

Erosion and Sediment Control Guideline for Small Sites

 Nelson City Council
te kaunihera o whakatū

Please note

This guide is a summary of the Erosion and Sediment control requirements in the Nelson City Council Land Development Manual only and does not negate all other earthworks requirements under the Nelson Resource Management Plan or the Building Act. Do not rely solely on this guide to make decisions about your property. Please see the Nelson Resource Management Plan for full details or seek further information from the Council by one of the methods listed below:

- Check out the Nelson Resource Management Plan (available in PDF downloads from www.nelsoncitycouncil.co.nz)
- Check out the Erosion and Sediment Control Section 9 of the Nelson City Council Land Development Manual (available in PDF downloads from www.nelsoncitycouncil.co.nz)
- Contact Nelson City Council customer services on (03) 546 0200 (for general enquiries regarding erosion and sediment control)
- Nelson City Council duty planner (Phone: 03 546 0357)
- Nelson City Council duty building officer (Phone: 027 246 0663)

The effects of uncontrolled erosion

The effects of uncontrolled erosion and sediment runoff from small sites include:

- Damage to the building site as well as structural damage to retaining walls, building foundations, underground services and other structures
- Safety problems when soil, litter and debris is washed onto the site and surrounding areas
- Loss of good topsoil
- Blocked gutters and stormwater network, soakage and treatment systems, creating flooding
- Pollution of receiving waters, aquatic habitat and a resulting reduction in biodiversity
- Non-compliance with consent conditions and risk of fines

Environmental law and consents

This guideline will help applicants to prepare an erosion and sediment control plan for small sites to meet the Nelson Resource Management Plan and Building Code requirements. It will also help minimise erosion and prevent sediment discharge into the environment.

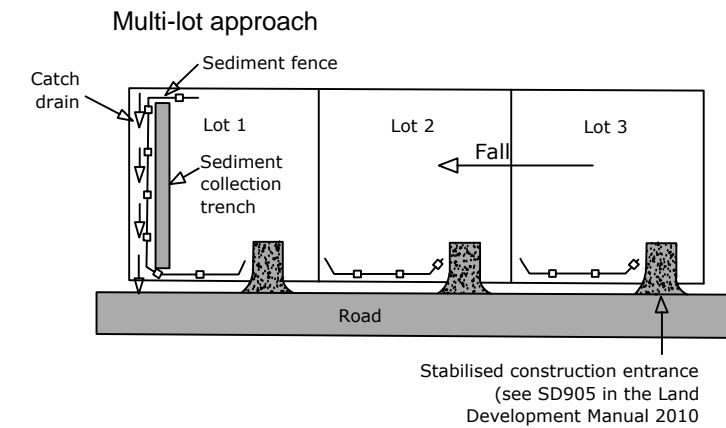
The Resource Management Act (1991) promotes the sustainable management of natural and physical resources. Any discharge of contaminants (including sediment) is contrary to Section 15 of the RMA, unless authorised by the NRMP or a consent.

Council requires erosion and sediment control plans to be submitted as part of any building or resource consent process. Failure to comply with these requirements may result in failed building inspections and ongoing non-compliance could result in enforcement action. This guide contains information and advice that can help you meet the requirements.

Multi-lot developments

Take a smart approach to multi-lot developments for developers and builders (if applicable).

It is better for developers to plan a multi-lot approach before each plot sale by completing building platforms and any retaining walls before selling. Benefits include: economies of scale when using equipment and materials, better home design and placement for site type with improved site entry.



Why do small sites need erosion and sediment control?

Ground disturbance for individual buildings may be on a much smaller scale than major developments, but the cumulative impact from these small sites can be considerable: Because stormwater systems are usually installed and operational, they provide a network for removing sediment-laden stormwater and wastewater from the building site. This contaminated water then travels through the stormwater system and creates environmental and maintenance problems in the downstream systems.

The benefits of good water and soil management

Effective onsite management of soil erosion and water pollution provides many benefits including:

- reduced average construction time
- reduced clean-up costs
- all-weather site access
- better public image
- improved wet-weather working conditions
- improved drainage and reduced site flooding
- fewer problems with mud and dust
- reduced stockpile losses
- better-looking and more marketable sites
- fewer public complaints
- benefits to the environment (e.g. water quality)

How do I manage erosion and sediment on site?

