

NELSON TASMAN EROSION AND SEDIMENT CONTROL GUIDELINES

JULY 2019



Erosion and Sediment Control Guidelines

Control your sediment. Protect your project.
Safeguard our environment.

Chapter 1 Acknowledgements and Introduction

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Document Review

This guideline will be reviewed regularly to allow inclusion of new methods and technologies as accepted best practice changes. With this process in mind, it is important that those undertaking land disturbance in Tasman provide feedback on any issues they have with implementation of any methods and technologies recommended in this guideline, as well as sharing experience of using any new methods or technologies that become available.

How can I provide feedback on this guideline?

For your comments and suggestions, please use the feedback form downloadable from the erosion and sediment control webpage and email to pauline.webby@tasman.govt.nz.

How will I be advised of updates to the guideline?

This guideline is a living document and updates will be made, as required, to the web version available on NCC and Tasman District Council's webpage. Hard copies will not be sold or officially issued. It is the responsibility of the user of this guideline to ensure they download the most up to date version of this guideline.

Version control	Document Review
V1 July 2019	Complete

FOREWORD

Tasman District Council and Nelson City Council are committed to the reduction of stormwater runoff effects including sediment discharges from subdivisions, developments and land disturbance activities. Throughout this guideline reference is made to land disturbance activities, rather than earthworks, to provide a broader context for application.

The current Tasman Resource Management Plan (TRMP) defines the term ‘land disturbance’ which means:

- **The destruction or removal of vegetation** [including trees, shrubs, plants, or grasses], for example, by logging of forests or clearance of scrub by spraying, burning or mechanical means;
- **Soil disturbance** [meaning the disturbance of soil other than by modification of the shape of the ground surface and includes cultivation, deep ripping, mole ploughing, root raking, blading, and compaction by vehicles or stocking, and excludes earthworks], OR
- **Earthworks** [meaning any modification to the shape of the ground surface by movement or removal of soil and includes excavation, infilling, recontouring [meaning any earthworks that result in the reshaping, raising, or lowering of the surface of a more or less continuous area of ground], and construction of any road, track, embankment, or drainage channel] and includes for example building sites, pits or quarries.

The Nelson Resource Management Plan (NRMP) does not define use the term land disturbance, but the following defined terms relate to the disturbance of land:

- **Vegetation clearance** means disturbance of soil other than by modification to the shape of the land surface and includes cultivation, deep ripping, root raking, blading and compaction, the term earthworks is utilised.
- **Soil disturbance** means disturbance of soil other than by modification to the shape of the land surface and includes cultivation, deep ripping, root raking, blading and compaction.

Earthworks means any modification to the shape of the land surface, including removal of soil, excavation, infilling, re-contouring and construction of any road, track, landing or drainage channel [‘Landfill’ has a separate (refer definition). of ‘Landfill’].

For the purposes of this guide “**earthworks**” has the same meaning as **land disturbance**.

This guideline is intended for use when undertaking the following activities whenever they include land disturbance:

- | | |
|--|---|
| <ul style="list-style-type: none"> • Subdivision development • Building work, including site preparation • Road and track construction and maintenance • Drainage construction and maintenance | <ul style="list-style-type: none"> • Utility construction and maintenance • Quarrying • Works in or adjacent to waterways • Farming |
|--|---|

Note:

Plantation forestry activities are managed by the National Environmental Standard Plantation Forestry (NESPF).

This Erosion and Sediment Control Guide provides the Councils and land use managers with detailed design guidance and information about what constitutes best practice for erosion and sediment control for land disturbing activities in the Nelson/Tasman Districts.

Some industries have erosion and sediment control guidelines specific to their activities which cover industry specific issues and best practice methods. Industry specific guidelines can be used in conjunction with this guideline provided they are appropriate to the Nelson/Tasman region's soils and climate and employ best practice methods to the same or greater standard than identified in this guideline.

If you have any doubt as to which guidelines are appropriate for your activity, please contact the Council to discuss.

