

CHAPTER 1

INTRODUCTION

Skiing against a backdrop of snow-capped mountains or hiking through colorful alpine meadows on clear, blue-sky days are defining images for ski areas in Colorado and around the world. Such images help draw millions of people to ski areas for winter and summer recreation, which generates over \$3.6 billion in revenue in the U.S. alone. To preserve the integrity of these images, we must understand and reduce the impacts of ski areas on resource consumption and environmental quality.



The magnitude and diversity of services and operations at ski areas create a multifaceted environmental impact or “footprint” for most ski areas that includes chemical and water use, energy consumption and related air pollution, and solid and hazardous waste generation. Moreover, the environmental aspects of mountain operations that form the footprint are often difficult to measure and track and, consequently, to address in a systematic manner. In recognition of these challenges and the important role that the ski industry plays in Colorado’s economy, the Colorado Department of Public Health and Environment (CDPHE) initiated discussions with ski area representatives about proactive strategies for improving regulatory compliance, reducing wastes, and conserving natural resources. These discussions ultimately led to the development of a project that involved working with Colorado ski areas to identify, demonstrate, document, and communicate pollution prevention (P2) strategies. CDPHE obtained funding from the U.S. Environmental Protection Agency (EPA) for the project, which formally started in August 1999. CDPHE contracted Tetra Tech EM Inc. (Tetra Tech), an environmental consulting firm to assist with project implementation through December 2001.

In addition to CDPHE, EPA, and Tetra Tech, numerous organizations and individuals contributed to the project; these parties are listed in the acknowledgments section of this document. In particular, the National Ski Areas Association (NSAA) was helpful in providing a national perspective to the project and in communicating project information to its membership. In addition, The Brendle Group, Inc. contributed significantly to all aspects of the project.

The project featured two main components:

1. Working with two volunteer Colorado ski areas to understand and evaluate mountain operations in order to identify and implement P2 opportunities or record P2 methods currently in practice.
2. Based on on-site experience with the two volunteer ski areas and conversations with staff from other ski areas, creating a handbook (this document) that discusses environmental management strategies for ski areas and presents practical information about P2 opportunities

for specific mountain operations; in addition, offering a training session for ski area managers and staff that introduces the content of the handbook

CDPHE selected Aspen Skiing Company (ASC) and Arapahoe Basin (A-Basin) from among several Colorado ski areas that expressed interest in participating in the project. ASC and A-Basin were chosen in part because their size and operations are representative of both large and small ski areas. Summary information about ASC and A-Basin is provided in Table 1.1. Although ASC statistics suggest that it is a very large operation, ASC owns four distinct ski areas that are individually comparable to many “single-mountain” ski areas nationally. For this reason, most of the experience and environmental successes at ASC are directly applicable to many smaller ski areas.

TABLE 1.1 DESCRIPTIVE STATISTICS FOR A-BASIN AND ASC

	Arapahoe Basin	Aspen Skiing Company
Number of Distinct Areas	1	4
Skiable Area (acres)	490	4,817
Annual Skier Visits	235,000	1.3 million
Number of Lifts	5	39
Winter Employees	175	3,500
Summer Employees	28	1,000
Lodging Rooms	No lodging	3 hotels, 260 rooms
Restaurants, Cafeterias, and Bars	1 cafeteria, 1 bar	15
Number of Vehicles	9 vehicles, 5 snowcats 1 backhoe, 1 bobcat	90

The many operations that contribute to a ski area’s environmental footprint are diverse and are often not related to specific regulatory compliance issues. This handbook provides environmental improvement strategies for on-mountain operations as well as for management functions that can impact environmental performance. These strategies represent opportunities to take practical steps toward fulfilling the Environmental Principles endorsed by many ski areas participating in NSAA’s Environmental Charter, commonly referred to as “Sustainable Slopes” (see Section 2.2 and www.nsaa.org/envIRON/index.asp).

The purpose of this handbook is twofold: (1) demonstrate that practical, proven techniques and technologies exist for reducing environmental impacts of ski area operations and (2) identify resources (names, telephone numbers, web sites, documents, and so on) for ski area personnel to obtain further information.

Chapter 2 through 14 of this handbook are organized according to the following common management functions and on-mountain operations:

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| 2. Environmental Programs and Policies | 8. Lift Operations |
| 3. Environmental Performance Measurement and Reporting | 9. Food and Beverage Service |
| 4. Regulatory Compliance | 10. Building Maintenance |
| 5. Customer, Employee, and Community Programs | 11. Snowmaking |
| 6. Purchasing | 12. Lodging |
| 7. Vehicle and Equipment Maintenance | 13. Grounds Maintenance |
| | 14. Building Design and Construction |

As stated above, the handbook is organized according to operational areas. However, the environmental strategies discussed in each chapter are multi-media; that is, they address source reduction (for example, “green” purchasing), energy efficiency, solid and hazardous waste minimization, and air emission reduction. Virtually all strategies that improve energy efficiency and many that reduce solid waste result in off-site air emission reductions. The impact of particular strategies is usually apparent from the section heading and is always explained in the text.

The handbook contains numerous case studies from the two ski areas (A-Basin and ASC) selected as the recipients of substantial on-site evaluations and from Vail Resorts, which was represented on the project’s Advisory Board and actively contributed to the project. **Case studies are marked with an owl icon.**

