures Furniture Bike racks Seating	Outer Park Edges & Entry	**Outer Park Edges and Entry:** Includes all portions of the entrances and edges of parks. The first major features encountered by park visitors are the landscape buffers, public parking lots, signage and entryways that welcome visitors and set the tone for the park visitor's experience.
Fences and Barriers Furniture Facility & Water Distribution Lighting Fixtures Park Structures Paths and Plazas Waste Receptacles	Structures	**Structures:** Includes major buildings managed by BPRD as well as park structures such as picnic shelters, pavilions, maintenance buildings and storage facilities that support park and recreation activities.
Courts Fences and Barriers Furniture Horticulture Lighting Fixtures Paths and Plazas Signs Trees Turf and Fields Waste Receptacles	Active Recreation Areas	**Active Recreation Areas:** Includes major athletic fields such as soccer, baseball and softball fields (both natural and artificial turf), as well as hard surface courts such as tennis, basketball, skate parks and other play areas intended for physical and active use by individuals or large groups in formal activities or events.
Fences and Barriers Horticulture Lighting Fixtures Park Structures Parking Lots Paths and Plazas Signs Trees Waste Furniture Bike racks Seating	Passive Recreation Areas	**Passive Recreation Areas:** Includes public gathering areas, single seating areas, plazas, the Pearl Street Mall, informal picnic grounds, outdoor classrooms, community gardens and other areas for individual or groups to engage in unstructured civic and community events.

Assets Within Settings

Parkside Park | Photo by City of Boulder

Asset Groups	Settings	Setting Description
Fences and Barriers Furniture Horticulture Facility & Water Distribution Park Structures Paths and Plazas Playgrounds Signs Trees Waste Receptacles	Playgrounds	**Playgrounds:** Includes all children's play areas, from tot lots to elementary school age playgrounds, swings and other play equipment. Playgrounds also include surface areas, edging, and immediate supervision areas as well as parent seating, shade trees and gathering areas.
Fences and Barriers Furniture Horticulture Lighting Fixtures Paths and Plazas Signs Trees Waste Receptacles	Pathways	**Pathways:** Includes all pedestrian connections: paved bike trails, sidewalks, nature trails and soft surface pathways. They also include bridges and tunnels that are part of a larger trail system throughout the City.
Fences and Barriers Horticulture Facility & Water Distribution Paths and Plazas Signs Trees Waste Receptacles	Urban Forest	**Urban Forest:** Includes the 43,000 trees managed for their environmental, social, health and economic contributions and aesthetic value. Urban Forests may include ornamental trees, shrubs and flower beds that are not native to the area and have been planted as part of an overall park design.
Fences and Barriers Furniture Horticulture Paths and Plazas Signs Trees Waste Receptacles Vegetation	Natural Landscape	**Natural Landscape:** Includes the natural/native areas that form a majority of Urban Parks within the City of Boulder and connect with the larger open spaces and greenbelts. These areas include stream corridors, wetlands, ponds and remnant native landscapes that offer opportunities for nature play and wildlife observation in the urban setting as well as providing valuable ecosystem services such as native ecosystems, erosion control, stormwater runoff reduction and water quality improvement.

4

Intent, Standards & Guidelines

Foothills Community Park | Photo by City of Boulder

Intent, Standards & Guidelines Table of Contents

Asset Standards

Emma Gomez Martinez Park | Photo by City of Boulder

Park Design

The assets included in this chapter set out standards for the BPRD park system. However, each park site and set of stakeholders is unique. These unique needs and elements should be evaluated in a site analysis of the park prior to design. If non-standard assets are a better solution for the park, the site analysis will outline the background and reasoning for why the specific assets should deviate from the standards in this manual.

During the site analysis, other documents, as noted in Chapter 1, that will influence and affect the overall park design should be referenced and any necessary elements incorporated. In addition, the overall sustainability of the park should be analyzed to ensure a successful project outcome. This includes integrating overall project goals, assessing the life-cycle of park assets, considering costs and having preliminary discussions with both stakeholders and maintenance staff. Stakeholders should be selected based on project needs, location and anticipated users. To streamline anticipated project costs, a cost estimate for standard BPRD assets is included in the appendix of this manual.

Site Analysis Example

Boulder Library Site Analysis | Analysis by WORK Architecture

Asset Standards

Salberg Park | Photo by City of Boulder

Site Grading and Drainage

Park design should include integration of both on-site and off-site features. The assets within this chapter standardize typical off-site park features within the BPRD system. The on-site features, such as topography, should be utilized as unique park elements within the design.

Park sites within the City of Boulder have varying topography. The unique elements and conditions of each site should be assessed during site analysis and worked into the park design as applicable. However, as the site potential is being explored some overall site standards should be adhered to increase the longevity of site features and to reduce the potential maintenance of the features. The chart below outlines slope guidelines to follow when grading sites for development. These standards set slopes for elements that are easier to install and maintain.

In addition, all park features should be designed and graded with drainage in mind. Site drainage should utilize current Best Management Practices (BMP) and should be directed to landscape areas for infiltration, where possible, prior to entering the utility storm system.

Site Grading Thresholds	
Use	**Grade Range**
Paths & Trails	1% - 4.9% Longitudinal; 1% - 1.75% Cross-Slope or within current ADA Standards.
Plazas	1% - 1.75%, no more than 2% in any direction or within current ADA Standards.
Crusher Fines Paths	1% - 3.9% Longitudinal; 1% - 1.75% Cross-Slope or within current ADA Standards.
Parking Areas	1% - 3%
Turf & Natural Landscapes	2% - 25% max. (4:1)
Planting & Mulch Areas	2% - 33% max. (3:1)
Athletic Courts	1% - 1.75%, drain end to end or side to side. Do not crown.
Athletic Fields	1% - 1.75%, drain end to end or side to side. Crown Premier Fields.
Playground	1% - 1.75%; no more than 2% in any direction or within current ADA Standards.

Parking Lots

East Boulder Community Park | Photo by City of Boulder

Vehicular Parking

Intent

Providing vehicular parking for park users is not always a necessity for smaller, neighborhood scale parks, but as the park scale increases, so does the need for vehicular parking.

Standards

- Parking lots must adhere to all applicable standards and associated details in the DCS and BRC, as well as all applicable accessible parking requirements per current ADA standards.
- Parking studies conforming to the requirements set forth in the BRC Section 9-9-6 shall be conducted prior to design.
- At least one soil sample for geotechnical analysis must be taken from each proposed parking lot location. Coordinate with BPRD and the City of Boulder Public Works Department to determine the final number of samples that will be required based on project specific conditions.
- Parking lot surface shall be 4" thick asphalt pavement unless additional asphalt thickness and/or concrete pads are deemed necessary for areas that see high traffic or regular use by heavy vehicles/equipment. Final depth shall be based on the findings and/or recommendations provided within the geotechnical report.
- Accessible routes into the park from on site parking lots shall meet or exceed current ADA standards.
- Parking Lots will be seal-coated 1 year after construction.
- Two entries/exits shall be provided, where possible.
- Provide concrete curb and gutter with a 2' pan.
- Provide concrete pads for trash enclosures and/or at turning areas or drive lanes as necessary. Concrete shall be a minimum of 7" thick placed on top of an aggregate base course. Final depths shall be based on the findings and/or recommendations provided within the geotechnical report.
- Provide and identify designated, maintainable areas for snow piling during snow removal.
- Bicycle parking for park program elements should be 10% of vehicular spaces provided.
- Existing trees 6" dbh (diameter at breast height) and greater shall remain in-place and parking lot shall be designed to work around tree locations. Credit for canopy will be assessed by City Forester and Planning & Development Services.
- For instances where the removal of existing trees 6" dbh or greater can not be avoided, the replacement values of tress to be removed shall be assessed by City Forester and Planning & Development Services in order to determine the appropriate mitigation requirements.

Parking Lots

Foothills Community Park | Photo by City of Boulder

Vehicular Parking Continued

Guidelines

- Coordinate with a transportation consultant to determine parking needs.
- Look for alternatives to implement low impact development (LID) and green infrastructure (GI) strategies such as directing surface drainage into landscape areas for infiltration.
- To the greatest extent possible, parking lots should be designed to accommodate dual port, level 2 EV parking, with at least one of the ports being accessible from an ADA parking stall.
- Evaluate options for carports to allow for photovoltaic (solar energy) development to meet NetZero requirements.
- Existing trees 6" dbh or less may be relocated. Consider relocating any existing trees adjacent to parking lot.

Parking Count Guidelines	
Park Asset	Required Parking Spaces
Diamond Field (Baseball & Softball)	
Satellite Field	20 per field
Premier Field	40 per field
Rectangular Field (Multi-Purpose)	
Satellite Field	15 per field
Premier Field	30 per field
Basketball Court	5 per court - 10 per court*
Tennis/Pickleball/ Platform Tennis/ Volleyball/ Handball Court	2 per court - 4 per court*
Single Track/ Skills Course/ Terrain Park/ Pump Track	4 per every 1 acre
Skatepark	1 per every 600 sf.
Dog Park	10 per every acre.
Disc Golf Course	18 per every 9 holes
Park Playground (Community & City Parks)	1 per every 600 sf.
Rentable Shade Structure	1 per every 100 sf.

Plaza Areas

Valmont City Park North | Photo by City of Boulder

Plaza Areas

Intent

Plaza areas are non-linear, paved spaces, larger than sidewalks, typically located adjacent to key park features that serve as collector spaces where park users can congregate. Plaza areas can take many different shapes, sizes and configurations. When thoughtfully designed these spaces can work to serve an array of different park user groups both individually and simultaneously.

Standards

- Plaza areas shall be concrete pavement.
- Areas of plaza pavement between control joints shall not exceed 100 sf.
- Areas of plaza pavement between expansion joints shall not exceed 1000 sf.
- Slopes within the plaza areas shall not be less than 1% or exceed 1.8% in any direction.
- Plazas shall conform to all current and applicable ADA standards and guidelines.
- Plaza concrete shall be 6" depth with fiber-mesh reinforcement and 6" compacted aggregate sub-base to anticipate light to moderate vehicular traffic.

Guidelines

- A plaza area should be sized for its intended use and feel contextually appropriate for the park in which it resides.
- Plazas should feel centrally located in relation to adjacent park amenities.
- Consider using decorative concrete pavement in plaza areas to help define the space and set it apart from concrete paths and trails. An interesting or unique jointing pattern is another way to help set these spaces apart.
- Plaza spaces should be designed with ample seating and comfortable shaded areas that encourage users to gather in the space.
- Plazas spaces should be designed taking into consideration the ease of snow removal and/or storage.
- Plaza spaces can be an ideal location to provide a large shelter with room to comfortably accommodate multiple user groups simultaneously.

Park Paths

Foothills Community Park | Photo by City of Boulder

Park Paths

Intent

Pedestrian park paths serve to bring people into the park, provide accessible routes between internal park features, and reduce the emergence of social trails to and through the park by directing foot traffic. Developing an organized network of internal park pathways is a critical piece to creating a successful user experience.

Standards

- Park paths must comply with current ADA standards.
- Park paths shall be comprised of 6" thick concrete pavement on top of a 6" layer of Class 6 aggregate base.
- Paths shall be a minimum of 8' wide.
- Cross slopes shall be 1.8% max. A minimum of 1% slope in any direction shall be provided for drainage.
- Longitudinal slopes shall not be greater than 4.5%.

Guidelines

- Park paths should be designed to provide efficient connections between park amenities using smooth horizontal alignments, comprised of tangents and radii. Designers shall find a balance that will allow a path to meander without creating inconvenient circulation patterns.
- Park paths should be designed taking into consideration the ease of snow removal.

Multi-use Paths

Intent

Multi-use paths are identified in the Transportation Master Plan. The standards and details of these paths are dictated by the DCS and are operated and maintained by BPRD. These paths facilitate the shared use of various forms of transportation. They often span long distances, providing valuable connections between parks, trails and urban spaces, locally and regionally.

Standards

- Multi-use path locations shall conform to the plans and regulations set forth by the City of Boulder Transportation Department.
- Multi-use paths must adhere to all applicable standards and associated details in the DCS, as well as all applicable AASHTO trail standards.
- Multi-Use paths shall be designed with snow removal in mind.

Guidelines

- For paths that see heavy multi-modal traffic, consider the addition of striping along the centerline of the path or trail to help define and separate directional traffic. Refer to best management practices (BMPs) outlined by the Transportation Department during design.
- Consider including a 2' wide rumble/warning strip of a contrasting color along path edges when running adjacent to walls, steep grade changes or any other condition that might prove to be dangerous if users were to accidentally veer off of the trail.

Path Details

Crestview Park | Photo by City of Boulder

Concrete Details for Plazas and Paths

Concrete Path Section

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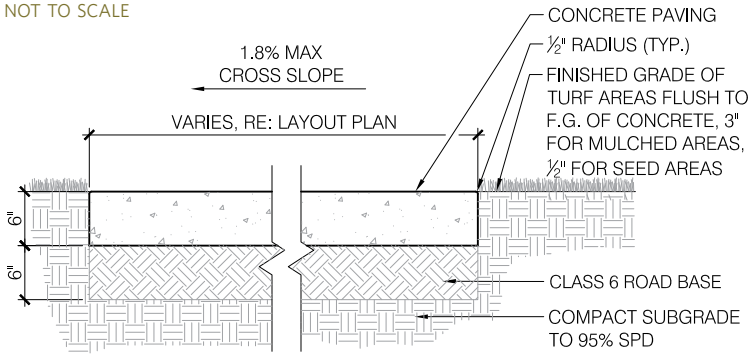
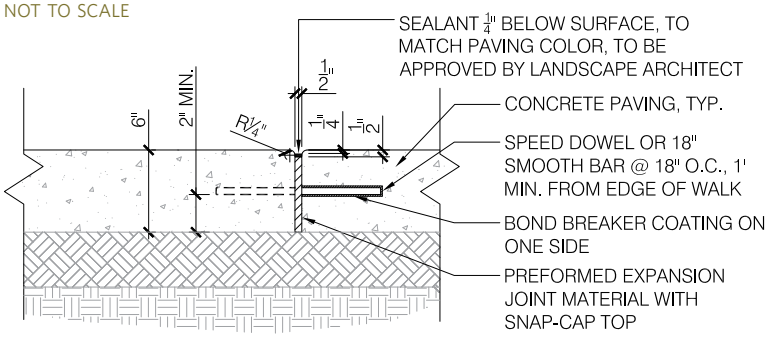


NOTES:
1. CONCRETE SHALL INCLUDE FIBERMESH REINFORCEMENT.
2. CONTROL JOINTS ARE TO BE SAW -CUT WHILE GREEN. (1/8" WIDE X 1-1/4" DEEP AND PLACED EVERY 6' O.C., UNLESS OTHERWISE INDICATED ON DRAWINGS).
3. EXPANSION JOINTS ARE TO BE PLACED EVERY 80 L.F. OR AS INDICATED ON DRAWINGS, AND WHERE CONCRETE ABUTS EXISTING PAVEMENT, STRUCTURES, OR THERE IS A CHANGE IN DIRECTION IN THE PATH OF TRAVEL.
4. AT COLD POUR JOINTS PROVIDE SPEED DOWELS @ 18" O.C.
5. CONTRACTOR TO SUBMIT JOINT PLAN TO PROJECT MANAGER FOR APPROVAL.

Expansion Joint Section

NOT TO SCALE



Concrete Thickened Edge Section

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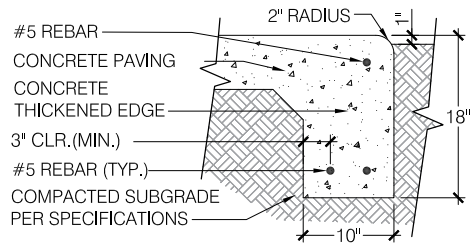


NOTES:
1. SAWCUT VERTICAL FACE OF THICKENED EDGE AT EVERY TOOL JOINT IN THE WALKING SURFACE - COORDINATE WITH PROJECT MANAGER.

Soft Surface Trails

Crestview Park | Photo by City of Boulder

Aggregate Surface Trails

Intent

Aggregate surface trails are often used to provide pedestrian access to natural areas, but can also be used to provide supplemental internal circulation and connections in situations where concrete pavement may not be appropriate due to project, budget or other constraints.

Standards

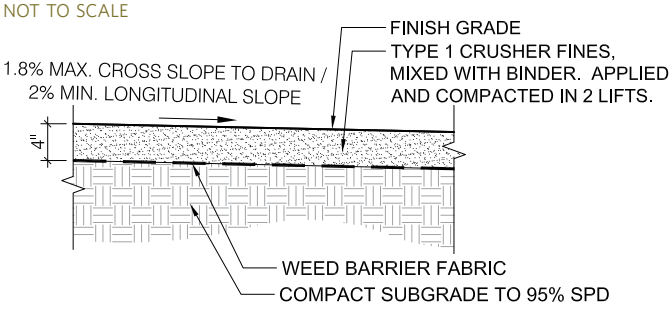
- Aggregate surface trails shall be comprised of crusher fines or decomposed granite mixed with Sta-lok binder or approved equal, 4" thick, placed on compacted subgrade and weed barrier fabric.
- ADA and/or BRC standards may be applicable depending on the trail location.

Guidelines

- Flat benches should be provided extending 1-2' from trail edges.
- Consider sloping the edges of abutting concrete pavement down to the compacted sub grade to help prevent differential settlement between concrete and crusher fines surfaces. See detail pg. 59.

Aggregate Surface Trail Section

NOT TO SCALE



Natural Surface Trails

Intent

Natural surface trails are often utilized in similar applications to aggregate surface trails; however, rather than introducing an imported aggregate surface material, the trail surface is left to remain in its natural state. Similar to a traditional hiking trail, continued foot traffic helps to keep the trail from becoming overgrown. Natural surface trail maintenance can be performed by community volunteers through a city organized volunteer event.

Standards

- Natural surface trails shall be compacted and mowed to low vegetation.
- Natural surface trails shall be utilized in natural areas and sited to minimize impacts to surrounding ecosystems.
- Natural surface trails shall be 4'-6' wide.
- Target longitudinal slopes shall fall between 2% - 10% with a short-pitch maximum of 15%.
- Target cross-slopes shall fall between 3%-6% with a maximum of 7%.
- Maximum trail obstacle height shall be 8".

Guidelines

- If natural surface trail is integrated into an existing slope, the trail shall be graded to direct drainage towards the downhill side of the slope.

Path & Trail Connections

Harlow Platts Community Park | Photo by City of Boulder

Path & Trail Connections

Intent

Successful park circulation patterns exhibit strong internal connections between key pieces of park infrastructure, as well as strong external connections to adjacent community infrastructure. Using these linkages to inform the overall spatial organization of a park site enhances user experience and better integrates the park into the surrounding community and greater park system.

Standards

- The minimum radius for paved pathway or trail intersection is 12'.
- Where a lower volume trail meets a higher volume trail, the lower volume trail shall meet it as close to perpendicular as possible.
- Intersections shall have clear sight lines to any adjoining trail.

Guidelines

- Signage for trail intersections should be added, where applicable and appropriate for wayfinding.
- When a like trail meets a like trail, larger radii may be used at the trail intersection.

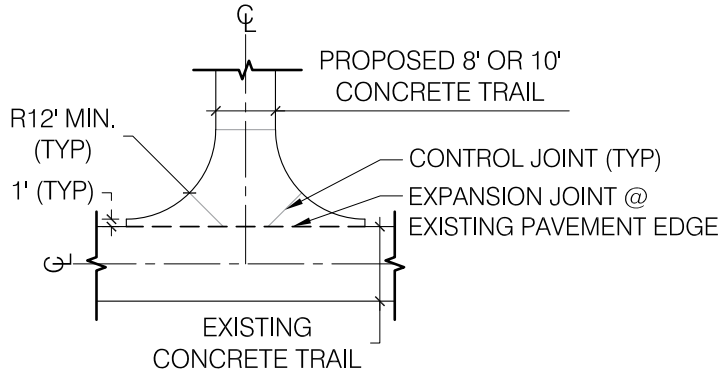
Path & Trail Connections

Foothills Community Park | Photo by City of Boulder

Path & Trail Connection Diagrams

Concrete Trail Intersection

NOT TO SCALE



Aggregate Surface Trail at Concrete Pavement Edge Section

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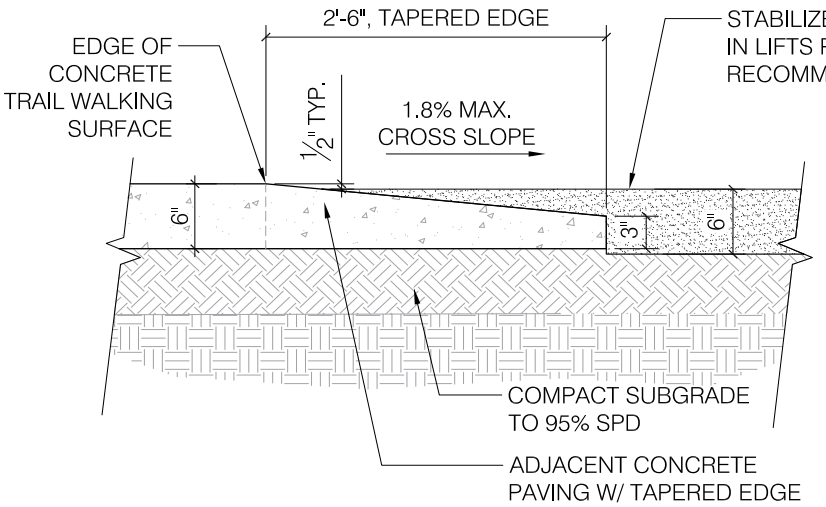


NOTES:

1. FOR CONDITIONS WHERE CONCRETE TRAIL IS EXISTING, PROVIDE AN EXPANSION JOINT WHERE THE NEW TAPERED EDGE ABUTS THE EDGE OF EXISTING CONCRETE PAVEMENT.
2. PROVIDE TAPERED EDGE CONDITION ONLY IN SITUATIONS WHERE A CONCRETE PATH TERMINATES AT CRUSHER FINES PAVEMENT PERPENDICULAR TO THE DIRECTION OF TRAVEL, NOT WHERE CRUSHER FINES BORDERS PATH EDGES.

Bridges

Harlow Platts Community Park | Photo by City of Boulder

Bridges

Intent

Bridges located within the boundaries of the park see mostly pedestrian and bicycle traffic; however, these structures often serve a dual purpose as important pieces of park infrastructure for maintenance and operations access. Therefore, site bridges should be designed taking into consideration pedestrian scale, aesthetics and vehicular functionality.

Standards

- Structural design of bridges and abutments shall be designed to accommodate their intended use loads.
- If bridges are to accommodate use by maintenance vehicles, they shall be designed for vehicular loading up to 12,000 lbs. at a minimum.
- If a bridge is part of a snow removal route, it shall be designed for H10 vehicular loading (up to 20,000 lbs.) at a minimum to accommodate snow removal vehicles.
- Pedestrian bridges shall have a clear width from inside rail to inside rail of 10′ minimum.
- Decking for bridges designed for pedestrian use shall be wood or composite material, and all railings shall be metal.
- Decking for bridges designed for vehicular loading shall be concrete and all railings shall be metal. Concrete surfaces shall be plow-able and have a slip resistant finish.
- Bridges shall have a 1/4″ max. horizontal and 1/2″ max. vertical joint spacing between decking. Refer to ADA standards for additional requirements.
- Bridges, approach pads and/or landings shall be designed to provide adequate drainage across all surfaces without increasing erosion potential on bank areas adjacent to bridge abutments.
- Bridges and bridge abutments must be designed in conjunction with and stamped by a professional structural engineer licensed in the State of Colorado.
- Bridges must be designed so that the low chord elevation is set at or above the minimum required height above channel bottom as determined by FEMA and/or as directed by the City of Boulder.
- Bridges must be designed to comply with all current and applicable ADA guidelines and standards.

Guidelines

- Bridge aesthetics and materials should compliment surrounding landscape and other site infrastructural elements.
- When determining bridge location(s), cross at narrow segments of the waterway when possible and try to minimize the total number of crossings.
- Integrate wing walls into the abutment design when possible.
- Paths should be designed and aligned to avoid the need for bridges whenever possible, leaving bridges as a last resort only to be used when all other options have been exhausted.
- Where applicable; bridge railings and decking should be designed to allow for the passage of snow and debris in order to help reduce collection on the walking surface and lessen the intensity of associated routine maintenance.

Restroom Buildings

Valmont Bike Park | Photo by City of Boulder

Prefabricated Restroom Buildings

Intent

Restroom buildings are an important park element and infrastructural component that contributes to user health and comfort. For information regarding when and where restroom buildings should be provided, refer to the park typology asset and setting sections in Chapter 3 of this document.

Standards

- Restroom buildings shall be prefabricated structures by Romtec or other BPRD approved manufacturer of similar structures, provided all City of Boulder building codes and energy standards can be met.
- Restrooms shall be designed for year-round use.
- Restrooms shall include push-type faucets and heavy duty hand dryers.
- All restroom buildings shall include a changing table in each restroom.
- All doors shall be locking and all locks shall be keyed on both sides.
- All restroom fixtures shall be commercial grade, vandal resistant and meet current ADA requirements.
- Restroom size, materials, colors, finishes, fixtures not mentioned in this document, and all other component options shall be determined on a park by park basis in close coordination with BPRD.

Guidelines

- Include all project sub consultants in design discussions with the restroom building manufacturer from design initiation.
- All outdoor restroom buildings and signage should be gender neutral.
- Locate additional utility equipment (i.e. electrical transformers, irrigation controllers, etc.) within the restroom building's utility chase where possible.
- When siting the restroom building, coordinate with the restroom manufacturer and project civil engineer to ensure existing and proposed water taps and lines are sized appropriately to provide adequate pressure to the restroom in the location proposed.
- Begin the permitting process discussions with the building department as early as possible, keeping in mind that the State of Colorado and the City of Boulder design requirements may be contradicting.

Restroom Buildings

Martin Park | Photo by City of Boulder

Temporary Restrooms

Intent

Temporary restrooms are most often provided for park events where organizers are anticipating more visitors than the existing restroom infrastructure can handle. Additionally, temporary restrooms may be also be provided on a long term or rotational basis in parks that might need additional facilities while awaiting funding, design and/or construction of permanent facilities.

Standards

- All temporary restroom facilities shall be ADA accessible port-o-lets of the highest quality available from the provider.
- In developed parks, restrooms shall be placed in locations that can be reached via accessible routes meeting current ADA requirements.
- If a temporary restroom is intended to remain in place for an extended period of time (>1 year) or repeatedly throughout the year, a permanent concrete pad with anchor points and port-o-let enclosure structure shall be constructed. In developed parks, an accessible route meeting current ADA requirements must be provided to the pad and enclosure structure.
- All port-o-lets shall be securely fastened to the ground and/or to adjacent port-o-lets as necessary to prevent vandalism or any unauthorized relocation.
- During the design process, the anticipated frequency of use shall be evaluated in coordination with BPRD to determine an appropriate service schedule.
- Ease of service truck access must be considered when siting a temporary restroom facility.

Guidelines

- Temporary restroom facilities should be located adjacent to and/or centrally located between the primary park amenities it is intended to serve.
- Temporary restrooms may also be proposed in natural areas where plumbed restrooms are not feasible. In these cases, ADA accessibility and installation of a concrete pad will be considered on a site-by-site basis, as appropriate and necessary.
- Ideally temporary restroom facilities should be located down wind from areas of the park receiving heavy use.

Shade Structures

Foothills Community Park | Photo by City of Boulder

Pavilions, Shade Structures & Shade Sails

Intent

Structures that provide shade are a common park asset and a welcome addition to all parks independent of park typology or scale. Shade structures work to serve users on many levels, and should be designed with park and user specific conditions in mind.

Standards

- Shade sails shall be solid roof, monoslope structures comprised of interesting geometric configurations. Coordinate design with BPRD.
- Shade structures shall be a multi-rib, hipped roof structure by Poligon, or other BPRD approved manufacturer.
- Pavilions shall be a multi-rib, hipped roof structure by Poligon, or other BPRD approved manufacturer and shall incorporate additional site elements as noted in the table below.
- All colors and finishes shall be selected in coordination with BPRD.
- All structures shall be constructed with conduit and cut outs ready to receive electrical service.
- All pavilions, shade structures and shade sails shall include security lighting that meets the night sky ordinance.
- Accessible routes complying with current ADA standards shall be provided to all shelters.
- Concrete pad shall extend 18" min. beyond the shelter roof line.

Guidelines

- Providing electrical power to shelters is optional based on size; see the table below.
- Security lighting may be either solar powered or wired depending on the availability of on-site electrical service.
- Concrete pavement under shelters should slope at a consistent 1.5% maximum away from the center of the pad.
- The top of shade structure foundation caissons should be flush with surrounding pavement. Column heights will need to be adjusted accordingly in order to ensure the shelter roof is level.

Pavilion/Shade Structure Amenities

Structure	Structure Size	Rentable (Y/N)	Restroom Building (Y/N)	Picnic Tables	Grills	Drinking Fountains	Bike Racks	Waste	Electrical Outlets	Security Lighting	Found in Typologies
Shade Sail	10x10	N	N	1	0	0	2	2-Can	No	Yes	Neighborhood Park Community Use Area
Shade Structure	20x20	N	N	2	1	0	2	2-Can	No	Yes	Neighborhood Park Community Park City Park Recreation Facility
Pavilion	20x30	Y	Y	3	1	1	3	3-Can	Yes	Yes	Community Park City Park Specialized Facility

Basketball

Park East Park | Photo by City of Boulder

Basketball Courts

Intent

Basketball courts are common park assets that provide a multigenerational range of user groups with opportunities for team recreation, both on casual and competitive levels. These courts often receive heavy use and should be designed and constructed to withstand this level of use to the extent possible.

Court Standards

- All new courts shall be constructed as post-tensioned concrete slabs. Slope to drain @ 1.5% max.
- Court size: 84' x 50'.
- Accessible routes meeting current ADA standards must be provided to all courts.
- Courts shall be painted with white, 2" wide acrylic striping only, or a combination of acrylic surfacing and striping.
- Court striping dimensions shall conform to the National Federation of State High School Associations' Basketball Court Diagram.
- Half courts are acceptable where space is constrained. Half courts only require one basket.
- Goal posts shall be set a minimum of 8" from post-tensioned slab edges.

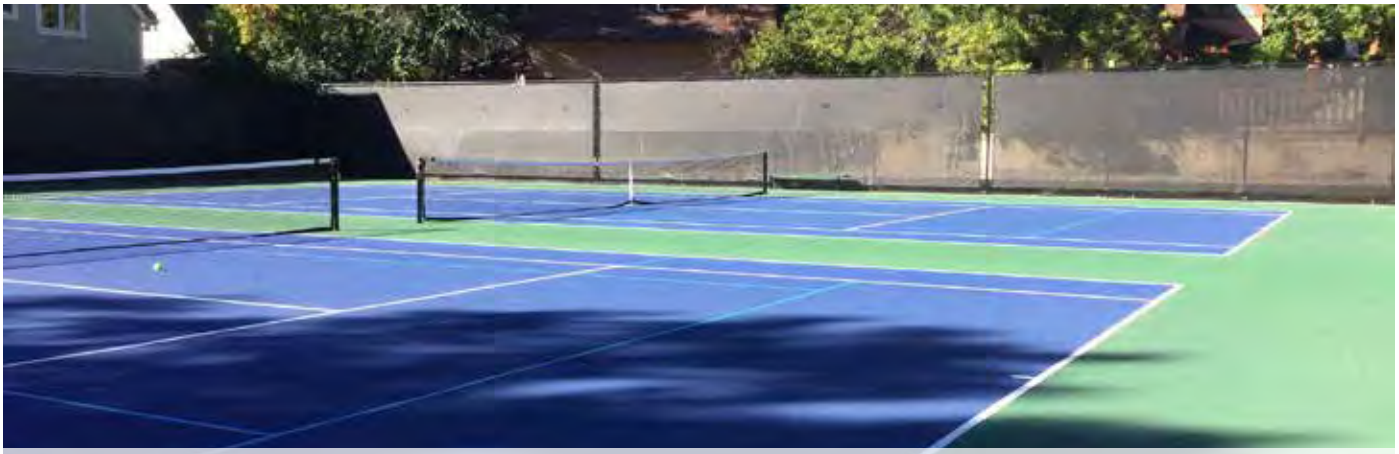
Equipment Standards

- Basketball goal systems shall be Original Ultimate Playground Basketball System; 6" square pole, powder coated black; 42"x60" steel backboard, white with orange target; by Bison or approved equal. Coordinate product selections with BPRD for final approval.
- All basketball goal posts shall be provided with sleeving for ease of replacement.

Guidelines

- Set goal posts or, at a minimum, identify and form post footing locations prior to pouring the post-tensioned court slab.
- If site constraints inhibit the ability to meet the preferred court size, alternative court dimensions may be submitted to BPRD for approval.
- Courts should provide flexible and multiple uses whenever possible.
- Direction of play should be oriented North-South whenever possible.
- When court design includes perimeter walkways, consider incorporating walks into post-tensioned slab for ease of construction.

Tennis



Knollwood Tennis Courts | Photo by City of Boulder

Tennis Courts

Intent

Tennis courts are common park assets that provide a multigenerational range of user groups with opportunities for team recreation, both on casual and competitive levels. These courts often receive heavy use and should be designed and constructed to withstand this level of use to the extent possible.

Court Standards

- Courts shall be constructed as a post-tensioned concrete slab. Slope to drain in one consistent plane @ .833% min., 1% max.
- Court shall include an 8"width (12" preferred) x 8"depth concrete mow strip bordering the perimeter of the post-tensioned slab.
- Court size and striping dimensions shall conform to US Tennis Association (USTA) standards.
- Accessible routes meeting current ADA standards must be provided to all courts.
- Courts shall be painted with a two color acrylic surfacing with white striping. Color scheme shall be blue within the area of play and green in all other surrounding court area. Final color selections shall be coordinated with BPRD staff for final approval.
- Courts shall include ghost striping for youth play in a different color than primary striping or as recommended by youth play guidelines.

Equipment Standards

- Tennis Net Posts: Heavy-duty round tennis post with top pulley & net tightener; 3" O.D.; Embed in concrete footing per manufacturer's recommendations; Color: powder coated black.
- All tennis net posts shall be provided with sleeving for ease of removal and replacement.
- Tennis Net: 3mm black nylon mesh net with 1-3/4" openings; 42' x 3'-6".

Fencing Standards

- Courts shall be enclosed with 10'-0" tall perimeter fencing, and shall include at a minimum one single gate (3' wide) for user access and one double gate (16' wide, 2 x 8' gates) for maintenance access.
- Fence fabric shall be 4 gauge with 50mm x 50mm diamond pattern openings.
- Embed all posts in concrete footing per manufacturer's recommendations.
- Perimeter fence posts shall be set within the mow strip border, not within the post-tensioned slab, and shall be surrounded by expansion jointing.
- All perimeter fence posts, rails, and fabric shall be vinyl coated; Color: black.
- Wind screens shall be provided for all perimeter fencing; Color: black.