The policies and rules in the TRMP and the NRMP should be read by those intending any activity that disturbs natural ground cover to identify the status of a particular project for consenting requirements or permitted activity conditions.

The choice of compliance and the level of best practice adopted, sits with those undertaking land disturbance. Councils can set and enforce regulations, but it is individuals who choose to be proactive and think about how they can effectively manage erosion and sediment on their properties that will make all the difference to the quality of our streams, wetlands, estuaries and beaches.

1 INTRODUCTION

Sediment from land disturbance activities can have significant detrimental impacts on receiving systems including adjacent properties, rivers, lakes, freshwater wetlands, estuaries, harbours and coasts. It also represents the loss of valuable soils, particularly where eroded from productive land.



Adverse impacts from land disturbance activities are caused by the dislodgement and transport of sediment by water or wind from areas where soil is exposed. Suspended sediments are transported off site and deposited downstream, particularly in low energy, slow flowing areas.

Adverse impacts on aquatic ecosystems usually result from excessive levels of fine sediment in the water column and on and in the bed with some environments being more sensitive than others - for example estuaries, freshwater wetlands and spring-fed, gravel-bed streams.

Figure 1-1 Excessive sediment in Field Creek due to poor site erosion and sediment control

Wind erosion can cause significant dislodgement and transport of sediment. This causes nuisance and adverse amenity effects and can affect human health, as well as subsequently causing adverse effects on water quality upon settling.

Discussion of adverse impacts is further explored in Chapter 3 on land disturbance issues and Chapter 4 on receiving environments.

The national annual cost of erosion and sedimentation in New Zealand has been estimated to be well over \$100 million per year (Krausse et al. 2001). However, this figure does not include less-tangible effects like water quality decline and biodiversity loss.

There are numerous sources of sediment; some natural and some caused by human activities. As accelerated sediment discharge from development, farming, horticulture and forestry has potential for significant adverse impacts to receiving systems, the Council has developed this best practice guideline for earthworks and land disturbing activities. This document has been based on other guidelines in use around New Zealand but includes information and issues specific to the Nelson and Tasman region.

The following considerations will need to be factored into any erosion and sediment control plan. Plans should use erosion and sediment control practices included in this guideline:

- Climate
- Soils, including specific consideration of vulnerable soils in Tasman
- Slope
- Size of disturbance
- Receiving system that the project drains into
- Effectiveness of the practice, and
- Regulatory requirements of the Council.

This guideline incorporates the above items into the criteria for both erosion and sediment control practices and provides guidance on specific situations where a given practice is appropriate and how to size the practice. It is also recognised that no control practice is 100% effective and that some of the key elements in reducing sediment discharge come from good site management, in particular limiting the size and duration of disturbed areas and stabilising exposed soils as soon as possible. As such, this guideline also incorporates recommended principles for consideration during design and planning phases to help minimise sediment generation.

There have been a number of local studies that conclude that sediment is a contaminant of concern in the Tasman District (Young et al 2010). Tasman district has some of the clearest river water in New Zealand. With clear water it takes far less sediment to cause an effect on amenity values that is “conspicuous”. Tasman and Nelson also have a number of estuaries which are vulnerable to the discharges from the urban centres and rural areas which drain to them and which are already under pressure from sedimentation. The key land disturbing activities in both regions are forestry, farming and urban development. Within urban areas the key activities of concern are subdivision developments and building construction.

With careful planning, design and implementation, adverse effects of sediment discharges resulting from land disturbances, construction and maintenance activities can be avoided or minimised, helping to protect our iconic streams, rivers, wetlands, estuaries and beaches.



Figure 1-2 Kaihoka Lakes, Owen River; Waimea Estuary, Kaiteriteri Beach (T. James); Parapara Beach (R.Scherer)

1.1 Advantages of Erosion and Sediment Control

Careful pre-planning and implementation of erosion and sediment controls usually results in many on-site advantages, in addition to protecting the environment.