The key to good erosion and sediment management on site is to follow the simple steps detailed below and shown overleaf in order to improve your site throughout the building process, from planning to site decommissioning.

1. Pre-construction planning and site layout

The most important phase of any project is the planning. By considering the measures shown in the erosion and sediment control site plan overleaf, it is possible to ensure sediment is controlled before works start.

2. Control water at the top of the site

Keeping water out of your works site is a cost-effective site-management tool. Figure 2A shows how to plan your site layout to reduce site erosion. In addition extra drainage and discharge areas may be needed to prevent further problems (Figure 2B).

3. Provide all-weather access

Local residents often complain about muddy roads when building work starts. This can be stopped by making sure there is one stabilised and managed entry exit which (if possible) extends directly to the building. See standard drawing SD905 in the Land Development Manual for details on how to construct an all-weather access.

4. Manage within the sediment control zone

The sediment control zone should be as close to the works as possible and within the catchment area of other control measures. In addition, by limiting the amount of material supplied to only what is needed, taking responsibility for delivery placement and covering stockpiles with waterproof covers, reductions in time and material waste can be achieved.

5. Sediment control methods

In many cases this is the front yard and most public area of a site. It is important to control any sediment and ensure that it is not allowed to run off the site, resulting in further problems within the public domain. There are several simple filter methods that can be employed to do this. These methods include; sediment fences, a healthy vegetation buffer zone, decanting earth bund (DEB) or sump inlet protection. Depending on the site and combination of control measures used, effective sediment control can be achieved.

6. Vegetation buffer

To ensure the minimum loss of top soil, it is important to reduce the amount lost through general works and drainage. The easiest way to stop this loss is to leave a cover of healthy vegetation over as much of the site as possible. A promotion/suppression blanket will also do the job. These methods not only stop soil loss, but also drain and filter excess water.

7. Manage litter and building wastes

A tidy site is a healthy and efficient site, so keeping a tidy and litter free site is important. This is particularly so for 'wet trades' (especially concrete). These should be cleaned up on site and any contaminated water should be captured by your sediment control measures.

8. Connect all down pipes

By connecting downpipes as early as possible, site flooding and down time after rain can be significantly reduced. This shortens the total building time, reduces related costs, and also reduces sediment runoff.

9. Service trenching

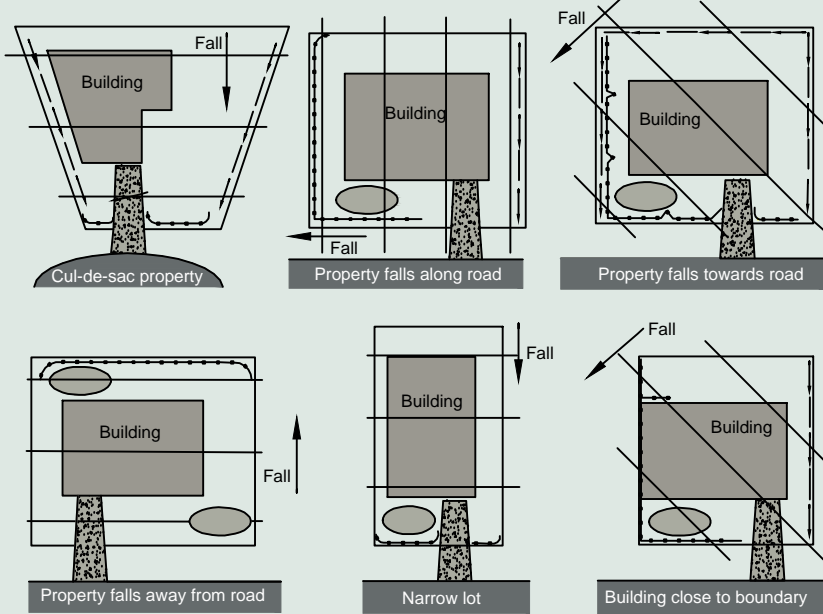
In order to prevent service trenching from becoming a source of sediment, a few easy steps can be taken. Make sure to plan and coordinate services connection, so all are done at the same time (three days max) and within a seasonally dry period of the build. Consider and plan the trench, making sure to pile the earth above the trench to divert surface water away and avoid trenching in areas prone to water pooling. Once finished, ensure that backfill is properly compacted and filled to a level of at least 75-100mm above the ground level to allow for some subsidence and prevent it becoming a water channel.

