Contents

Chapter 1 Emergency Procedures . . . 1-1
General Responsibilities . . . 1-1
Regional Emergency Response Plans . . . 1-2
WSDOT Disaster Plan . . . 1-2
Organization and Assignment of Responsibilities . . . 1-2
Administration and Logistics . . . 1-3
Plan Development and Maintenance . . . 1-3
Training and Exercises . . . 1-3
Emergency Operating Procedures . . . 1-3
Maintenance Field Personnel . . . 1-4
Maintenance Superintendent or Supervisor . . . 1-5
Abandoned Cargo . . . 1-5
Clearing the Highway . . . 1-6

Chapter 2 Work Zone Traffic Control and Safety . . . 2-1
General . . . 2-1
Fundamental Principles . . . 2-1
Traffic Control Zones . . . 2-2
Traffic Control Devices . . . 2-3
Cone Placement Procedure . . . 2-5
Traffic Control Procedures . . . 2-8
Off-Road Activities . . . 2-9
Nighttime Activities . . . 2-9
Automated Flagger Assistance Device (AFAD) . . . 2-9
Temporary and Portable Signal Systems . . . 2-10
Non-Motorized Traffic Control . . . 2-10
Pedestrian Control . . . 2-10
Bicycle Control . . . 2-11
Safety . . . 2-11
Work Zone Operations . . . 2-11
Enforcement . . . 2-12
Resources for Traffic Control and Work Zone Safety . . . 2-12

Chapter 3 Pavement Patching and Repair . . . 3-1
General . . . 3-1
Maintenance of Flexible Pavements . . . 3-2
Load and Speed Restrictions . . . 3-2
Pavement Deficiencies . . . 3-2
Pavement Maintenance Techniques . . . 3-4
Patching With Base Repair . . . 3-5
Effects of Traffic on a Patching Operation . . . 3-9
Crack Sealing (or Pouring) . . . 3-9
Maintenance of Rigid Pavements . . . 3-11
Portland Cement Concrete Pavement Crack Pouring . . . 3-11
Classes of Asphalt Concrete Pavement (ACP) . . . 3-13

Asphalt Emulsion Surface Treatment 3-13
Pavement Conditions for a Successful Project 3-14
Material Selection 3-14
Calibration Procedures 3-16
Cleaning of Distributor 3-20
Checking the Bitumeter 3-21
Traffic Control 3-21
Application of Asphalt 3-21
Spreading Aggregate 3-22
Chip Spreader Calibration 3-22
Chip Spreader 3-23
Rolling 3-23
Spreading of Fines or Choking - Optional 3-24
Post-Seal Inspection 3-24
DOs of Seal Coating 3-25
DO NOTs of Seal Coating 3-25
Blade Mixed Asphalt Mix 3-25
Handling Emulsified Asphalts 3-27

Chapter 4 Drainage 4-1
General 4-1
Drainage From Abutting Properties 4-1
Ditches and Gutters 4-2
Rockfall Ditches and Slope Benches 4-3
Dry Wells 4-3
Culverts 4-3
Automatic Pumps 4-4
Under Drains 4-4
Horizontal Drains 4-5
Storm Sewers and Catch Basins 4-8
Bank Protection 4-9
Detention Ponds, Tanks, and other Stormwater Treatment Facilities 4-9

Chapter 5 Maintenance of Structures 5-1
General 5-1
Major Structures 5-1
Minor Structures 5-1
Inspection 5-1
Bridge Repair Guidelines 5-4
Bridge Information 5-5
Environmental Aspects 5-5
Utility Installations 5-6

Chapter 6 Roadside Management 6-1
General 6-1
Definitions 6-1
Reference 6-2
Resources 6-2