Environmental benefits include:

- Reduced risk of damage to aquatic ecosystems
- Improved appearance of the site and downstream waters
- Reduced water treatment costs for water users
- Reduced blockage of drains, and
- Less mud dropped or washed onto roads.

On-site benefits can typically include:

- Improved drainage and reduced site wetness
- Less dust problems
- Improved working conditions
- Reduced downtime after rain
- Less stockpile losses
- Reduced clean-up costs
- Earlier works completion
- Less chance of public complaints, and
- Less chance of failed compliance assessments, minimising risk of works stoppages and potential fines.

1.2 Council Expectations

Tasman District Council and Nelson City Council (NCC) promote the following methods to achieving good land disturbance management and protection of water quality in the region:

- Erosion and Sediment Control Plans
- Use of Best Practicable Option
- A 'Treatment Train' approach to sediment management
- Good site management (non-structural practices and behaviours eg. staging)
- Discharge standards.

The Resource Management Act 1991 (RMA) defines 'Best Practicable Option' as:

"Best Practicable Option, in relation to a discharge of a contaminant or an emission of noise, means the best method for preventing or minimising the adverse effects on the environment having regard, among other things, to:

- (a) The nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects; and*
- (b) The financial implications, and the effects on the environment, of that option when compared with other options; and*
- (c) The current state of technical knowledge and the likelihood that the option can be successfully applied."*

The Councils' minimum expectations for ALL land disturbing activities are:

For land disturbance activities requiring resource consent and for permitted activities, consistency with this guideline and use of best practice methods to ensure off site effects are avoided or minimised.

ALL sites, whether permitted or needing resource consent, should have considered the need for erosion and sediment controls and where appropriate develop an Erosion and Sediment Control Plan (refer to Chapter 7) that reflects the scale of the land disturbance and sensitivity of the receiving environments.

All land disturbing activities, whether permitted or requiring consent, will need to comply with the respective permitted discharge rules within the relevant Council Plan or apply for resource consents.

Compliance with any resource consents. To determine the requirements for consent for your project, it is prudent that you have discussions with Council staff in the first instance.

1.3 Industry Specific Guidelines

Some industries have erosion and sediment control guidelines specific to their activities which cover industry specific issues and best practice methods. These guidelines typically have the same end goals of minimising erosion and preventing the transport of sediments offsite or into waterways.

Industry specific guidelines can be used in conjunction with this guideline provided they are appropriate to Tasman and Nelson's soils and climate and employ best practice methods to the same or greater standard than identified in this guideline.

If you have any doubt as to which guidelines are appropriate for your activity, please contact Council to discuss.

1.4 Regulatory Context

The primary legal mandate for implementation of erosion and sediment control in New Zealand is the RMA.

Tasman District Council and Nelson City Council (NCC) have functions and powers under sections 30 and 31 of the Resource Management Act (RMA, 1991) to adopt plans and control activities and discharges for the purposes of soil conservation, controlling the effects of land use and development and maintaining and enhancing water quality and ecosystems. The councils' have prepared the Tasman Resource Management Plan (TRMP) and the Nelson Resource Management Plan (NRMP) to carry out these functions and duties.

The Councils are also required, as building consent authorities, to enforce the Building Act 2004, along with the New Zealand Building Code. The Building Code (B1 and E1) requires site works (including earthworks), buildings and surface water to be managed to avoid damage or nuisance to people, other properties (including roads) and outfalls (including natural waterways, kerb and channel or soakage systems).

Builders are also referred to the Small Sites Erosion and Sediment Control brochure July 2019 for advice on erosion and sediment control methods suitable for use on small building sites.

1.5 Tasman Resource Management Plan (TRMP)

The TRMP identifies key issues in the Tasman District and provides means of implementing controls through objectives, policies and rules which specify the need for resource consent and conditions for permitted activities. The land disturbance rules form the basis of erosion and sediment control planning in the Tasman area.

The policies and rules in the TRMP should be read by those intending on any activity that disturbs ground cover or soil to identify the status of a particular project for consenting requirements or permitted activity conditions.

