

TABLE OF CONTENTS

CHAPTER	GENERAL TOPIC
Preface	Introduction
1	Working in the Watershed
2	Following the Rules
3	Maintaining the Roads
4	Maintaining the Culverts
5	Disposing the Spoil
6	Managing the Maintenance Yard
7	Maintaining the Bridges
8	Performing Emergency Work
9	Dealing with Snow & Ice
10	Monitoring the Practices
11	Training the Staff
12	Information Sources
APPENDICES	
A	Getting the Permits
B	BMP Standard Designs
C	Culvert Criteria for Fish Passage
D	Water Drafting Guidelines

TABLE OF CONTENTS

PREFACE

INTRODUCTION

Why the Manual is Needed
How the Manual was Developed

CHAPTER 1

WORKING IN THE WATERSHED

- 1-A Watershed Basics
 - What is a Watershed?
 - Watershed Processes
 - Water Quality
 - Helpful References
- 1-B Stream Habitat Needs
 - What Fish?
 - Salmon & Steelhead Life Cycles
 - Salmon and Steelhead Needs
 - Salmon and Steelhead Locations
 - Threatened or Endangered Species
 - Other Aquatic or Riparian Sensitive Species
- 1-C Road Treatment Principles
 - Goals of Treating County Roads
 - Road Sources of Sediment
 - Ten Principles for Treating County Roads

CHAPTER 2

FOLLOWING THE RULES

- 2-A Who sets the Rules: The Agencies
- 2-B Why the Rules are Made: The Laws & Regulations
- 2-C What is Required: The Permits
- 2-D When Permits Happen
- 2-E Where to Find Help

CHAPTER 3

MAINTAINING THE ROADS

- 3-A Grading Practices
 - 3-A-1 Shoulder Blading and Rebuilding
 - 3-A-2 Erosion Repair and Control
 - 3-A-3 Ditch Shaping and Cleaning
 - 3-A-4 Channel Maintenance
- 3-B Road Surfacing and Dust Abatement
 - 3-B-1 Surface Work
 - 3-B-2 Dust Abatement
 - 3-B-3 Water Drafting
- 3-C Vegetation Management
 - 3-C-1 Mowing and Cutting

TABLE OF CONTENTS

3-D	3-C-2	Tree Removal
		Winterizing Road System
	3-D-1	Winterizing Roads
CHAPTER 4		MAINTAINING THE CULVERTS
4-A		Culvert Cleaning
4-B		Culvert Improvement and Repair
4-C		Culvert Sizing
4-D		Culvert Replacement
4-E		Ditch Relief Culverts
4-F		Temporary Stream Diversions
CHAPTER 5		DISPOSING OF THE SPOIL
5-A		Spoil Disposal
	5-A-1	Site Selection
	5-A-2	Disposal Site Maintenance
	5-A-3	Disposal Site Closure
5-B		Stockpiling for Reuse
	5-B-1	Stockpile Maintenance
CHAPTER 6		MANAGING THE MAINTENANCE YARD
6-A		Facility Housekeeping Practices
6-B		Building & Grounds Maintenance
6-C		Vehicle & Equipment Maintenance
	6-C-1	Fueling
	6-C-2	Maintenance & Repair
	6-C-3	Pressure Washing
	6-C-4	Oil/Water Separators
6-D		Material Use & Storage
	6-D-1	Waste Minimization, Handling & Disposal
	6-D-2	Used Oil Recycling
	6-D-3	Storage of Hazardous Materials
	6-D-4	Outdoor Storage of Raw Materials
	6-D-5	Outdoor Loading / Unloading of Materials
	6-D-6	Above Ground Tank Leak & Spill Control
	6-D-7	Safer Alternative Products
CHAPTER 7		MAINTAINING THE BRIDGES
7-A		Bridge Maintenance
	7-A-1	Bridge Cleaning and Maintenance
	7-A-2	Bridge Vegetation Management

TABLE OF CONTENTS

7-B		Bridge Repair & Drift Removal
	7-B-1	Bridge Repair
	7-B-2	Drift Removal
CHAPTER 8		PERFORMING EMERGENCY WORK
8-A		Emergency Maintenance – General
8-B		Slide and Settlement Repair
8-C		Accident Clean-Up
CHAPTER 9		DEALING WITH SNOW & ICE
9-A		Snow and Ice Removal
	9-A-1	Snow and Ice Removal
9-B		De-Icing , Anti-Icing, and Sanding
	9-B-1	Sanding
	9-B-2	De-Icing & Anti-Icing Chemicals
CHAPTER 10		MONITORING THE PRACTICES
10-A		Documentation & Reporting
10-B		Monitoring
	10-B-1	Implementation
	10-B-2	Effectiveness
	10-B-3	Photopoints
	10-B-4	Project Monitoring
10-C		Manual Review & Updating
CHAPTER 11		TRAINING THE STAFF
11-A		Training Program
11-B		Training Resources
11-C		Annual Award
CHAPTER 12		INFORMATION SOURCES
12-A		Acronyms
12-B		Glossary
12-C		References
12-D		Sources of Materials

TABLE OF CONTENTS

APPENDICES

APPENDIX A

GETTING THE PERMITS

A-1	Permit Flow Charts
A-2	Directory of Agencies

APPENDIX B

BMP STANDARD DESIGNS

B-1	Table of Contents
B-2	Useful References
B-3	Culverts
B-4	Erosion Control
B-5	Fish Exclusion
B-6	Fish Ladders
B-7	Streambank Protection & Channel Improvement
B-8	Water and Runoff Diversions
B-9	Water Quality Protection / Sediment Control

APPENDIX C – FISH PASSAGE GUIDELINES

C-1	NMFS Fish Passage Guidelines
C-2	DFG Culvert Criteria for Fish Passage

APPENDIX D – WATER DRAFTING GUIDELINES

D-1	NMFS Water Drafting Specifications
D-2	DFG Guidelines for Temporary Water Drafting