Guidelines

- Set net posts or, at a minimum, identify and form post footing locations prior to pouring the post-tensioned court slab.
- The concrete mow strip around the post-tensioned slab should be poured separately from any adjacent walks or pavement as a cold joint.
- Direction of play should be oriented North-South whenever possible.

Pickleball

Harlow Platts Park | Photo by City of Boulder

Pickleball Courts

Intent

Pickleball Courts provide a multigenerational range of user groups with opportunities for team recreation, both on casual and competitive levels. These courts often receive heavy use and should be designed and constructed to withstand this level of use to the extent possible.

Court Standards

- Courts shall be constructed as a post-tensioned concrete slab. Slope to drain in one consistent plane @ .833% min., 1% max.
- Court shall include an 8"width (12" preferred) x 8"depth concrete mow strip bordering the perimeter of the post-tensioned slab.
- Court size and striping dimensions shall conform to USA Pickleball Association (USAPA) standards.
- Accessible routes meeting current ADA standards must be provided to all courts.
- Courts shall be painted with a two color acrylic surfacing with white striping. Surfacing color scheme should generally follow industry standards and must be coordinated with BPRD.

Equipment Standards

- Pickleball Net Posts: 3-1/2" round post with two fixed eyes, net tightener, and side pulley. Embed in concrete footing per manufacturer's recommendations; Color: Powder coated black.
- Pickleball Net: 3mm black nylon mesh net with 1-3/4" openings; 36" x 22'

Fencing Standards

- Courts shall be enclosed with 8'-0" tall perimeter fencing, and shall include, at a minimum, one single gate (3' wide) for user access and one double gate (16' wide, 2 x 8' gates) for maintenance access.
- Fence fabric shall be 4 gauge with 50mm x 50mm diamond pattern openings.
- Individual courts shall be separated by 4' tall internal fencing with a single (3' wide) gate.
- Embed all posts in concrete footing per manufacturer's recommendations.
- Perimeter fence posts shall be set within the mow strip border, not within the post-tensioned slab, and shall be surrounded by expansion jointing.
- All fence posts, rails, and fabric shall be vinyl coated; Color: black.
- Wind screens shall be provided for all perimeter fencing. Color: Black.

Guidelines

- Set net posts or, at a minimum, identify and form post footing locations prior to pouring the post-tensioned court slab.
- The concrete mow strip around the post-tensioned slab should be poured separately from any adjacent walks or pavement as a cold joint.
- Direction of play should be oriented North-South whenever possible.

Platform Tennis

Frederick Law Olmsted Jr. Park | Photo by City of Boulder

Platform Tennis Courts

Intent

Platform Tennis Courts provide a multigenerational range of user groups with opportunities for team recreation, both on casual and competitive levels. Platform tennis is primarily a winter sport with a season that typically spans from September through April.

Court Standards

- Courts shall be constructed from welded aluminum decking on top of a raised platform enclosed by perimeter skirting.
- Courts must include an integrated ice and snow melt system designed specifically for platform tennis courts.
- Court size and striping dimensions shall conform to American Platform Tennis Association (APTA) standards.
- Accessible routes meeting current ADA standards must be provided to all courts.
- Courts shall be painted with a two color acrylic surfacing with white striping. Surfacing color scheme should generally follow industry standards and must be coordinated with BPRD.

Equipment Standards

- Platform Tennis Net Posts: 2-3/8" round post with two fixed eyes, net tightener, and side pulley; 24" PVC post sleeves; Color: Powder coated black.
- Platform Tennis Net: 3mm black nylon mesh net with 1-3/4" openings; 36" x 23'

Fencing Standards

- Courts shall be enclosed with 12'-0" tall, 10 panel, tension fencing screens held taut by a superstructure around the perimeter of the deck, and shall include, at a minimum, one single (3' wide) gate for user access.
- Superstructure components shall be powder coated black.
- Screens shall be comprised of 16 gauge, hexagonal vinyl coated wire mesh with 1" openings.; color: black.
- Snow boards comprised of composite material shall be fixed around the perimeter of the court at the base of all tension fencing screens and gates.

Guidelines

- Designers, contractors and manufacturers who specialize in platform tennis construction should be consulted during the design process.
- Windscreens may be provided and attached to the exterior of the perimeter tension fencing and superstructure.
- Direction of play should be oriented North-South whenever possible.
- A structural engineer should be consulted throughout the design process, and may be required to provide stamped engineered drawings for the superstructure.

Volleyball

Boulder Reservoir | Photo by City of Boulder

Volleyball Courts

Intent

Sand volleyball courts are often located in larger parks that serve users on a local to regional scale.

Court Standards

- Courts shall be sand pits with a 26.5′ x 52.5′ play area and a concrete mow strip border offset 10′ from the play area on all sides of the pit. In conditions where the pit abuts a concrete walk, the edge of walk shall remain a minimum of 10′ from the play area, and be constructed with a thickened edge where bordering the sand pit.
- Direction of play shall be oriented North-South.
- When multiple courts are together, a minimum of 10′ between courts must be maintained.
- Sand shall be a 10″ min. depth throughout court area.
- Anchors shall be placed at each corner of the play area as boundary markings.

Equipment Standards

- Volleyball Net Posts: Metal post; 3-1/2″ O.D.; 12′ long; embed in concrete footing per manufacturer's recommendations.
- Volleyball Net: Competition volleyball net with top cable & bottom rope ties; 32′ x 3′.

Guidelines

- Consider providing opportunities for seating in area(s) along or adjacent to the court perimeter for park users waiting for their turn on the court.

Handball

East Boulder Community Park | Photo by https://wphlive.tv

Handball Courts

Intent

Handball courts are often located in larger parks that serve users on a local to regional scale.

Standards

- All courts shall be three-wall courts 20′ wide x 20′ Ht. x 40′ long. Side walls may transition from 20′ to 15′ Ht. beginning at the restraining line (25′ from the front wall).
- Pavement shall extend 25′ beyond the long line to provide a run-out zone, court pavement shall extend 10′ beyond the long line, and the remaining 15′ shall be standard concrete pavement.
- Accessible routes meeting current ADA standards must be provided to all courts.
- Courts shall be painted with white, 2″ wide acrylic striping only.
- Striping dimensions shall conform to U.S. Handball Association standards.
- Lighting shall be provided for all handball courts.

Fencing Standards

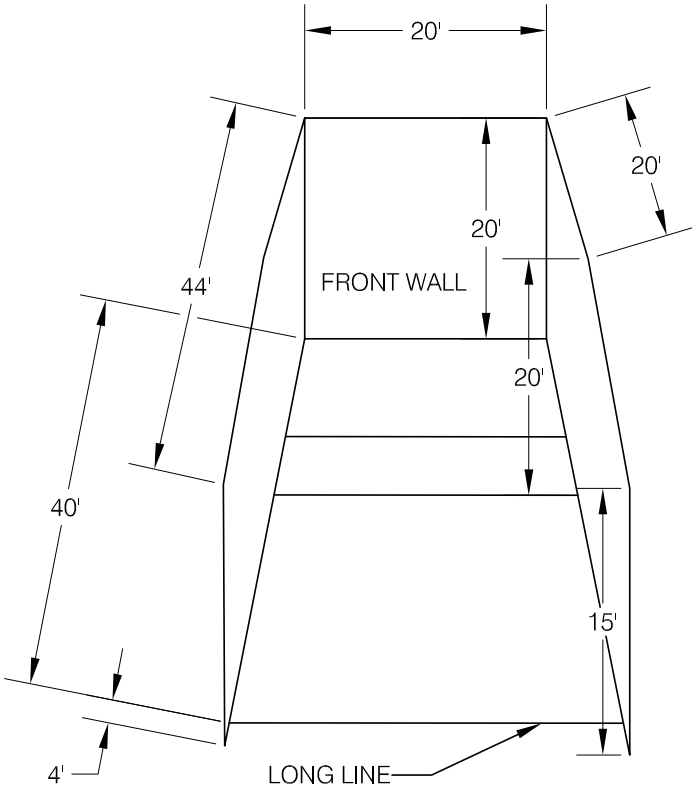
- 10′ Ht. chain link fencing shall be provided extending out from the first and last side walls and enclosing the court area along the rear edge a min. of 25′ from the long line.
- All fence posts, rails, and fabric shall be vinyl coated; Color: Black.
- Wind screens shall be provided for all perimeter fencing. Color: Black.

Guidelines

- Benches shall be provided adjacent to the court area just outside the perimeter fencing.

Three-wall Court Perspective Diagram

NOT TO SCALE



Diamond Fields

Gerald Stazio Ballfields | Photo by City of Boulder

Baseball/Softball

Intent

Baseball and Softball fields are standard park elements that may be incorporated into community and specialty use parks. BPRD generally supports two types of diamond fields, Satellite and Premier. Premier fields are generally grouped together in complexes and have higher quality surfaces than Satellite fields. All fields shall be designed to accommodate the widest range of users and provide the most flexibility of use.

Field Standards

- Baseball and Softball fields shall conform to standard sizes listed in this section.
- Infield mix shall be 65% sand, 24% silt, & 11% clay with a 6" minimum depth (8" preferred).

Equipment Standards

- Bases shall be break-away type for satellite fields and impact type for premier fields.

Fencing Standards

- Premier baseball outfield fencing shall be 6' Ht. with yellow outfield top rail caps and optic yellow foul poles. Backstop fencing shall be comprised of 4 panels at 30' tall, dropping to 20' wings on each side.
- Premier softball outfield fencing shall be 6' Ht. with yellow outfield top rail caps and optic yellow foul poles. Backstop fencing shall be comprised of 4 panels at 20' Ht., dropping to 10' wings on each side.
- Satellite baseball and softball fields shall have no outfield fencing. Backstop fencing shall be comprised of 4 panels at 20' tall, dropping to 10' wings on each side unless site conditions warrant such fencing, i.e., proximity to a path or ditch.
- Backstop and foul line fencing shall be installed based on intended field use.
- Refer to ASTM standards for dugout and backstop overhangs.
- If entire field is fenced a 16' wide maintenance access gate must be incorporated within the outfield fencing.

Guidelines

- Fields may be all turfgrass or have a skinned infield.
- Premier fields should include additional drainage infrastructure to keep field playable in wet conditions.
- Consider providing opportunities for seating in area(s) along or adjacent to the field perimeter for park users waiting for their turn on the field or watching a game.
- Fields should be oriented such that a line from home base through the pitchers mound is facing Northeast.
- Consider movable pitching mounds and/or movable fences to provide the most flexibility between uses.

Baseball	Infield Dimension	Home Run Dimension
College/High School (Premier)	95'	400'
Little League (Satellite)	50'	225'

Rectangular Fields

Pleasantview Park | Photo by City of Boulder

Multi-use Fields

Intent

Turf fields may be incorporated into parks for both active and passive recreation. Turf fields that accommodate sports may be designed as a multi-use field or as a sport-specific field that is striped and rented as such. BPRD generally supports two types of multi-use fields, Satellite and Premier.

Field Standards

- Premier fields shall be designed with space to accommodate the largest field, soccer (80yards wide x 120 yards long), in order to accommodate a variety of sports, when possible.
- Satellite fields shall be designed with space to accommodate a full size soccer field when possible, but can be smaller if needed to allow room for additional fields on site. The smallest allowable satellite field size is 55′ wide x 65′ long.
- Fields shall be designed with a 10′ minimum play-out zone. This 10′ zone would be clear of any vertical obstruction or surface change in order to protect players.
- Field shall be located close to trail/pathway access.
- When fields are striped for multiple sports, use distinct colors.
- Field slope shall be 2% min. and 3% maximum.
- Field cross-slope shall not exceed 2% in any direction and not be less than 1.5% min.
- Premier fields shall be crowned in the center and be designed with an under-drain system.
- Fields shall not be designed to include any permanent equipment

Guidelines

- Consider spectator seating, where applicable.
- Where possible, crown satellite fields in center.
- Direction of play should be oriented North-South whenever possible.
- Premier fields should include additional drainage infrastructure to keep field playable in wet conditions.

Premier Field Under Drain

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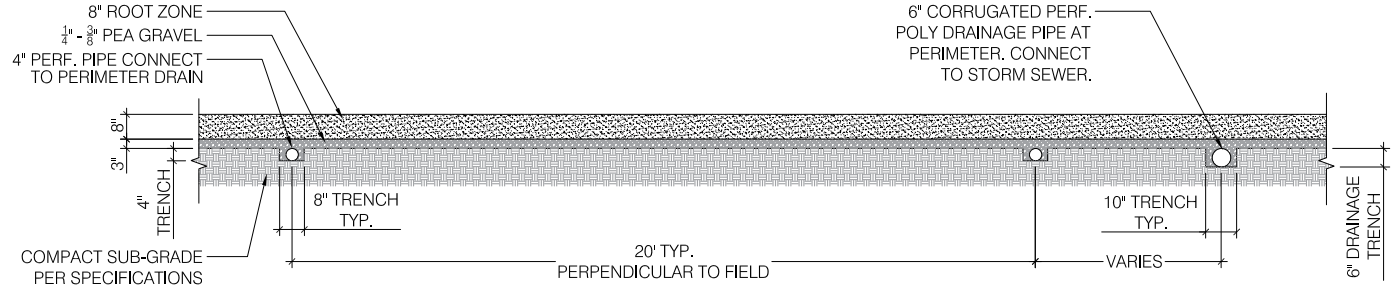

Playgrounds

Creekside Playground | Photo by City of Boulder

Playgrounds

Intent

Playgrounds and play areas are an instrumental component of successful parks. Providing opportunities for children of all ages to play, learn and interact with their peers is important for both the individual and the community. Playground design, by nature, is very unique to the site and intended users. However, all playgrounds and park elements intended for play must meet regulations and standards governing safety and access for all.

Standards

- Playgrounds shall include equipment and features that provide a variety of play opportunities for both the 2-5 year and 5-12 year age ranges. Disparate age ranges shall be separated into two or more distinct areas to minimize conflict, when possible.
- All play areas shall be signed appropriately for intended age ranges.
- Warranty for playground elements shall meet or exceed the following requirements:
  - Moving parts: 3-year, 5-year preferred
  - Cables and climbers: 8-year
  - Concrete play elements: 10-year
  - Metal posts and components, coatings, play decks, ladders: 15-year
- Playgrounds shall adhere to all applicable ASTM & CPSC standards relating to playground safety, as well as all applicable ADA requirements for accessibility.
- Shade shall be incorporated into the play area either through trees or a structure.
- Seating shall be incorporated directly adjacent to play areas.
- All play areas must account for drainage and shall have adequate drainage to minimize or eliminate standing water on play surfaces and adjacent surfaces.
- All open playgrounds shall maintain a minimum distance of 30' from all roads or other conflicting land uses (hazards). Perimeter fencing will be required for all playgrounds that do not comply with this minimum distance.

Guidelines

- Play features should be designed with the child in mind and should be colorful and inviting where appropriate.
- Playground themes should be considered to tie play elements together with the park design.
- Playground designs should maintain a continuous line of sight through all equipment.
- Considerations should be made for inclusive play and universal design when possible.

Playground Surfacing

Christensen Park | Photo by City of Boulder

Playground Surfacing

Intent

Safety surfacing works to reduce risk of injury for playground users and can often be utilized to provide accessible routes to play equipment. While the specific surfacing material may vary, safety surfacing is a critical component that must be included for all new and/or refurbished playgrounds.

Standards

- Safety surfacing material shall be selected and coordinated with BPRD.
- The depth of surfacing required is dependent on fall heights associated with the play equipment present/selected and shall be coordinated with the playground equipment manufacturer.
- All poured-in-place (PIP) rubber safety surfacing color mixtures shall be comprised of 25% black.
- Surface grades shall not exceed 2%, and must comply with all current and applicable ADA requirements, except for in areas intentionally graded for play on a slope.
- When playground surfacing is Engineered Wood Fibar (EWF), rubber mats shall be installed at the base of all slides and swings.
- Final installation details shall conform to the ultimate manufacturer's recommendations.
- Playground surfacing shall be bordered on all sides by either a concrete curb or thickened edge condition when abutting concrete pavement.
- Accessible routes to transfer platforms and other key accessible play amenities should be PIP, even when other surfacing is EWF.
- If existing trees are to remain within a play area, PIP surfacing must be kept outside of the dripline to avoid negative impacts to tree health.

Guidelines

- Unless specific site conditions, such as slope, merit otherwise, PIP surfacing may be poured over top of prepped class 6 aggregate road base material.
- Consider using patterns and colors within the surfacing to delineate areas, paths, or create a theme when using PIP or a blend of the two.
- Surfacing material selection should respond to the intended play uses as well as the character of the playground and surrounding park site.

Concrete Thickened Edge at Safety Surfacing Section

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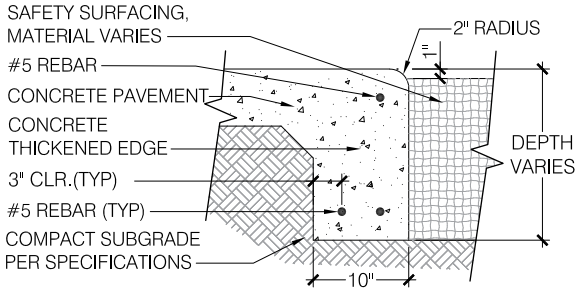

NOTES:
1. DOWEL THICKENED EDGE TO CURB WITH (2) 18" #4 REBAR DOWELS AT ALL LOCATIONS WHERE CURBS MEET THICKENED EDGES.
2. SAWCUT FACE OF THICKENED EDGE AT EVERY TOOL JOINT - COORDINATE WITH OWNER'S REPRESENTATIVE.
3. DEPTH OF SURFACING IS DEPENDENT ON REQUIRED FALL ATTENUATION OF PLAY EQUIPMENT.

Playground Surfacing

Beach Park | Photo by City of Boulder

Playground Surfacing Details

Poured-in-Place Rubberized Surfacing Section

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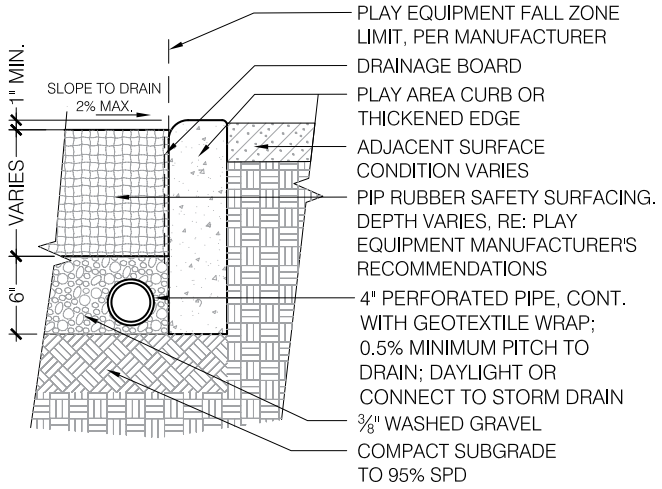

Play Area Curb

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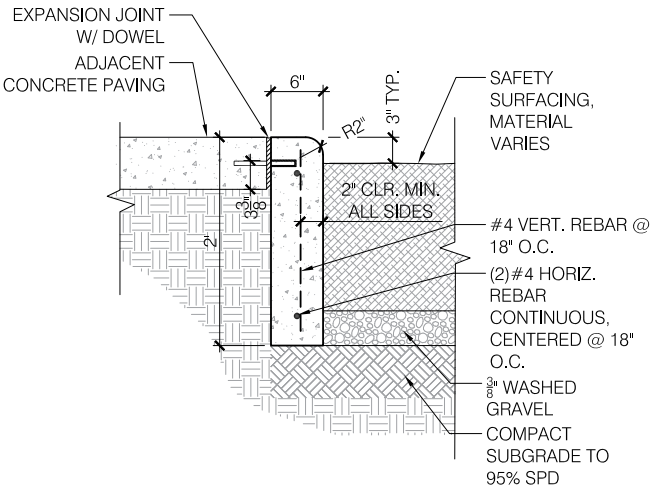

Engineered Wood Fiber Surfacing Section

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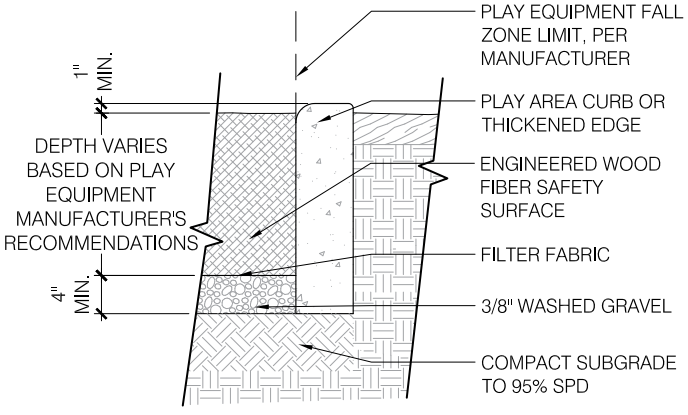

Play Area Underdrain Section

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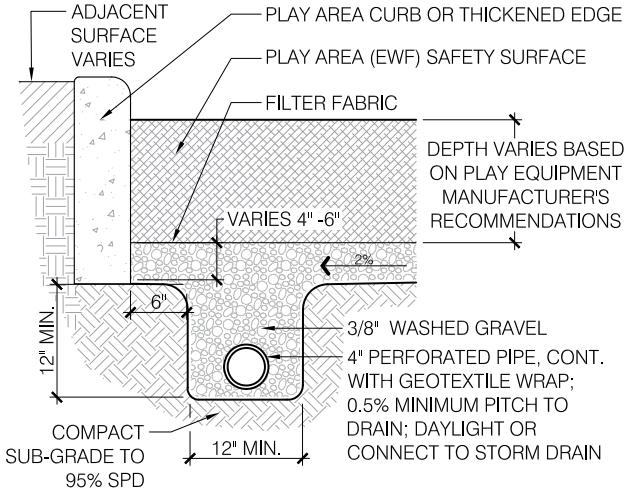


Playground Equipment

East Palo Park | Photo by City of Boulder

Playground Equipment

Intent

Selecting appropriate play equipment is paramount to creating a successful playground. Equipment selections should be driven by the needs and desires of community user groups and should work to serve children of all ages and physical abilities.

Standards

- All playground equipment must be designed to meet all current and applicable ADA, CPSC, and ASTM standards.
- Age range specific equipment must be provided for both 2-5 year and 5-12 year age groups.
- There must be clear separation between 2-5 year and 5-12 year play areas whenever possible. If all age groups must be included in the same play area, visual separation within the play area should be attempted.
- Play equipment shall be signed for intended age range.
- All playgrounds shall include a wide variety of equipment that addresses major motor functions.
- Tot swings, belt swings and a tot slide are required in all playgrounds.

Guidelines

- Equipment should be specified from play equipment manufacturer's sourced in the US with a history of experience for ease of maintenance and operations.
- Equipment that encourages and provides opportunities for inclusive play and universal design should be integrated whenever possible.

Embankment Slides

Intent

Embankment slides are unique play features that are typically designed for site specific applications. These slides are most suitable for playground sites that feature some form of grade separation between play areas.

Standards

- Embankment slides must be designed to meet all current and applicable ADA, CPSC and ASTM standards.
- Slides shall have an angle of 30 degrees, average, over length of slide bed, but must not exceed 50 degrees at any point.
- The bottom of the slide must never be greater than 12" above the top of safety surface.
- Ensure slide is either in full contact with the embankment or that the slide and the adjacent material avoid entrapment.
- Nothing vertical shall be placed within 2' of slide bed edges.

Guidelines

- Design of surfacing at the base of the slide should be considered as high traffic areas that tend to wear faster than surrounding surfaces.

Nature Exploration Areas

Christensen Park | Photo by City of Boulder

Nature Exploration Areas

Intent

Nature exploration and engagement has become an increasingly popular style of playground design that relies on the use of all natural materials to create custom play features and/or manufactured play elements that mimic nature when contextually appropriate. Nature play elements can be incorporated into playgrounds in a variety of ways that work to connect children to nature.

Standards

- All natural play elements shall follow guidelines of traditional playgrounds.
- All natural play elements must accommodate for safety zones and surfacing requirements based on ultimate fall height.
- Wood and logs used shall have exposed edges chamfered.
- Nature exploration areas shall provide universally accessible opportunities for engagement with nature.
- If water is used, water supply, filtration and water drainage must be coordinated with Boulder Public Works, Boulder County Public Health and any other applicable departments.

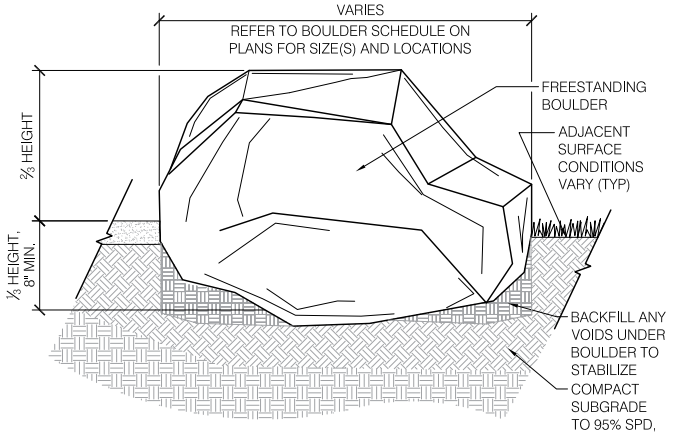
Guidelines

- Natural play elements should be reflective of the immediate surroundings and fit within the character of the park in which they reside. For example, parks that exhibit a more wild character may feature natural play elements that encapsulate the loose and free-flowing nature of the wild landscape. On the other hand, parks with a more managed character may feature more refined natural play elements or elements that mimic nature in a way that blends well with the surrounding urban context.
- Maintenance intensity should be considered in determining the appropriate material for play elements included within a nature exploration area.
- Plants and other natural elements should be incorporated into the play areas.
- Water may be considered as an element within nature play areas.
- Engineered wood fiber mulch is an acceptable surfacing material to consider for nature play areas.

Landscape/Play Boulder Section

NOT TO SCALE

NOTES:
1. LANDSCAPE ARCHITECT TO APPROVE SELECTED BOULDERS ON SITE AT QUARRY PRIOR TO ORDERING AND DELIVERY.
2. A SINGLE ROW OF BOULDERS MAY ACT AS RETAINING WALL FOR UP TO 2'-6".
3. IF ABUTTING CONCRETE PAVEMENT, BOULDERS MUST BE PLACED PRIOR TO CONCRETE FORMS.
4. PROVIDE EXPANSION JOINT AND SEALANT WHERE STONE ABUTS CONC PAVEMENT. SEALANT TO BE ¼" DEPTH, AND APPLIED AFTER CONC HAS CURED.
5. WHEN BOULDERS ABUT ONE ANOTHER THEY SHALL BE PLACED TO HAVE NO GAPS OVER 3" BETWEEN THEM WHENEVER POSSIBLE. ANY GAPS OVER 3" DUE TO IRREGULAR FACES SHALL BE FILLED WITH GROUT OR STONE.



Sand Play

Scott Carpenter Park | Photo by City of Boulder

Sand Play

Intent

Sand play pits or areas typically cater to younger children, in the 2-5 year age. Sand play provides younger children with opportunities to engage in kinesthetic or tactile play and learning.

Standards

- Sand play pits shall be comprised of play sand at a 1'-10" minimum depth set atop 8" of class 6 road base for drainage.
- The class 6 road base drainage layer shall be wrapped in geotextile fabric.
- All sand play areas must have an under-drain connected to the storm system to provide adequate drainage.

Guidelines

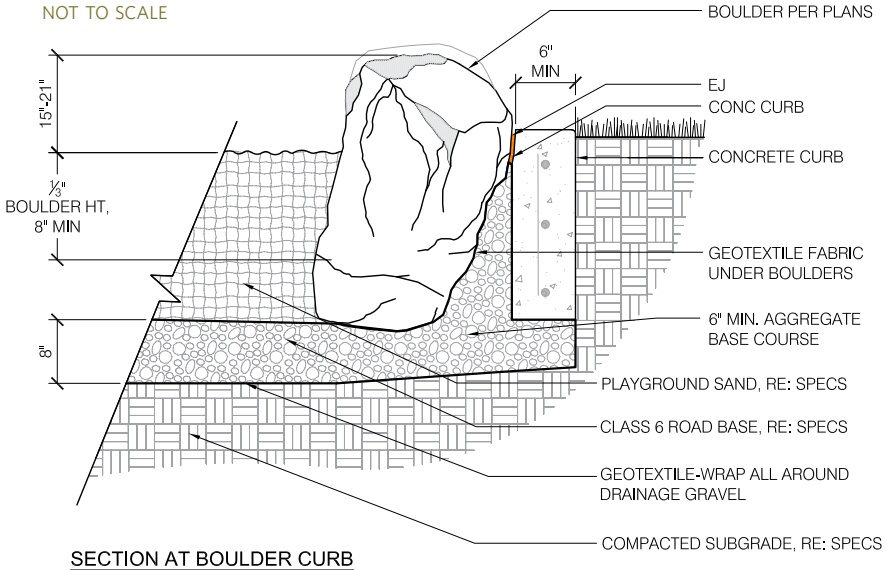
- Sand pit areas can provide a wonderful opportunity to incorporate educational water play elements such as water tables and/or hand pumps.

Sand Play

Crestview Park | Photo by City of Boulder

Sand Play Edge Condition Sections

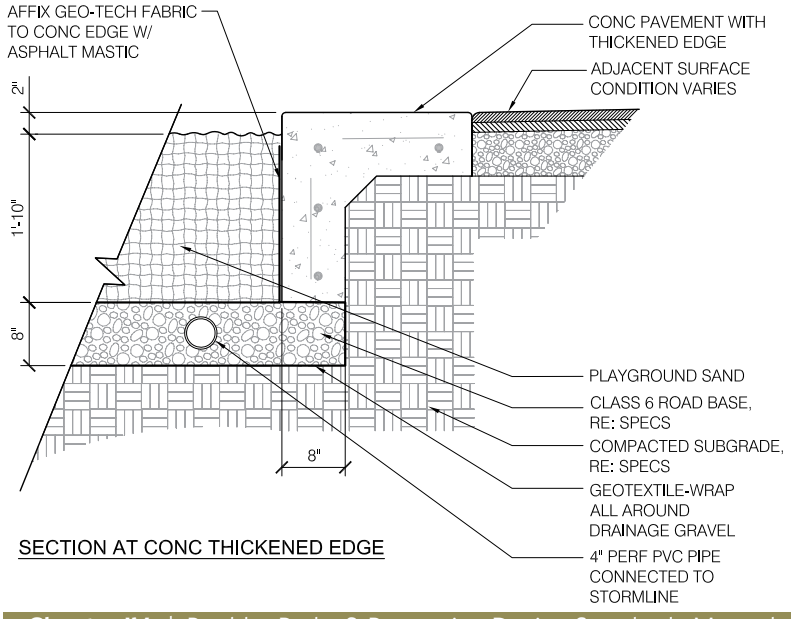
NOT TO SCALE



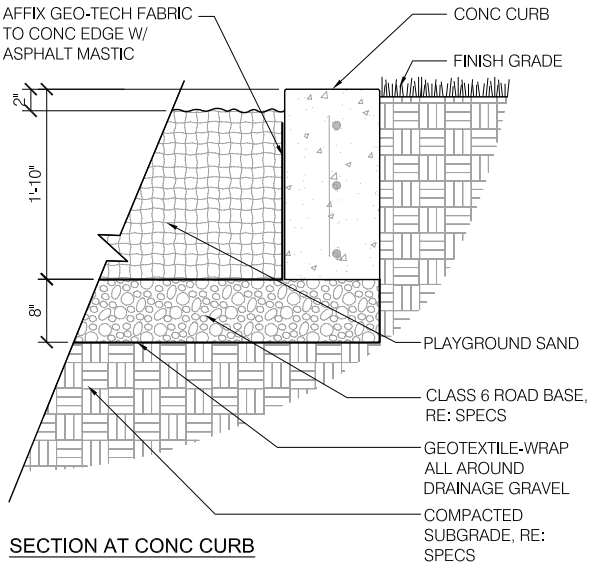
SECTION AT BOULDER CURB

NOTES:

1. EXPANSION JOINTS SHALL BE INSTALLED BETWEEN BOULDER EDGE AND CONC BAND.
2. PLACE BOULDER PRIOR TO CONC WORK.
3. WRAP BOULDERS IN PLASTIC TO PROTECT FROM CONC SPLASHING, STAINING, AND DAMAGE.
4. AFTER POURING CONC, REMOVE ALL PLASTIC, CONC SPLASHES, AND STAINS FROM BOULDERS.
5. PLACE BOULDERS WITH ADJACENT FLUSH EDGES TO MINIMIZE GAPS AND CHINKING.
6. BOULDERS ARE TO BE ROUNDED WITH NO SHARP EDGES. VISIBLE GRINDING NOT PERMITTED.
7. OWNER TO APPROVE ALL BOULDERS AND RESERVES THE RIGHT TO REJECT UN-SATISFACTORY MATERIALS. CONTRACTOR WILL BE RESPONSIBLE FOR RETURNING AND ASSOCIATED RESTOCKING FEES. CONTRACTOR MAY REQUEST OWNER INSPECTION AT QUARRY WITH A MIN OF 72 HOUR NOTICE.



SECTION AT CONC THICKENED EDGE



SECTION AT CONC CURB

Water Play

Creekside Park | Photo by City of Boulder

Water Play

Intent

Water play can be incorporated into playgrounds in a variety of ways that allow users to engage with water in a safe, clean and controlled environment. In many cases, water play elements have the ability to serve as both an exciting play feature and an educational tool used to teach children about the nature and properties of flowing water.

Standards

- Water supply, filtration and water drainage must be coordinated with Boulder Public Works, Boulder County Public Health and any other applicable departments.
- All water play must be designed with an under-drain system.
- Water supply shall be controlled by an automatic timer. Timer programming shall only allow water to be accessed during typical use hours.
- Water supply line(s) must be fitted with a back flow preventer.
- Water shall only run when activated by a user.

Guidelines

- Look for opportunities to design water play elements in a way that teaches children about both natural and human influenced hydrological processes.
- Water play can be combined with other park elements such as sand play areas or plaza areas.

Splash Pads

Intent

Splash pads are often located within large paved areas, such as plaza spaces, and can be configured in a wide range of different shapes and sizes. Splash pads can be designed to serve a dual purpose as both play element and public water feature.