It is important to note that regardless of whether an activity is permitted or requires resource consent, anyone undertaking land disturbance activities, of any scale, should consider erosion and sediment control requirements and develop an appropriate plan to minimise adverse effects from erosion and sediment transportation (refer to Chapter 7 for further information on Erosion and Sediment Control Plans).

Situations which require specific consideration of erosion and sediment management include (but are not limited to):

- Land Disturbance Areas
- Slope Instability Risk Areas
- Quarry areas
- Contaminated soils
- Landscape priority or significant natural areas, including native vegetation
- Water Conservation Order areas
- Within 20m of a water body (river, stream, lake or wetland)
- Within 20m of any stop bank
- Within 200m of the coastal marine area (the Coastal Environment Area)
- Within 32m of electricity transmission lines
- Within a flood hazard area or within a flood plain
- Within or areas including a known cultural site.

The sections of the TRMP of particular relevance to erosion and sediment control are highlighted in red in Table 1-2 and key aspects are outlined in the following sections.

1.5.1 TRMP Policies and Objectives

Generally, the TRMP policies and objectives seek to ensure:

- Development only occurs where adequate provision is made for control of sediment discharges.
- Developers adopt appropriate management methods to avoid or mitigate the adverse effects of stormwater run-off.
- The avoidance, remedying or mitigation of adverse effects of land disturbance, including:
 - Damage to soil
 - Acceleration of the loss of soil
 - Sediment contamination of water and deposition of debris into rivers, streams, lakes, wetlands, karst systems and the coast
 - Damage to riverbeds, karst features, land, fisheries or wildlife habitats, or structures through deposition, erosion or inundation
 - Adverse visual effects
 - Damage or destruction of indigenous animal, plant, and trout and salmon habitats, including cave habitats, or of sites or areas of cultural heritage significance
 - Adverse effects on indigenous biodiversity or other intrinsic values of ecosystems.
 - The promotion of land use practices that avoid, remedy or mitigate the adverse effects of land disturbance on the environment.
- Land disturbance activities are managed consistent with their risks on different terrains in the District, including consideration of:
 - Natural erosion risk, and erosion risk upon disturbance
 - Scale, type, and likelihood of land disturbance
 - Sensitivity and significance of water bodies and other natural features in relation to sedimentation or movement of debris
 - Coastal risk areas
 - Climate related risks.

1.5.2 TRMP Rules – under review

Chapter 18.5 - Land Disturbance Areas provides the rules for Land Disturbance including earthworks, soil disturbance and vegetation removal or destruction (covering also quarrying, cultivation, trenching, firebreaks, roads, tracks, etc). Rules regulate activities according to whether they are in:

- Land Disturbance Area 1 (all dry land, except land in Land Disturbance Area 2) or
- Land disturbance Area 2 (Separation Point Granite geology)

Chapter 18.6 (Quarry Area) and **Chapter 18.12 (Slope Instability Risk Area)** provide further rules for land disturbance in these respective areas (refer to the TRMP maps for where these areas are located).

Chapter 28 (Rules for Activities in the Beds and on the Surface of Rivers and Lakes) and **Chapter 30 (Rules for Taking, Using, Damming and Diverting Water)** provide rules of particular relevance to activities undertaken in and around waterbodies, including damming or diversion of water to enable works, vehicle and stock access across waterways and installation of culverts, bridges and utility services, etc (refer section 11 for further information on activities within and around watercourses).

Chapter 36 (Rules for Contaminant Discharges) contains rules regulating discharges of sediment, debris, vegetation and other contaminants to land, water and coastal areas. The chapter also covers discharges of dust and stormwater.

Part V – Annex 1 and 2 contain the Water Conservation Orders for Buller River (2001) and Motueka River (2004)) respectively. These specify water quality standards within these two waterways (refer Section 4.4.9 for further information).

