

Shire of Mundaring

POLICY

STORMWATER MANAGEMENT

Policy Ref:	PS - 10		
Committee Rec:	DAC12.02.05	Date:	8 Feb 2005
Adopted by:	RC4.02.05	Date:	22 Feb 2005
Amended by:		Date:	
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Procedure Ref:		Delegation Ref:	
Statute Ref:			
Local Law Ref:			

PURPOSE

To identify acceptable methods for managing stormwater run-off from new developments in order to minimise the adverse impacts potentially associated with rainfall run-off from impermeable surfaces.

POLICY

1.0 Policy Objectives

To ensure that stormwater run-off from new developments is properly managed to:

- (a) avoid or minimise the risk of erosion caused by rainfall run-off from new impervious surfaces;
- (b) prevent sedimentation and turbidity of watercourses;
- (c) avoid overloading Council's stormwater drainage system;
- (d) ensure that stormwater infiltration and run-off rates post development have no more of an off-site impact than pre-development rates;
- (e) minimise the risk of localised flooding caused by increased stormwater run-off from impervious surfaces in new developments.

2.0 Background

Erosion is a major issue associated with land development in the Shire of Mundaring due to low runoff rates pre-development (under native vegetation conditions), the erodability of the soils, and steep slopes experienced throughout the Shire.

New developments increase the amount of impervious surfaces within a water catchment area, causing dramatic changes in both the quantity and quality of stormwater run-off and groundwater recharge rates, and increasing the risk of erosion, localised flooding, and watercourse turbidity and sedimentation.

In recognition of these issues (and as part of the Shire's Environmental Management Strategy, 1996) Council, in 1997, commissioned JDA Consultant Hydrologists to prepare an Urban Drainage Strategy (UDS) to assist in managing the impacts of future urban areas with respect to peak flow, flooding, water quality, erosion and sedimentation.

The Shire's Infrastructure Service division has prepared complementary Application Guidelines to assist landowners, developers, and their consultants in the interpretation of information contained within the UDS. The Guidelines also provide assistance for the preparation of development and subdivision applications within the Shire, and aim to ensure water management issues are included at an early stage in the design process to improve outcomes.

Furthermore, Council has in recent years imposed a standard condition of Planning Approval on most developments that requires stormwater run-off from the development to be retained on site. This Policy has been prepared to identify the acceptable measures by which this can occur and to formalise Council's approach to imposing conditions on Planning Approvals relating to stormwater management.

3.0 Scheme Provisions

This Policy is a Town Planning Scheme Code and has been developed in accordance with Clause 8.14 of Town Planning Scheme No. 3.

4.0 Application

This Policy applies to all developments that require Planning Approval under Council's Town Planning Scheme No. 3.

5.0 Policy

5.1 Stormwater runoff from new impermeable surfaces in developments shall be managed in any one or more of the following ways to achieve the objectives of this Policy, as outlined in Section 1.0 above:

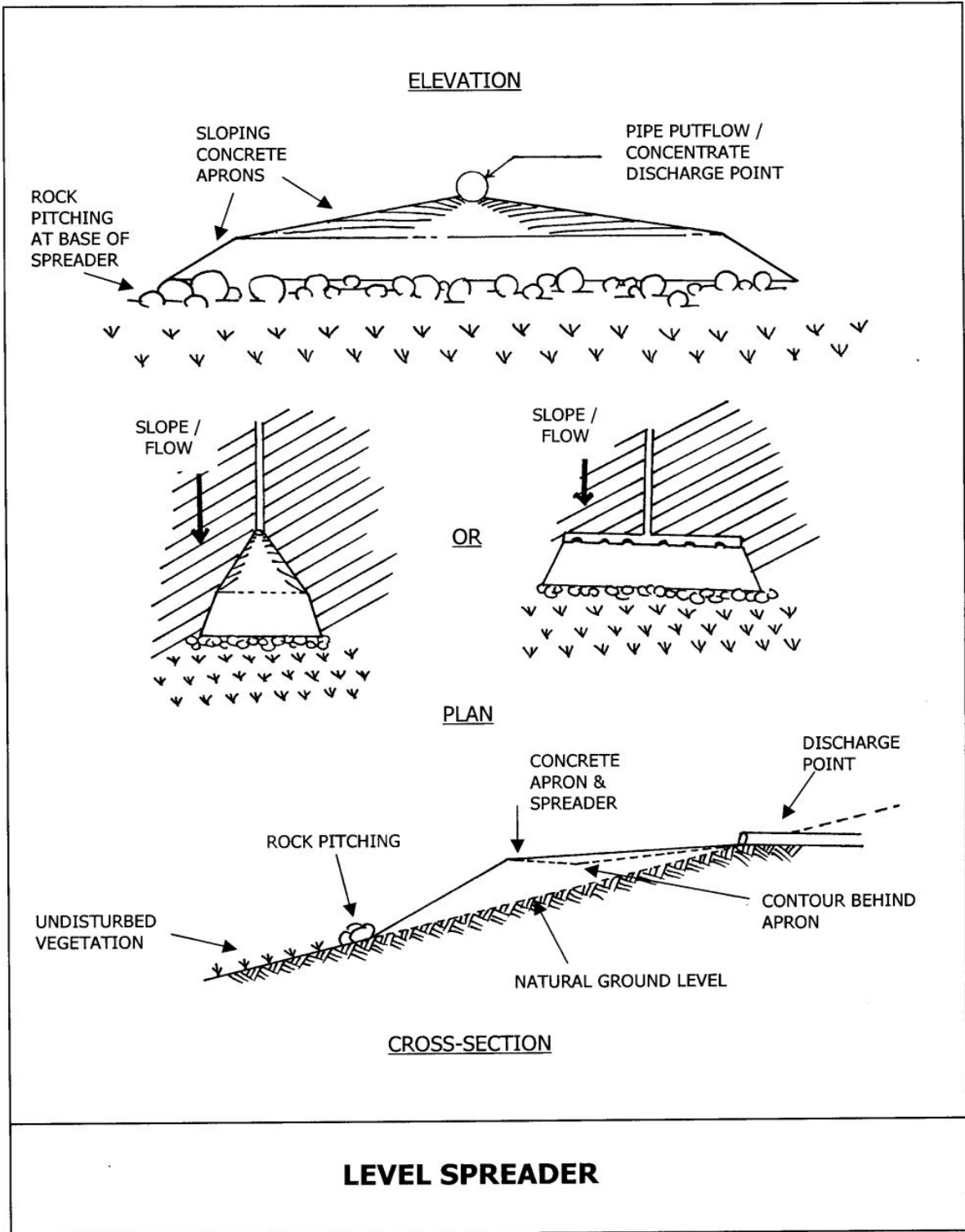
- (a) installation of soak-wells;

- (b) construction of a stormwater detention basin(s);
- (c) construction of a diversion or catch drain(s) across a slope to convey runoff at a non-erosive velocity and to divert runoff from upslope areas around the site of a disturbance or an area at risk of erosion;
- (d) construction of a level water spreader, which slowly discharges water from the outlet of a drain or pipe onto an undisturbed area stabilised by vegetation cover. The purpose of the spreader is to convert a concentrated potentially erosive outflow from a discharge point into non erosive sheet flow. A construction note illustrating this method is included as **Appendix – 1**;
- (e) installation of a weed-free hay bale barrier(s) positioned so as to intercept runoff and sediment. The primary purpose of the hay bale barrier is to reduce runoff velocities and filter runoff. A construction note illustrating this method is included as **Appendix –2**;
- (f) installation of a sediment fence(s) to reduce runoff velocities and cause the deposition of silt. These fences are usually used to intercept sheet flow from disturbed areas. A construction note illustrating this method is included as **Appendix – 3**;
- (g) planting of continuous vegetated buffers to intercept sediment laden sheet flow. The buffers remove the silt from runoff by trapping soil and sediment particles and are most effective where the flow is shallow and spread over a large area;
- (h) any other method identified as being acceptable for controlling stormwater runoff from developments in Council's Stormwater Drainage Strategy or accompanying Application Guidelines.