Standards

- Water supply, filtration and water drainage must be coordinated with Boulder Public Works, Boulder County Public Health and any other applicable departments.
- Surfacing at splash pad areas must be slip-resistant.
- All splash pads shall be designed with a perimeter drainage system, preferably a trench or slot drain.
- Water supply shall be controlled by an automatic timer. Timer programming shall only allow water to be accessed during typical use hours.
- Water shall only run when activated by a user.
- Cross-slope of surface must not exceed 1.8%.
- All splash pads must be coordinated with Facilities & Asset Management (FAM).

Guidelines

- Splash pads can be timed to coordinate with music and/or lights.

Wheel Play

Scott Carpenter Skate Park | Photo by City of Boulder

Skate Parks

Intent

Skate parks provide skilled riders with the opportunity to develop and refine the advanced motor skills associated with extreme skating, biking and scooting. Skate parks can be configured in a wide range of shapes and sizes depending on spatial availability, desired ramp/ rail components and anticipated level of usage.

Standards

- Skate park ramps and surfaces shall be concrete, with a smooth, consistent finish throughout.
- Opportunities for seating and shade shall be provided within or directly adjacent to the park.
- Overhead lighting shall be provided for skate parks that are to remain open after dark.
- All stake park features must adhere to all applicable safety standards.
- Skate parks shall be enclosed by perimeter fencing. Coordinate with BPRD and skate park consultants to determine the appropriate clear distances between ridable features and fencing components.

Guidelines

- The skate park design process should include a community visioning phase providing community stakeholders with the opportunity to provide input.
- Skate parks should be located in high visibility areas to attract potential users and deter vandalism.
- Skate park features should be designed to reflect current sporting trends and cater to riders of all skill levels in a way that helps riders grow their skills at their own pace.
- Skate park designers and/or landscape architects with experience in skate park design should be consulted throughout the design process.
- Local park users should be engaged during the design process to provide input regarding size, desired ramp and rail elements, lighting and other design considerations.
- Consider locating drinking fountain(s) in close proximity to the skate park.

Wheel Play

Valmont Bike Park | Photo by Allison Graham

Single Track Trails & Skills Courses

Intent

Single track trails and skills courses provide riders of all skill levels with the opportunity to develop and test their riding skills on a series of different obstacles located throughout the course. Trails vary in size but are typically at least 12" in width. Trails are typically designed and marked by skill level (beginner, intermediate and expert). Most trails are one-way and should include appropriate signage indicating the direction of travel.

Standards

- Trail surfacing material shall be a compacted soil mix comprised of 60% silt and clay and 40% sand. Other materials such as SoilTac may be used to help solidify the soil.
- Signs including trail name and level of difficulty shall be provided for all trails. Signage should also include the direction of travel, as appropriate, on one-way trails.
- Features including rock, wood or other rideable obstacles, must be structurally engineered and manufactured by a reputable company. Any new feature must be similar in design and scale as existing features at the park.
- Alternative routes are provided at each obstacle location allowing riders to select the appropriate obstacle based on their individual skill level.

Guidelines

- A landscape architect experienced in designing bike parks and trails should be consulted through the design process.
- Refer to Valmont Bike Park features for guidelines on park layout and development.
- Obstacles and rideable features must be appropriate for the trail in terms of targeted riding abilities.
- If installed at Valmont Bike Park, any new wooden feature must match existing color scheme at the facility. This includes black steel footings, pressure treated wood and a light green accent color.

Wheel Play

Valmont Bike Park | Photo by City of Boulder

Terrain Parks

Intent

Terrain park trails typically cater to riders of varying skill levels but primarily intermediate and advanced riders. High speeds are combined with large jumps and other designed skill features. These trails are commonly one-way downhill routes and therefore most appropriately located in areas where trails can work with the existing topography. Common types of terrain park trails include dirt jumps, slope-style, slalom, etc.

Standards

- Trail surfacing material shall be a compacted soil mix comprised of 60% silt and clay and 40% sand. Other materials such as SoilTac may be used to help solidify the soil.
- For ramps and landings, additional soil stabilization methods may be required.
- Features including rock, wood or other rideable obstacles, must be structurally engineered and manufactured by a reputable company. Any new feature must be similar in design and scope as existing features at the park.
- Alternative routes are provided at each obstacle location allowing riders to select the appropriate obstacle based on their individual skill level.
- Signs including trail name and level of difficulty shall be provided for all trails.
- Return paths shall be provided for all terrain park trails that route riders back uphill to the start of the trail.

Guidelines

- Both a landscape architect experienced in designing bike parks and trails and a professional terrain park specific designer should be consulted through the design process.
- Designers should consider including accessible terrain park plazas and/or overlook areas that provide spectators with views down onto the trail.
- Refer to Valmont Bike Park features for guidelines on park layout and development.

Wheel Play

Valmont Bike Park | Photo by City of Boulder

Pump Tracks

Intent

A pump track is a circuit of rollers, banked turns and features designed to be ridden completely by pumping and generating momentum by up and down body movements. Pump tracks can be built in small areas using dirt stabilizations or even concrete or asphalt based on their intended use.

A tot track, or tot pump track, is a scaled down and simplified version of a pump track designed specifically for children that takes into consideration the smaller wheel base of a typical children bikes and scooters. Tot tracks can be concrete, asphalt, PIP surfacing or stabilized dirt based on their context and intended use.

Standards

- Dirt pump track surfacing material shall be a compacted soil mix comprised of 60% silt and clay and 40% sand. Other materials such as SoilTac may be used to help solidify the soil.
- Dirt pump tracks shall be located away from all other trails and clearly marked with signage indicating skill level required.
- Pump tracks designed for young riders (tot pump tracks) shall be enclosed with perimeter fencing and include a singular access point. Access routes to the pump track shall not cross other bike trails at any point.
- Concrete tot pump tracks shall follow standards for concrete pavement.

Guidelines

- Tot track locations, particularly concrete tot tracks, should be located in close proximity to playground areas whenever possible.

Disc Golf

Harlow Platts Community Park | Photo by City of Boulder

Disc Golf Courses

Intent

Disc golf courses are a popular park amenity that requires an ample amount of open space for successful design and implementation. Errant discs can become dangerous to other park users on adjacent trails and paths, so careful consideration to spatial constraints and potential conflicts should be taken when deciding whether or not a disc golf course is an appropriate improvement for a given park.

Standards

- Courses shall be 18 holes with a minimum of 1 practice/warm up basket located in close proximity to the first tee box.
- A sign panel shall be provided near the first tee box or in an adjacent waiting area that includes an overall course map and all other pertinent course information such as rules and regulations. See the BPRD Graphic Standards Guide for additional information.
- Tee boxes shall be a 6' wide x 10' long concrete pad; 6" thick; medium broom finish perpendicular to the direction of throw.
- Tee boxes shall be clearly marked with tee signage that identifies the hole number, par, and distances to both potential basket locations. Additionally the tee sign shall include a simple map graphic that shows general locations of basic hole elements in relation to one another including but not limited too; tee box, basket locations, natural obstacles such as trees and any man made obstacles that may be present.
- Baskets shall be a Professional Disk Golf Association (PGDA) approved model.
- Hold top of post sleeve and concrete footing 2" min. below finish grade.
- Each hole shall be designed to include a minimum of two sleeved basket locations, so that basket locations can be moved from time to time.
- All basket locations shall be encircled by a 3'ø mulch ring "green" with a 6" wide concrete mow strip border.

Guidelines

- If spatial constraints inhibit a full 18 hole course, a 9 hole course may be an acceptable alternative.
- A waiting area with seating should be provided for courses where the first tee pad is not located adjacent to any other gathering/seating areas.
- Boot scrapers/brushes should be considered in locations where golfers will be exiting the course onto concrete pavement.
- For tee boxes located on existing slopes over 5%, the area surrounding should be graded at 2% extending 4' beyond proposed pad edges on the downhill side prior to constructing the concrete pad in order to avoid undermining of the pavement over time.
- Man made obstacles can be a great addition to new courses providing immediate challenges for holes while waiting for tree obstacles to grow in over time.
- Maintenance access to all areas of the course should be considered in the course design.

Dog Park

East Boulder Community Park | Photo by City of Boulder

Dog Park

Intent

Dog parks are a popular park amenity and have become a common addition to parks of many different scales and typologies. This amenity provides park users who are also dog guardians with the opportunity to exercise and socialize their dogs in a fun, protected environment.

Standards

- Dog parks shall be appropriately sized for the park they reside in and the anticipated average number of daily users. The minimum acceptable size is +/- 1/2 acre.
- Dog parks shall be completely enclosed by 6' Ht. chain link perimeter fencing with 9 gauge, vinyl coated fence fabric, 2" mesh fastened to dog park side of fence.
- Dog parks shall have separation between big dog and small dog areas, spatial constraints permitting.
- A small fenced in waiting area with double gates shall be included at all dog park entrances.
- A dog park specific maintenance gate shall be provided along the perimeter fencing.
- A minimum of one dog waste station including both an attached bag dispenser and attached 10 gallon waste basket shall be provided within each park, located in an area easily accessible by maintenance vehicles.
- If new or transplanted trees are planned within the dog park, these trees shall be planted in groupings when possible and protected for 7 years.

Guidelines

- While dog parks can be an appropriate addition to parks at a range of different scales, designers should determine if a dog park would be a necessary addition to a park taking into consideration factors such as: proximity to another dog park, community need, available space, etc.
- Dog park surfacing should be a compacted soil mix comprised of 60% silt and clay and 40% sand with a 1.5% min. slope. Other materials such as SoilTac may be used to help solidify the soil.
- Stabilized crusher fines and/or synthetic turf surfacing areas may also be acceptable in certain situations.
- Due to the absence of trees inside most dog parks, shaded spaces for both people and dogs should be incorporated into the design when possible via small shade structures or other means.
- Trees may be strategically located around the perimeter of the dog park.
- Seating opportunities should be incorporated into the design when possible.
- Drinking fountains with integrated dog bowls should be provided when possible.
- Agility equipment and other dog play features should be provided when possible.
- Dog parks can often feel stark since they are typically flat, featureless spaces, devoid of trees. To combat this, designers should consider utilizing berms and/ or other landforms that serve as dog play features and add an element of visual interest.

Fencing

Garald Stazio Ballfields | Photo by City of Boulder

Chain Link Fencing

Intent

The fencing standards & guidelines outlined in this section are to be referenced in the design of new chain link park fencing including but not limited to the following applications:

- Property line/boundary fencing
- Maintenance/Equipment enclosures
- Security Fencing
- Baseball/Softball field fencing
- Dog Park fencing

**Chain link fencing standards for Tennis Courts, Pickle-ball/ Platform Tennis Courts, Dog Parks and Playgrounds can be found in those specific sections of this chapter.*

Standards

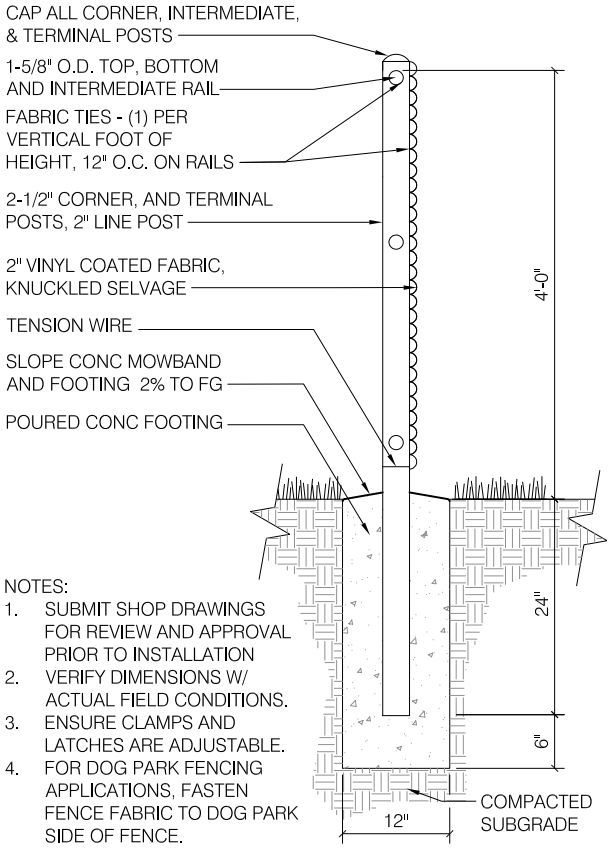
- Fence fabric shall be 9 gauge with 2-1/4" diamond pattern openings. For fencing in areas where prairie dogs are present and fence serves a dual-purpose (prairie dog barrier and other), 1" openings are standard. Color: Black
- All tubes, posts, top rails and bracing shall be schedule 40 unless otherwise noted. Color: Black
- Property line/boundary fencing shall be 4' Ht.
- Maintenance/equipment enclosures & security fencing shall be 8' Ht.
- Keep tops of fences level unless otherwise noted.
- All fence posts, rails and fabric shall be vinyl coated, unless otherwise noted.

Guidelines

- In conditions where a fence runs through or borders native or turf lawn areas, include a 10" mow strip on one or both sides of the fence line, as necessary.

Chain Link Fence Section/Elevation

NOT TO SCALE



NOTES:

1. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION
2. VERIFY DIMENSIONS W/ ACTUAL FIELD CONDITIONS.
3. ENSURE CLAMPS AND LATCHES ARE ADJUSTABLE.
4. FOR DOG PARK FENCING APPLICATIONS, FASTEN FENCE FABRIC TO DOG PARK SIDE OF FENCE.

Fencing

Eaton Park | Photo by City of Boulder

Post & Dowel Fencing

Intent

Post & dowel fencing is more aesthetic than chain link fencing and commonly used in natural areas.

Standards

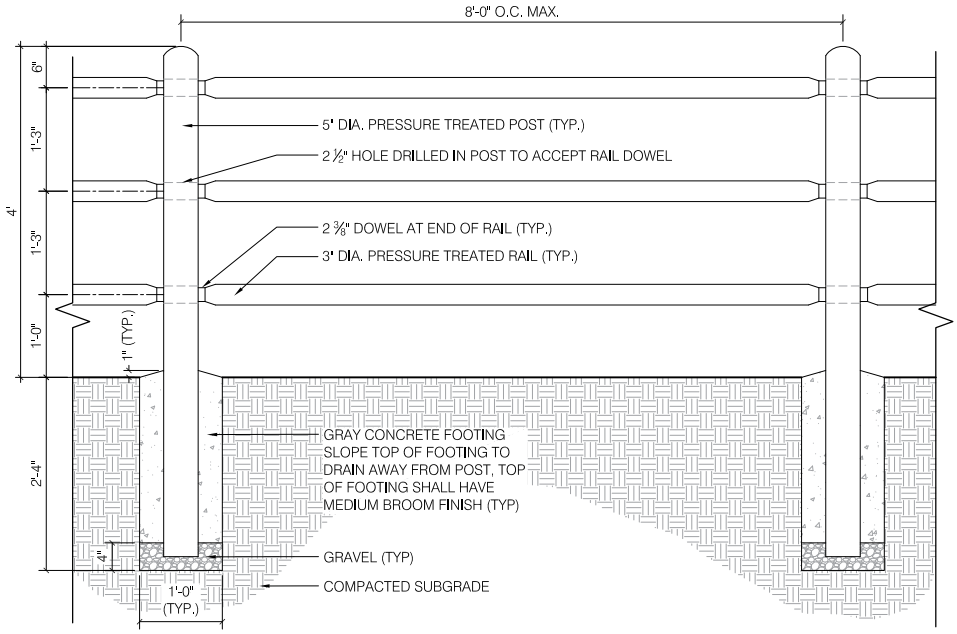
- Pole & dowel fencing may be 4′ Ht., comprised of three rails, or 3′ Ht., comprised of two rails.
- Rails (dowels) shall be 3″ø pressure treated wood.
- Posts shall be 5″ø pressure treated wood, embedded in a concrete footing. 8′ O.C. max between posts.
- Hold top of concrete footing 2″ min. below grade.
- Keep tops of fence rails level unless otherwise noted.

Guidelines

- Slope top of concrete footing away from post to drain at 2% min.
- Split rail fencing may be used in natural areas and as a permanent replacement for temporary buck and rail boundary fencing.
- Split rail fencing may be 4′ Ht., comprised of 3 rails, or 3′ Ht.,comprised of two rails. Rails shall be 3″ø pressure treated wood. Posts shall be 5″ø wood, embedded in a concrete footing. 8′ O.C. max between posts.

Post & Dowel Fence Details

NOT TO SCALE



Fencing

Coot Lake | Photo by City of Boulder

High Tension Fencing

Intent

High tension fencing should primarily be used for property line delineation in natural areas.

Standards

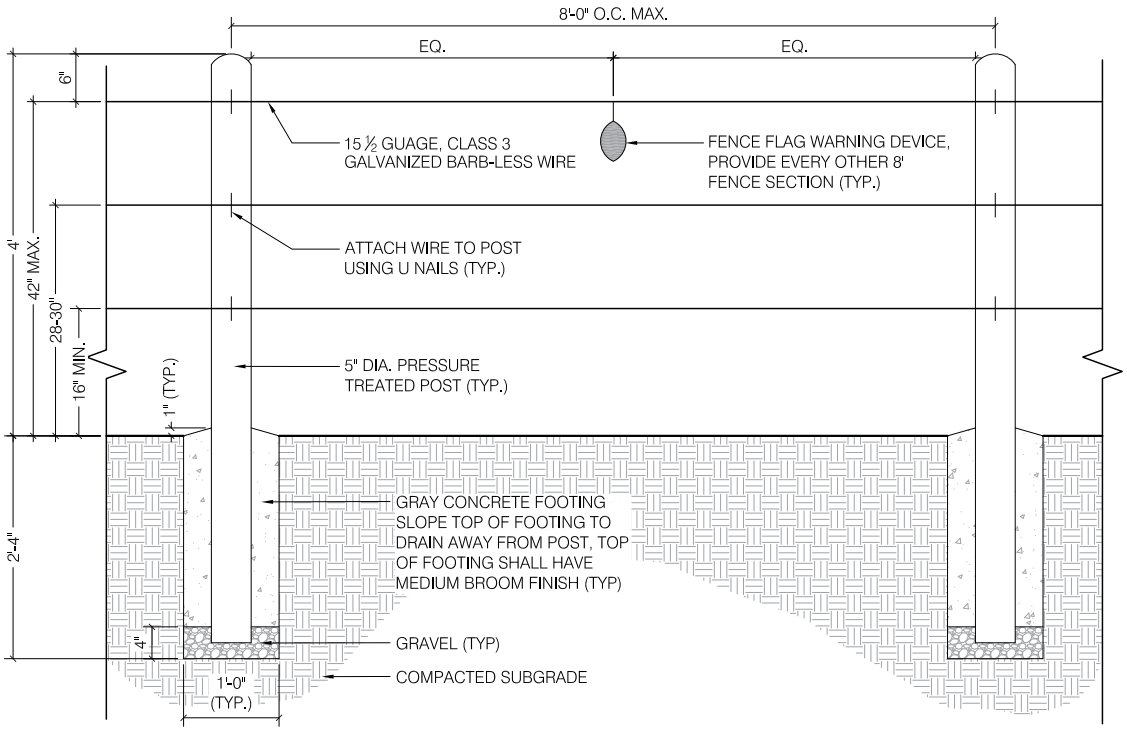
- High tension fencing shall be 4′ Ht. and comprised of three horizontal wires attached to posts with U nails.
- Fence flag warning devices shall be hung on the top fence wire, centered between posts on every other 8′ fence segment.
- Posts shall be 5″ø pressure treated wood, embedded in a concrete footing. 8′ O.C. maximum between posts.

Guidelines

- Slope top of concrete footing away from post to drain at 2% minimum.

High Tension Fencing Section/Elevation

NOT TO SCALE



Fencing

Montage II Fence | Photo by Ameristar

Pool Fencing

Intent

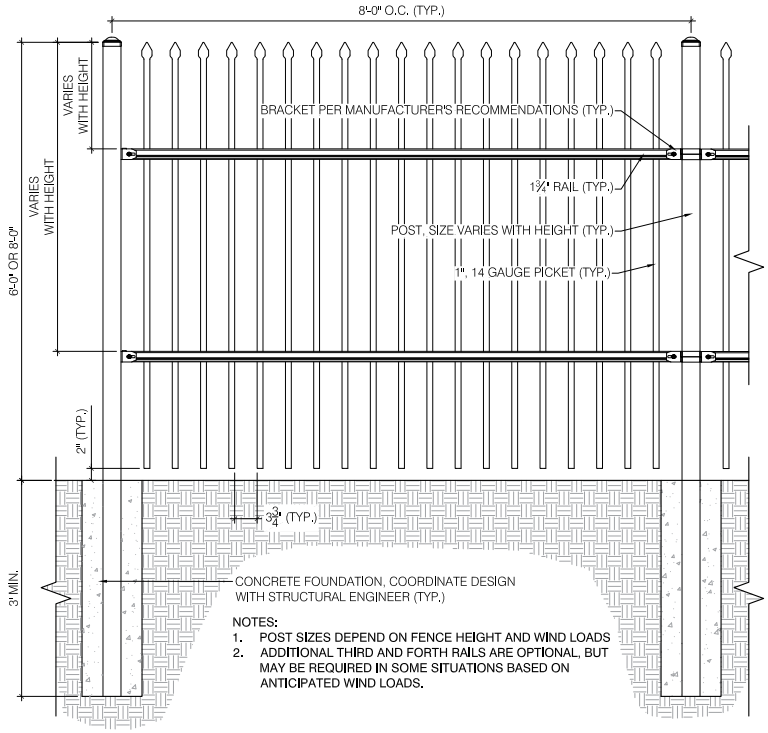
Pool fencing should be used to create controlled access points to pool deck areas and restrict public access to the pool deck when the pool is closed.

Standards

- Fencing shall be Montage II Industrial Ornamental Steel Fence; Invincible model; color: black, by Ameristar or equal if approved by BPRD.
- Fencing shall be 6' -8' Ht.

Pool Fencing Section/Elevation

NOT TO SCALE

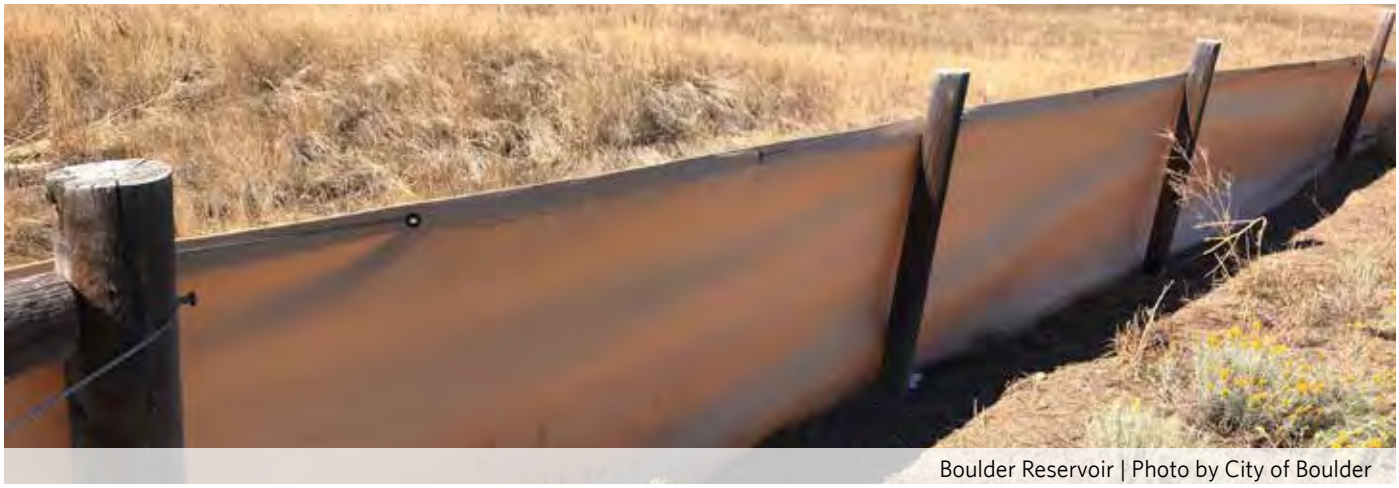


- Both pedestrian (single 3' width) and maintenance access (double 12' width) gates must be provided.
- All gates must match Invincible model, by Ameristar and come equipped with self-closing, self latching hardware with locking capabilities, keeping the gate or door securely closed at all times when not in use; panic bars; mesh guards to prevent gate from being opened from outside the fence.
- Pool signage must be attached to the outside of the pedestrian access gate.
- All pool fencing and gates shall comply with all current and applicable BRC and ADA standards.

Guidelines

- A building permit may be required for fencing over 6' Ht. Refer to BRC sections 9-9-15 and 10-5-2.

Fencing



Boulder Reservoir | Photo by City of Boulder

Prairie Dog Barriers - Vinyl

Intent

Vinyl prairie dog barriers may be used in different applications depending on site conditions and the duration of time the fencing is to remain in place. The following applications are acceptable for consideration:

- Temporary Vinyl for Long term Construction Project - Vinyl trenched into ground, held up by T-posts and smooth wire through top grommets.
- Vinyl Barrier Applied to Chain Link Fence - 5′ wide, 1″ netting poultry wire attached to bottom 1′ of fence fabric vertically and extends horizontally along the ground 4′, anchored to the ground. Vinyl barrier is attached to poultry wire at the top and anchored into the ground at the bottom.

Standards

- Vinyl barriers shall be 48″ Ht. min. (for trenching applications) with grommets positioned at 3′ intervals along the top and bottom of the barrier.
- T-posts shall have safety caps.
- Posts shall be placed on the non-prairie dog side of the barrier.

Guidelines

- Barriers are most effective and require less maintenance when trenched. It is more important to have 36″ or more above ground than exactly 12″ below.
- Vinyl that is to be utilized for <1 year may be installed with t-posts, but if anticipated use is to be more than 1 year wood posts should be utilized.
- Vinyl that is to be utilized for <1 year does not have to be trenched but rather can be folded to lay on and secured to the ground. The addition of horizontal 1″ chicken wire is recommended for this application for securing the barrier. The wire should extend at least 4′ out from the base of the barrier. Chicken wire shall be placed on the prairie dog side of the barrier.
- Where chain link fencing already exists or is needed for a project, vinyl may be secured to the links with a portion secured horizontally on the ground. Horizontal 1″ chicken wire is also recommended for this application if >1 year.
- There are many other substances that would work for prairie dog barriers including wood; however unless special circumstances are present, use the standard materials.
- Tan color vinyl is preferred over black.

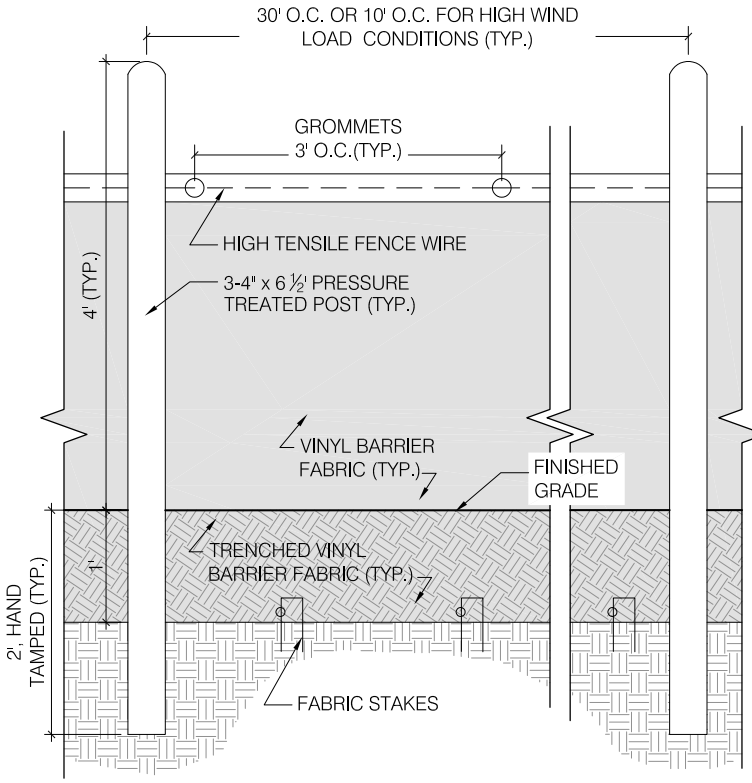
Fencing

Boulder Reservoir | Photo by City of Boulder

Prairie Dog Barriers - Vinyl Continued

Vinyl Prairie Dog Barrier Section/Elevation

NOT TO SCALE



NOTES:

1. HIGH TENSILE FENCE WIRE (HTF) ATTACHED TO ANCHOR POST (FAR SIE) STRUNG THROUGH GROMMETS ALONG LENGTH TO SUPPORT BARRIER.
2. HTF STAPLED TO POST (NOT HAMMERED IN ALL THE WAY TO ALLOW MOVEMENT)
3. TRENCH BASE OF VINYL 12" DEEP, STAKE IN AND TAMP WITH SOIL TO HOLD DOWN.
4. HTF MAY ALSO BE STRUNG ALONG THE BOTTOM OF THE TRENCH, TENSIONED AT ENDS, THEN VINYL ATTACHED TO ANCHORS WITH HOG RINGS.
5. USE AN H-BRACE ANCHOR FOR SPANS UP TO 200' AND DOUBLE H-BRACE FOR SPANS GREATER THAN 200'.

Fencing

Tom Watson Park | Photo by City of Boulder

Prairie Dog Barriers - Metal

Intent

Metal prairie dog barriers provide a long term (3 years or more) visual and physical barrier to prairie dogs in order to deter occupation of areas determined to be incompatible according to the Urban Wildlife Management Plan principles and maximize coexistence while minimizing removal of prairie dogs.

Metal prairie dog barriers are advantageous for the following reasons:

- Metal surface is slick and difficult to climb.
- Strong material significantly decreases maintenance costs over time.
- Barriers create a opaque visual deterrent both from the horizon and beneath the barrier.
- Can withstand high winds, hail, flooding and heavy snow loads.

Standards

- Metal barriers shall be made from metal sheeting and trenched a minimum of 6" underground with a preferred depth of 2-4' underground.
- Ribs of metal/pro-panel shall be installed vertically.

Guidelines

- Barriers are most effective when installed prior to prairie dogs occupying the undesired area as burrow systems are extensive and hard to block afterwards.
- The addition of horizontal 1" chicken wire is recommended for this application when prairie dogs have historically occupied both sides of the new barrier.
- The wire should extend at least 4' out from the base of the barrier.
- The chicken wire should be placed on the prairie dog side of the barrier.
- The posts should be placed on the non-prairie dog side of the barrier.
- The smoother side of the barrier should be placed on the prairie dog side of the barrier.

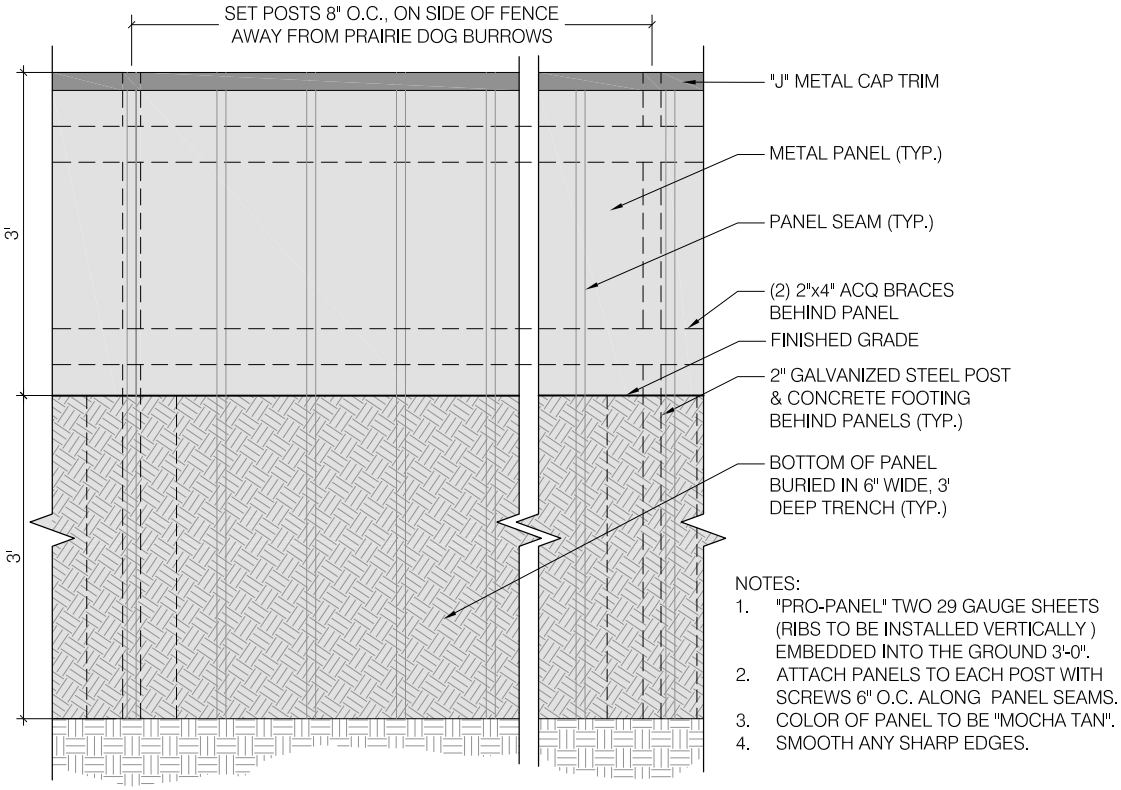
Fencing

Valmont City Park | Photo by City of Boulder

Prairie Dog Barriers - Metal Continued

Metal Prairie Dog Barrier Section/Elevation

NOT TO SCALE



NOTES:

1. "PRO-PANEL" TWO 29 GAUGE SHEETS (RIBS TO BE INSTALLED VERTICALLY) EMBEDDED INTO THE GROUND 3'-0".
2. ATTACH PANELS TO EACH POST WITH SCREWS 6" O.C. ALONG PANEL SEAMS.
3. COLOR OF PANEL TO BE "MOCHA TAN".
4. SMOOTH ANY SHARP EDGES.

Gates

Foothills Community Park | Photo by City of Boulder

Chain Link Fence Gates

Intent

Chain link fence gates function to provide pedestrian access through a chain link fence or barrier between two areas or park amenities. Gates can be sized either for pedestrian or equipment access as needed.

