



Trails Design and Management Handbook



OPEN SPACE AND TRAILS PROGRAM
PITKIN COUNTY, COLORADO



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Foreword

AT ITS BEST, A TRAIL is a unique extension of its site. Much more than merely a connection between two points, a trail can create a safe and sustainable corridor through the site which brings visitors into the site's natural features. A trail can be subtly integrated into its site such that it feels like it belongs there — complementing the site with its presence — and in the process making us feel as if we, too, belong there. And the best trails provide a rich combination of landscape, visual and sensory experiences, intellectual discoveries, and emotions and feelings that continually makes them enjoyable to use, time and time again.

Trails such as this usually don't just happen. They are designed to be sustainable, to bring visitors in contact with the site — to be enjoyable to use. This specification is intended as a first step in creating such trails as part of a state-of-the-art trail system especially suited to Pitkin County's environment, residents, and visitors.

GOALS OF THIS SPECIFICATION

This specification is designed to help produce unique trails that are uniquely suited to their sites and users. At the same time, it is intended to provide a recognizable design consistency between trails and to eliminate the need to start from scratch with every trail.

As outlined in these pages, the trail design process begins with a thorough examination intended to reveal the dozens of interrelated aspects that together shape trail planning and management. Extensive guidelines are given for relating these aspects in a balance that resolves the many natural and man-made forces operating on a given trail.

This specification then gives planning and construction details for various common trail features, along with design and aesthetic issues for creating a quality trail experience. Designs for trail surfaces and drainage are based on the best of both time-proven methods and on state-of-the-art methods. Designs for structures, signs, and trailside features are largely based on the mining and ranching heritage of Pitkin County, as well as on the character of the mountain and valley landscape.

Realizing that all sites and trails are unique, this specification often gives a great deal of flexibility in trail design. Nearly all trail features can be built in more than one way, and guidelines are given for choosing between various methods. To further create flexibility, the word "should" is used much more often than "shall." Except where the physical stability of the trail or the safety of users would be compromised, the spirit of this specification should be considered more important than the letter. This specification can and should be extended as needed.

All parts of the trail system are designed to be cost-effective with low maintenance. Quality design and construction, combined with frequent inspections and light maintenance, are intended to prevent major problems.

THE CHARACTER OF THE TRAILS

Trails designed through this specification are intended to have a sturdy grounded feel — to feel as if they are integral parts of their neighborhoods and sites. Simple lines, heavy square timbers, practical unembellished designs, and the use of natural materials such as native stone, wood, crushed stone, and linseed oil wood treatment are intended to evoke an unpretentious solid western feeling for both residents and visitors. The desired feeling is

a simple elegance resulting from the blending of effective design, solid practicality, native materials, and careful craftsmanship.

Natural materials are favored over high-tech or man-made materials, but the latest in technology is employed where appropriate. Site preservation, restoration, and revegetation efforts are designed to integrate trails with both sites and neighborhoods.

It is hoped that combining these design guidelines with respect for natural resource values will produce a trail system that becomes an important and eagerly-supported part of life in Pitkin County. May you be able to enjoy many years of good trail experiences.

– Troy Scott Parker
June 1993

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Editing assistance was gratefully provided by Hugh Duffy of the Rivers, Trails, and Conservation Assistance Program of the National Park Service, Rocky Mountain Division. Stuart Macdonald, Colorado State Trails Coordinator, was very helpful in providing supporting materials and literature. Ron Henderson of Henderson Concrete, Montrose, Colorado, generously provided detailed information on concrete

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The author would also like to thank Christopher Alexander and his colleagues for the ideas expressed in *The Timeless Way of Building* and *A Pattern Language* — many of the concepts from their work are included in this specification in ways far too numerous to mention.

And, last but not least, thanks to all the unnamed trail planners, contractors, builders, and others whose cumulative trail work all around the country forms the basis for much of this specification.