10. Maintaining and decommissioning of site

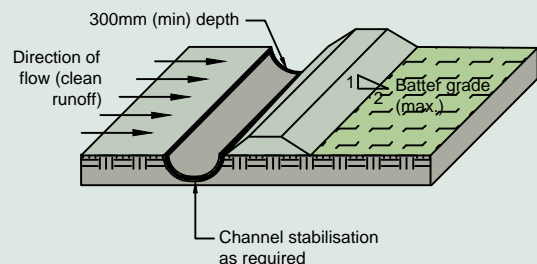
After investing in sediment control measures, it is important to ensure they are properly maintained and working effectively throughout your build. Daily checks and the correct removal of built up sediment should be employed to make the most of your control measures. Careful decommissioning will also allow for materials to be re-used on the next job, while regeneration of vegetation or stabilising the site will ensure improved kerbside appeal.

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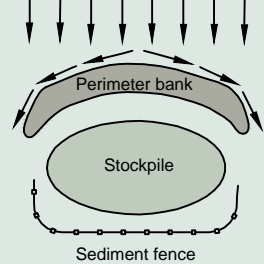
2A Typical drainage and sediment control layouts



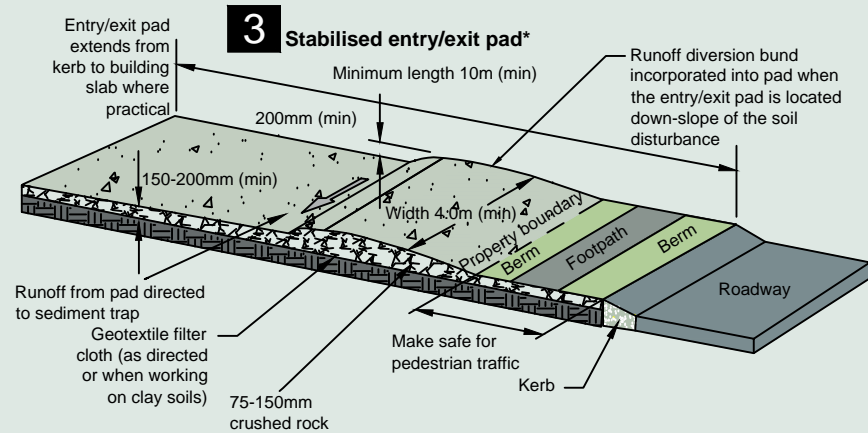
2B Stormwater diversion channel



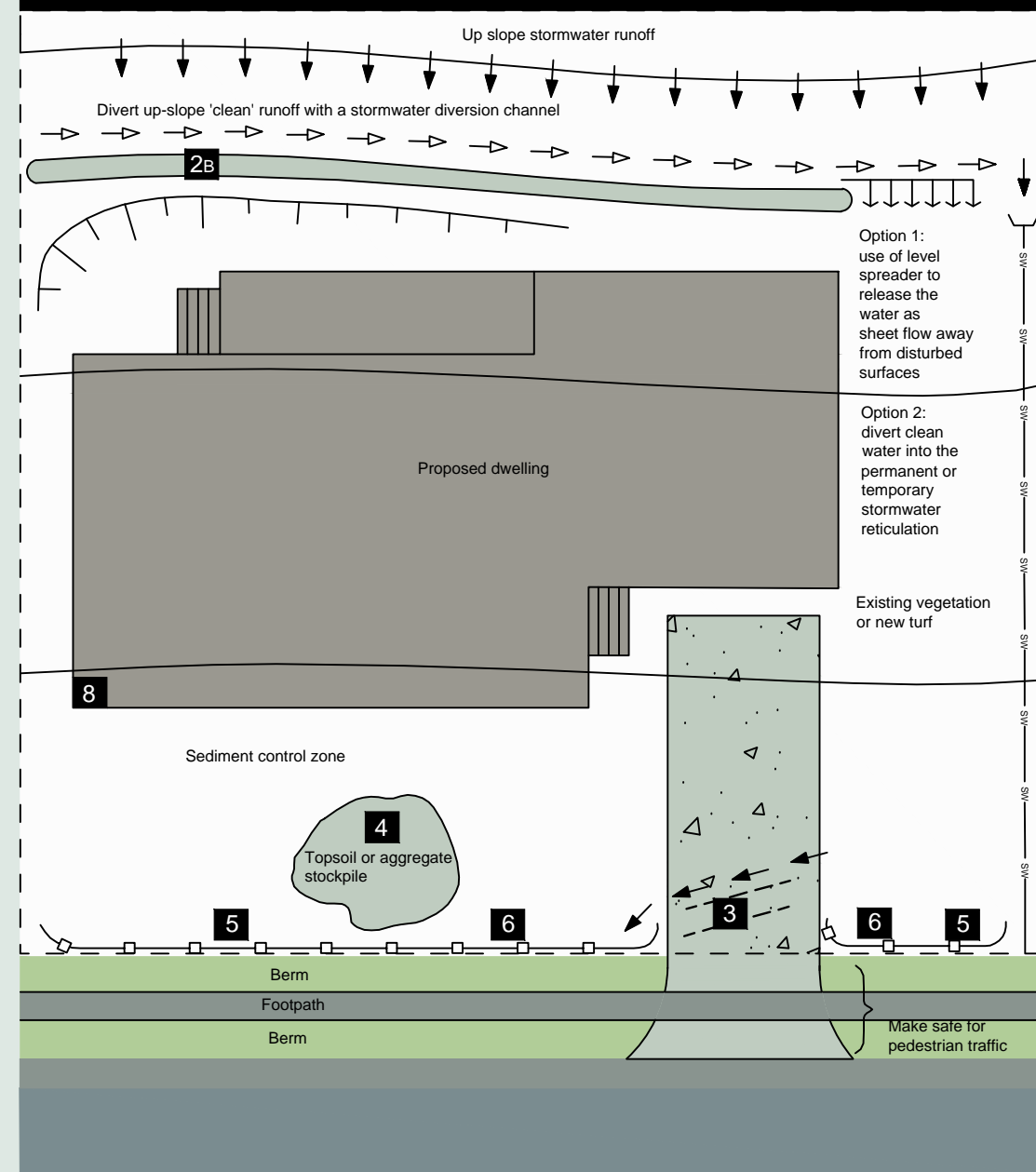
4 Sediment control zone



3 Stabilised entry/exit pad*



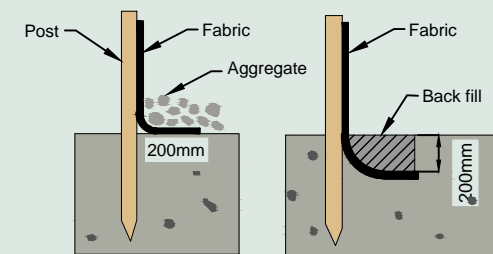
Erosion and sediment control plan example



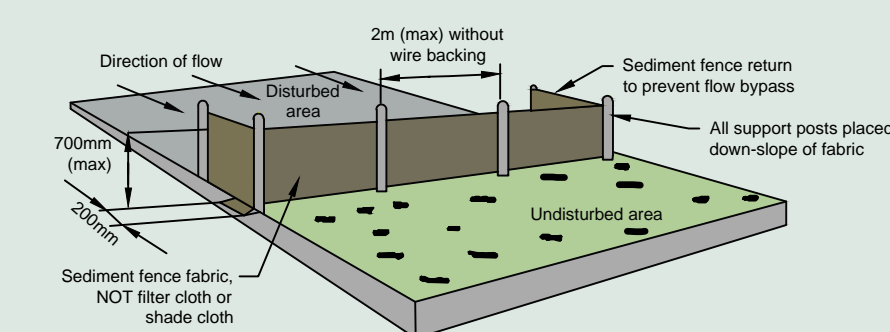
*For information on how to construct a stabilised entrance (all-weather access), please see standard drawing SD905 in the Land Development Manual 2010.

**For information on how to construct a sediment (or silt) fence, please see standard drawing SD913 in the Land Development Manual 2010.