Table 1-1 Tasman Resource Management Plan - Document Structure

Part 1 - Introductory	Contextual Chapters	Chapter 1 - Introduction
		Chapter 2 - Meaning of Words
		Chapter 3 - Local authorities cross boundary issues
		Chapter 4 - Monitoring and review procedures
Part 2 - Land	District wide Objectives and Policies	Chapter 5 - Site Amenity effects
		Chapter 6 - Urban environment effects
		Chapter 7 - Rural environment effects
		Chapter 8 - Margins of river lakes, wetlands and coast
		Chapter 9 - Landscape
		Chapter 10 - Significant natural values and historic heritage
		Chapter 11 - Land transport effects
		Chapter 12 - Land disturbance
		Chapter 13 - Natural hazards
		Chapter 14 - Reserves and open space
	Chapter 15 - Infrastructure and network utilities	
	Rules	Chapter 16 - General rules
		Chapter 17 - Zone rules
		Chapter 18 - special area (Includes Land Disturbance, Slope instability rules)
	Other	Chapter 19 information required with Land use consent or Subdivision consent applications
Appendices	App 1 Designations, App. 2 - Urban Design Guide, App. 3 - Coastal Tasman Area Subdivision and Development Design Guide	
Part 3 - Coastal Marine Area	District wide Objectives and Policies	Chapter 20 - Effects of craft using surface of coastal water
		Chapter 21 - Effects of Disturbance, structures and occupation on coastal marine conservation and heritage, access and amenity values
		Chapter 22 - Aquaculture
		Chapter 23 - Natural Hazards and Hazardous substances
	Chapter 24 - Noise emissions	
	Rules	Chapter 25 - Coastal marine area rules
Other	Chapter 26 information required with Coastal Permit Applications	
Part 4 - Rivers and lakes	District wide Objectives and Policies	Chapter 27 - Activities in the beds and on the surface of rivers and lakes
	Rules	Chapter 28 – Rules for activities in the beds and on the surface of rivers and lakes
	Other	Chapter 29 information required with Land use activities

Part 5 - Water	District wide Objectives and Policies	Chapter 30 - Taking, using, damming and diverting water
	Rules	Chapter 31 - Rules for water take, diversion, use or damming
	Other	Chapter 32 information required with permitted applications for taking, using, damming or diverting water Annex 1 and 2 Water Conservation Orders – Motueka and Buller Rivers
Part 6 - Discharges	District wide Objectives and Policies	Chapter 33 - Discharges to land and fresh water
		Chapter 34 - Discharges to air
		Chapter 35 - Discharge to Coastal marine area
	Rules	Chapter 36 - Rules for contaminant discharges
	Other	Chapter 37 information required with Discharge Permit Applications Annex 1 Marine pollution regulations, Annex 2 NES Air pollutants

1.6 Nelson Resource Management Plan (NRMP)

The NRMP identifies key issues in the Nelson City Council area and provides means of implementing controls through objectives, policies and rules which specify the need for resource consent and conditions for permitted activities. The vegetation clearance, soil disturbance and earthworks rules form the basis of erosion and sediment control planning in Nelson.

The objectives, policies and rules in the NRMP should be read by those intending on any activity that disturbs ground cover or soil to identify the status of a particular project for consenting requirements or permitted activity conditions.

It is important to note that regardless of whether an activity is permitted or requires resource consent, anyone undertaking land disturbance activities (vegetation clearance, soil disturbance and earthworks), of any scale, should consider erosion and sediment control requirements and develop an appropriate plan to ensure there are no adverse effects from erosion and sediment transportation (refer Chapter 7 for further information on Erosion and Sediment Control Plans).

Situations which require specific consideration of erosion and sediment management include (but are not limited to):

- Areas identified on the Planning Maps as Land Management Overlay
- Areas identified on the Planning Maps as Slope Risk Overlay
- Land with a predominant slope exceeding 25 degrees
- Contaminated soils
- Areas identified as Landscape Overlay
- Areas identified as Conservation Overlay
- Areas identified as Coastal Environment Overlay
- Conservation Zone land
- Within 5m of a river identified with a Riparian Overlay (or coast)
- Within 20m of the Coastal Marine Area
- Areas identified as Flood Hazard Overlay, Flood Path, or an Inundation Overlay.