Standards

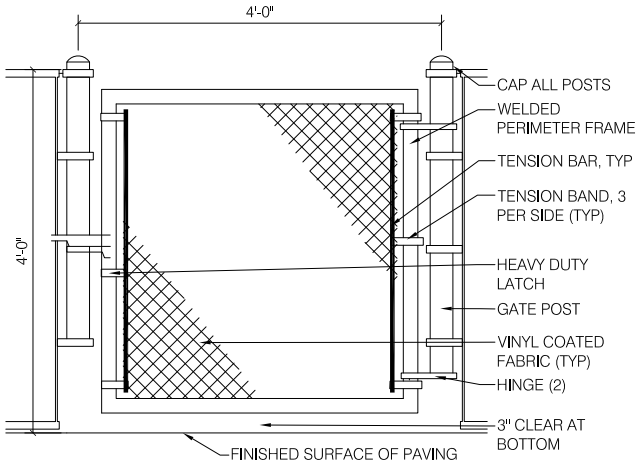
- Pedestrian gate openings shall have a clear width of 3′ minimum. Equipment gate openings shall have a clear width of 16′, comprised of two, 8′ gates.
- Gate shall be powder coated black.
- Latch shall be a standard fork latch meeting current ADA requirements unless specific conditions require a different treatment.
- Gates 3′ and under shall have 2 hinges minimum. Gates over 3′ shall have 3 hinges, minimum.
- Latches and hinges shall not be welded.
- The style of gate used shall be complimentary to the fence design and materials.

Guidelines

- Cross supports should be provided as necessary for stabilization.
- Gates can be single or double depending on the situation

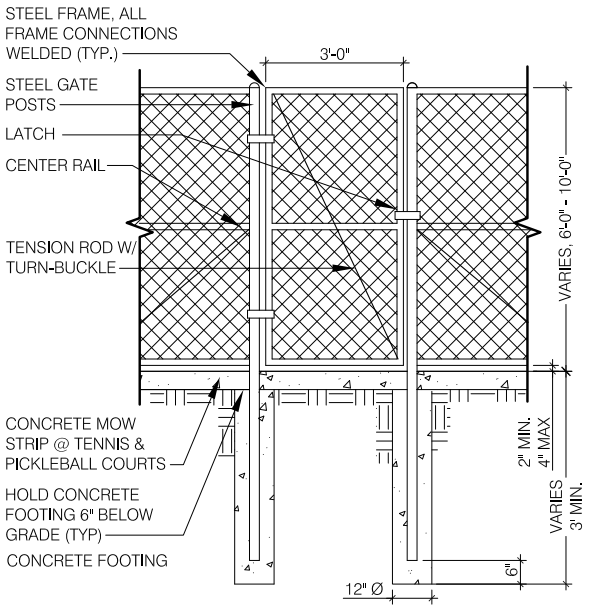
Chain Link Fence Pedestrian Gate - 4′ Ht.

NOT TO SCALE



Chain Link Fence Pedestrian Gate - 6′-10′ Ht.

NOT TO SCALE



Gates

Area III | Photo by City of Boulder

Post & Dowel/High Tension Fence Gates

Intent

Post & dowel/high tension fence gates provide access to natural lands for maintenance staff and restrict access to these areas by the general public. Gates can be sized either for pedestrian or equipment access as needed.

Standards

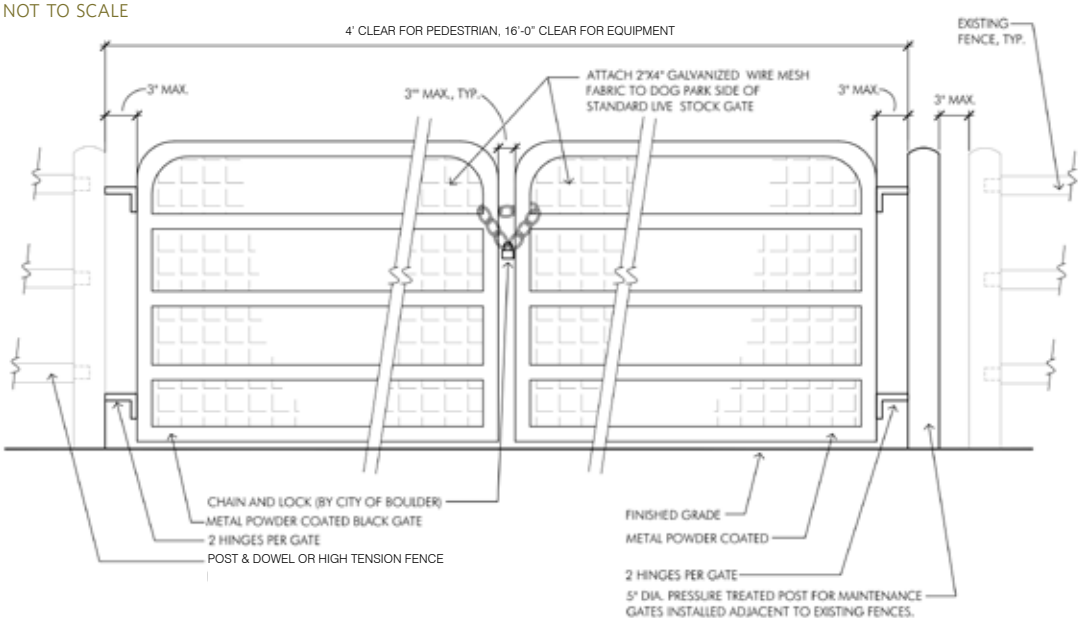
- Pedestrian gate openings shall have a clear width of 3' minimum. Equipment gate openings shall have a clear width of 16' comprised of two, 8' gates.
- Equipment access gates shall have 2 hinges.
- Gates shall be provided with a heavy duty hasp and keyed lock.
- Provide a cane bolt and metal sleeve for all double gates.
- Gates shall be powder coated green when located in natural lands areas and black in all other situations.
- The style of gate used should be complimentary to the fence design and materials.

Guidelines

- Gates can be single or double depending on the situation.
- Cross supports should be provided as necessary for stabilization.
- Hinges should not be welded unless otherwise noted for athletic field gates.

Post & Dowel/ High Tension Fence Equipment Access Gate

NOT TO SCALE



Railing

Valmont City Park North | Photo by City of Boulder

Guard Rail

Intent

Site railing is typically used to protect park users in conditions where an abrupt change in grade occurs adjacent to a walking surface. This condition can be due to existing landforms and geological features on site, or created as a result of designed park features, grading and/or infrastructure such as bridges, walls, overlooks, etc.

Standards

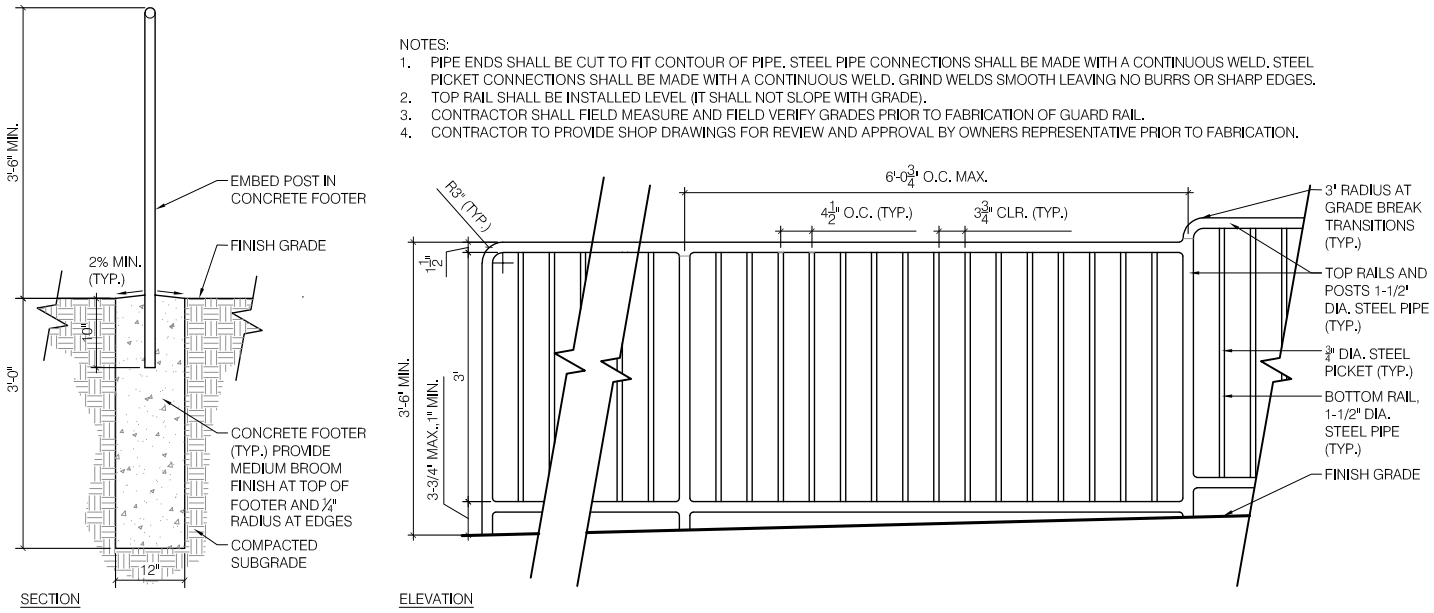
- Railing and handrails shall be provided in all locations on site as required by the current ADA standards.
- 42" Ht. min. from finish grade to top rail.
- Drill and epoxy rail posts 10" min. in concrete footing.
- All rails and posts shall be 1-1/2"ø steel pipe, painted black.
- All pickets shall be 3/4"ø steel, painted black.
- Picket spacing shall be less than 4" to avoid entrapment.

Guidelines

- Alternative guardrail designs may be submitted to Boulder Parks & Recreation for consideration.

Guard Rail Section & Elevation

NOT TO SCALE



Railing

Tantra Park | Photo by City of Boulder

Stair/ Ramp Railing

Intent

Railings and/or handrails are required for nearly all site stairs and ramps, and should be designed taking into careful consideration all applicable standards, rules and regulations related to accessibility set forth by all local, state and national governing bodies.

Standards

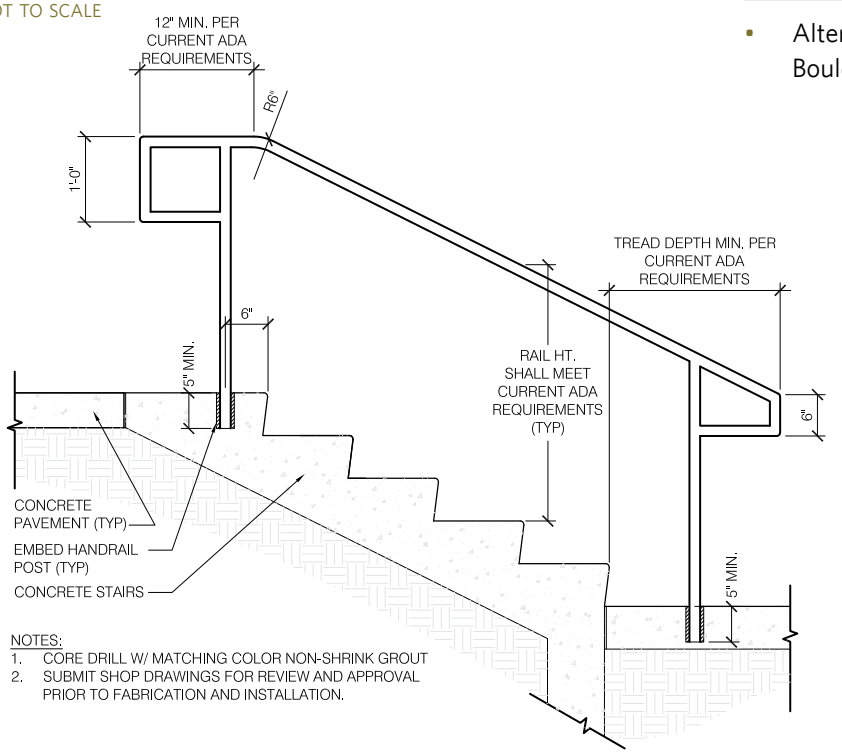
- Stair/ramp railing and handrails shall be provided in all locations on site as required by the current ADA standards.
- Provide edge protection as necessary per current ADA Standards.
- Drill and epoxy rail posts 10" min. in concrete footing.
- All railing and handrails shall be 1-1/2"ø steel, painted black.
- Handrails located at playgrounds and other park areas where children are predominant users shall incorporate a child rail.
- All hand rails must be continuous.

Guidelines

- Alternative railing designs may be submitted to Boulder Parks & Recreation for consideration.

Stair Railing Section/Elevation

NOT TO SCALE



Retaining Walls

Foothills Community Park | Photo by City of Boulder

Retaining Walls

Intent

When designing retaining walls, the site character should be taken into consideration when determining wall heights, widths, materials and finishes. The design of the wall should feel integral to the site design and reinforce the character of the site.

Standards

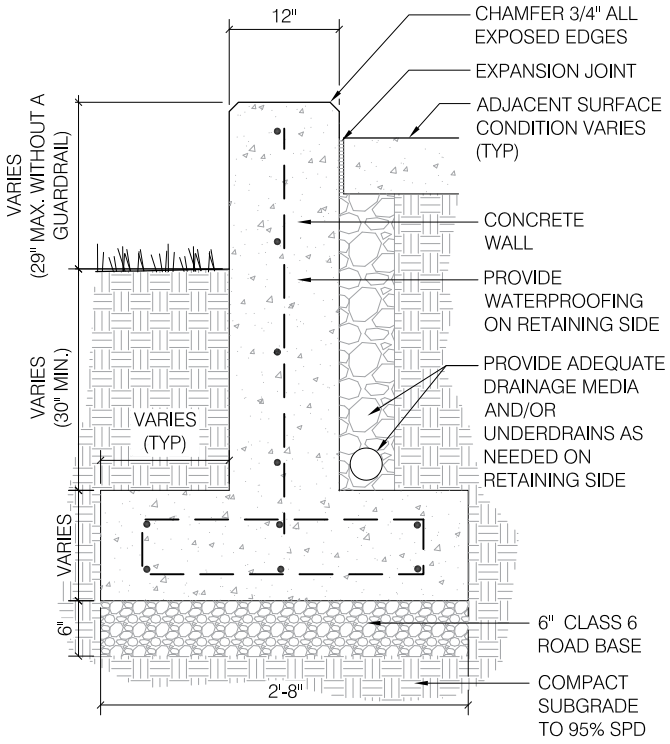
- For all walls over 3' Ht., a structural engineer must be consulted during the design process and must provide stamped and signed engineered drawings, or a signed letter certifying the structural review and approval of drawings developed by a professional landscape architect.
- Walls over 29" in height, from adjacent grade, must incorporate a guard rail when adjacent to a walking surface on top.
- Retaining wall designs shall include drainage layers and/or structures on the retaining side in order to provide adequate drainage behind the wall. Wall drainage infrastructure shall be designed in coordination with BPRD and the project structural engineer.

Guidelines

- For concrete walls with exposed faces over 2'-6" tall, consider using a form liner or other decorative finish in order to avoid creating a blank face condition that could feel stark to visitors and potentially attractive to vandals.

Concrete Retaining Wall Section

NOT TO SCALE



NOTES:

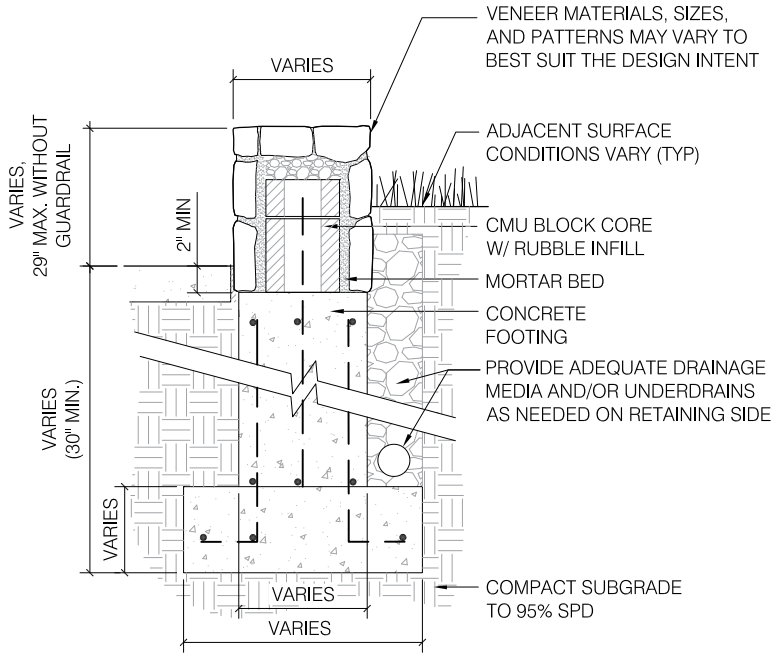
1. PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO FORMING AND INSTALLATION.
2. FIELD VERIFY ALL DIMENSIONS PRIOR TO SHOP DRAWINGS AND FABRICATION.
3. PROVIDE FORMED 3/4" 'VEE GROOVE' CONTROL JOINTS AT 8'-0" O.C.
4. WALL FINISHES TO BE DETERMINED BY LANDSCAPE ARCHITECT IN COORDINATION WITH BPRD.
5. ALL UNDERDRAINS TO EITHER DAYLIGHT OR BE CONNECTED TO A STORM DRAIN.

Retaining Walls

Wonderland Creek Underpass | Photo by City of Boulder

Concrete Masonry Unit (CMU) Block Wall with Veneer

NOT TO SCALE



NOTES:

1. PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
2. USE MINIMAL CHINKING ONLY AS NECESSARY FOR WALL STABILITY.
3. ALL UNDERDRAINS TO EITHER DAYLIGHT OR BE CONNECTED TO A STORM DRAIN.

Benches

Columbine Park | Photo by City of Boulder

Park/Memorial Bench

Intent

Park benches are an important asset to any public space that caters to passive and active users. Utilizing a standard bench design across parks is a great way to provide park users with a consistent identifying element that helps to inform them that they are in a BPRD managed park. Affixing memorial plaques to these park benches is a great way to pay tribute to community members and park advocates who are no longer with us but whose spirits live on within the parks they cared for.

Standards

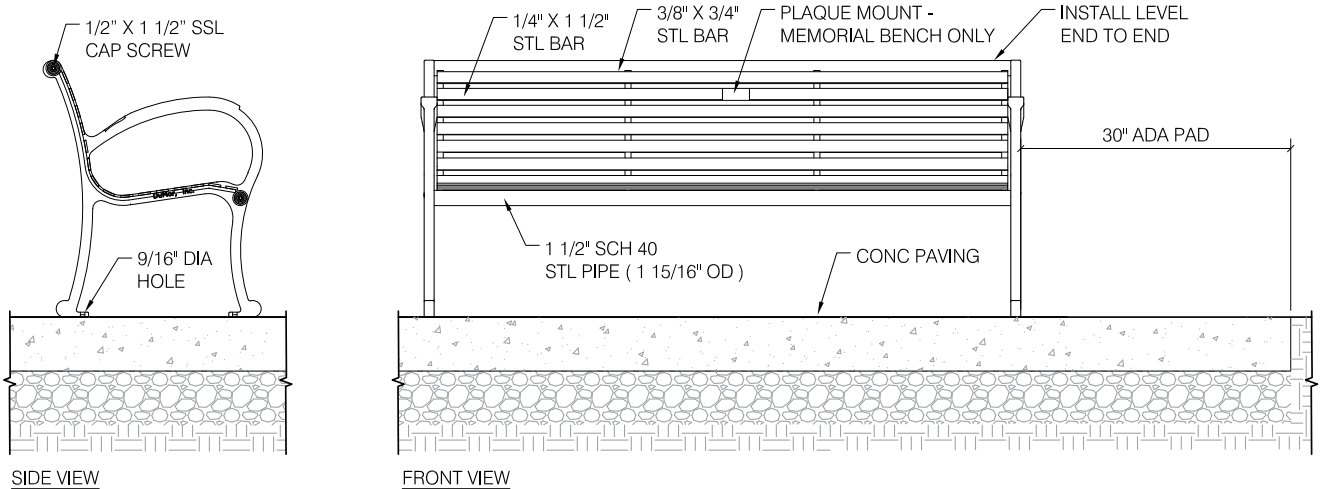
- Park/memorial bench shall be 6' Dumor steel bench #160 with center arm rest; powder coat black
- Memorial bench shall include a plaque inset.
- Bench shall be set a min. of 18" from any concrete edge on all sides except for in natural areas where bench is embedded in concrete footers with crusher fines or natural surface under the bench.
- Companion seating must meet current ADA requirements.
- The total number of benches and percentage of accessible benches provided within a park must comply with current ADA standards.
- Benches in natural areas shall be on aggregate surfacing with minimal concrete footers.

Guidelines

- Specialty benches may occur at Chautauqua Park, Civic Area, Downtown Boulder, Pearl St., Valmont Park and Boulder Reservoir Regional Park.

Park Bench Section/Elevation

NOT TO SCALE



Benches

Greenleaf Park | Photo by City of Boulder

Natural Stone Bench

Intent

In certain cases, the traditional park bench might not be the right fit in a park or open space that has a more natural or wild character. In these instances, it is acceptable to propose the use of natural stone benches in place of the traditional standard park benches.

Standards

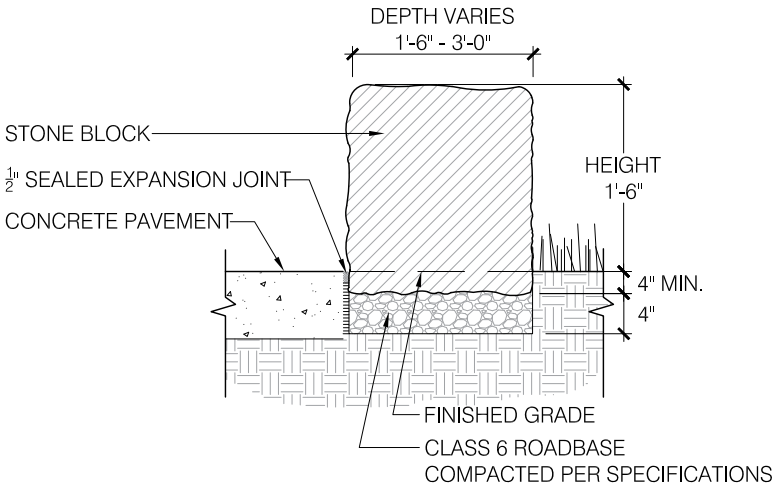
- Stone benches shall range from 1'-2' Ht., widths may vary but shall be at least 12" deep.
- Stone shall be locally sourced whenever possible in order to closely match the colors and composition of the stone native to the area.
- All exposed stone edges shall be eased.
- Stone shall be installed on top of a 6" aggregate base course or concrete depending on the setting.

Guidelines

- Be mindful of pinch points when locating/setting stone benches abutting or in close proximity to one another.

Natural Stone Bench Section/Elevation

NOT TO SCALE



Benches

Garald Stazio Ballfields | Photo by City of Boulder

Dugout Bench

Intent

Dugout benches should be a heavy duty bench designed for dugout specific applications. Bench size should be determined taking into consideration the specific needs of the user groups the field has been designed to serve. (i.e. youth, teenage, special needs, seniors)

Standards

- Dugout benches to be commercial grade cast aluminum with surface mounting.
- Install benches atop a concrete pad extending 18" from the edges of the bench on all sides.
- Benches shall be installed with accessible companion seating per current ADA requirements.

Guidelines

- Alternative dugout bench designs can be submitted to BPRD for approval.
- Coordinate with BPRD to determine a final bench location within the dugout prior to installation.

Bleachers

Intent

Bleachers are typically located adjacent to athletic fields and provide seating for spectators. Providing spectators with a seating opportunity can be advantageous for user groups of all ages and levels of competition.

Standards

- Bleachers for premier fields shall be eight row 21' long standard aluminum bleacher with surface mount option by Trigon Sports. Bleachers for satellite fields shall be five row 19.5' long standard aluminum bleacher with surface mount option by Trigon Sports.
- Safety railing shall be provided along the back of all bleachers and along the sides or stairs as applicable.
- Bleachers shall be set on concrete pads that extend 18" beyond the bleacher edge on all sides.
- All bleachers shall be installed with accompanying ADA viewing areas and accessible routes shall be provided per current ADA accessibility standards.

Guidelines

- Bleachers should be placed a minimum of 30' away from all edges of athletic fields or courts without perimeter fencing.

Tables

Foothills Community Park | Photo by City of Boulder

Picnic Tables

Intent

Picnic tables are a park asset that should be included in all parks, independent of typology or scale. Tables are often grouped together in plazas or other gathering areas, but can be successful when used in dispersed locations as well.

Standards

- Picnic tables shall be 8' Rectangular Outdoor Steel Picnic Table - Expanded Metal, Diamond 96"W x 62"D x 29 1/2"H - Black thermoplastic coating, by Global Industrial.
- All tables shall be surface mounted.
- For stand alone tables mounted on concrete pads, the concrete pad shall extend a minimum of 24" from the edges of the table.

Guidelines

- The appropriate total number and locations of picnic tables should be determined on a site-by-site basis and take into consideration the needs of the specific user groups the park serves.

Accessible Picnic Tables

Intent

Providing accessible picnic tables is an important component to designing inclusive park spaces.

Standards

- Accessible picnic tables shall be 8' Double Sided Extra Heavy Duty ADA Table, Diamond 96"W x 70"D x 30"H - Black thermoplastic coating, by Global Industrial. Current ADA requirements must be cross referenced at the time of purchase to ensure that the model specified still meets the current ADA standard.
- The total number of accessible tables provided on site must comply with the current ADA standards for the percentage for accessible seating.
- All tables shall be surface mounted.
- The route leading to the table must meet all current and applicable ADA standards relating to accessible seating and accessible routes.

Guidelines

- The appropriate total number and locations of ADA picnic tables should be determined on a site-by-site basis and take into consideration the needs of the specific user groups the park serves.

Grills

Harlow Platts Community Park | Photo by City of Boulder

Grills

Intent

Grills may be located adjacent to picnic areas, shelters and other gathering spaces.

Standards

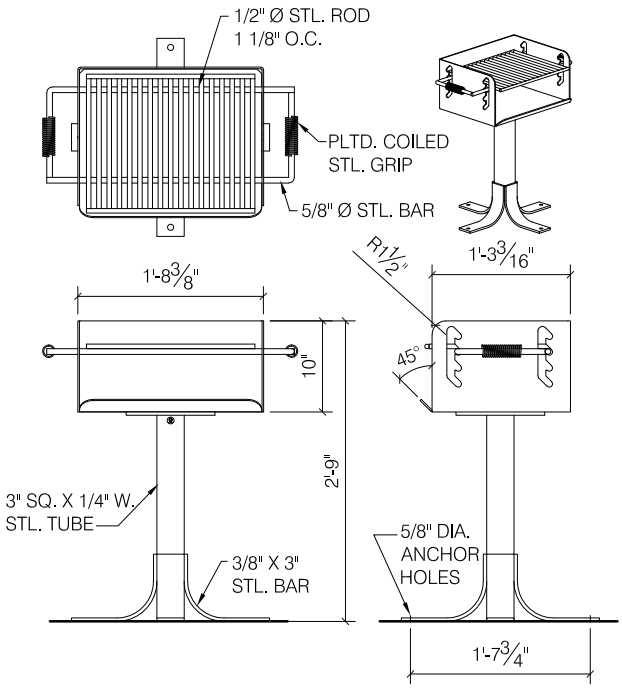
- All new grills shall be Grill 22, by Dumor; surface mount option only; Color: Black. Current ADA requirements must be cross referenced at the time of purchase to ensure that the model specified still meets the current ADA standard.
- Grill locations shall adhere to current ADA standards for accessibility and accessible routes.
- Grills shall be supplied at all park shelters that can be rented by park users.
- Grills shall be installed per manufacturer's recommendations.
- Parks with grills must have a three bin trash receptacle system that includes a compost bin for ash disposal.

Guidelines

- Grills should not be located under any tree canopy or within 6' of any shelter or shade structure roof lines.
- The appropriate total number and locations of grills should be determined on a site-by-site basis and take into consideration the needs of the specific user groups the park serves.

Pedestal Grill Details

NOT TO SCALE



Bollards

East Park | Photo by City of Boulder

Bollards

Intent

Bollards are only to be used for the purpose of restricting vehicular access into the park via pedestrian walkways, multimodal trails, plaza spaces, etc. They should not be used to delineate spaces within the park, or for any other purpose unrelated to vehicular access.

Standards

- Stationary bollards shall be Bollard 400, 36" Ht.; surface mount option.
- Removable bollards shall be Bollard 400, 36" Ht., provide with ground sleeve and locking mechanism.
- Color: Black.
- Coordinate bollard products and manufacturers specified with BPRD.
- Bollards used for vehicular protection must be rated to a 10,000 lb crash and must be no further than 6' on-center.

Guidelines

- Using bollards to create a vehicular barrier can be particularly useful in conditions where park paths, trails and/or plaza spaces abut a roadway or parking lot in a flush condition.

Bike Racks

Valmont Bike Park | Photo by City of Boulder

Bike Racks

Intent

Bike racks are an important modifier that should be included in all parks independent of park typology and/or scale. The presence of bike parking can work to encourage park user ridership.

Standards

- All inverted "U" bike racks shall be Bike Rack 83, surface mount, powder coated black, by Dumor.
- Racks shall be installed a minimum of 18" from any internal park path.
- Refer to DCS details 2.52.A, 2.52.B, & 2.53 for product and spacing requirements for inverted "U" bike racks.
- In special conditions, alternative bike rack designs/products may be submitted to BPRD for consideration.

Guidelines

- The appropriate number of bike racks to be provided within a given park site should be determined on a case by case basis, taking into consideration both on-site and contextual influencing factors.
- Depending on the required review types, the number, location and type of bicycle parking may be governed by DCS, BRC and feedback from transportation staff.
- When possible, bike racks should be located in close proximity to arrival spaces, gathering spaces, restrooms, courts/athletic fields, local trail connections or any other park asset that receives regular or heavy use.

Bicycle Parking	
Typology	**Minimum Number of Racks**
Neighborhood Park	2
Community Park	4
City Parks	10 In addition to others required as part of this manual
Civic Areas	4
Recreational Facilities	8 In addition to others required as part BRC & this manual
Specialized Facilities	2
Natural Areas	1
Community Use Areas	0

Waste

Civic Park | Photo by City of Boulder

2-Can System (Litter & Recycling)

Intent

Opportunities for waste disposal should be provided for users in multiple locations throughout a park space. Ensuring that an adequate number of waste and recycling receptacles are provided in thoughtful locations encourages use and helps to keep the park clean of litter.

Standards

- Trash and recycling receptacles shall be Bearsaver - CE series Double Trash Enclosure, ADA Compliant, surface mount, Color: Black.
- Label receptacles "Landfill" and "Recycle"
- Receptacles shall be anchored to a concrete pad, set 18" min. from any adjacent concrete paths or plazas and 8" min. from all pad edges. When installed in a crusher fines or soft surface area, installation to be post anchored per manufacturer's recommendations.
- Receptacles located in natural areas shall be anchored to concrete footers and surrounded by aggregate surfacing.

Guidelines

- Locate receptacles near areas of heavy use, adjacent to courts and at park entry spaces.
- Coordinate with the City of Boulder Sustainability Department to help determine total numbers and final locations.

3-Can System (+Compost or Ash Bin)

Intent

Rentable park shelters often host large group events that generate a lot of food waste. So providing a receptacle for compostable waste along with trash and recycling can help reduce the amount of waste that collects in the trash receptacle.

Standards

- Trash, recycling and compost receptacles shall be Bearsaver - CE series Triple Trash Enclosure, surface mount, Color: Black.
- 3-can systems shall only be included at rent-able shade structures and athletic fields.
- Receptacles shall be anchored to a concrete pad, set 18" min. from any adjacent concrete paths or plazas and 8" min. from all pad edges. When installed in a crusher fines or soft surface area, installation to be post anchored per manufacturer's recommendations.

Guidelines

- Coordinate with the City of Boulder Sustainability Department to help determine total numbers and final locations.

Park Signs

South Boulder Recreation Center | Photo by City of Boulder

Monument Signs

Intent

Monument signs are used to identify parks and are typically included at park entrances. Monument signs welcome visitors as they enter the park and help to identify the park as part of the Boulder Parks and Recreation park system.

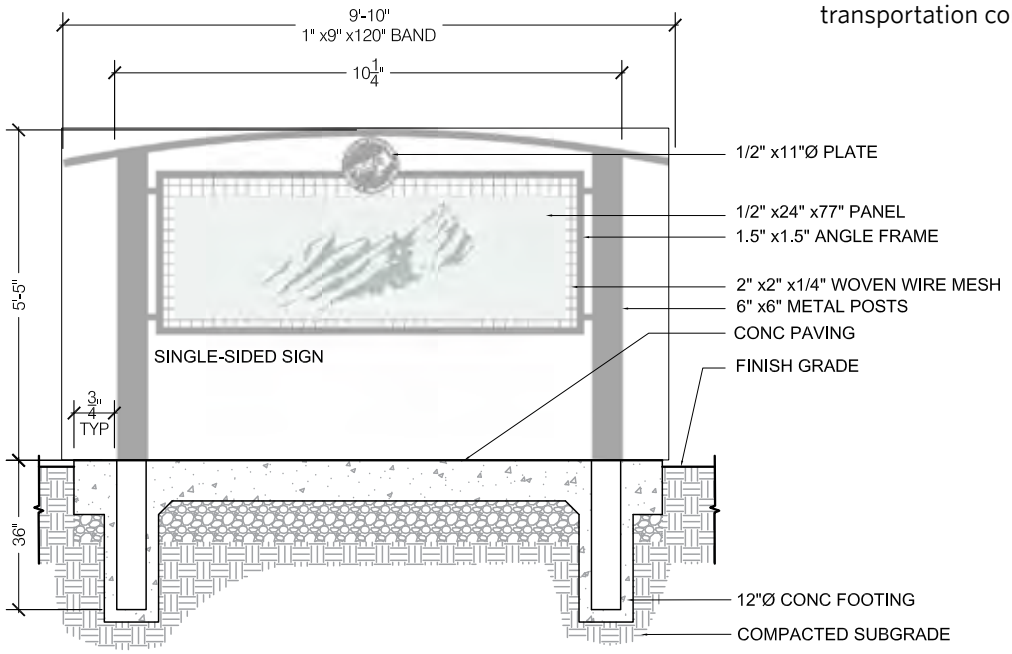
Standards

- Refer to the Boulder Parks & Recreation Graphic Standards Guide for monument sign graphic and infrastructural standards in Appendix G.
- Monument signs shall be located adjacent to the primary park entrance. Locate sign in a planting bed when possible.

Guidelines

- There are two standard sizes for monument signs provided in the Boulder Parks & Recreation Graphic Standards Guide (Appendix G). The appropriate size to use should be determined on a park by park basis, in coordination with Boulder Parks & Recreation.
- Smaller monument style entry signs should be considered for secondary park entries that see heavy use and/or provide access into the park from an adjacent public space or multimodal transportation corridor.

Monument Sign
NOT TO SCALE



Park Signs

Valmont City Park North | Photo by City of Boulder

Other Park Signs

Intent

Park signage plays an important role in creating a safe, comfortable, engaging and intuitive user experience for park goers. Signage types typically found in a park include but are not limited to: wayfinding/directional, regulatory, mapping, interpretive, kiosk, etc.