Roadside Functions 6-2
Roadside Treatment 6-2
Maintenance Involvement in the Roadside Management Process. 6-2
Roadside Maintenance and the Maintenance Accountability Process. 6-4
Roadside Management Zones 6-4
Maintenance of Zone 1 6-5
Maintenance of Zone 2 6-7
Maintenance of Zone 3 6-8
Integrated Vegetation Management 6-9
Danger Trees 6-11
Disposal of Logs Dumped on Right of Way 6-11
Removal of Dangerous Objects and Structures 6-11
Trespass and Encroachment. 6-12
Encroachment – General 6-12
Encroachment – Maintenance Crew Responsibilities 6-12
Franchises and Permits 6-13
The Use of Pesticides. 6-13
Use and Evaluation of New Products 6-14
Pesticide License 6-14
Record Keeping 6-14
Product Labels 6-14
Posting Requirements 6-14
Aquatic Pesticide Applications 6-15
Pesticide Sensitive Individuals 6-15
Container Disposal. 6-15
Use of Mowing Equipment 6-16
Other Cutting Methods 6-16
Cultural Control Methods 6-17
Biological Control 6-17
Burning Debris. 6-17
Illegal Tree Removal 6-18
Significant Roadside Activities 6-18
Removal of Debris and Rubbish 6-19
Litter Control and Partnerships for Roadside Enhancement 6-19
Adopt-a-Highway 6-20
Program Rules 6-20
Participant Eligibility. 6-20
Assignment of Sections 6-21
Volunteer Adoptions. 6-22
Sponsored Adoptions 6-22
General Permits for Roadside Enhancement 6-26
AAH Administrative Roles and Responsibilities. 6-26
Maintenance and Operations Responsibilities. 6-26
Region Responsibilities 6-27
Guidelines for Litter Crew Traffic Control 6-28
Auxiliary Facilities. 6-32

Chapter 7 Snow and Ice Control 7-1
General 7-1
Preparation for Winter Operations 7-1
Treatment Levels and Goals 7-1
Other Facilities 7-2
Area of Responsibility 7-2
Abandoned or Illegally Parked Vehicles 7-3
City Streets on the State Highway System 7-3
Operational Considerations 7-3
Service Level Quality Measurement 7-8

Chapter 8 Traffic Services 8-1
General 8-1
Reconstruction Principles 8-1
Signing 8-2
Signing Responsibility 8-2
Sign Installation 8-2
Maintenance 8-3
Sign Visibility 8-4
Sign Storage and Transportation 8-4
Delineation 8-4
Pavement Markings 8-5
Materials 8-6
Application 8-7
Surface Moisture Test 8-7
Marking Renewal or Replacement Frequency 8-8
Removal of Markings 8-8
Guideposts 8-8
Traffic Barriers and Impact Attenuators 8-9
Maintenance 8-9
Inspection – General 8-9
Inspection and Preventive Maintenance – Cable Barrier 8-9
Repair 8-10
Standard Run of Barrier 8-10
Terminals and Anchors 8-10
Transitions 8-11
Impact Attenuators 8-11
Maintenance 8-12
Islands 8-12
Transit Vehicle Stop Zones 8-12

Chapter 9 Electrical System Maintenance 9-1
General 9-1
Wiring and Connection Maintenance 9-1
Enclosure Maintenance 9-1
Documentation 9-1
Changeable Message Sign Systems 9-2
Drain Pump Systems 9-2

Gate and Barrier Systems . . . 9-2
Intersection Control Beacons (Includes Hazard Beacons) . . . 9-2
Illumination Systems . . . 9-3
Sign Lighting Systems . . . 9-3
Services . . . 9-3
Signal Systems . . . 9-3
Vehicle Detection Systems . . . 9-3
Pedestrian Detection and Display System . . . 9-4
Vehicle Display Systems . . . 9-4
Signal Control Systems . . . 9-4
Sprinkler Systems . . . 9-4
Television Systems . . . 9-4

Chapter 10 Miscellaneous . . . 10-1
Right of Way Fences . . . 10-1
Road Approaches – General . . . 10-1
Typical Maintenance Responsibilities in Cities . . . 10-1
Maintenance Yards . . . 10-4
Stockpile Sites . . . 10-4
Materials From State Quarries or Pits . . . 10-5
Procurement of Materials . . . 10-5
Material Specifications – General . . . 10-5
Disposal of Surplus Items . . . 10-6
Instructions for Radio Operation . . . 10-6
Helpful Reminders . . . 10-7
Work Scheduling and Reporting . . . 10-7
Budget . . . 10-7
Scheduling . . . 10-8
Reporting . . . 10-8
Environmental Sensitivity . . . 10-8

Appendix A City Streets as Part of State Highways . . . A-1
Original 1997 Agreement . . . A-35

Appendix B Emergency Restrictions for Roads . . . B-1
General . . . B-1
Actions . . . B-2
Signing Instructions . . . B-2
Emergency Load Restrictions . . . B-3
Severe Emergency Load Restrictions . . . B-4

Index . . . I