The sections of the NRMP of particular relevance to erosion and sediment controls are highlighted in red in Table 1-2 and key aspects are outlined in the following sections.

1.6.1 NRMP Policies and Objectives

Generally, the NRMP policies and objectives seek to ensure:

- Adverse effects of soil erosion, particularly sedimentation, are avoided, remedied or mitigated.
- Identify areas where accelerated soil erosion or sedimentation associated with the existing land uses or management practices exceed the sustainable capabilities of the land and promote alternative sustainable land uses or management practices.
- Land use management practices should minimise the contribution of diffuse (or “non-point”) source contaminants to water in the coastal environment.
- Protection of riparian (stream) margins and coastal margins, and their natural functioning, from activities to protect stream and esplanade values.
- Maintain water quality by requiring use of techniques to limit both nonpoint discharges and control point source stormwater discharges caused by land disturbing activities such as forestry, subdivisions and land development, increased impervious surfaces, and commercial and industrial activities.
- Control land use activities which have potential to adversely affect surface water quality and to encourage land use activities that minimise and filter contaminants entering water bodies.
- Minimising to the greatest practicable extent discharges of contaminants in stormwater to the Coastal Marine Area.
- Activities should not aggravate known or potential natural hazards, on their own site or another site.
- Contaminated sites should be managed to contain effects, and to promote the rehabilitation of sites.

1.6.2 NRMP Rules

The key NRMP rules relating to erosion and sediment control are:

1.6.2.1 Vegetation Clearance, Soil Disturbance and Earthworks

These three rules appear in each zone of the plan. In each instance the rules set out which of the activities can occur as a permitted activity subject to conditions, or where resource consent as a controlled activity or a discretionary activity.

1.6.2.2 Riparian Overlay, Land Management Overlay, Slope Risk Overlays, Landscape Overlay, Conservation Overlay, Inundation Overlay, and Coastal Environment Overlay (Rural Zone)

These are particular rules that apply in each zone if the particular environmental factor has been identified on the planning maps in that zone. Where these overlays are present, particular controls may apply to earthworks or vegetation clearance.

1.7 Subdivision

Each zone contains a rule for subdivision and provide for the council to exercise control in granting a subdivision consent over vegetation clearance, land disturbance and earthworks, including as they affect soil erosion and sedimentation.

Table 1-2 Nelson Resource Management Plan – Document Structure

Volume 1	Contextual Chapters & District wide Objectives and Policies	Chapter 1 - Introduction
		Chapter 2 – Meaning of Words
		Chapter 3 – Administration (including information required with consent applications)
		Chapter 4 – Resource Management Issues
		Chapter 5 – District Wide Objectives and Issues (including DO 13 Soil erosion and sedimentation)
		Chapter 6 - Financial Contributions
Volume 2	Zone specific Objectives, Policies and Rule	Chapter 7 – Residential Zone
		Chapter 8 – Inner City Zone
		Chapter 9 Suburban Commercial Zone
		Chapter 10 – Industrial Zone
		Chapter 11 – Open Space & Recreation Zone
		Chapter 12 – Rural Zone
		Chapter 13 – Coastal Marine Area
		Chapter 14 – Conservation Zone
Volume 3	Appendices	Appendix 28 – Freshwater (water quality standards and rules)

*Volume 4 of the NRMP contains the Planning Maps, which include Land Management Overlay in places, defining land is especially sensitive to activities that cause erosion and sedimentation.

If you are unsure which rules apply to your site or activity contact the relevant Council to discuss.

1.8 Nelson Tasman Land Development Manual (NTLDM)

The Nelson Tasman Land Development Manual (NTLDM) identifies the standards and specifications for infrastructure assets in the Nelson/Tasman region. The document covers development including creation of public assets, such as water supply, wastewater, stormwater, roading and reserves, as well as electrical and telecommunications utilities.