Standards

- Refer to the Boulder Parks & Recreation Graphic Standards Guide for sign graphic and infrastructural standards in Appendix G.
- Wayfinding or directional signs shall be provided throughout the park in all locations as required by local transportation standards, at a minimum.
- Sign kiosks may be used to display a collection of different signs, and shall be located adjacent to plazas and/or other gathering spaces.
- Coordinate with BPRD to determine the site specific signage needs and requirements for individual parks and facilities.

Guidelines

- Interpretive signs are a great way to convey site specific narratives and other interesting information to park users.

Valmont Bikepark | Photo by City of Boulder

Park Lighting

East Boulder Recreation Center | Photo by City of Boulder

Park Lighting

Intent

While lighting is not typically present in most BPRD parks, well lit park elements can help provide users with a sense of safety in certain conditions. Additional lighting can also be utilized to extend park use hours.

Standards

- All new/renovated lighting must meet new energy efficiency and dark skies requirements per the 2020 City of Boulder Energy Conservation Code (COBECC) as well as Crime Prevention Through Environmental Design (CPTED) standards for safety.
- All new/renovated lighting must comply with the City of Boulder Outdoor Lighting Ordinance, per BRC Section 9-9-16.

Guidelines

- Mow strips should be provided for light poles provided in lawn areas.
- For park renovation projects where existing lighting is to remain, all efforts should be made to transition existing Xcel lighting to City management to ensure compliance with current lighting standards.
- Providing lighting for bike parking and/or trash enclosure areas is a higher priority and may be required based on park location and intended use.

Light Spacing Distances	
Element	**Distance from**
Tree	20′
Driveway Edge	10′
Face of Road Curb (to center of pole)	3′
Sidewalks (to center of pole)	3′

Park Lighting

Dairy Center for the Arts | Photo by City of Boulder

Parking Lot Lighting

Intent

Parking lot lighting helps increase visibility and safety for both pedestrians and motorists moving through the parking lot during evening hours.

Standards

- All new/renovated parking lot lighting has to meet new energy efficiency and dark skies requirements per the 2020 COBECC as well as CPTED standards for safety.
- All new/renovated lighting must comply with the City of Boulder Outdoor Lighting Ordinance, per BRC Section 9-9-16.
- All parking lots shall be lit to an average brightness of 1 foot-candle.
- Lights shall be mounted on concrete caissons extending 30" above the parking lot pavement.
- Lights shall be located at the perimeter of the parking lot, where possible.
- Light temperature to be 3000K to coordinate with other park lighting. If parking lot is adjacent to lit athletic fields color temperature shall be 4000-5000 to coordinate with field lighting.

Guidelines

- Avoid locating lights in parking islands to eliminate conflicts with trees.

Path Lighting

Intent

Path lighting creates a safe way to move about the park system during evening hours. Pole lights, bollard lights or a combination of both may be appropriate depending on site conditions. Bollard lighting will often be the most appropriate form of path lighting due to its energy efficiency and ability to illuminate only the walking surface.

Standards

- All new/renovated lighting must meet new energy efficiency and dark skies requirements per the 2020 COBECC as well as CPTED standards for safety.
- All new/renovated lighting must comply with the City of Boulder Outdoor Lighting Ordinance, per BRC Section 9-9-16.
- Bollard lights shall be Kim Lighting PA&R and shall follow all applicable City of Boulder standards.
- Lighting on paths shall be an average brightness of 0.75 foot-candles.
- Light temperature to be 3000K to coordinate with other park lighting.
- Bollards shall be set a minimum of 6" and a maximum of 12" back from the edge of the trail.

Guidelines

- Space bollards to avoid pockets of dark and light along trail.
- Light distribution type should be based on bollard use.

Field & Structure Lighting

East Boulder Community Park | Photo by City of Boulder

Court & Athletic Field Lighting

Intent

Court lighting extends the available usage times for these park elements. Well lit courts and fields may be used by tournament players or neighborhood groups.

Standards

- All new/renovated lighting must meet new energy efficiency and dark skies requirements per the 2020 COBECC as well as CPTED standards for safety.
- All new/renovated lighting must comply with the City of Boulder Outdoor Lighting Ordinance, per BRC Section 9-9-16.
- Court lighting shall be provided with a timer.
- Lighting requirements shall be determined by intended use of court or field.
- Light temperature to be 5000K.

Guidelines

- Community members in neighboring residential areas should be engaged early the deign process when court and/or athletic field lighting is being considered as part of the project.
- Lit fields shall be designed and located to reduce light spillage and light pollution.

Building-Mounted Lighting

Intent

Building-mounted lighting can work to highlight architectural features as well as provide ambient security lighting for the building exterior and entrances.

Standards

- All new/renovated lighting has to meet new energy efficiency and dark skies requirements per the 2020 COBECC as well as CPTED standards for safety.
- All new/renovated lighting must comply with the City of Boulder Outdoor Lighting Ordinance, per BRC Section 9-9-16.
- Wall packs shall be HE Williams Voltaire and shall follow all applicable City of Boulder standards.
- 1 Foot-candle average at building perimeter for safety.
- Light temperature to be 3000K to coordinate with other park lighting.

Guidelines

- Architectural lighting specialists should be consulted when determining locations for building-mounted lighting.
- All efforts should be made to reduce light spillage and light pollution via use of new technology or management to be good neighbors.

Drinking Fountains

North Boulder Park | Photo by City of Boulder

Drinking Fountains

Intent

Park users' enjoyment is often enhanced with services such as water fountains. Whether active or passive users, drinking fountains help to keep park users supplied with necessary elements to keep them in the park.

Standards

- All drinking fountains shall be Elkay EZH2O Outdoor Drinking Fountain with Bottle Filling Station and Pet Fountain, Bi-Level, Pedestal, ADA, Non-refrigerated, Color: Dark Green.
- All fountains and locations shall adhere to all current and applicable ADA standards.
- Fountains shall be located in densely used areas of the park, or in conjunction with a building, dog park, playground or other park amenity.
- Fountains shall be set a minimum of 18" from pavement edges or any other site features.
- Drinking fountains shall only be provided in parks with restrooms.
- Fountains shall be designed to include a backflow preventer.

Guidelines

- Fountains should be drained into a sump or directly into a sanitary system.

Irrigation

Harlow Platts Park | Photo by City of Boulder

Irrigation

Intent

Supplemental irrigation assists plants that do not typically survive in Boulder's environment to grow and thrive. Irrigation is needed in most planting beds, turf fields and for tree establishment.

Standards

- See Appendix E for BPRD standard irrigation details.
- All irrigation controllers shall be smart controllers installed per manufacturer's standards and specifications.
- Rain sensors are required for all systems.
- All turf shall be irrigated via spray heads or rotors.
- Turf areas shall have head to head irrigation coverage. Heads should be triangulated when possible.
- Planting areas and trees shall be drip irrigated, provide redundant wraps on new trees.
- No overspray allowed on concrete walks or roads but may occur on soft-surface trails and walks.
- Keep heads 12" min. from edge of concrete.
- Drip irrigation system shall be XCZ100, use polyethylene lines only.
- Provide Carson valve boxes and set level into 1 1/2" aggregate, 2" min. clearance from box to any lateral or mainline.
- Rotors shall be Hunter I-25-SS.
- Pop-up sprays shall be Hunter PROS-06-PRS.
- System should maintain a 30 PSI standard, and 40 PSI for MP rotors.
- All lateral and mainlines should be bedded with squeegee or sand.
- Laterals shall run perpendicular to slopes.
- Drip/trees shall be on a separate zone.
- All irrigation controllers shall be Baseline and installed per manufacturer's standards and specifications.
- Lightning arrestors shall be included in the design.
- Moisture sensor shall be located in the design.
- Tag valves in numeric order from point of connection, work clock wise in looped system.
- Refer to the DCS for irrigation standards and details.
- For instances where standard irrigation details provided as part of this document conflict with the standard irrigation details provided in the DCS, always use the details provided within this document.
- After the system has been finished, a punch list shall be developed to make sure everything was installed per plan and is functioning properly.
- Once the system is confirmed to be functioning properly by the design team, an audit of the system will then be done by a 3rd party company (the designing firm can not do their own audits), the contractor will be responsible to pay for and coordinate the audit.

Guidelines

- Evaluate HDPE for mainlines and laterals as appropriate.

Vegetation

Gerald Stazio Ballfields | Photo by City of Boulder

Turf grass

Intent

Turf grass is often used in park areas, such as athletic fields and lawns, that see regular active use. In an effort to reduce labor, increase efficiency and reduce environmental impact, turf grass selection should carefully consider these impacts.

Standards

- Sod areas shall be minimized and should only be installed for active use areas.
- Sod shall have a minimum six week establishment period after installation; seed shall have a three month establishment period.
- Seeded and sodded areas shall be closed for use during establishment.
- Orchard grass shall be used in undeveloped areas that are not meant to be natural areas.
- Bluegrass mixes shall be used in sunny areas.
- The following grasses are acceptable in shaded areas: Fescues; salt tolerant grass types (depending on site and usage); regenerating turf grass fescue variety (Barunbrug). Coordinate with BPRD to determine final selection.
- Turf grass selection shall encourage minimizing mowing frequency in new and established turf areas, i.e. selection of compact turf grasses.
- Soil tests on existing topsoil shall be performed as part of design development process and topsoil shall be amended as necessary during construction, based on test results.
- Roto-till areas to be turfgrass, sod or seed, minimum of 5-6" deep.
- Incorporate a minimum of 5-7 yards of compost per 1,000 square feet and till into native soil.
- Sub-surface prep for turf areas, sodded or seeded, shall include the removal of all rocks and foreign material 1" inch or larger.
- Sod installation period is April 15 – October 1.
- Trees planted in sod must be protected with a tree guard. See tree protection section on page 120 of this manual for product information.

Guidelines

- After installation, overseed lawn areas with clover to provide additional nitrogen, when possible (not in athletic fields).
- Refer to sod guidelines in the DCS, Section 10.04 Seeding/Sodding.

Natural Areas

Maxwell Lake Park | Photo by City of Boulder

Natural Areas Planting & Seeding

Intent

Natural areas often contain sensitive habitats, plants or animal species or provide connectivity to larger habitat patches. These areas create greater biodiversity within the park system and the larger regional landscape for both plants and animals. They are intended to enhance the park experience and provide environmental, social, health and economic contributions as well as aesthetic value. They are often maintained to blend the parks with contiguous natural features such as creek corridors. Use of these areas vary based upon the sensitivity of the habitat and may range from closures to open with trail access.

Standards

- Natural areas shall be used to blend the park into surrounding natural areas and maintain natural corridors, where applicable.
- Natural areas shall have no formal planting beds.
- Plantings and seed mixes shall be comprised of native species and be neonicotinoid free.
- Seeded areas shall have a minimum three-month establishment period prior to park user access.
- Use natural area seed mixes in Appendix B.
- Seed mixes shall contain a variety of species and types of vegetation including warm/cool season grasses, forbs, sedges, etc. as appropriate for the habitat type. See Appendix B.
- Seed mixes shall be certified weed-free to less than 3%.
- Seeded areas shall be irrigated for establishment only.
- Installation shall be drill or disk seeded, then hydro-mulched.
- Post & dowel fence shall be utilized to establish boundaries, as needed.
- Seed installation period is April 15 – October 1 for irrigated areas and November 15-April 15 for non-irrigated areas.

Guidelines

- Native tree species may be planted directly adjacent to a stream or drainage channel, where appropriate.
- Soil conditioners such as Biosol or Menefee Humate should be incorporated into the soil as necessary.
- Interpretive and informational signage can help park users to understand and appreciate the unique ecosystems found in natural areas.
- Biological inventories of significant natural areas should be conducted prior to a change of use (i.e., from natural area to developed park). A more limited biological assessment may be necessary for construction of new amenities in natural areas to minimize impacts.

Contained Planting Bed

Admiral Arleigh A Burke Park | Photo by City of Boulder

Contained Planting Bed

Intent

Contained planting beds are often found in various locations throughout a park in order to provide a protected location for plant material to thrive adjacent to other park amenities and uses. There are three overarching types of contained planting beds: Shrub Beds, Perennial Beds and Sign Beds.

Standards

- Shrub beds: Comprised of spreading shrubs that grow densely together over time and help to reduce evapotranspiration rates and future mulch use.
- Perennial beds: Tend to be smaller and more pollinator focused, planted with a variety of flowering plants and ornamental grasses that vary in shape, color and seasonal interest.
- Sign beds: Specifically designed to accommodate a park monument sign within the bed area. These beds tend to be a combination of shrubs and perennials, arranged in a manner that brings attention to the monument sign.
- All plantings must be neonicotinoid free.
- All planting beds shall have a barrier in locations where the bed abuts turf or native lawn. A concrete mow strip is preferred, when possible.
- Mulch all beds to 3"-4" thick with shredded wood mulch. Rock mulch is prohibited.
- Amend soil in planting bed as necessary to encourage plant health, per soil testing results.
- Site preparation in any planting bed shall include tilling the soil to a minimum depth of six inches below the finished grade.
- For all allowable plant species, see Appendix B.
- Planting Season: Mar. 1-June 1 or Sept. 1-Oct. 15

Guidelines

- Maximize native and pollinator plantings when possible.
- Intensive pollinator plantings should not be located near playgrounds or other children's amenities.
- Possible mole/vole exclusion, where needed.
- Alternative mulch products and compositions may be submitted to BPRD for consideration and approval.
- Designers should take plant hardiness & drought tolerance into special consideration when developing planting designs.

Parking Islands

East Boulder Community Park | Photo by City of Boulder

Parking Islands

Intent

Parking islands should be designed to facilitate a safe and comfortable pedestrian circulation pattern through the parking lot and into the park. These islands should also be designed to accommodate vegetation, including shade trees.

Standards

- All parking island planting shall conform to BRC, Section 9-9-14 - Parking Lot Landscaping Standards.
- Planted areas adjacent to parking spots shall provide a 12" wide concrete step out zone behind curb.
- Sleeving for irrigation laterals shall be provided to all vegetated parking islands.

Guidelines

- Large, contiguous planting spaces within parking islands are preferred. Larger islands contribute to larger rooting areas and larger trees with more shade long-term.
- The design of parking lots and islands should consider the flow of pedestrian traffic and work to discourage trampling of plants.
- Incorporate LID best practices into the parking lot island and planting design.
- Where possible, curb cuts and water filtration areas should be incorporated into parking lot designs to manage water during storm events.

Tree Planting

Tree Top | Photo by City of Boulder

Tree Planting

Intent

Trees are an important asset to any park that provide visual interest as well as ecological and micro-climatic benefits. Trees can be utilized both in groupings and as individual specimens to help reinforce site design elements and create a sense of place. Trees are considered assets per code: BRC 6-6-1

> *The city council finds that all trees, plants, and other landscaping located, standing or growing within or upon city property, including, without limitation, any city owned or controlled street, alley, rights of way, or other public place or city or mountain park, recreation area or open space, belong to the city and are a community asset comprising a part of the public infrastructure.*

Parks are an ideal place for trees because they don't often need additional protections like tree grates, guards or supplemental soil volumes.

Standards

- See the DCS for tree planting details and specifications.
- For tree species see City of Boulder Forestry website, 'Best Trees for Boulder' list.
- Space trees a minimum of 14' apart on center and at least 72" from center to other features. Tree and planting design should respond to park location and overall park character.
- Size: 1.5 - 2"cal. for ornamental trees and 2-2.5" cal. for deciduous trees - 2" cal. preferred.
- Planting Season: Mar. 1-June 1 or Sept. 1-Oct. 15.
- Mitigation: for every tree inch cal. removed on site, replace with tree caliper totaling the removed inches (remove 20" tree, replace with 10- 2" trees).
- Provide a 5' shredded wood mulch ring for new tree plantings.
- All tree stakes and/or tree wrap shall be removed by the landscape contractor or general contractor following construction.
- Tree stock must meet nursery stock standards. Trees that have been dug in the spring of the current year are preferred.
- Tree planting designs within parks shall support the city-wide tree canopy cover goals. Additionally, tree planting designs shall meet city tree diversity standards at a minimum and should work to exceed those standards whenever possible.

Guidelines

- Planting plans should be more natural, some denser in areas with interspersed open spaces.
- Tree palettes for BPRD projects should not only meet the city's tree species diversity standards, they should strive to exceed these baseline standards and promote diversity on a higher level.
- Spring planting is preferred.
- The soil in project areas should be tested during design development so that soil improvements can be recommended by soil testing agency.
- Designers should take tree hardiness into special consideration when developing planting designs.

Tree Protection

Pearl Street Mall | Photo by City of Boulder

Protection of Existing Trees

Intent

Protecting existing trees is critical during the construction of a new park or park renovation project. Due to the slow growing nature of trees in the local climate, retention and protection of existing mature trees plays an important role in providing immediate shade for park users and preserving the environmental, economic, health and social services provided by the urban tree canopy.

Standards

- Refer to the DCS for tree protection requirements and standard details.
- Identification part of process (planning/design portion), start with inventory within project area that identifies tree preservation codes.
- Tree protection shall be called out on the plans.
- Areas within the tree protection fencing shall be mulched to aid in preventing compaction.
- All existing vegetation to remain shall be tank watered throughout the construction of the project until the irrigation system is fully functional.
- Trees to be protected shall be determined on a site by site basis in coordination with BPRD PM and City of Boulder Forestry division.

Guidelines

- Park designs should work to save as many existing trees of desirable species as possible.

Protection of New Trees

Intent

Tree guards are meant to protect newly planted trees; tree grates are intended to create a space for tree roots within a hardscape area like a plaza. Tree grates and guards are only needed in limited applications.

Standards

- Refer to current City of Boulder Forestry standards and DCS for standards and details for trees in the right-of-way.
- Trees planted in turf shall be protected with a 8.5" Ht., 5.25" Tree & Plant Guard, by Tree Supports, or approved equal.
- Trees planted in hardscape conditions shall be protected with a 5' Ht, Type A, 18" DIA. Tree Guard by Neenah Foundry, or approved equal.
- Tree grates shall be two piece 4' X 10' model # R-8815-B with an 18" opening or four piece 4' x 12' model # R-8815 with an 18" opening by Neenah Foundry.
- All tree stakes and/or tree wrap shall be removed by the landscape contractor or general contractor following construction.

Guidelines

- Only provide tree grates and guards if necessary or requested by Boulder Parks and Recreation.
- Tree guards for trees in turf areas should be removed after 2-4 years.
- Metal tree guards for trees in urban and/or hardscape areas should be removed only when the tree appears to be outgrowing the guard.

Appendix

Appendix A: Glossary

Aesthetic Value - A relative value that can be assigned to any physical element relating to its inherent visually pleasing or unpleasing qualities.

Accessible - Used to describe any site element designed in a way that facilitates ease of use by people with physical or mental limitations and/or those who require the use of mobility devices.

Assessment – The process of comparing and evaluating an entity against established standards and documenting the differences.

Assessment Scoring - A scoring process that utilizes a predetermined asset scorecard which simplifies asset inspections by providing a user-friendly visual rating scale for each inspection topic. This approach also provides a level of consistency among users and encourages objectivity in results. Visual evaluations correspond with a rating scale ranging from serious to good condition. Findings of the condition assessment are entered into the department's asset management software where condition assessment ratings are translated into a numeric score. Though the scoring process for each asset varies by the needs and components of the asset, each results in an overall asset condition score that allows for comparison of assets across the BPRD system.

Asset – An amenity such as a playground, picnic shelter, basketball court or athletic field that allows people to exercise, socialize and maintain healthy, physical, mental and social wellbeing.

Asset Condition - Determined by scale in Asset Management Plan document.

Asset Management – A systematic process of maintaining, upgrading and operating physical assets cost-effectively.

Asset Setting - How assets are grouped or placed within a park.

Addenda - Written information adding to, clarifying or modifying the bidding documents.

Best Management Practice (BMP) - A technique, method, or process that is most effective at delivering a particular outcome. The idea stems from the notion that with the appropriate processes, checks and testing, a desired outcome can be delivered with fewer problems and unforeseen complications. BMPs can also be defined as the most efficient and effective way of accomplishing a task, based on repeatable procedures that can be proven over time

Bid - An offer to perform a contract for work and labor or for supplying materials at a specified price. In the construction industry, a bid is considered an offer by the contractor to the owner. A bid, as an offer, becomes a contract once the owner accepts the bidder's offer with all other contractual requirements in order.

Bidding - A process whereby sealed proposals are submitted to the owner for consideration. Competitive bidding is mandatory for all City of Boulder projects.

Biodiversity - The range and number of different plant, animal, fungi and microorganism species living collectively within a given ecosystem.

Capital Project - A long-term, capital-intensive investment project with a purpose to build upon, add to or improve a capital asset.

Circulation Pattern - The pattern or patterns in which people, vehicles or any other elements in motion move throughout a site.

Civic Space - (See Chapter 3, Pg. 32-33).

Clear Width - A span between two vertical elements devoid of any vertical obstructions.

Community Use Area - (See Chapter 3, Pg. 40-41).

Condition Assessment - A detailed record and snapshot in time of the physical condition of an asset.

Consultant - A person who provides expert advice professionally. Within the context of this document this term often refers to a Landscape Architect, Engineer, Architect, etc.

Contractor - A person, firm, partnership, subcontractor or corporation, licensed by the City that is responsible for the construction of approved public improvements associated with a specific project, or projects, within the City of Boulder service area. This term also includes the contractor's superintendent and on-site manager.

Design-build - A method of organizing a building project in which a single entity undertakes the design and construction at a set fee negotiated in advance.

Design Standard - Generally accepted uniform procedures, dimensions, materials or parts that directly affect the design of a product or facility.

Establishment - The root system development process beginning at the onset of planting, that is critical for the long-term health and success of a particular plant or group of plantings.

Establishment Period - The time during which a new plant is developing its root system after being planted.

Facility, Recreational - (See Chapter 3, Pg. 34-35).

Facility, Specialized - (See Chapter 3, Pg. 36-37).

Facility Programing - A research and decision-making process that identifies the scope of work to be designed.

Foot-candle - A U.S. unit of measurement referring to incident light. Footcandles can be derived from lumens (1fc = 1 lumen/sq . ft .) or candelas (fc = candelas/distance 2).

Greenway Trail - A trail that links parks and facilities together, typically off-street.

Guideline - A general rule, principle or piece of advice relating to a specific park asset.

Horizontal Alignment - The proposed route of a given path, trail or roadway comprised of a series of horizontal tangents and circular curves along the ground plane independent of vertical alignment (grades and vertical curves).

Hydro-mulch - A seeding process that uses a mixture of seed, mulch and fertilizer. It is often used as an erosion control technique on construction sites, as an alternative to the traditional process of broadcasting or sowing dry seed.

Inclusive Design - Design processes and elements that work to facilitate and encourage cohabitation and interaction between multiple user groups of varying ages, abilities, demographics, etc.

Infrastructure - Basic physical and organizational structures and facilities needed for the operation of a park.

Integrated Pest Management (IPM) - A broad-based approach that integrates practices for control of pests through biological, cultural, mechanical and chemical practices.

Invasive Species - An organism that causes ecological or economic harm in a new environment where it is not native. Invasive species can harm both the natural resources in an ecosystem as well as threaten human use of these resources.

Inventory - The process of collecting information about a site's existing conditions, including but not limited to elements of a physical, metaphysical, contextual and operational nature.

Irrigation, Overspray - A condition where water from an irrigation head(s) is spraying into an area that is already receiving sufficient spray coverage from an adjacent head(s), or water is being sprayed directly onto a hardscape surface.

Irrigation, Rotor Head - A type of fixed spray sprinkler that uses a rotating stream (or multiple streams) of water to irrigate an area.

Irrigation, Spray Head - A type of fixed spray sprinkler that pops up from underground and waters a set pattern, usually from 4 to 15 feet in range.

Lawn, Native- An open space that has been seeded with a variety of grass species historically found to grow wild in that location.

Level of Service - An expression of the minimum recreation and park infrastructure capacity required to satisfy the needs of residents of the community. Unless otherwise specified, LOS is expressed as per 1,000 population.

Life-cycle - All stages of providing a facility or service including conception, planning, design, implementation, evaluation, monitoring, retirement and/or disposal.

Glossary Continued

Low Impact Development (LID) - Stormwater management techniques that seek to mimic natural systems while offering functional stormwater run-off systems.

Matrix of Condition - A working document or log, managed by BPRD, where assessment scores rating the physical condition of all BPRD parks and park assets are logged and tracked over time.

Meander - Winding curves or bends in a path or trail.

Multigenerational - Relating to people of several generations.

Multimodal - Refers to a transportation system that considers various modes (walking, cycling, automobile, public transit, etc.) and connections among modes.

NetZero - A site with zero net energy consumption, meaning the total amount of energy used by the site on an annual basis is roughly equal to the amount of renewable energy created on the site, or nearby.

Natural Area - (See Chapter 3, Pg. 38-39).

Operations & Maintenance Plan - A post-occupancy plan for a given park that works to provide guidance for the BPRD staff involved in parks and grounds maintenance relating to how the park should be managed and maintained once the park becomes open to the public.

Parcel - A contiguous area of land that is owned by a single entity.

Park, Developed - A park that has been designed and constructed to facilitate specific uses.

Park, City - (See Chapter 3, Pg. 30-31).

Park, Community - (See Chapter 3, Pg. 28-29).

Park, Neighborhood - (See Chapter 3, Pg. 26-27).

Park, Undeveloped - Land managed by BPRD that is planned for future development as parkland.

Park, Urban - Parks operated and maintained by BPRD.

Parking Island - An unpaved, often planted, area within a parking lot.

Path, Multi-use - (See Chapter 4, Pg. 55).

Path, Park - (See Chapter 4, Pg. 55).

Permit - An official document providing someone with authorization to do something.

Planting, Native - A planting scheme that contains a variety of plant species historically found to grow wild in that location.

Planting, Pollinator - A planting scheme that contains a variety of plant species that attract and support a wide range of pollinator insect species.

Plaza Area - (See Chapter 4, Pg. 54).

Precedents - An earlier event or action that is regarded as an example or guide to be considered in subsequent similar circumstances.

Prefabricated - To manufacture sections of (especially a building or piece of furniture) to enable quick or easy assembly on site.

Project Category - Categories of project types, set forth by the City of Boulder, that define what level of requirements a project must meet and the appropriate project management approach.

Public Engagement - The involvement of specialists listening to, developing their understanding of, and interacting with, non-specialists.

Punch List -A document prepared near the end of a construction project listing work not conforming to contract specifications that the general contractor must complete prior to final payment.

Punch Walk - A site tour conducted with the contractor, owners representative, consultant team members and BPRD project manager

Record Documents - A revised set of drawings submitted by a contractor upon completion of a construction project. Record drawings (or As-built) drawings show the dimensions, geometry and location of all components of the project.

Recreation, Active - A structured individual or team activity that requires the use of special facilities, courses, fields or equipment.

Recreation, Passive - Recreational activities that do not require prepared facilities like sports fields or pavilions. Passive recreational activities place minimal stress on a site's resources; as a result, they can provide ecosystem service benefits and are highly compatible with natural resource protection.

Seeding, Disc - A seeding method that utilizes a device that sows seeds by dragging a tine or knife-point through the soil and dropping seeds in behind it with a press wheel at the back closing it up.

Seeding, Drill - A seeding method that utilizes a device that sows seeds by positioning them in the soil and burying them to a specific depth. This ensures that seeds will be distributed evenly.

Seeding, Native - Sowing an area with seeds of a variety of grass species historically found to grow wild in that location.

Shall - Used to mean a mandatory duty to conform to the specified standard. Where certain requirements in these standards are described with the "shall" stipulation, it is mandatory that these requirements be met or exceeded.

Should - Used to mean an advisory condition. Where "should" is used, it is considered to be recommended or advisory, but not mandatory.

Signage, Informational - Signage that informs people of a site element/areas purpose, or gives them instruction on the use of something.

Signage, Interpretive - Signage that draws attention to elements of cultural, environmental and/or historic significance.

Signage, Kiosk - A sign structure that contains multiple sign panels that communicate a range of different information.

Signage, Regulatory - Signage that defines the rules and regulations of a park. This type of signage defines how a park is to be used.

Site Amenity, Asset - An amenity such as a playground, picnic shelter, basketball court or athletic field that allows people to exercise, socialize and maintain healthy, physical, mental and social wellbeing.

Site Amenity, Modifier - A basic site amenity that supports users during a visit to a park or recreation site. These typically include elements such as restrooms, shade, parking, benches, lighting and drinking fountains.

Site Analysis - Detailed description and examination of the features of a site, to determine how these features will effect and contribute to the design of a proposed development. A site analysis directly informs the design response.

Site Conditions - Physical and other conditions at the Site and the surrounding area as a whole, including conditions relating to the environment, transportation, access, waste disposal, handling and storage of materials, the availability and quality of electric power, the availability and quality of water, the availability and quality of roads, climatic conditions and seasons, topography, air and water quality and access conditions, ground surface conditions, surface soil conditions, sound attenuation, subsurface geology, nature and quantity of surface and subsurface materials to be encountered.

Social Wellbeing - The extent to which a person feels a sense of belonging and social inclusion.

Soil Amendment - Any material added to a soil to improve its physical properties, such as water retention, permeability, water infiltration, drainage, aeration and structure. The goal is to provide a better environment for roots.

Soil Conditions - The capacity of a soil to function, within land use and ecosystem boundaries, to sustain biological productivity, maintain environmental health, and promote plant, animal, and human health.

Specifications -A set of documented requirements to be satisfied by a material, design, product or service that always accompany a set of construction drawings.

Stream Corridor - The stream, its floodplains and a transitional upland fringe.

Submittal - Shop drawings, material data, samples and/or product data that are submitted to the project Landscape Architect, Architect, Engineer and/or Owner for review and approval prior to the contractor proceeding with the work.

Tree Canopy - The layer of leaves, branches and stems of trees that cover the ground when viewed from above.

Glossary Continued

Tree Protection - Measures taken to preserve tree health during construction and/or throughout the life of the tree depending on the method of protection.

Turf, Artificial - Manufactured synthetic surfacing material that mimics the look and feel of turfgrass.

Turfgrass - Any low, densely growing species of grass that can be used in lawn or sports field applications.

Typology - A categorization of park types defined by the size, location and type of assets and modifiers within a given park.

Urban Forest - The collection of privately owned and publicly owned trees and woody shrubs that grow within an urban area.

User Group - Park users who share similar interests, goals or concerns.

Variance - (See Chapter 1, Pg. 4).

Vegetation - An assemblage of plant species and the ground cover or canopy they provide

Waiver - (See Chapter 1, Pg. 4).

Abbreviations

ADA – Americans with Disabilities Act (1990)

AMP - Asset Management Program

ANSI - American National Standards Institute

API – Asset Priority Index

ASI - Architect's Supplemental Information

AASHTO - American Association of State Highway and Transportation Officials

ASTM - American Society for Testing and Materials

APTA - American Platform Tennis Association

BGEM - Boulder Grasslands Ecosystem Management

BMP - Best Management Practice

BPRD – Boulder Parks and Recreation Department

BPMP - Boulder Parks Master Plan (2014)

BRC - Boulder Revised Code

BUFSP - Boulder Urban Forestry Strategic Plan (2018)

BVCP – Boulder Valley Comprehensive Plan (2015)

CIP - Capital Improvement Plan

CMO – City Manager's Office

CPSC - U.S. Consumer Product Safety Commission

COB – City of Boulder

DCS - Design and Construction Standards

DBH - Diameter at Breast Height

DUDG - Downtown Urban Design Guidelines

FEMA - Federal Emergency Management Agency

GI - Green Infrastructure

GMMP - General Maintenance and Management Plan

IPM – Integrated Pest Management

NRPA – National Recreation and Park Association

LID - Low Impact Development

OAC - Owner-Architect-Contractor

OSMP – Open Space and Mountain Parks Department

PM - Project Manager

PMP - Project Management Policy

PR - Proposal Request

PWD - Public Works Department

PWDCS - Public Works Design and Construction Standards

PWTS - Public Works Transportation Standards

RFI - Request for Information

RFP - Request for Proposal

RFQ - Request for Qualifications

ROW - Right-of-Way

RPI – Recreation Priority Index

RPFP – Recreation Programs and Facilities Plan (2010)

USTA - U.S. Tennis Association

USAPA - U.S.A. Pickleball Association

Appendix B: Standard Plant Lists

Tree List

For tree species see City of Boulder Forestry website, 'Best Trees for Boulder' list.

