

Chapter 5: Road Construction

Successful construction involves building Forest Service roads that are appropriate for their expected service life while at the same time minimizing impacts on forest resources and other values.

The purposes of this chapter are to provide:

- the mandatory requirements for road construction on FSRs; and
- practices for forest road construction activities that will assist ministry staff in achieving the statutory and regulatory requirements in the *Forest and Range Practices Act* and the *Forest Planning and Practices Regulation*.

5.0.1 Policy

All Forest Service roads will be constructed in a manner that considers road user safety, values at risk of damage or loss and cost efficiency.

5.1 Mandatory Procedures & Best Practices

5.2 Road Construction Professional Responsibilities & Considerations

- 5.2.1 Field Reviews
- 5.2.2 Changed Conditions
- 5.2.3 Modifications During Construction
- 5.2.4 Project Assurance

5.3 Road Corridor Preparation

- 5.3.1 Preparing the Site
- 5.3.2 Establishing Clearing Widths
- 5.3.3 Marking Clearing Widths
- 5.3.4 Establishing Pilot Trails
- 5.3.5 Felling & Yarding Within the Clearing Width

5.4 Grubbing & Stripping

5.5 Disposal of Debris

- 5.5.1 Piling & Burning
- 5.5.2 Scattering

- 5.5.3 Burying
- 5.5.4 Endhauling Debris for Disposal
- 5.5.5 Location of Disposal Sites for Debris

5.6 Subgrade Construction

- 5.6.1 Construction Near Licensed Waterworks
- 5.6.2 Construction in Riparian Management Areas
- 5.6.3 Fan Destabilization
- 5.6.4 Wildlife Measures & Features
- 5.6.5 Construction Surveys
- 5.6.6 Modifying the Road Layout & Design
- 5.6.7 Sidecast Construction
- 5.6.8 Full Bench & Partial Bench Construction
- 5.6.9 Endhauling Surplus Excavation Materials
- 5.6.10 Location of Disposal Sites for Excavation Spoil
- 5.6.11 Rock Excavation

5.7 Overlanding

- 5.7.1 Construction of Short-Term Roads
- 5.7.2 Winter Construction of Permanent Roads
- 5.7.3 Turnouts & Widening
- 5.7.4 Location of Borrow Pits

5.8 Road Drainage Construction

- 5.8.1 Maintaining Surface Drainage Patterns
- 5.8.2 Drainage Practices & Water Quality
- 5.8.3 Ditch Construction Considerations
- 5.8.4 Cross-Drain Culvert Location
- 5.8.5 Cross-Drain Culvert Installation
- 5.8.6 Log Culvert Construction
- 5.8.7 Temporary Stream Crossings
- 5.8.8 Construction of Open & Closed Bottom Metal Culverts on Non-Fish Streams
- 5.8.9 Construction of Open & Closed Bottom Metal Culverts on Fish Streams
- 5.8.10 Fords on Non-Fish Streams

5.9 Stabilizing the Subgrade & Surfacing the Road

- 5.9.1 Ballasting
- 5.9.2 Surfacing
- 5.9.3 Surfacing Compaction
- 5.9.4 Protecting Erodible Fills Located Within Floodplains

- 5.9.5 Litter, Petroleum Products & Other Waste Materials

5.10 Construction & Use of Snow & One-Season Winter Roads

- 5.10.1 Snow Road Construction
- 5.10.2 One-Season Winter Road Construction
- 5.10.3 Road Use

5.11 Soil Erosion & Sediment Control

- 5.11.1 Soil Erosion Control Techniques
- 5.11.2 Sediment Control Techniques

5.12 Road Works Shutdown Indicators

- 5.12.1 Procedures for Shutting Down Operations
- 5.12.2 Limiting Road Use to Minimize Adverse Impacts
- 5.12.3 Emergency Road Maintenance

5.13 Resources & Suggestions for Further Reading

5.14 Appendices

- 5.14.1 Tables to Establish Clearing Width
- 5.14.2 Project Tracking Checklist