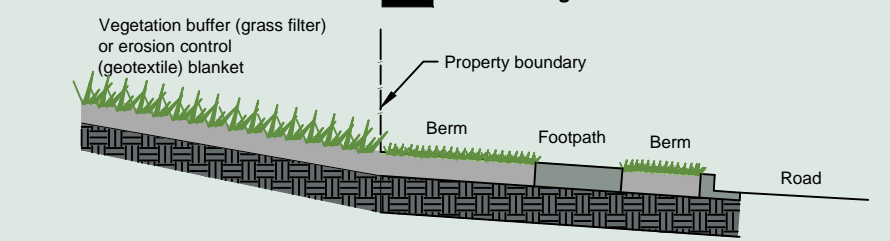
5a Sediment fence construction details



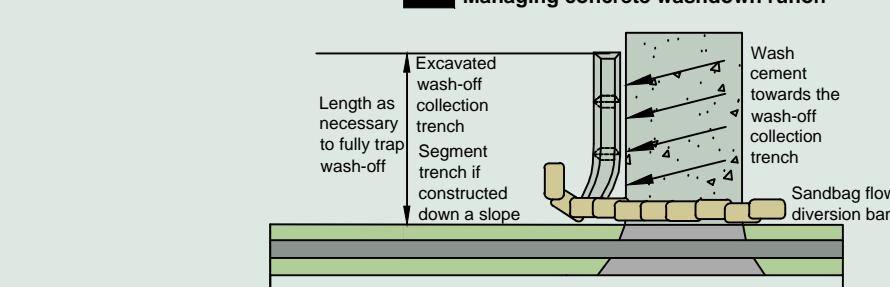
5b Sediment fence construction details**



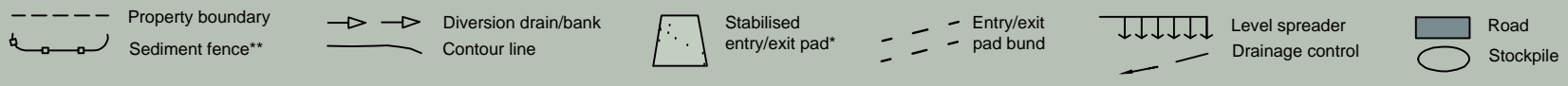
6 Maintained grass area to reduce erosion



7 Managing concrete washdown runoff



Quick reference guide



Notes

- All erosion and sediment control structures to be inspected each working day and maintained in good working order.
- All ground cover vegetation outside the immediate building area to be preserved during the building phase.
- All erosion and sediment control measures to be installed prior to commencement of major earthworks.
- Stockpiles of clay material to be covered with impervious sheet.
- Roof water downpipes to be connected to the permanent underground stormwater drainage system as soon as practical after the roof is laid.

1 Pre-construction planning and site layout

The most important phase of any project is the planning. By considering the measures shown in the erosion and sediment control site plan, it is possible to ensure minimum effect and maximum benefit before works start.

2 Control water at the top of the site

Keeping water out of your works site is a cost-effective site management tool. Figure 2A shows how to plan your site layout to reduce site erosion. In addition extra drainage and discharge areas may be needed to prevent further problems 2B.

3 Provide all-weather access

Local residents often complain about muddy roads when building work starts. This can be stopped by making sure there is one stabilised and managed entry/exit which (if possible) extends directly to the building.

4 Manage within the sediment control zone

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8 Connect all down pipes

Research shows that by connecting these pipes as early as possible site flooding and down time after rain can be significantly reduced, thus shortening total building time and related costs.

9 Service trenching

In order to prevent service trenching from becoming a source of sediment, a few easy steps can be taken. Make sure to plan and coordinate services connections, so all are done at the same time (three days max) and within a seasonally dry period of the build. Consider and plan the trench, making sure to pile earth above the trench to divert surface water away and avoid trenching in areas prone to water pooling. Once finished, ensure that backfill is properly compacted and filled to a level of at least 75-100mm above the ground level to allow for some subsidence and prevent it becoming a water channel.

10 Maintaining and decommissioning of site

After investing in sediment control measures, it is important to ensure they are properly maintained and working effectively throughout your build. Daily checks and the correct removal of built up sediment should be employed to make the most of your control measures. Careful decommissioning will also allow for materials to be re-used on the next job, while regeneration of vegetation or stabilising the site will ensure improved kerbside appeal.