Natural Areas Seed Mixes

Habitat Type	Scientific Name	Common Name	% Composition of Mix	Rate (PLS lbs./Acre)
Upland Species				
Grasses	Sporobolus airoides	Alkali Sacaton	70% grasses - % for each species will depend upon site.	Will depend upon soils/site and application method. In general double the drilled planting rate for broadcast applications.
	Andropogon gerardii Vitman	**Big Bluestem**		
	Bouteloua gracilias	**Blue Grama**		
	Elymus elymoides	Bottlebrush Squirreltail		
	Bouteloua dactyloides	**Buffalograss**		
	Nassella viridula	Green Needlegrass		
	Achnatherum hymenoides	Indian Ricegrass		
	Distichlis spicata	Inland Saltgrass		
	Schizachyrium scoparium	Little Bluestem		
	Hesperostipa Barkworth	Needle & Thread (closed areas)		
	Sporobolus cryptandrus	Sand Dropseed		
	Poa secunda	Sandberg Bluegrass		
	Bouteloua curtipendula	**Sideoats Grama**		
	Elymus trachycaulus	Slender Wheatgrass		
	Panicum virgatum	**Switchgrass**		
	Pascopyrum smithii	**Western Wheatgrass**		
	Sorghastrum nutans	Yellow Indiangrass		
Forbs	Helianthus annuus	Annual Sunflower	30% Forbs/Wildflowers - % for each species will depend upon site.	
	Erigeron speciosus	Aspen Daisy/Fleabane		
	Rudbeckia hirta	Blackeyed Susan		
	Gaillardia aristata	**Blanketflower**		
	Liatris punctata	**Dotted Gayfeather**		
	Artemisia frigida	Fringed sage		
	Linum perenne lewisii	**Blue Flax**		
	Argemone polyanthemos	**Prickly poppy**		
	Dalea purpurea	Purple Prairie Clover		
	Cleome serrulata	Rocky Mountain bee plant		
	Sphaeralcea coccinea	Scarlet Globemallow		
	Heliomeris multiflora	Showy Goldeneye		
	Penstemon secundiflorus	**Sidebells Penstemon/Orchid Beardtongue**		
	Symphyotrichum laeve	Smooth Blue Aster		
	Yucca Glauca	Soapweed yucca		
	Ratibida columnifera	**Yellow/Upright/Prairie Coneflower**		
Wetland Species				
	Sporobolus airoides	Alkali sacaton		
	Schoenoplectus pungens	**Common threesquare**		
	Poa palustris	Fowl bluegrass		
	Juncus arcticus littoralis or balticus	**Baltic or Mountain Rush (not arctic)**		
	Puccinellia nuttalliana	Nuttall's alkaligrass		
	Distichlis spicata	Saltgrass		
	Bolboschoenus maritimus	**Alkali/Cosmopolitan Bulrush**		
	Carex nebrascencis	**Nebraska Sedge**		
	Spartina pectinata	Prairie Cordgrass		

*BPRD most commonly utilized species are in **bold**

Shrub and Perennial Plant List

Plant Name	Height/Spread (FT)	Light Requirement	Flower Color/ Season
Shrubs			
Amorpha canescens Leadplant	3 x 4	Sun	Purple/Summer
Berberis thunbergii Japanese barberry	3 x 5	Sun	Yellow/Spring
Berberis x 'Tara' Emerald Carousel ™ Emerald Carousel barberry	4 x 5	Partial Sun/ Sun	Yellow/Spring
Buddleia alternifolia 'Argentea' – Silver Fountain Butterflybush	10 x 8	Sun	Violet/Late Spring
Caragana arborescens Siberian peashrub	12 x 10	Partial Sun/ Sun	Yellow/ late Spring
Caryopteris x clandonensis Blue mist spirea	4 x 4	Partial Sun/ Sun	Blue-Violet/ Summer
Cercocarpus ledifolius- Curl-leaf mountain-mahogany	20 x 12	Partial Sun/ Sun	Yellow/Spring (not showy)
Cercocarpus montanus Mountain-mahogany	8 x 6	Partial Sun/ Sun	Yellow/Spring (now showy)
Chamaebatiaria millefolium Fernbush	5 x 6	Partial Sun/ Sun	White/Summer
Chrysothamnus spp. Rabbitbrush	6 x 6	Sun	Yellow/Late Summer
Ephedra equisetina Bluestem jointfir	4 x 5	Partial Sun/ Sun	Not Showy
Fallugia paradoxa Apache plume	5 x 5	Partial Sun/ Sun	White/Late Spring
Forestiera neomexicana New Mexican privet	12 x 10	Sun	Yellow/Spring
Hippophae rhamnoides Sea-buckthorn	18 x 12	Sun	Yellow/Early Spring
Holodiscus dumosus Rock spirea	4 x 4	Sun	White/Late Spring
Pinus mugo Mugo pine	Many sizes	Partial Sun/ Sun	Not Showy
Potentilla fruticosa Cinquefoil (potentilla)	4 x 4	Sun	Yellow, White, Pink/Late Spring-Frost
Prunus besseyi Sand cherry	6 x 6	Partial Sun/ Sun	White/Spring

Shrub and Perennial Plant List Continued

Rhus glabra cismontana Smooth sumac	6 x 6	Sun	Yellow/Summer
Rhus trilobata Threeleaf sumac	6 x 6	Sun	Yellow/Spring
Symphoricarpos albus Snowberry	4 x 4	Partial Sun/ Sun	White/Early Summer
Syringa vulgaris Common lilac	15 x 12	Partial Sun/ Sun	Purple/Spring
Cytisus purgans Spaish Gold Broom	4 x 6	Partial Sun/ Sun	Spring
Viburnum x rhytidophylloides 'Alleghany' Alleghany Viburnum	10 x 10	Partial Sun/ Sun	White/Spring
Viburnum burjaeticum Manchurian Viburnum	10 x 6 or 5 x 5 dwarf	Partial Sun/ Sun	White/Spring
Chrysothamnus nauseosus Dwarf Rabbitbrush	1 x 3	Partial Sun/ Sun	Yellow/ Summer-Fall
Pinus monophylla 'Blue Jazz' Dwarf Pinyon Pine	2 x 2	Partial Sun/ Sun	Not Showy
Sibiraea laevitaga Siberian Spirea	5 x 8	Partial Sun/ Sun	White/Spring
Ribes uva-crispa Gooseberry	3 x 5	Partial Sun/ Sun	Summer
Arctostaphylos x coloradensis Manzanita	1 x 5	Partial Sun/ Sun	Pink/Spring, Winter
Ribes aureum Golden Currant	6 x 6	Partial Sun/ Sun	Yellow/Early Spring
Cotinus coggygria Smoke Bush	15 x 10	Partial Sun/ Sun	Summer
Euonymus alatus Burning Bush	6 x 6	Partial Sun/ Sun	Yellow, Green/ Early Summer
Forsythia spp. Forsythia	All sizes	Partial Sun/ Sun	Yellow/Early Spring
Spirea spp.	All sizes	Partial Sun/ Sun	White, pink/ Summer

Shrub and Perennial Plant List Continued

Rhus trilobata 'Autumn Amber' Autumn Amber Sumac	14 x 8	Sun	N/A
Ornamental Grasses			
Korean Feather Reed Grass	3 x 2	Partial Sun/ Sun	N/A
Sporobolus wrightii Giant Sacaton	6 x 5	Partial Sun, Sun	N/A
Bouteloua gracilis Blue Grama Grass	3 x 3	Partial Sun, Sun	N/A
Schizachyrium scoparium Little Bluestem	3 x 1	Sun	N/A
Andropogon gerardii Big Bluestem	6 x 2	Sun	N/A
Muhlenbergia reverchonii Ruby Muhly	2 x 2	Sun	N/A
Achnatherum calamagrostis Alpine Plume Grass	2 x 3	Partial Sun/ Sun	N/A
Sorghastrum nutans Indian Grass	5 x 3	Sun	N/A
Bouteloua curtipendula Sidoats grama	3 x 3	Partial Sun, Sun	N/A
Calamagrostis x acutiflora Feather Reed Grass	5 x 2	Sun	N/A
Chasmanthium latifolium Northern Sea Oats	4 x 4	Partial Sun, Sun	N/A
Erianthus (Saccharum) ravennae Hardy Plume Grass	12 x 4	Sun	N/A
Miscanthus sinensis Maiden Hair Grass	Varies	Partial Sun, Sun	N/A
Perennials			
Achillea millefolium Common Yarrow	2 x 2	Partial Sun, Sun	Pink, Red, Yellow, White/Summer

Shrub and Perennial Plant List Continued

Gaillardia spp. Blanket Flower	1 x 3	Partial Sun, Sun	Yellow, Red/Summer
Iris germanica Bearded Iris	2 x 3	Partial Sun, Sun	Blue, orange, pink, purple, white, yellow/ Late Spring
Linum spp. Blue Flax	2 x 2	Partial Sun, Sun	Blue/ Spring-Summer
Lupinus spp. Lupine	5 x 3	Partial Sun, Sun	Varies/Spring
Oenothera spp. Desert Primrose	0.5 x 1	Sun	Yellow/Summer
Penstemon spp. Penstemon	Varies	Partial Sun, Sun	Varies
Perovskia atriplicifolia Russian Sage	5 x 4	Sun	Purple/Summer
Ratibida columnifera Prairie Coneflower	3 x 1.5	Sun	Yellow/Summer
Zauschneria spp. Hummingbird Trumpet	0.5 x 2	Partial Sun, Sun	Orange/Summer
Agastache spp. Hyssop	Varies	Partial Sun, Sun	Varies
Belamcanda chinensis Blackberry Lily	3 x 2	Sun	Orange/Summer
Kniphofia spp Torch Lilly/Red Hot Poker	3 x 3	Partial Sun, Sun	Orange/Summer
Lavandula angustifolia Lavender	1.5 x 1.5	Sun	Purple/Summer
Liatris punctate Gayfeather	4 x 1.5	Sun	Purple, White/ Sumer
Nepeta 'Pfiske' Little Trudy Catmint	10 x 16	Partial Sun, Sun	Purple Spring/ Fall
Solidago spp. Goldenrod/Solidago	3 x 3	Sun	Yellow/Late Summer
Aquilegia spp. Columbine	3 x 1.5	Partial Sun, Sun	Varies/Spring

Shrub and Perennial Plant List Continued

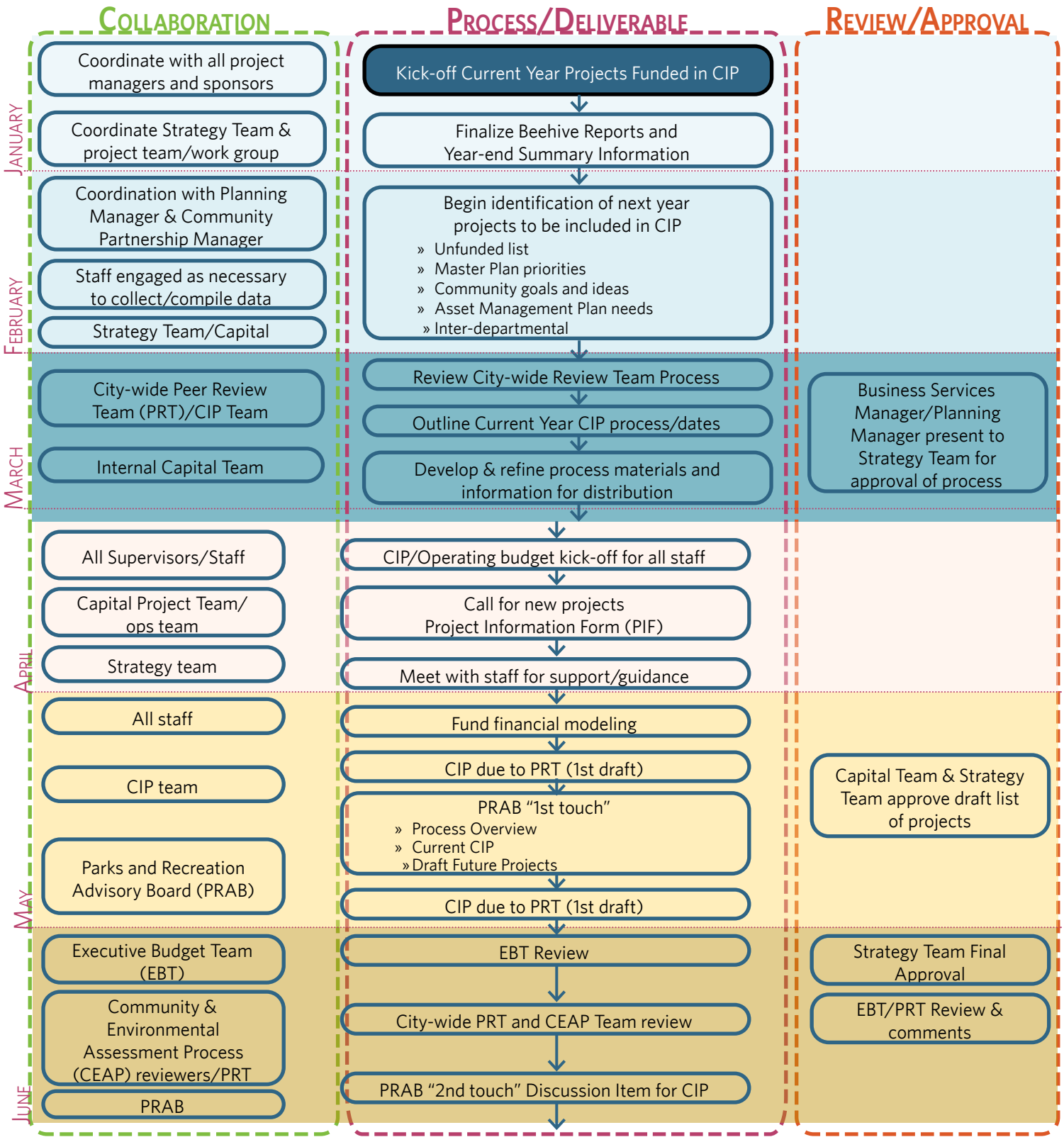
Salvia argentea Silver Sage Salvia azurea grandiflora Purple Rain Sage Salvia darcyi Vermillion Bluffs Mexican Sage Salvia darcyii x microphylla Windwalker Royal Red Salvia lemmonii 'PS' 2019 Desert Rose Salvia Salvia officinalis Culinary Sage Salvia pachyphylla Mojave Sage Salvia reptans 'PS' Autumn Sapphire Sage Salvia x sylvestris Meadow Sage Salvia sclarea Clary Sage Salvia greggi Wild Thing Sage Salvia daghestanica Platinum Sage Salvia moorcroftiana x indica Shangri-la Sage	Varies	Partial Sun, Sun	Varies/Summer
Calylophus serrulatus Sundrops	0.5 x 1	Partial Sun, Sun	Yellow/Spring, Summer
Echium russicum Red Feathers	1 x 1	Partial Sun, Sun	Purple, Red/ Spring-Fall
Berlandiera lyrata Chocolate Flower	1 x 1	Sun	Yellow/Spring-Fall
Clematis scottii Scott's Sugerbowls	1 x 1	Sun	Blue/Spring, Summer

Shrub and Perennial Plant List Continued

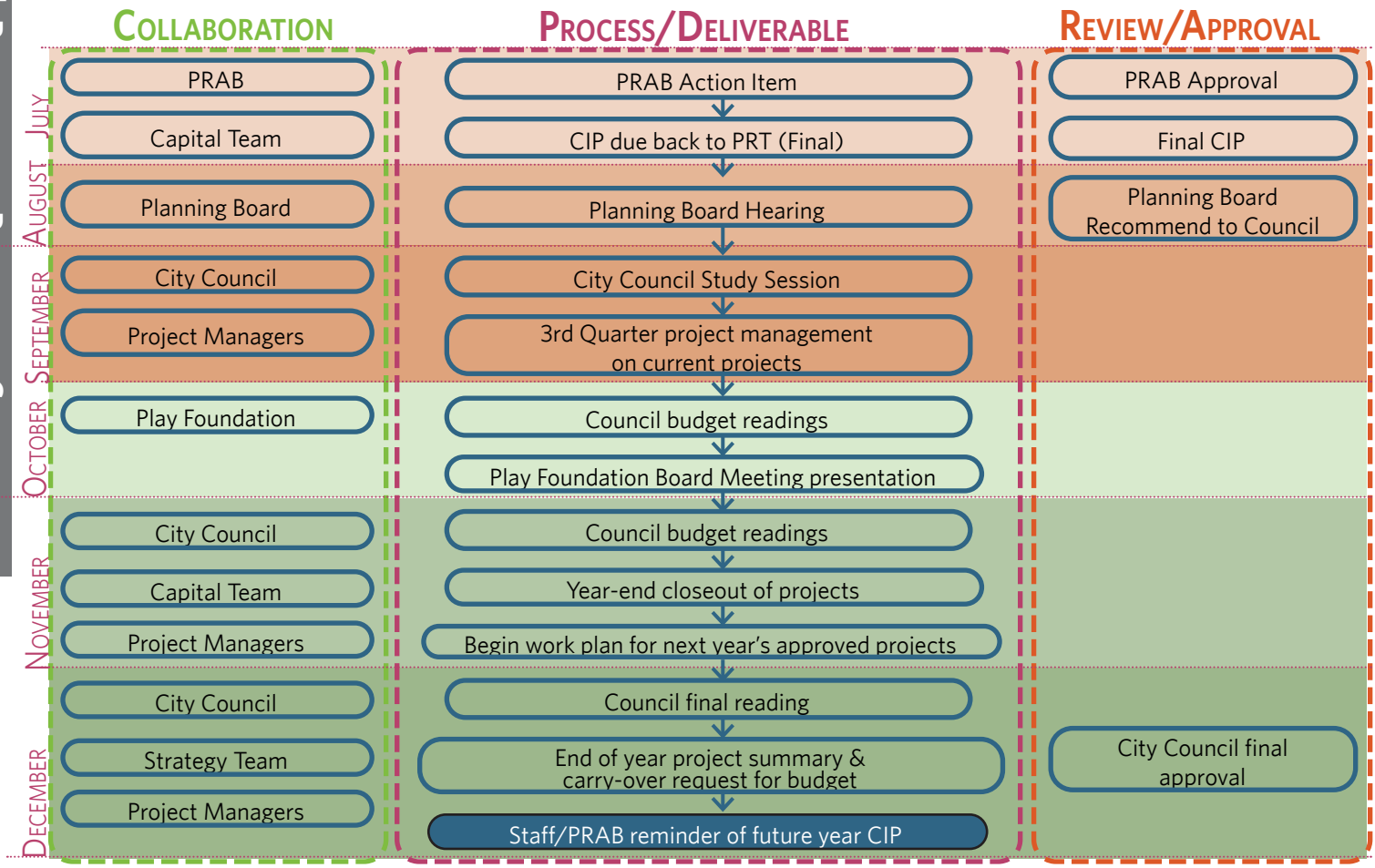
Origanum libanoticum Hops Oregano	1 x 2	Partial Sun/ Sun	Purple/Fall, Summer
Phlomis cashmeriana Cashmere Sage	5 x 3	Partial Sun/ Sun	Pink/Summer
Anthemis marschallania Filigree Daisy	0.5 x 2	Partial Sun/ Sun	Yellow/Spring
Seseli gummiferum Moon Carrot	3 x 1	Partial Sun/ Sun	White/Fall, Summer
Crambe maritima Curly Leaf Sea Kale	2 x 3	Sun	White/Spring
Geranium dalmaticum Cranesbill	0.5 x 1	Partial Sun/ Sun	Pink/Spring, Summer
Hemerocallis spp. Daylily	Varies	Partial Sun/ Sun	Red, Orange, Yellow/Summer

Appendix C: Requirements, Process and Checklists

Annual Capitol Planning Process



Annual Capitol Planning Process Continued



BOULDER'S BID CONSTRUCTION CHECKLIST

BID Construction Checklist

(Last modified 12/23/2011)

Please provide the following information to purchasing when submitting a new request for a project to be issued for bid.

- ☐ Project OCA
- ☐ Advertisement (use appropriate boiler on purchasing website)
  - o Where to advertise (Daily Camera, Daily Journal)
- ☐ Target list (email addresses of potential target bidders)
- ☐ Contact Information (City side)
  - o Contact for purchasing if questions arise regarding the bid packet
  - o Official contact for bidders to be included in the bid packet
- ☐ Bid opening date (minimum two weeks from issue date)
- ☐ Pre-bid date and location (if applicable)
- ☐ Establish an end date for Q&A
- ☐ Procurement Schedule (issue date, close date, pre-bid meeting date, award date, etc)
  - o Pre-bid meeting, if needed should be 7-14 days after bid is issued
    - ▪ Addendum to be released after pre-bid meeting
  - o 3 to 10 days between pre-bid/addendum and Bid/RFP closing

NOTE: No addendums may be released within 48 hours of bid opening without extending bid close date to allow for vendor response time

- ☐ Number of copies request in RFP submission (number of hard copies? CDs?)
- ☐ Bid schedule/Bid form (identify how you want the bids submitted; lump sum, unit pricing)
- ☐ Specifications
- ☐ Technical Specifications & Plan sets
- ☐ Special Conditions

  Standard terms and conditions are contained in the contract boiler. The RFP should NOT contain terms and conditions unless they are in addition to those provided in the contract due to the unique nature of the service being solicited.

  Example 1:
  The Concessionaire shall make the following considerations when installing machines at the above facilities:

  1. Machines (where applicable) shall be equipped with a "guaranteed vend" feature that will continue to turn mechanism until item has been released.
  2. Machines will have continuity within all the above facilities.
  3. Food machines located at the outdoor facilities shall be refrigerated.
  4. A "change" machine shall be installed at each of the recreation centers. If "change" is located within a vending machine, it shall be clearly marked.

  Example 2:
  Contractor will be notified 2 working days prior to any activity planned at the cemetery. If properly notified of an activity planned at the cemetery, the contractor will cease operations for up to two hours without additional charge or delay in the schedule. If the activity exceeds two hours, the contractor may apply for compensation per Section 01290 of the Specifications.

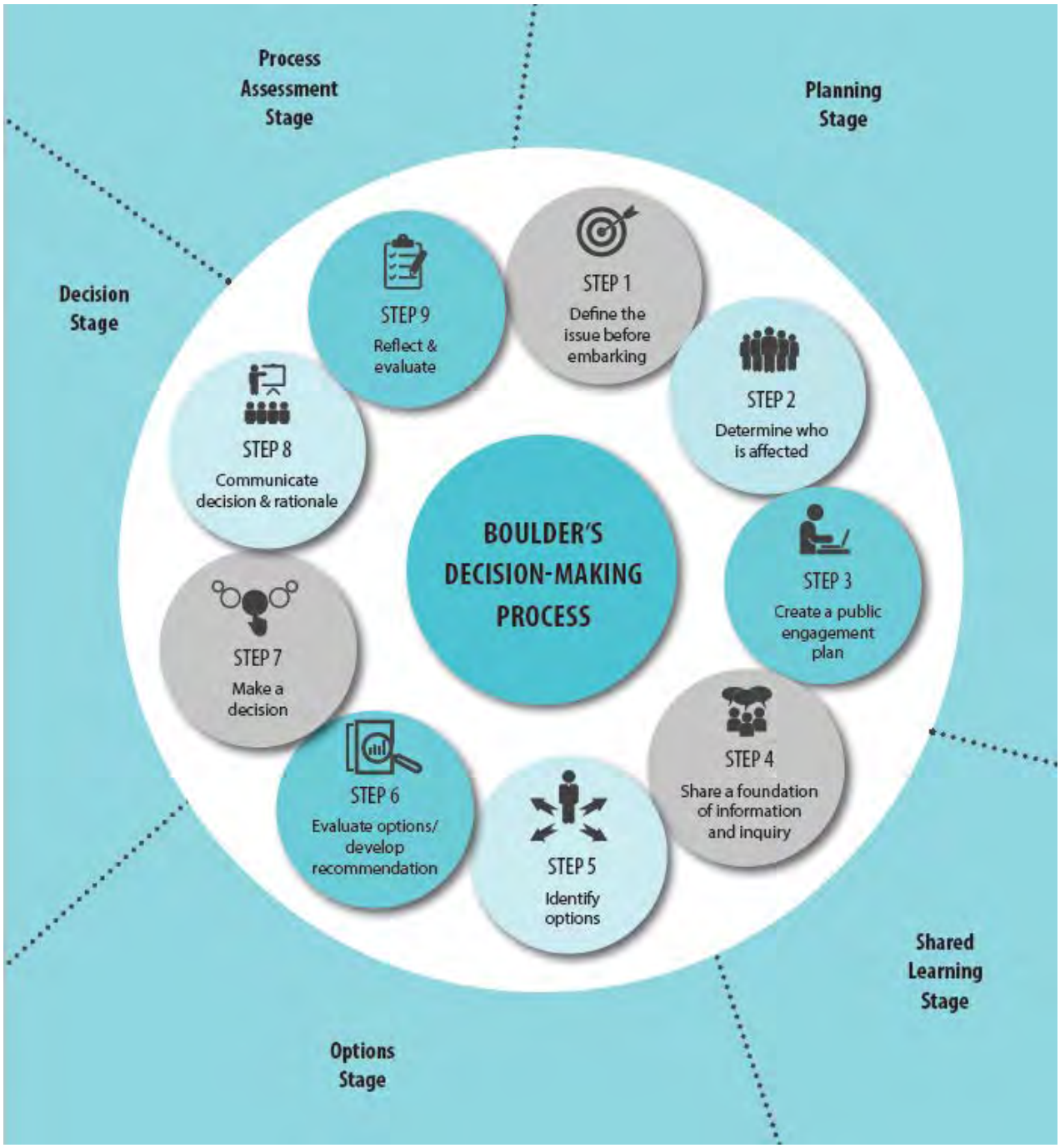
- ☐ Instructions to bidders (specifically what is required to comply with solicitation request)
- ☐ Identify what the liquidated damages will be for this project.
- ☐ Identify additional insureds (CDOT, other property owners, etc.)
- ☐ Overview of selection criteria (what will you be measuring? How? Who will participate). Purchasing will review and concur prior to bid/rfp release.

NOTE: Once the bidding process is complete and an award decision has been made ALL the original responses and rating/ranking documents should be returned to purchasing for processing and record retention. We are required to keep general purchasing records for 6 years + current.

BOULDER'S DECISION MAKING PROCESS CHECKLIST

Boulder's Decision-Making Process Checklist

A step-by-step guide to navigating the "wheel"



Boulder's Decision Making Process Checklist Continued

STEP #1: DEFINE THE ISSUE BEFORE EMBARKING

Defining the issue is an essential step to a successful project. Many times it is assumed what the issue is, and when project teams deliberately discuss this, several different perceptions emerge. Ensure that there is alignment on this step before continuing. The outcome of this step is documented in your project charter.

- ❑ Understand the issue, its scope, scale, context, history, complexity (document in your project charter)
- ❑ Determine if and how your project fits into a larger vision or plan
- ❑ Determine the decision-making process and timeline (document in your project charter)
- ❑ Determine the roles of council, boards, staff, experts, public, organizations
- ❑ Determine and announce the project/issue/work; note: if this is a new issue, it may be appropriate to engage the community in defining it; if it is an old issue, be sure you can articulate how previous input helped define the issue.

STEP #2: DETERMINE WHO IS AFFECTED

Determining who is affected is a deliberate action to identify and document interested individuals, areas, and groups. If this step is done effectively, the project engagement will go smooth and will minimize "surprises". The outcome of this step is documented in the engagement plan.

- ❑ Identify interested individuals, neighborhoods and interest groups
- ❑ Determine whose voices need to be heard and why – both those directly affected and those with a communitywide perspective. Be sure to think about those who are traditionally under-represented.
- ❑ Discuss what level of involvement (Inform, Consult, Involve, Collaborate) each stakeholder group might expect or desire
- ❑ Determine if/how the city as a whole or other city departments may be affected and include them in planning, as appropriate
- ❑ Apply lessons learned from past engagement: what has worked well, what has not?
- ❑ Consider expanding notification process beyond property owners, to include community members, businesses, tenants, users/visitors to be as inclusive as possible

STEP #3: CREATE A ENGAGEMENT PLAN

Boulder's Decision Making Process Checklist Continued

Documenting and planning for engagement on your project is a key component of success for a project. In order to successfully complete this step, you must first have your rough project phases and timeline finished. The outcome of this step is an engagement (and communications) plan which is a section of your project charter.

- ❑ Draw from the discussions in steps 1 and 2 to establish engagement objectives (we usually recommend a minimum of three and no more than about six).
- ❑ Draw from the discussions in steps 1 and 2 to establish engagement objectives (we usually recommend a minimum of three and no more than about six).
- ❑ Based on your project timeline and phases – at what point will the project be hitting each of the steps on the decision-making wheel, or if the project is using a timeline other than the wheel, what are the phases? What level of involvement can the city commit to at each phase? When are the key engagement milestones likely to occur?
- ❑ Sketch out engagement techniques you will use at each phase of the project; choose techniques that will accomplish your objectives, are achievable with city resources and are appropriate for the level of involvement you identified.

Some tips as you consider techniques

- Inform and educate in early stages for well-grounded understanding of issues rather than waiting for later involvement when positions have become hardened and polarized
- Remember that a key focus of improving engagement in the city is being more inclusive – create opportunities to engage at a variety of times to accommodate work schedules and family responsibilities and go to where people live, work, play and learn: parks, churches, community facilities, Farmer's Market, kiosks, coffees, organizations' meetings
- If you have stakeholders in vulnerable populations, like lower-income or non-English speaking, work with nonprofit partners who have relationships with these populations (Boulder Housing Partners, Youth Advisory Board, YWCA, parent-teacher groups) as well as community-based advocacy organizations. Also reach out to Ryan Hanschen to learn more about possible community connector opportunities.
- If the business community is a stakeholder, consider ways to reach key leaders in convenient ways (consider consulting with the Chamber and the city's Community Vitality team)
- Don't be afraid to experiment with new ideas; just know how you will determine if they are working and be prepared to shift course if they aren't!
- If your issue is contentious, consider whether you should be using neutral outside facilitators and plan/budget for that if it would be beneficial
- Consider online engagement opportunities, like the Be Heard Boulder platform

BOULDER'S DECISION MAKING PROCESS CHECKLIST CONTINUED

- Working groups seem to be the technique of choice these days, but they require a big commitment in terms of time and staff resources. While they are not prohibited, please know there are other ways to involve or collaborate with community members, so you may want to explore these first.
- Surveys are most helpful if they include demographic data so you can gauge who is – and who is not – participating in your collection of perspectives. Be sure to talk to your engagement liaison or Sarah Huntley about the options for including demographic data and what the city needs you to do with that data once you have it.
- Align your plan with the decision-making process and timeline

❑ Create a related Communications Plan, including strategies for information sharing (this can be a standalone plan or part of your engagement plan). Some tips to remember:

Some tips as you plan good communications

- The city's website is our #1 communication tool. Create and maintain a page with timely information about your project, the process and public engagement opportunities. Include helpful information, including contact information, a list of upcoming events and expected milestones, searchable documents and archives. Summarize long documents.
- Video can be very powerful. Think about involving Channel 8, both in segments that can be woven into existing programming, as well as standalone short video clips that can be shared easily on your webpage and through social media.
- Likewise, visual graphics that summarize info in condensed and appealing ways work well.
- We should be working toward at least Spanish language access to written and oral info and participation in events, whenever possible, but especially for topics likely to impact our Spanish-speaking populations. Be sure to have a native speaker check translation.
- Accessible language matters; avoid use of legalese, technical terms, acronyms and jargon. Ask someone unfamiliar with your project to read your materials for understanding.
- Project-specific public notices should emphasize the most important details, including project descriptions, why the project matters, the timeline, contact information and engagement opportunities. Consider an article or visual in the printed community newsletter and leverage any e-mailed newsletters that are appropriate.
- Not everyone is comfortable at a podium. Provide comment forms at meetings and online that give space for people to explain the reasons behind their positions.
- Compile and summarize comments received. Invite council and board/commission members to observe official public engagement events.

BOULDER'S DECISION MAKING PROCESS CHECKLIST CONTINUED

- Local media such as the Daily Camera and KGNU can share information and foster discussion about issues. Reporter pitches may work, but also consider op-ed columns and paid content.
- Local professionals in science and technology, public relations, research, public affairs and survey research fields can help break down complex concepts and develop appropriate messaging. They may also be willing to participate in a speaker series.
- We have committed to improving our feedback loop so people can understand how/whether their input is being considered. Consider how you will summarize and share the main themes.

- ❑ Identify available resources. This should include a discussion of needed staff expertise, estimate time and funding to accomplish your plan. Consider also how professional public engagement consultants, if any, and organizational partners will be used in the process
- ❑ Develop a set of success measures that you will use to evaluate your work; typically, these are tied to the engagement objectives you developed – how will you know if you achieved that objective? Think both quantitatively and qualitatively.
- ❑ Incorporate the engagement plan and communications plan into your project charter
- ❑ Distribute the public engagement plan (either the full version or a streamlined public-facing how to participate in this project guide) to the community and affected parties
- ❑ Measure demographics of community members who are participating (ethnicity, gender etc.) to ensure a wide range of representation

STEP #4: SHARE A FOUNDATION OF INFORMATION AND INQUIRY

This step is the first step of public engagement on a project. This frames the issue and clarifies the purpose and goals. When this step is skipped or overlooked, it often leads to confusion and frustration of the community, the project team, and decision makers. Spend the time to get this step done right. The outcome of this step will occur during the first phase of your project.

- ❑ Revisit Steps 1, 2 and 3 together
- ❑ Build common vision and goals with community members before implementing the pieces. Start with vision, talk about values, create well-formed goals and strategies that can then be implemented through specific projects and programs; make background information digestible and easily available
- ❑ Publicly define the interests of the city—including staff and the individuals and groups involved; also be sure to spell out any constraints, limits that exist

Boulder's Decision Making Process Checklist Continued

- ❑ Determine important criteria for the decision (this could be an opportunity in and of itself for community engagement)
- ❑ Outline the anticipated policy analysis questions and methods
- ❑ Define data and information needs and agree on how to address them
- ❑ Formulate the questions that will shape the decision and make these clear to the public
- ❑ Engage in two-way communication through open houses, community meetings, online forums; be sure to respond to questions and share the answers broadly
- ❑ Provide opportunities for community members to connect with early designs and concepts for private developments
- ❑ Provide and publicize ways to influence council members beyond speaking at Tuesday meetings:
- ❑ After major public engagement events, compile and publish online summary of what was heard

STEP #5: IDENTIFY OPTIONS

This step will encompass a large portion of your project, possibly an entire phase of work. This community expects to dig in and understand options, and the details and differences within them. The outcome of this step will be a part or phase of your project when options are developed and vetted with the individuals, groups and organizations you identified in step #2.

- ❑ Gather ideas from diverse sources, not exclusively from staff, boards and council; treat this as brainstorming and resist any urge to reject an idea immediately
- ❑ Identify citywide vs. more localized concerns
- ❑ Use local professionals: scientists, mediators, PR firms, research, local ad and tech agencies to help identify and explain options
- ❑ Provide opportunities for community members to engage in dialogue with one another to better understand other perspectives
- ❑ Create opportunities where staff, council and community can try new/creative solutions and risk mistakes from which we can learn: think outside the box.

STEP #6: EVALUATE IDEAS/DEVELOP A RECOMMENDATION

This step is a critical one in a project, where the ideas and options developed during the previous step are evaluated. Utilize your team, including your executive sponsors, in evaluating and

Boulder's Decision Making Process Checklist Continued

developing your recommendation. The outcome of this step is presenting the recommendation, which is typically a part of the options analysis or decision making phase of a project.

- ❑ Encourage the consideration of pros/cons and tradeoffs associated with each option
- ❑ Provide opportunities for Q&A, exchange of information and views outside council or board meetings, invite decision-makers to participate in these opportunities
- ❑ Spell out legal, social, economic, environmental, technical aspects of each option
- ❑ Be explicit about the criteria you are using to formulate a recommendation
- ❑ Move from individual opinions to the common good
- ❑ Test ideas broadly
- ❑ Formulate and make public a staff recommendation

STEP #7: MAKE A DECISION

This step is an action by the decision-makers identified in step #1. Based on the recommendation in the previous step, this work is about synthesizing the feedback obtained, equally representing that feedback in a transparent and open way and facilitating the decision-making process. The outcome of this step is a decision, which typically is a milestone in a phase of your project.

- ❑ Review expected decision-making process from Phase 1
- ❑ Summarize what has come from public engagement, including viewpoints (by theme) that may not be represented by staff's recommendation
- ❑ If one clear solution hasn't emerged, consider narrowing options for further discussion
- ❑ Solicit further input about consequences of favored decision
- ❑ Ensure transparency
- ❑ Decide timeline for implementation and how to test solution
- ❑ Make letters and emails about issues under consideration public, organized online by topic
- ❑ Summarize opinions, information, impacts that were considered
- ❑ Summarize demographics of participants; i.e. mapping

STEP #8: COMMUNICATE THE DECISION AND RATIONALE

This step is often overlooked and is an important "closing the loop" action to your project. This step needs to occur as close to the decision action as possible, and a plan for who and how the communications occurs

BOULDER'S DECISION MAKING PROCESS CHECKLIST CONTINUED

should be developed prior to the decision. Don't forget to communicate to your project team as well! The outcome of this step is the action of communicating the decision.