THE PITKIN COUNTY OPEN SPACE AND TRAILS PROGRAM

ON NOVEMBER 4, 1990, Pitkin County voters approved a citizen initiative establishing the Pitkin County Open Space and Trails Board of Trustees and authorizing the program to raise funds through a property tax and bonds. Resolution 90-93 of the Board of County Commissioners enabled the Open Space and Trails Board to “establish acquisition priorities and recommend management guidelines and other relevant policies and procedures to guide the expenditure of open space and trails funds.” (See Appendix B for the complete Open Space and Trails Board Objectives and Policies statement).

The mission of the Open Space and Trails Program is to

“acquire, preserve, maintain and manage open space for multiple purposes including, but not limited to, recreational, wildlife, agricultural, access, and scenic purposes and to acquire, preserve, develop, manage and maintain trails for similar purposes.”

Likewise, trails dedicated to the County as a result of private land development approvals are subject to the same mission statement. Trails are an important and valued form of land use in Pitkin County.

This *Trails Design and Management Planning Handbook* has been adopted by the Open Space and Trails Board and the Pitkin County Commissioners as an amendment to the County Trails

Plan previously adopted in 1991 by Resolution 91-____, replacing the “Trail Guidelines” section and expanding on the evaluation procedure and approval process described in Section II of that Plan. These guidelines are consistent with County Land Use Code and other relevant regulations.

TRAIL DESIGN AND MANAGEMENT PLANNING

The County has adopted guiding policies regarding trails acquisition, stewardship, and advocacy which this Trail Design and Management Handbook is designed to implement. Building and operating a quality trail system requires the appropriate, site-specific application of functional, cost-effective, low impact, and easily maintained design concepts. Every trail segment presents different physical conditions and management challenges. The implementation of design and management standards must be flexible enough to adapt to those changing needs while still achieving the overall trail objectives of the County. The County’s trail stewardship practices always seek to preserve and enhance the ecological, scenic, agricultural, and cultural resources acquired through the Open Space and Trails Program or through land use approvals.

Trail design and management planning are intended to help ensure that those stewardship obligations are met through a thorough planning requirement which

is consistently applied to each individual trail project. The trail design process seeks continuity and consistent quality, but avoids the strict application of rigid design specifications where creative adaptations of the design guidelines can achieve a superior outcome. The management planning process seeks to identify, in advance, the appropriate uses for a trail, its maintenance needs, the likely management issues, and the management resources that can be applied.

Meeting the County's Trails Goals

The 1991 Pitkin County Trails Plan, Section IV, states that the County's goal is

“to provide a pedestrian, bicycling, equestrian, fishing, and nordic trails system which is properly maintained and accessible; which provides a good trails experience to residents and visitors alike in all seasons; and which functions as an important part of the transportation system, or which provides an opportunity for the public to recreate in wilderness settings.”

Good trail design and appropriate management are both essential to the achievement of that goal. Further, the County recognizes that not all existing trails meet the County's goal. This document is designed to guide the County and the public through a thorough examination of good trail design and appropriate management in the course of proposing, approving, building, or upgrading the County's trail system.

THE COMPLETE TRAIL APPROVAL PROCESS

The development of the County trail system will occur within the context of the County's land use regulations as described in this Handbook. In order to provide the information necessary to prepare a trail proposal, this Handbook is laid out as follows:

Section 1

Trail Design Process and Guidelines

This section presents general design process and guidelines for all trail types. The design of trails should follow this process and meet these guidelines as much as possible.

Section 2

Multiple Use Hard Surface Trail Specifications

Section 3

Crusher Fines Trail Specifications

Together, Sections 2 and 3 present the County's design guidelines for these trail types and for attendant trail system improvements. The goals, design concepts, recommended specifications, and anticipated maintenance needs for each trail type are presented and explained. Where a feature or concept applies to both trail types, it is presented in Section 2.

Section 4

Trail Proposal and Evaluation Process

This describes the step-by-step progression of a trail proposal toward County approval, whether it originates from the private sector, from the Open Space and Trails Program, or from another entity. The requirements for proposals for new trails (and for evaluation of existing trails) are also given here.

Reference

Supporting reference materials are included in Appendix C.