# Chapter 1. Introduction

## 1.1 Purpose

Recreational trails are developed to provide access to the natural, cultural, and scenic resources of a park, to enhance the visitor's enjoyment of these resources, and to provide opportunities for varied recreation. Trails are park facilities similar to campsites and picnic areas. As such, they need to be funded, operated, and maintained through a comprehensive management program. Unfortunately, many times trails are not properly funded and maintenance responsibilities are relegated to untrained personnel, which results in impacts to resources and public safety and lower user satisfaction.

In California most state parks offer public trails and associated amenities, such as signage and restrooms, in settings that range from remote wilderness with no or few developed facilities to urban interfaces with fully developed facilities. Given California's diverse landscape, trails can be found in a wide variety of geographical and environmental settings, each with unique resource and visitor use issues.

To effectively manage such important and diverse facilities, the Department has developed a trail management program that provides an administrative framework with the flexibility to adjust to unique conditions. This handbook describes the processes for planning, designing, constructing, maintaining, and managing trails that will minimize impacts to park resources and maximize public recreation opportunities.

## 1.2 Target Audience

This handbook is designed to assist park management professionals in the development of a comprehensive trail management program. It is intended to provide tools for park planners, administrators, maintenance staff, and trail crews to ensure that trail systems are managed and administered consistently within the state park system. While many processes are specific to California State Parks, broader concepts such as planning, budgeting, prioritizing, and managing trail projects will be helpful to other organizations. Additionally, the information contained in this handbook, such as designing and constructing trails for various user types, will be of value to all trail professionals.

This handbook will not replace trained, experienced, and skilled trail workers and supervisors. It is meant to supplement their knowledge and compliment the information presented in the Department's trails management classes offered through the William Penn Mott Training Center. While intended for trail professionals, the handbook also provides basic information regarding trail management for new trail coordinators, supervisors, and managers.

## 1.3 Handbook Scope

This handbook will guide managers to the most sustainable trail designs that reduce maintenance costs, minimize impacts to natural and cultural resources, improve accessibility for all users, and provide the highest quality recreational opportunities available.

The handbook applies to recreational pedestrian, bicycle, equestrian, and multi-use trails. It does not address in depth the design needs of paved bike trails, "shared use paths," or off-highway vehicle trails. It also does not address roads that are used as trail routes and corridors. These facilities are technically roads and should be treated and maintained as such.

This handbook was developed to assist land managers with planning, designing, constructing, maintaining, and managing trails with low to moderate mechanical wear (e.g. hiking, cycling, equestrian). In depth information on trails with heavy mechanical wear (e.g. off-highway vehicles, downhill and free riding mountain biking) is not specifically addressed in this handbook. However, most of the information in this handbook is applicable to heavy mechanical wear trails. The additional design, construction, maintenance, and management requirements for trails with heavy mechanical wear are outlined in Chapter 5, *Principles of Trail Layout and Design*.

Through adaptive management, the approach to trail design and construction used by the Department has evolved over the years, and this edition of the handbook captures many of the new and innovative techniques that have been developed since the last publication in 1991. The concepts identified in this handbook were also influenced by documents, articles, and manuals produced by other agencies such as the U.S. Access Board, National Park Service, U.S. Forest Service, several state and local agencies, and private organizations. These documents are referenced in the bibliography found in Appendix A.

## 1.4 Management Philosophy

To accomplish the mission of providing high quality recreation while protecting park resources, a trail must be routed, designed, constructed, and maintained to the highest standards, which requires understanding the landform associated with the trail. It also requires knowledge of the user groups the trail is intended to serve, and the needs and design standards specific to each user group. In addition, the highest quality construction standards are applied to the building and maintenance of trails. Only by combining all of this information can sustainability for each trail be achieved.

### 1.4.1 Sustainability

The processes and practices identified in this handbook are for the development and ongoing management of *sustainable* trails. A sustainable trail has been designed and constructed to a standard that does not have an adverse impact on natural and cultural resources; can withstand the impacts of the intended users and the natural

elements while receiving only routine cyclical maintenance; and meets the needs of the users so they do not deviate from the established alignment. This definition is further developed in Chapter 2, *Trail System Development and Management*.

### 1.4.2 Natural and Cultural Resources

Trails provide a vital connection to a park's natural and cultural resources and should never significantly compromise or detract from them. Land managers are charged with the stewardship of the state's most valued resources and the resources must be considered when planning, designing, constructing, and managing a trail. The techniques described in this document are designed to minimize impacts to these resources.

### 1.4.3 Aesthetics

Aesthetic considerations in trail design, construction, and maintenance should always be a primary concern. The use of native materials and a curvilinear alignment that blends with the natural setting allow the constructed trail to appear to be an integral part of the environment, rather than an engineered route. The trail itself or any of its components should not overpower or distract from the natural or cultural setting, but should be harmonious with the natural environment and provide the visitor with the illusion that they are traversing the land without being separated from it. Visitors should be focused on the environment that surrounds them rather than on the trail itself. When designing a trail it is essential to consider not only the view from the trail but the view of the trail as it appears from a distance on the land. Aesthetics are inherently subjective. However, by following the guidelines set forth in this handbook, trail design and management can be accomplished in a manner that complements rather than detracts from the natural environment.

### 1.4.4 Visitor Experience

Trails are developed for the use and enjoyment of the visitor. The visitor's experience on the trail is one of the primary considerations of trail management. The type of experience trail users are seeking varies greatly from passive recreation, such as bird watching, strolling through an ancient forest, or enjoying beautiful vistas, to active recreation, such as trail running, technical mountain biking, or challenging equestrian trail rides. The Department strives to meet the recreational trail needs of the public while ensuring that the trails are safe, sustainable, and enjoyable for current and future generations.

### 1.4.5 Accessibility

The public has a wide range of mobility impairments and land managers should not arbitrarily rule out improving accessibility because we cannot comply with the U.S. Access Board's standards or our own preconceived design needs for hikers with the most severe mobility impairments. Accessibility should also take into consideration other physical challenges, such as sight and hearing disabilities, in the design and

implementation of trails and related facilities. As land managers, we should strive to make our trails accessible to the widest variety of visitors as possible. Not all trails can be fully accessible, but all trails should be built as obstruction-free as possible considering site constraints such as sensitivity of cultural and natural resources, landform limitations, intended visitor experience, trail user designations, and local construction practices and regulations.

Consider access to the trail and all its support facilities, not just individual elements. Support facilities, such as trailhead parking, restrooms, signage, and picnic areas should not present barriers to the accessible components of a trail. When a trail structure is replaced, even on a section of trail that is not considered accessible, the new structure should be made as accessible as possible. In that way we are incrementally improving access on a system-wide basis.

## 1.5 Best Practices

The information in this handbook should be used to select the most sustainable design solution that reduces maintenance costs, minimizes impacts to the natural and cultural resources, maximizes accessibility for all users, and provides the highest level of public service to visitors. The best practices (BPs) identified in each chapter have been consolidated in Appendix C for reference and use as attachments to planning, contracting, and environmental documents.

## 1.6 Handbook Organization

This handbook is broken into sections addressing planning and administration, trail layout and design, trail construction, and trail maintenance. To the extent possible, examples, diagrams, and photos have been provided to illustrate key points. Sample forms, drawings, and other documents are provided in the appendix. The text in this handbook uses many terms commonly associated with trail planning, design, construction, and maintenance. It also uses terms commonly used in natural resource management. A glossary of the terms used in this handbook is located in Appendix B for your reference and clarification.