- ❑ Link the outcome to the public engagement and decision-making process of your project
- ❑ Identify information, impacts, tradeoffs, and analysis that informed decision
- ❑ Consult with Communications about whether the decision was significant enough to warrant a wrap-up/next morning press release
- ❑ Provide deeper communication and explanation of outcome to those most involved in your process
- ❑ Consider whether an op-ed from a decision-maker is appropriate
- ❑ Consider publishing dissenting views alongside decisions for high-profile issues
- ❑ Address how the decision relates to policies such as the Boulder Valley Comp Plan, intergovernmental agreements, the city's Sustainability Framework and departmental Master Plans.

STEP #9: REFLECT AND EVALUATE

This step is the final step in a project, or phase of your project. As a continuous learning organization, reflecting and evaluating is essential to continual learning. Consider using the city's debrief model as the format for this evaluation. Document the evaluation, and share your debrief with the citywide engagement team.

- ❑ Who participated and how?
- ❑ Who did not participate and what could be done to include them better in the future?
- ❑ In what ways did participants influence the outcome?
- ❑ What worked?
- ❑ What did we learn for next time?
- ❑ How was the public engagement process modified to reflect changes? How was the decision-making process modified to reflect participation needs?
- ❑ Write and share a debrief summary on your project website or in an email to project listserv, or both

Operations Impact Checklist

Maintenance and Utility Impact Report

This form shall be invoked by the Parks Planning Division staff to incorporate financial considerations around future Operations and Maintenance costs into the planning and design process.

FACILITY NAME	PROJECT NAME	PROJECT NUMBER

FEATURE NAME AND DESCRIPTION	PREPARER'S NAME	DESIGN LIFE (YEARS)

UTILITY COSTS (OR SAVINGS) ANTICIPATED FOR PROPOSED PROJECT

UTILITY DESCRIPTION	UNITS (ccf, kwh, therms, etc.)	ANNUAL UNITS (*estimated*)	COST PER UNIT	ANNUAL COST OF UTILITIES
Water (non-irrigation)				$ -
Irrigation Water				$ -
Wastewater				$ -
Electricity				$ -
Natural Gas				$ -
Other (Describe):				
				$ -
Other (Describe):				
				$ -
TOTAL ANNUAL UTILITY COSTS (OR SAVINGS)				$ -

MAINTENANCE COSTS (OR SAVINGS) ANTICIPATED FOR PROPOSED PROJECT

NOTE: The maintenance costs below are intended only for general guidance in terms of design comparison and/or acceptance, and shall not be construed as an accurate mechanism for determining future maintenance costs.

LABOR TYPE	HOURLY RATE	ANNUAL HOURS (show as negative if savings)	LABOR COST (or savings)	ANNUAL COST FOR RELATED NONLABOR (materials, tools, supplies, contracts, etc.)	ANNUAL COST OF MAINT-ENANCE
			$ -		$ -
			$ -		$ -
			$ -		$ -
			$ -		$ -
			$ -		$ -
			$ -		$ -
Other (Describe):					
			$ -		$ -
Other (Describe):					
			$ -		$ -
TOTAL ANNUAL MAINTENANCE COSTS (OR SAVINGS)					$ -
TOTAL ANTICPATED O&M COSTS (OR SAVINGS)				$	-

Project Plan Template

Project Name

Project Plan

1. Purpose

Briefly describe the purpose of the project. Why is this project being undertaken now? Generally, what does the project hope to achieve?

2. Background

Provide background information on the project. How the project was identified? Provide specific information that helps inform the project moving forward (i.e., grants received, previous planning efforts, prior public engagement, etc.). Is there any outstanding historical context that is important to understand before beginning the project?

3. Goals and Objectives

Outline the specific project goals and objectives. What will this project achieve and how will it achieve those goals?

4. Scope

This section summarizes the scope of the proposed project by providing a list of key activities and deliverables. This includes specifically identifying issues or ideas that are either in scope or out of scope.

The scope of this project is outlined in the table below.

In Scope	Out of Scope

5. Assumptions and Constraints

An assumption is a circumstance or event outside the project that can affect its success and that the authors of this plan believe will happen. Constraints are restrictions or boundaries placed upon the project that limit the choices of the project team. The assumptions and constraints for this project are listed in the table below.

Assumptions	Constraints

6. Stakeholders

The table below lists stakeholders and indicates how they will be impacted and engaged by the project.

Stakeholder	Impact	Engagement

7. Public Engagement

This section is optional. Information can either be provided here on anticipated public engagement or through a separate Public Engagement Plan.

Engagement Objectives

How will successful engagement be measured?

Engagement timeline

Ongoing Project Communication

Boulder's Project Plan Template Continued

8. Deliverables

The project is completed when the deliverables listed in the following table are completed.

Deliverable Name	Description	Format

9. Budget Summary

The estimated cost of the project and cost assumptions are as follows:

Item	Cost	Notes
Staff		
Consultants		
Supplies		
Other		
Total Cost		

10. Human Resources

Roles and Responsibilities

The following human resources are required for the project.

Role	Name(s)	Responsibilities

11. Schedule Summary

The scheduling relies on a number of parameters between the project team, and other stakeholders. This schedule summarizes major milestones only and the individual on the team that is responsible for the completion of the milestone.

WBS	Activity	Responsible	Projected Completion Date
1.0			
2.0			
3.0			
4.0			
5.0			
6.0			
7.0			
8.0			

12. Decision-making Process

Name the ultimate decision-maker (i.e., staff, director, board, council).

BOULDER'S PROJECT PLAN TEMPLATE CONTINUED

13. Dependencies

Developing projects is dependent upon cooperation and collaboration from various entities, units, contractors and partners. This section lists the items the project team requires to continue its work but that are being completed by resources outside of the project team. Some examples include:

- *Project Team members*
- *Stakeholders*

14. Project Risks

Project risks identified to date are provided below with an assessment and recommended response.

No	Risk Event Statement	Probability H/M/L	Impact H/M/L	Recommended Response
1				
2				
3				
4				
5				

15. Project Issues

Project issues identified to date are provided below with a recommended response.

No	Description	Priority H/M/L	Recommended Action
1			
2			
3			

6

Boulder's Purchasing Guidelines

Purchasing Guidelines	
Guidance applicable to all purchases	• Check with the Purchasing Division for clarifications of requirements related to construction, consulting or other purchased services • The City encourages the procurement and use of recycled and environmentally friendly products • The purchase of computers, computer related equipment or software must be initiated and managed by the Information Technology Department • The City Manager must sign all City of Boulder contracts after they have been reviewed and approved as to form by the City Attorney's Office • Contracts for signature must be routed using the contract routing form which is found on the Central Records intraweb site • Order acknowledgements, quotes, proposals, estimates, and similar documents that bind the City to vendor terms should not be signed • City policy requires awarding bids to the lowest cost proposal satisfying the minimum requirements and the responsibility criteria of the project. Total life cycle cost may be considered • Individuals classified as an independent contractor or sole proprietor must be pre-qualified under 21 Questions criteria and provide an Affidavit of Legal Residency before being retained to provide a service to the City
o **Amount**	**Purchasing Process**
Up to $999	• Comparison shopping recommended • Use of BoulderCards per policy, or • Direct Invoice Entry in MUNIS, or • Prior to purchase, a MUNIS Purchase Requisition may be entered and released through MUNIS workflow. Once approved, the Requisition is then converted to a MUNIS Purchase Order or MUNIS Contract and payment may be made via Invoice Entry
$1,000 to $9,999	• Comparison shopping recommended • Use of BoulderCards per policy, or • Prior to purchase, a MUNIS Purchase Requisition must be entered and released through MUNIS workflow. Once approved, the Requisition is then converted to a MUNIS Purchase Order or MUNIS Contract and payment may be made via Invoice Entry Note: o At least one (1) quote must be attached to the MUNIS Purchase Requisition except in the case of a contract signed by the City Manager or his/her delegee, such as a Continuing Services Contract or Contract and Pricing Agreement. If these agreements exist, they should be attached to the MUNIS Purchase Requisition o The Scope of Work must be attached to the MUNIS Purchase Requisition

BOULDER'S PURCHASING GUIDELINES CONTINUED

$10,000 to $49,999	• Three informal bids or quotes required
	  o A documented attempt to reach out to a vendor to which the vendor declines to bid (referred to as a "no bid") qualifies as a bid
	• Prior to purchase, a MUNIS Purchase Requisition must be entered and released through MUNIS workflow. Once approved, the Requisition is then converted to a MUNIS Purchase Order or MUNIS Contract and payment may be made via Invoice entry
	Note:
	  o Bid summary, quotes, or emails documenting the bids must be attached to MUNIS Purchase Requisition except in the case of a contract signed by the City Manager or his/her delegee, such as a Continuing Services Contract or Contract and Pricing Agreement. If these agreements exist, they must be attached to the MUNIS Purchasing Requisition
	  o Scope of work must be attached to the MUNIS Purchase Requisition
	• Consulting services over $10,000 must be on an approved City of Boulder consulting contract
	  o Templates are available on City Attorney's Office Intraweb page
	  o A consulting services contract must be attached to the MUNIS Purchase Requisition
	• If three bids are not obtained, a Sole Source Justification or Request to Proceed can be used on a limited basis. These must be attached to the MUNIS Purchase Requisition. Contact Purchasing for additional information and instruction
	  o The Sole Source Justification or Request to Proceed should be accompanied by a current, applicable scope of work, which must also be attached to the MUNIS Purchase Requisition
	• Recognized Cooperative Contracts and Piggyback Contracts can be used to justify an award. Use of these types of contracts must be reviewed by Purchasing before this option is utilized

Boulder's Purchasing Guidelines Continued

Over $50,000	• Formal, public, competitive solicitation of bids required
	  o This process is managed by Purchasing. Purchasing must be consulted to provide proper templates and additional information
	  o Purchasing will post the solicitation on Rocky Mountain E-Purchasing (BidNet)
	  o Departments are responsible for evaluating responses to the public solicitation and developing and documenting objective evaluations
	  o The bid tabulation and evaluation scoring sheets should be forwarded to Purchasing for the bid archive
	  o Specific bonding, insurance, and/or contract terms may apply. Purchasing must be consulted to determine applicable requirements
	  o A City of Boulder contract is likely required, which must be reviewed by the City Attorney's Office before the contract is finalized.
	• If three bids are not obtained, a Sole Source Justification or Request to Proceed can be used on a limited basis. These must be attached to the MUNIS Purchase Requisition. Contact Purchasing for additional information and instruction
	  o The Sole Source Justification or Request to Proceed should be accompanied by a current, applicable scope of work, which must also be attached to the MUNIS Purchase Requisition
	• Recognized Cooperative Contracts and Piggyback Contracts can be used to justify an award. Use of these types of contracts must be reviewed by Purchasing before this option is utilized
	• Once a vendor is competitively selected and the contract is fully executed, a MUNIS Purchase Requisition must be entered and released through MUNIS workflow. The Requisition is then converted to a MUNIS Purchase Order or MUNIS Contract and payment may be made via invoice entry
	  o The contract must be attached to the MUNIS Purchase Requisition

Boulder's Public Engagement Plan Template

Engagement Plan Template

The City of Boulder's Engagement Plan Template is designed to reflect the direction that City Council and residents advised through approval of the Engagement Strategic Framework. By leveraging best practice engagement planning, this process will create efficiencies as well as save city staff and departments time and money.

Engagement Plan Template Sections:

- Project Snapshot
- Engagement Overview
- Essential Engagement Components (table may be copied for additional engagement phases)
- Additional Engagement Components (project dependent/optional)

Guidance:

- Steps referenced below refer to steps included in Boulder's Decision-Making Process
- Phases referenced below refer to internal, department determined phases for engagement
- Tables are designed in Times New Roman, Font 12, for ease in dropping into memos
- Keep in mind that Engagement Plan drafts are public record
- Please see sample Engagement Plan on Outreach Outpost for reference (coming soon!)

Boulder's Public Engagement Plan Template Continued

	Project Snapshot
Title of Project	•
Staff Roles (Project Lead, Engagement Lead)	
Background Context or Institutional Knowledge	•
Defined Opportunity, Issue or Problem Statement (Step 1)	•
Stakeholders and those Immediately Impacted (Step 2)	•
Final Decision-maker(s) Name the ultimate decision-maker (I.e., staff, director, board, council)	•
Project Objectives Outcomes & Measurements of Success	•
Project Timeline	•
Project Budget	•

Boulder's Public Engagement Plan Template Continued

Engagement Overview	
Engagement Objective(s) How will successful engagement be measured?	•
List of Project Phases (Internal Phases that Align with Steps 4-7)	•
Engagement Timeline (if different from Project Timeline)	•
Public Participation Level(s) at which Phase Inform | Consult Involve | Collaborate	•
Feedback Loop (Step 8) How will you achieve transparency? (eg, publishing results or themes, sharing how feedback will be used)	•

Essential Engagement Components (Pre-engagement or Steps 4-6) Timeline:						
Stakeholders (including underrepresented communities)	Techniques (Events, Activities, Updates, Tools, Methods), Scale (Spatial) & Locations	Purpose	Engagement Spectrum	Measurable Outcomes	Communication to Stakeholders	Communications Support Needed? Y/N
•	•	•	•	•	•	•
•	•	•	•	•	•	•
•	•	•	•	•	•	•
•	•	•	•	•	•	•

Boulder's Public Engagement Plan Template Continued

	Additional Engagement Components
Existing Community Assets Neighborhood Strengths to Build on	•
Depts Involved	•
Pre-mortem Why would this engagement not be successful?	•
Staff Roles, Including Logistic Support	•
Budget	•
Feedback to Decision-makers	•
Partner Organizations	•
Boards & Commissions Involved	•
Alignment with City Values	•
Supplies Needed	•

4

APPENDIX D: PARK COST ESTIMATE

PROBABLE PROJECT COSTS (2019 DOLLARS)

Parks and Recreation Department

Project Name:

Date:

Preliminary Opinion of Probable Project Costs

Item	Description	Qty	Unit	Unit Price	Total Price
Parking Lots, Plaza Areas					
	Concrete, 6" with Site Preparation & Base Course	0	SF	$ 9.45	
	Asphalt, 4" depth with Site Preparation & Base Course	0	SF	$ 4.55	$ -
	Asphalt, 6" depth with Site Preparation & Base Course	0	SF	$ 5.35	$ -
	Striping Parking Lots	0	LF	$ 0.40	$ -
	Mobilization for Asphalt Subcontractor - Small jobs	0	LS	$ 1,500.00	$ -
Group Sub-Total					$ -
Park Paths, Multi-Use Paths					
	Concrete, 6" depth & Base Course	0	SF	$ 8.60	$ -
Group Sub-Total					$ -
Aggregate Surface Paths					
	Crusher Fines, Type 1, 4" depth & Weed Barrier Fabric	0	SF	$ 3.35	$ -
Group Sub-Total					$ -
Restrooms					
	Bathroom Building, 1 stall, each gender	**0**	EA	$ 122,500.00	$ -
	Concrete, 6" depth, add fibermesh & Base Course	0	SF	$ 9.70	$ -
	Tap Fee	0	from Boulder		$ -
	Pre-Fabricated Bathroom with Concrete Pad and Installation - 1 Stall, Each Gender	**0**	EA	$ 101,500.00	$ -
	Tap Fee	0	from Boulder		$ -
	Upgraded Pre-Fabricated Bathroom with Concrete Pad and Installation - 1 Stall, Each Gender	**0**	EA	$ 131,500.00	$ -
	Tap Fee	0	from Boulder		$ -
Group Sub-Total					$ -
Shelters and Pavillions					
	10'x10' Poligon Shelter Structure (100 SF)	**0**	EA	$ 40,505.00	$ -
	Concrete pad & Base Course	0	SF	$ 9.20	$ -
	20'x20' Poligon Shelter Structure (400 SF)	**0**	EA	$ 55,760.00	$ -
	Concrete pad & Base Course	0	SF	$ 9.20	$ -
	20'x30' Poligon Shelter Structure (600 SF)	**0**	EA	$ 85,380.00	$ -
	Concrete pad & Base Course	0	SF	$ 9.20	$ -
Group Sub-Total					$ -
Baseball/Softball Fields					
	Skinned infield	0	SF	$ 5.00	$ -
	Turf Outfield & Irrigation	0	SF	$ 2.80	$ -
	Under Drain	0	LF	$ 17.00	$ -
	Fencing - Chain Link	0	LF	$ 38.50	$ -
	Bleachers 5 Row Standard 21' Aluminum Bleacher	0	EA	$ 8,800.00	$ -
	Bleachers 8 Row Standard 21' Aluminum Bleacher	0	EA	$ 15,250.00	$ -
	Concrete Plaza and Path & Base Course	0	SF	$ 14.40	$ -
Group Sub-Total					$ -
Multi-Use Fields					
	Turf Field	0	SF	$ 2.90	$ -
	Under Drain	0	LF	$ 18.00	$ -
	Striping	0	LF	$ 0.20	$ -
Group Sub-Total					$ -
Playground					
	2-5 Play Age - Standard	0	SF	$ 50.00	$ -
	2-5 Play Age - Custom	0	SF	$ 100.00	$ -
	5-12 Play Age - Standard	0	SF	$ 65.00	$ -
	5-12 Play Age - Custom	0	SF	$ 125.00	$ -
Group Sub-Total					$ -
Nature Play					
	All Age Play	0	SF	$ 15.00	$ -
Group Sub-Total					$ -

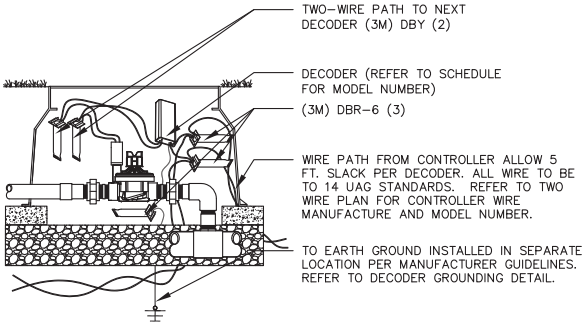
PROBABLE PROJECT COSTS (2019 DOLLARS) CONTINUED

Splash Pad							
	2-5 fixtures with Surfacing, plumbing, electrical, drainage	0	SF	$	80.00	$	-
Group Sub-Total						$	-
Safety Surfacing							
Poured in Place Rubber		0				$	-
	Surfacing, multi-color	0	SF	$	21.35	$	-
	Surfacing, single-color	0	SF	$	19.85	$	-
Engineered Wood Fiber		0					
	Surfacing , 12" depth	0	SF	$	6.35	$	-
Group Sub-Total						$	-
Skate Parks							
	Concrete with elements	0	SF	$	55.00	$	-
Group Sub-Total						$	-
Bike Parks							
	Single Track, Trails and Skills	0	SF	$	10.00	$	-
	Terrain Parks	0	SF	$	15.00	$	-
	Pump Tracks - Dirt and asphalt	0	SF	$	30.00	$	-
Group Sub-Total						$	-
Fencing & Gates							
	Chain Link	0	LF	$	38.50	$	-
	Chain Link Fence Gate, 4' wide	0	EA	$	425.00	$	-
	Chain Link Fence Gate, 16' wide	0	EA	$	1,100.00	$	-
	Post and Dowel	0	LF	$	31.00	$	-
	High Tension	0	LF	$	13.00	$	-
	Post & Dowel/ High Tension Fence Gate, 4' wide	0	EA	$	300.00	$	-
	Post & Dowel/ High Tension Fence Gate, 16' wide	0	EA	$	525.00	$	-
	Pool	0	LF	$	75.00	$	-
	Prairie Dog - Vinyl	0	LF	$	28.00	$	-
	Prairie Dog - Metal	0	LF	$	39.00	$	-
Group Sub-Total						$	-
Metals							
	Guard Rail	0	LF	$	335.00	$	-
	Stair/Ramp Railing	0	LF	$	300.00	$	-
Group Sub-Total						$	-
Walls							
	Concrete Seat Wall	0	LF	$	185.00	$	-
	CMU Block Wall with Veneer (Stone): 18" high x 12" wide	0	LF	$	365.00	$	-
	CMU Block Wall with Veneer (Brick): 18" high x 12" wide	0	LF	$	275.00	$	-
	Excavation and Backfill for Retaining Walls	0	LF	$	60.00	$	-
	Option - Gravel backfill and drain behind wall	0	LF	$	18.00	$	-
Group Sub-Total						$	-
Furnishings							
Park/Memorial Bench						$	-
	Bench 6' Dumor Steel Bench Black	0	EA	$	2,550.00	$	-
	Concrete Pad, 6" Thick & Base Course	0	SF	$	12.50	$	-
Natural Bench						$	-
	Sandstone with Guillitine edges, 6' long	0	EA	$	3,500.00	$	-
	Aggregate Base Course, 6" depth	0	SF	$	2.50	$	-
Picnic Table						$	-
	Table - Global Industrial Black Thermoplastic Coating	0	EA	$	1,050.00	$	-
	Accessible Table - Global Industrial ADA Black	0	EA	$	1,025.00	$	-
	Concrete Pad, 6" Thick & Base Course	0	SF	$	12.50	$	-
Trash						$	-
	2 Can system - Bearsaver CE Serices Double Surface Mount	0	EA	$	1,785.00	$	-
	3 Can system - Bearsaver CE Series Surface Mount Black	0	EA	$	2,140.00	$	-
	Concrete Pad, 6" Thick & Base Course	0	SF	$	12.50	$	-
Bike Rack						$	-
	Bike Rack Dumor 83 Inverted "U" Powder coated black	0	EA	$	325.00	$	-
	Concrete Pad, 6" Thick & Base Course	0	SF	$	12.50	$	-
Grill						$	-
	Dumor Grill 22 - Surface Mount - Black	0	EA	$	345.00	$	-
	Concrete Pad, 6" Thick	0	SF	$	12.50	$	-
Group Sub-Total						$	-
Signage							
	Monument Sign	0	EA	$	4,700.00	$	-
	Other Park Sign	0	EA	$	2,700.00	$	-
Group Sub-Total						$	-

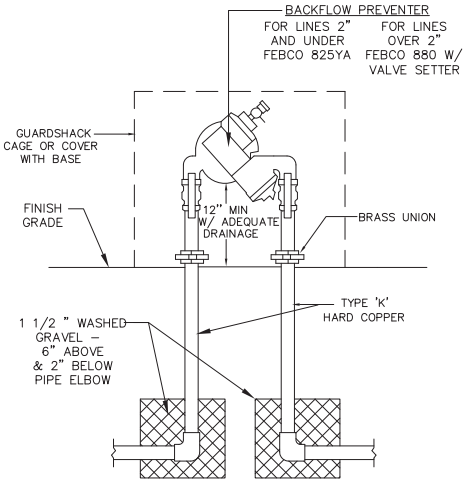
PROBABLE PROJECT COSTS (2019 DOLLARS) CONTINUED

Lighting								
		Path lighting	0	EA	$	5,200.00	$	-
		Court Lighting	0	Court	$	32,500.00	$	-
		Field Lighting	0	Field	$	440,000.00	$	-
		Building Lighting	0	EA	$	1,800.00	$	-
	Group Sub-Total						$	-
Drinking Fountain								
		Fountain - Elkay Model ELK4420BF1LDBEVG	0	EA	$	9,197.00	$	-
	Group Sub-Total						$	-
Irrigation								
		Turf	0	SF	$	1.10	$	-
		Perennial/Shurb Beds	0	SF	$	1.40	$	-
		Native Areas	0	SF	$	0.60	$	-
		Trees	0	EA	$	105.00	$	-
	Group Sub-Total						$	-
Vegetation								
		Turf Grass, sod	0	SF	$	1.05	$	-
		Natural Lands Seeding	0	SF	$	0.26	$	-
	Planting Beds						$	-
		Shrubs, 5 gallon	0	SF	$	44.00	$	-
		Perennials/Annuals, 1 gallon	0	SF	$	22.00	$	-
		Irrigation	0	SF	$	1.40	$	-
		Mulch, shredded wood, 3" depth	0	SF	$	1.40	$	-
	Planting Beds						$	-
		Shrubs	0	SF	$	44.00	$	-
		Perennials/Annuals	0	SF	$	22.00	$	-
		Tree Planting	0	SF	$	1.05	$	-
		Irrigation	0	SF	$	1.40	$	-
		Mulch, shredded wood, 3" depth	0	SF	$	1.40	$	-
	Group Sub-Total						$	-
Trees								
		Tree Guard	0	EA	$	150.00	$	-
		Tree Grate - Neenah Foundry R-8707 with Frame	0	EA	$	4,300.00	$	-
		Tree Planting, 2 1/2" caliper, deciduous	0	EA	$	735.00	$	-
	Group Sub-Total						$	-
Sub Total								**$0**
Contingency		10%						$0
Mobilization		5%						$0
Design Fees		12%						$0
Surveying During Construction		2%						$0
Environmental Allowance		5%						$0
Erosion Control		2.5%						$0
Insurance and Bonding		3.5%						$0
Contractor Overhead		10%						$0
Bldg. Permits/Fees			0	LS		$60,000.00		$0
	Sub Total							$0
Total Sum								**$0**

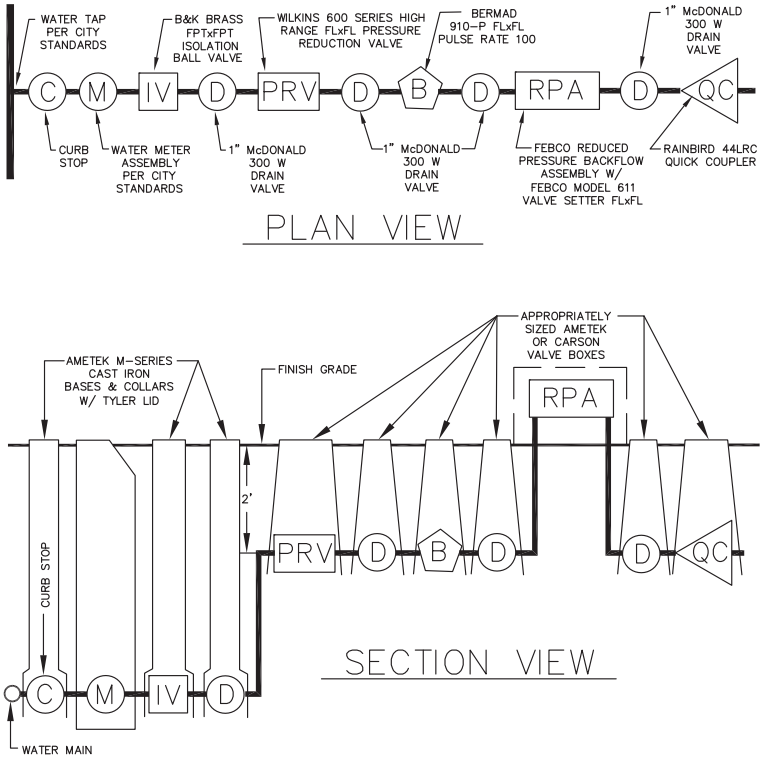
APPENDIX E: IRRIGATION DETAILS



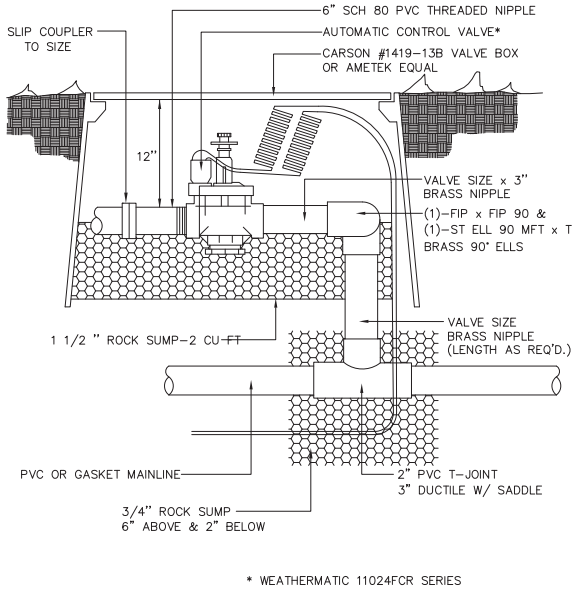
2-WIRE DECODERS



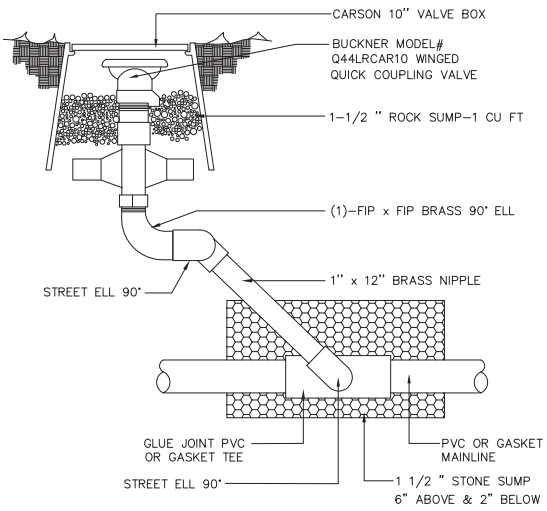
IRRIGATION REDUCED PRESSURE BACKFLOW ASSEMBLY



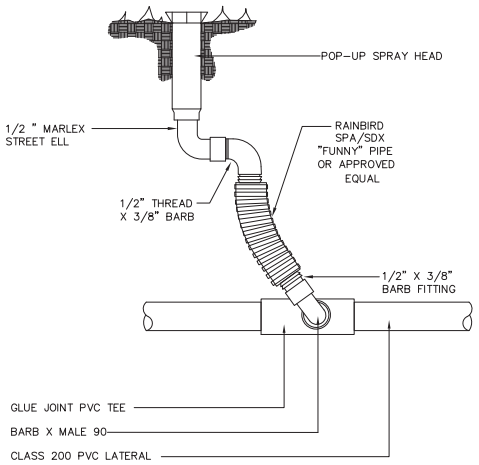
IRRIGATION TAP LINE DIAGRAM



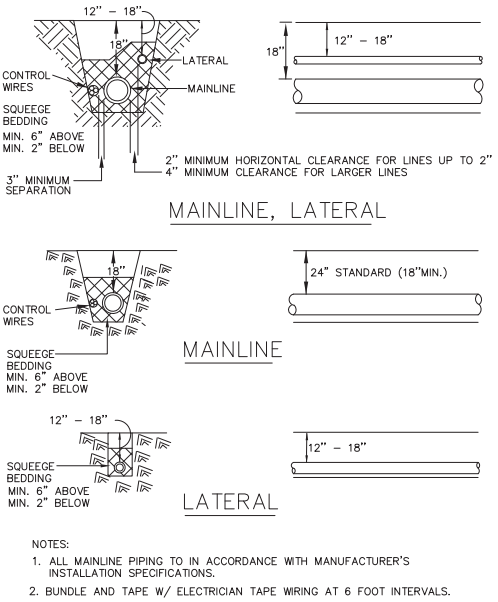
IRRIGATION CONTROL VALVE



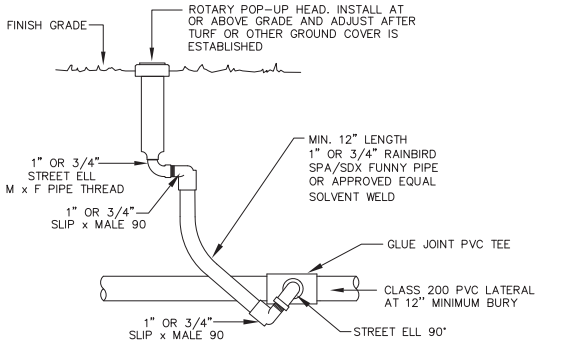
QUICK COUPLER



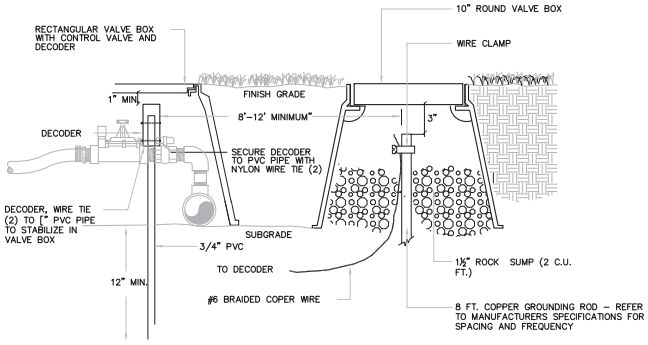
SPRAY HEADS



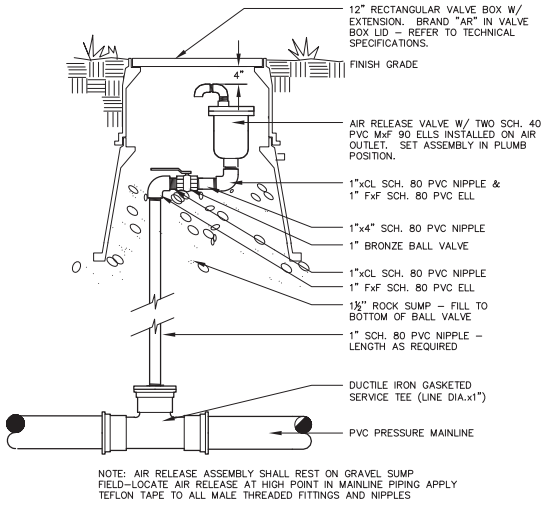
TRENCHING AND PIPING INSTALLATION



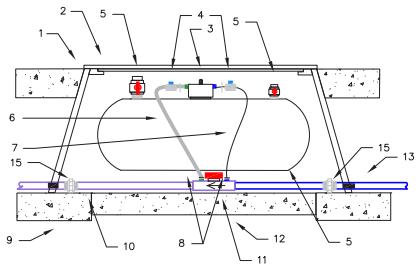
ROTARY HEAD



DECODER GROUNDING DETAIL



AIR RELIEF VALVE

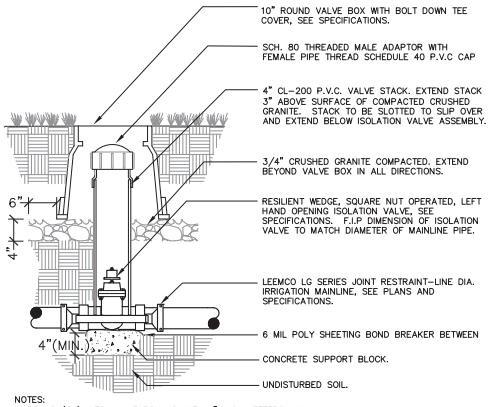


1 – FINISHED GRADE
2 – VALVE BOX & COVER 38"L X 24"W X 30" H
3 – PROPORTIONING CAP W/ FLOW ADJUSTMENT KNOB
4 – EZ-FLO TUBING FEED
5 – FILL AND DRAIN VALVES
6 – FERTILIZER OUT – CONNECT CLEAR TUBE TO GREEN CONNECTIONS ON PROPORTIONING CAP AND COUPLING
7 – WATER IN – CONNECT BLACK TUBE TO BLUE CONNECTIONS ON PROPORTIONING CAP AND COUPLING
8 – 1/4" TUBING CLAMP – BOTH THE GREEN AND BLUE COUPLING TUBING CONNECTIONS
9 – APPROVED BACKFILL
10 – PVC MAIN LINE TO VALVE MANIFOLD
11 – EZ BALL VALVE COUPLING CONNECTOR – INSTALL ACCORDING TO WATER FLOW DIRECTION ARROW
12 – 1½" ROCK (3 CU. FT.)
13 – PVC MAIN LINE FROM BACK FLOW PREVENTER
14 – EZ-FLO MODEL EZ030-HC FERTILZATION SYSTEM 36"L X 19"W X 25"H
15 – SCH. 80 PVC UNIONS (2 EACH.)

NOTE:
ITEMS 3, 4, 5, 6, 7 AND 8 ARE INCLUDED WITH THE EZ-FLO SYSTEM. ITEM 11 IS PURCHASED SEPARATELY.

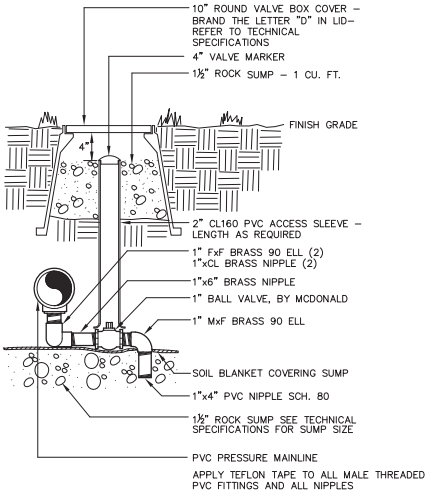
EZ-FLO FERTILIZING SYSTEM
MODEL NUMBER – EZ030-HC
30 GALLON CAPACITY
NOT TO SCALE

FERTIGATION

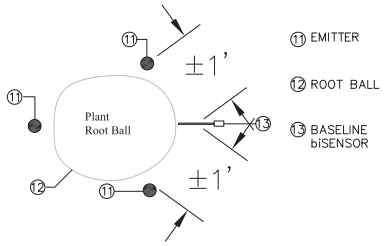


NOTES:
1. BRAND (GV) INTO VALVE BOX LID WITH 1" HIGH LETTERS MIN.
2. SET TOP OF VALVE BOX LID LEVEL WITH FINISHED GRADE OF ADJACENT UNDISTURBED TURF GRASS AREAS.
3. PROVIDE MINIMUM 3" CLEAR BETWEEN TOP OF STACK AND UNDERSIDE OF VALVE BOX LID.

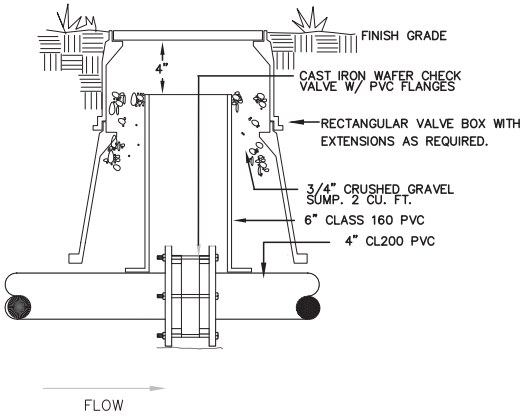
GATE VALVE



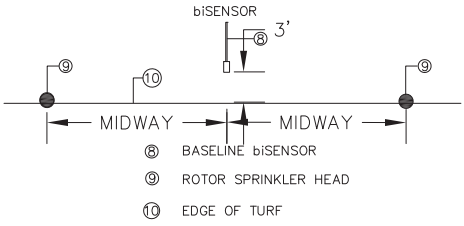
MANUAL DRAIN VALVE



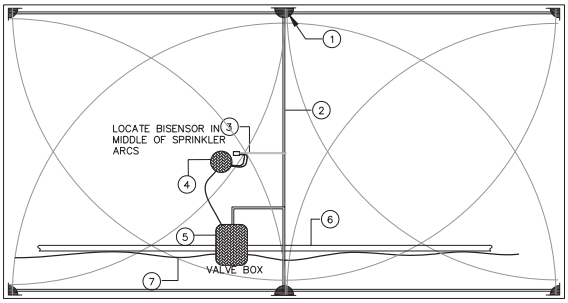
TREE ZONE BISENSOR



SWING CHECK VALVE

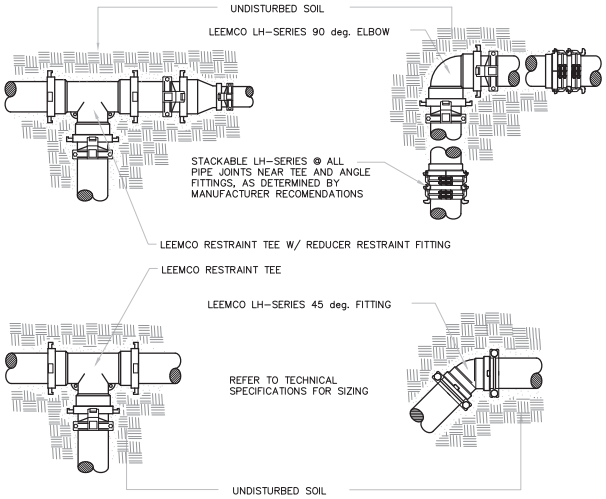


ROTOR ZONE BISENSOR

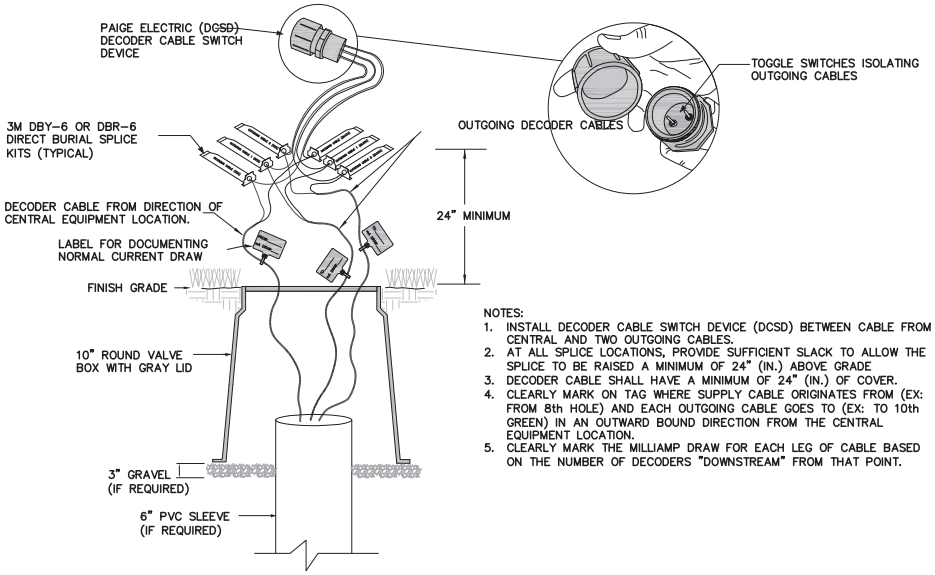


1. SPRINKLER HEAD
2. LATERAL LINE PER PLANS
3. BASELINE MOISTURE SENSOR – biSENSOR
4. 6" ROUND JUNCTION BOX
5. RECTANGULAR STANDARD OR JUMBO VALVE BOX
6. MAIN LINE SIZE PER PLANS
7. BASELINE biLINE

POPUP/MP ROTOR ZONE BISENSOR

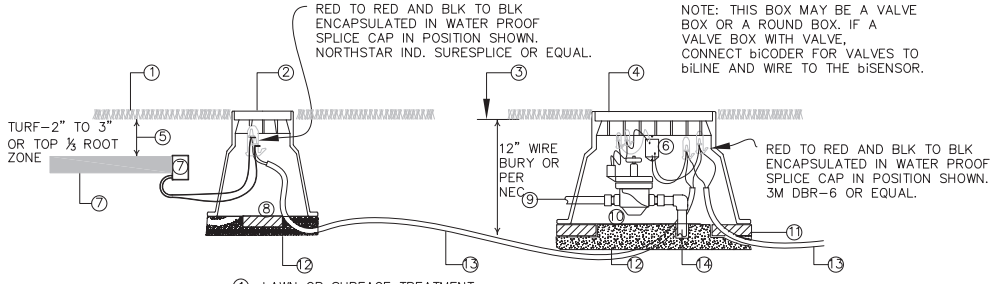


PIPE FITTINGS AND RESTRAINTS



NOTES:
1. INSTALL DECODER CABLE SWITCH DEVICE (DCSD) BETWEEN CABLE FROM CENTRAL AND TWO OUTGOING CABLES.
2. AT ALL SPLICE LOCATIONS, PROVIDE SUFFICIENT SLACK TO ALLOW THE SPLICE TO BE RAISED A MINIMUM OF 24" (IN.) ABOVE GRADE
3. DECODER CABLE SHALL HAVE A MINIMUM OF 24" (IN.) OF COVER.
4. CLEARLY MARK ON TAG WHERE SUPPLY CABLE ORIGINATES FROM (EX: FROM 8th HOLE) AND EACH OUTGOING CABLE GOES TO (EX: TO 10th GREEN) IN AN OUTWARD BOUND DIRECTION FROM THE CENTRAL EQUIPMENT LOCATION.
5. CLEARLY MARK THE MILLIAMP DRAW FOR EACH LEG OF CABLE BASED ON THE NUMBER OF DECODERS "DOWNSTREAM" FROM THAT POINT.

PAGE DCSD SWITCH



1. LAWN OR SURFACE TREATMENT
2. 6" ROUND JUNCTION BOX
3. FINISHED GRADE
4. RECTANGULAR STANDARD OR JUMBO VALVE BOX AS REQUIRED
5. BURY DEPTH – biSENSOR
6. BASELINE biCODER
7. biSENSOR – SET LENGTH HORIZONTALLY AND BLADE IN VERTICAL POSITION WITH WIRES LEADING OUT OF BOTTOM
8. 1–1/2" ROCK BED
9. LATERAL – SIZE PER PLANS
10. 24 VOLT REMOTE CONTROL VALVE
11. SUPPORT BLOCK – TYPICAL EACH CORNER (4 REQUIRED)
12. GRANULAR MATERIAL FOR DRAINAGE 3" MINUMUM DEPTH
13. biLINE – GUAGE AS PER PLAN
14. PRESSURE LINE – SIZE PER PLAN

MOISTURE SENSOR INSTALLATION

Appendix F: Approved Variances

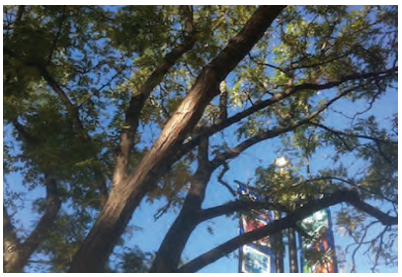
Appendix G: Park Settings

Boulder Colorado Parks & Recreation Department Asset Settings

Identifying individual settings within public parks is one way of creating standards that can be used to compare all park assets. Settings refer to the basic building blocks of public parks, such as buildings, playgrounds, active recreation areas or pathways. Settings are the major asset components the public might expect to find in the various public areas that they visit. Not all parks are made up of the same settings. These settings vary depending on the intended use and function of the park. A setting can be made up of several different elements and features. Each setting should be clearly recognizable by the general public. The following list of settings provides a broad classification with which to evaluate public parks. The Department manages over $274 million in assets with an estimated backlog of $37.6 million. These values are identified for each setting below based on the CRV (Current Replacement Value), backlog estimates which results in an FCI (Facility Condition Index) of 0.14.

Setting		Description
Outer Park Edges & Entry		This includes all portions of the entrances and edges of parks. The first major features encountered by park visitors are the landscape buffers, public parking lots, signage and entryways that welcoming visitors and set the tone for the park vitors experience.
Structures		This includes major buildings managed by FAM or P&R as well as park structures such as picnic shelters, pavilions, maintenance buildings and storage facilities that support park and recreation activities.
Active Recreation Areas		This includes major athletic fields such as soccer, baseball and softball fields (both natural and artificial turf), as well as hard surface courts such as tennis, basketball, skate parks, and other play areas intended for physical and active use by individuals or large groups in formal activities or events.
Passive Recreation Areas		This includes public gathering areas, single seating areas, plazas, Pearl Street Mall, informal picnic grounds, outdoor classrooms, community gardens and other areas for individual or groups to engage in unstructured civic and community events.

Boulder Colorado Parks & Recreation Department Asset Settings

Setting		Description
Playgrounds		This includes all children's play areas, from tot lots to elementary school age playgrounds, swings and other play equipment. Furthermore, playgrounds include surface areas, edging, and immediate supervision areas as well as parent seating, shade trees and gathering areas.
Pathways		This includes all pedestrian connections: paved bike trails, sidewalks, nature trails and soft surface pathways. It also includes bridges and tunnels that are part of a larger trail system.
Urban Forest		This includes the 40,000 urban trees that are managed for their aesthetic value and environmental contributions. Formal landscapes may include ornamental trees, shrubs, and flowerbeds that are not native to the area and have been planted as part of an overall park design.
Natural Landscape		This includes the natural areas that form over 60 percent of Urban Parks within the City of Boulder and connect with the larger open spaces and greenbelts. These areas include stream corridors, wetlands, ponds, and remnant native landscapes that offer opportunities for nature play and wildlife observation in the urban setting.

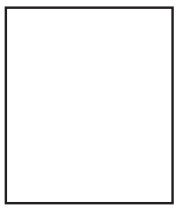
Graphic Standards Guide

CITY OF BOULDER PARKS & RECREATION SIGNAGE

Pantone 385C
Bkgd. Color

Pantone 5815C
Bkgd. Graphics and Logos

Black
Text & Logos



White
Text & Graphics

Color Palette

Colors used on all City of Boulder Parks & Recreation Signs

AaBbCcDdEe 1234

Gotham Condensed Bold

AaBbCcDdEeFfGg 12345

Univers 75 Black

AaBbCcDdEeFfGg 12345

Univers 67 Bold Condensed

AaBbCcDdEeFfGe 12345

Univers 67 Bold Condensed Oblique

Fonts

PRIMARY MONUMENT TITLES or PRIMARY REGULATION TEXT
Gotham Condensed Bold

WAYFINDING INFORMATION
Univers 75 Black

SECONDARY REGULATION INFORMATION
Univers 67 Bold Condensed

TERTIARY CONTACT INFORMATION
Univers 67 Bold Condensed Oblique

APPENDIX H: SIGNAGE GRAPHICS STANDARDS GUIDE

APPLICATIONS FOR CITY OF BOULDER ROUNDEL EMBLEM

Urban Park Monument Entrance Sign Application

Size:
Overall dimensions - 11 inches wide x 11 inches tall

Colors:
Background - Black
Mountain graphic - White
All text - White

Material:
iZone

Font:
30 pt. Univers 75 Black

Various COB Park Sign Applications

Size:
Overall dimensions - Varies per sign*

Colors:
Background green color - Pantone 5815C
Mountain graphic color - White
All text color - White

Font:
Univers 75 Black

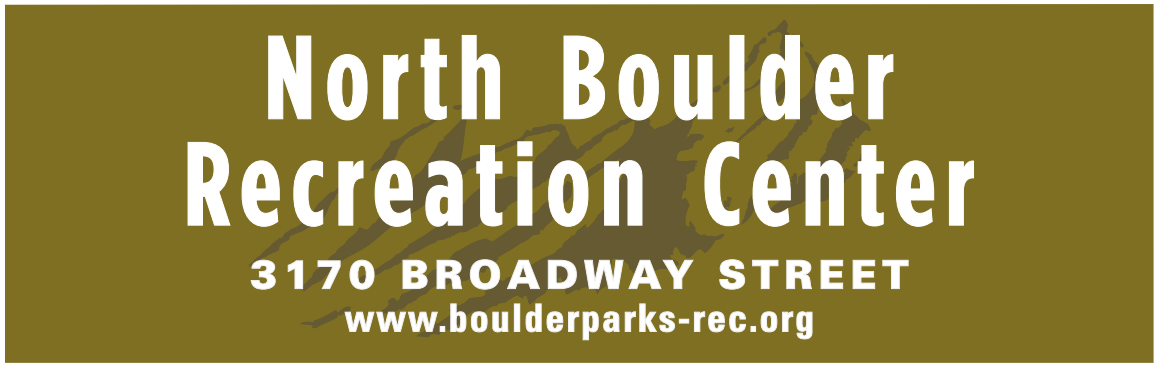
**Green COB emblem to be used on signs that incorporate the roundel in body of the text or graphics. Size of logo should not distract but support easy readability of primary information.*

Graphic Standards Guide

MONUMENT ENTRANCE SIGNS FOR URBAN PARKS

1.

2.



3.

Size:
Overall dimensions - 77 inches wide x 23.5 inches tall

Color:
Background green - Pantone 5815C
Background mountain graphic - Pantone 385C (93%)
All text - White

Fonts:
1. PARK TITLE ONLY SIGNS
Main title - 558.26 pt. Gotham Cond. Bold
Web site address - 180.63 pt. Univers 67 Bold Cond.

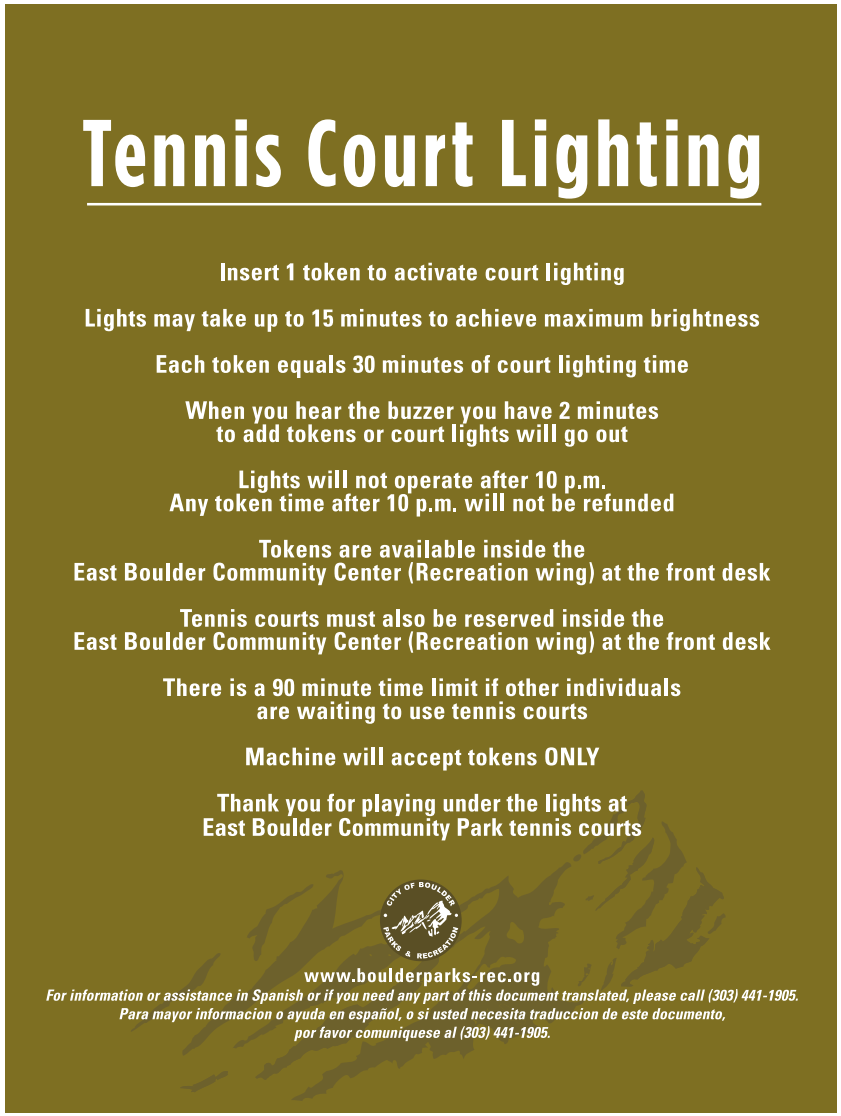
2. PARK/CENTER TITLE with ADDRESS SIGNS
Main title - 558.26 pt. Gotham Cond. Bold
Secondary street address - 193.5 pt. Univers 75 Black
Web site address - 180.63 pt. Univers 67 Bold Cond.

3. PARK TITLE with SUB-TEXT SIGNS
Main title - 558.26 pt. Gotham Cond. Bold
Secondary descriptive text - 432 pt. Gotham Cond. Bold
Web site address - 180.63 pt. Univers 67 Bold Cond.

Material:
iZone

Graphic Standards Guide

REGULATORY SIGNS FOR TENNIS COURT LIGHTING



Size:
Overall dimensions - 18 inches wide x 24 inches tall

Colors:
Background - Pantone 5815C
Background mountain graphic - Pantone 385C (80%)
COB roundel emblem - Pantone 385C (100%)
All text - White

Fonts:
Main title - 147.55 pt. Gotham Cond. Bold
Body text - 38 pt. Univers 67 Bold Cond.
Web site address - 30 pt. Univers 67 Bold Cond.
Contact Information - 24 pt. Univers 67 Bold Cond. Oblique

Material:
iZone

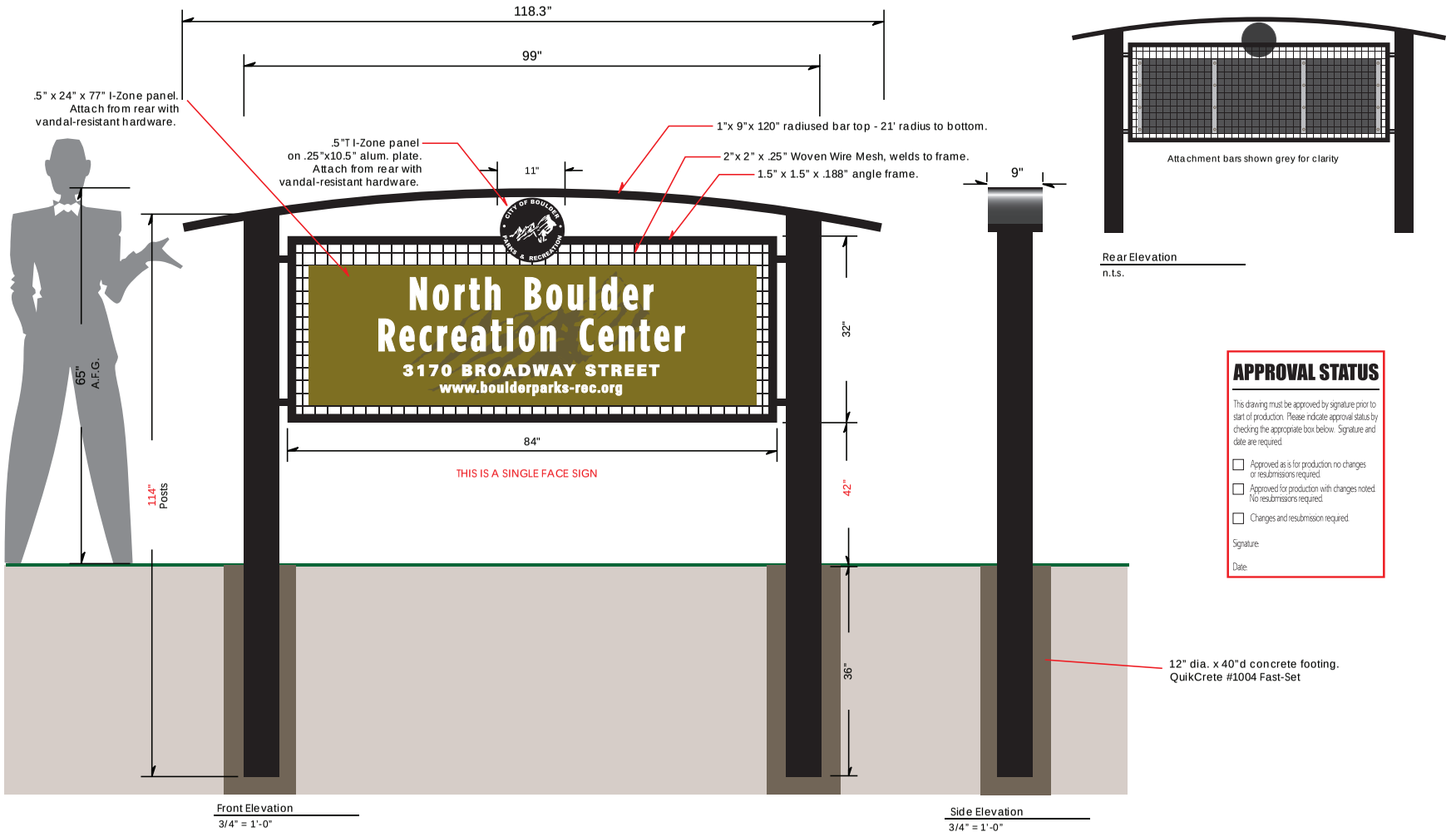
REGULATORY SIGNS FOR TURF FIELDS

Size:
Overall dimensions - 18 inches wide x 12 inches tall

Color:
Background green - Pantone 5815C
Background mountain graphic - Pantone 385C (93%)
Border rule - Pantone 385C (100%)
All text - White

Fonts:
Main title - 116 -164 pt. Gotham Cond. Bold
Web site address - 36 pt. Univers 67 Bold Cond.
Border stroke - .025 pt.

Material:
UV printed Aluminum



APPROVAL STATUS

This drawing must be approved by signature prior to start of production. Please indicate approval status by checking the appropriate box below. Signature and date are required.

- ☐ Approved as is for production, no changes or resubmissions required.
- ☐ Approved for production with changes noted. No resubmissions required.
- ☐ Changes and resubmission required.

Signature:

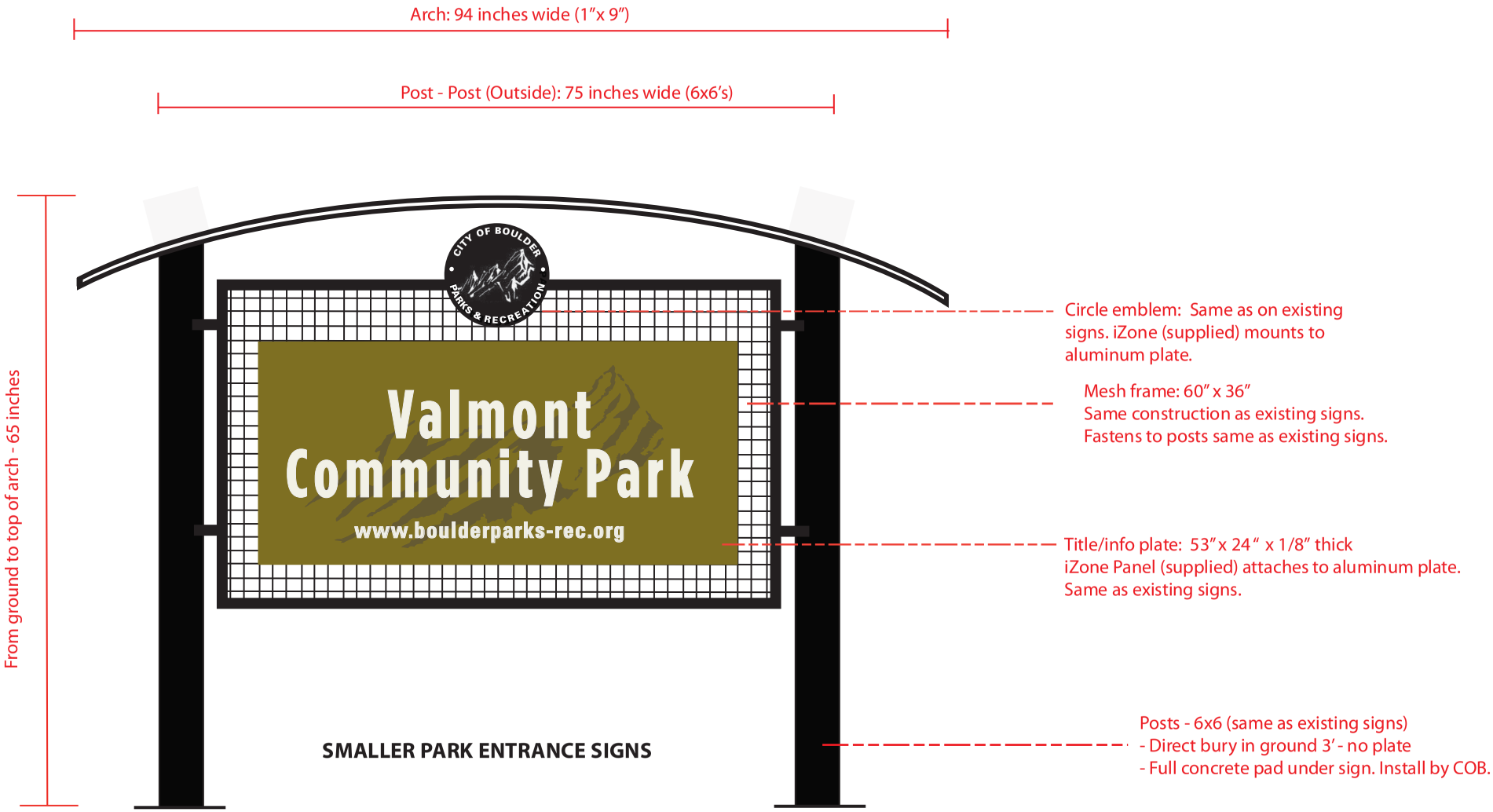
Date:

QTY: 1 sign - S/F

bscsigns Signage & Identity Solutions

project: Boulder Parks Signage				sign: X.001
scale: as noted	date: 21 Sept 2009	phase: CD	BSC job: -	sheet: 01

303/464.0644 p 6970 W. 116th Ave. Broomfield, Colorado 80020 bscsigns.com



SMALLER PARK ENTRANCE SIGNS

Materials:
Aluminum
iZone Panels
Black Matte MAPP paint

Scale: 1" = 1'

2 Circle emblems: Same as on existing signs. iZone (supplied) mounts to aluminum plate.

Mesh frame: 46" x 36"
Same construction as existing signs.
Fastens to posts same as existing signs.
Provide option for slightly less guage than currently using.

2 Title/info plates: 43" x 25.5 " x 1/8" thick
iZone Panel (supplied) attaches to aluminum plate.
Same as existing signs.

letter height - 4.5"

Posts - 6x6 square sharp corners
w/ edges broken.
- Direct bury in ground 3' - no plate
- Full concrete pad under sign. Install by COB.

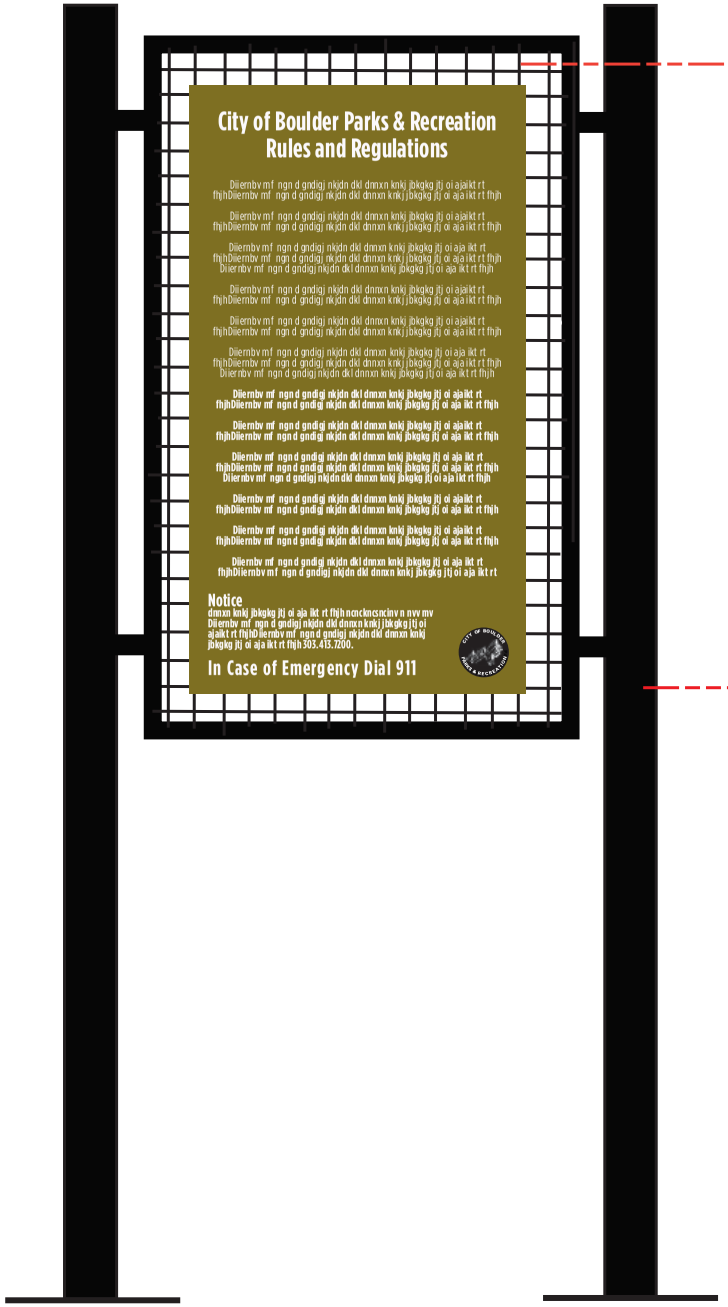
DOUBLE SIDED SIGN

Materials:
Aluminum with
Clear AntiGraffiti Powder Coat Finish

All Hardware

iZone Panels - supplied

Scale: 1" = 1'



Mesh metal frame:
- Size - 2' wide x 3'3" deep

Rules Sign: 1.5' wide x 2' 10" deep
- Izone Panels (same as existing signs)
- Attached with tamper proof bolts (same as existing signs)

6' x 3"x 3" metal posts
- Direct bury in ground 3' - no plate
- Concrete pads, above grade, around posts. Install by COB.
- Painted - Black MAPP (same as existing signs)

RULES AND REGULATION PERMANENT SIGNS:

Height - 6 feet
Width - 2' 10" feet (approx.)

Materials:
Same as entrance signs

DISC GOLF COURSE SIGN

Materials:
Aluminum
iZone Panels
Black Matte MAPP paint

Scale: 1" = 1'