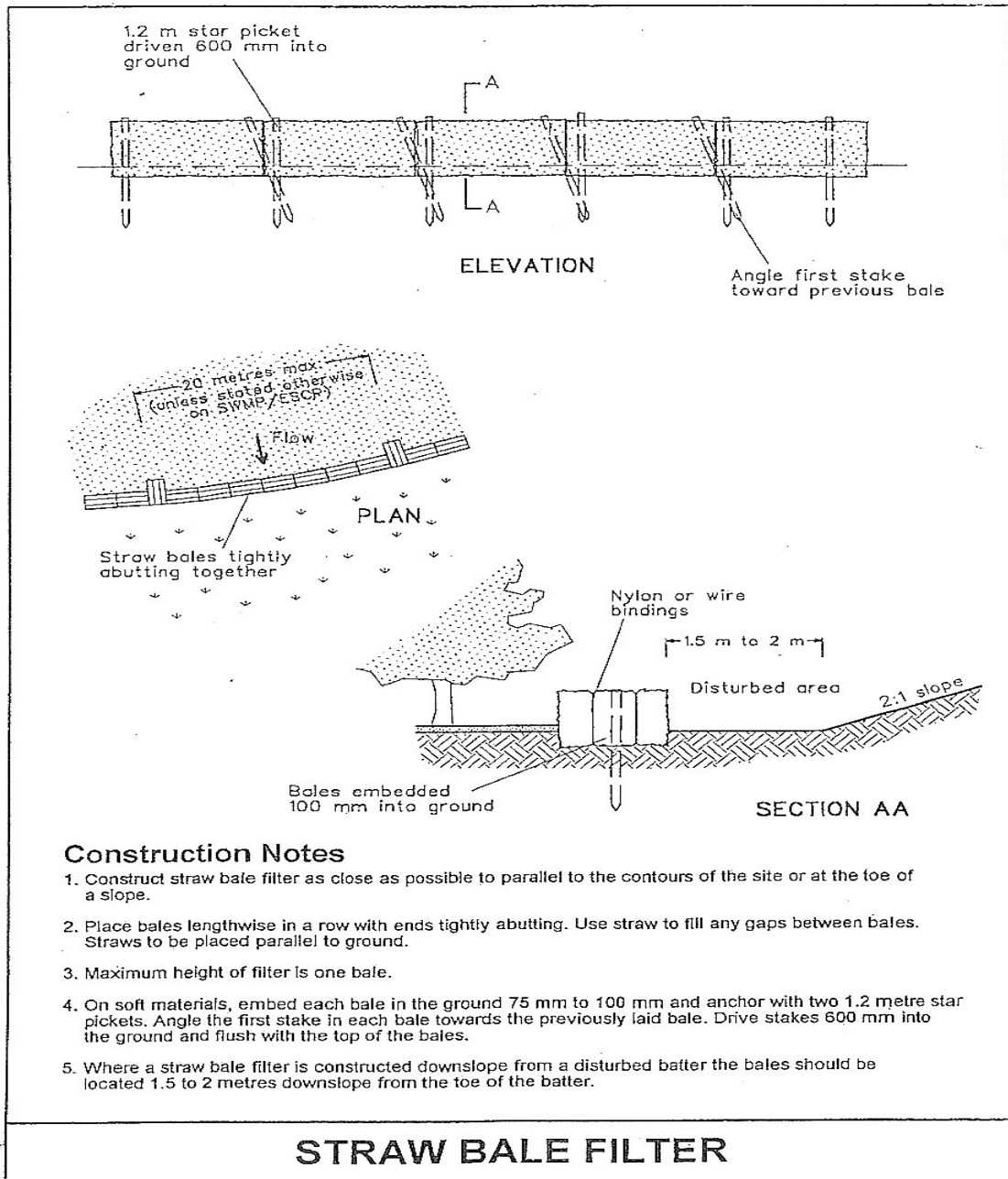
5.2 Stormwater runoff during the construction phase of a development shall be managed in accordance with the following principles:

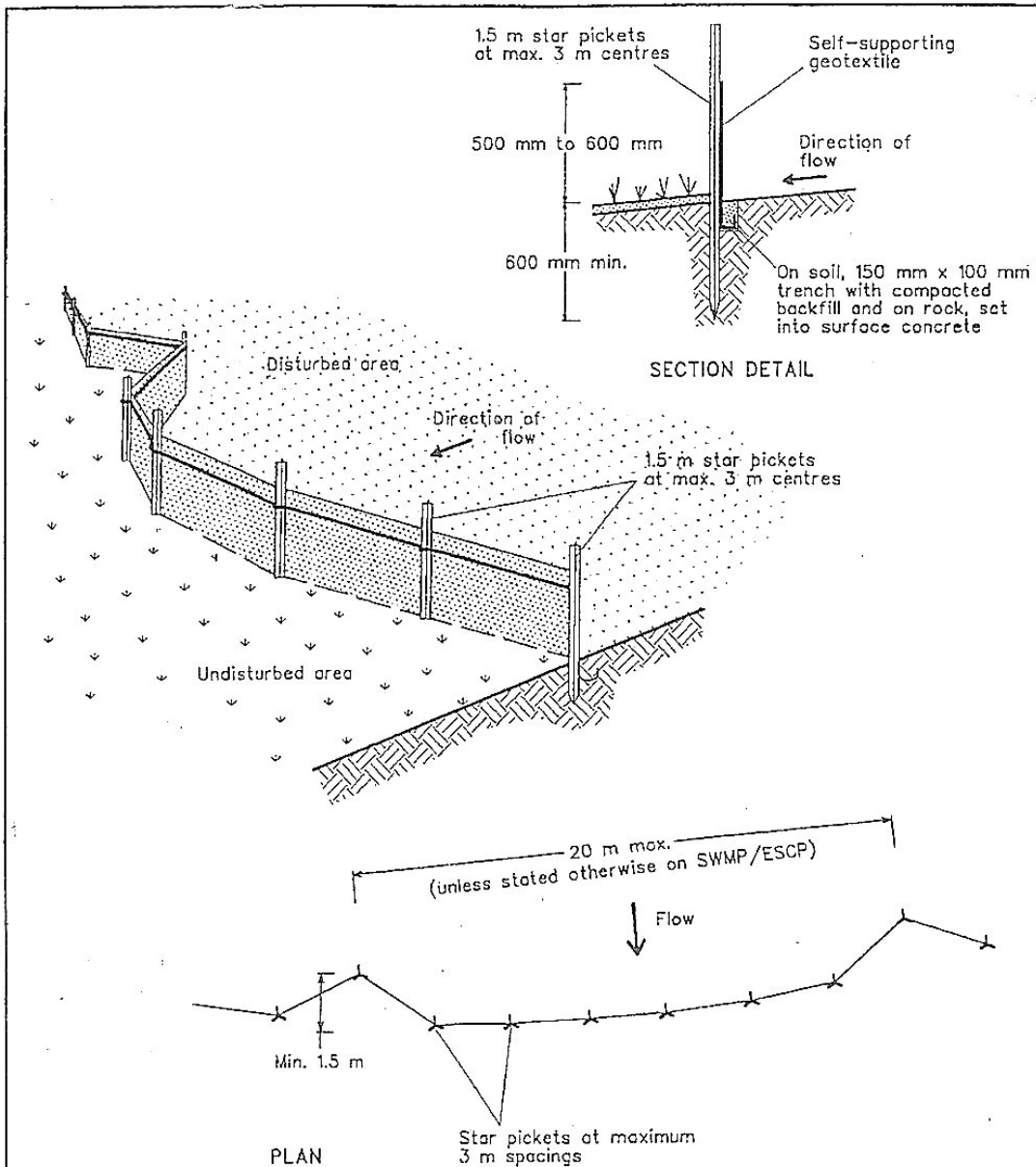
- (a) topsoil is to be retained on site and redistributed to disturbed areas post-construction;
- (b) soil must be prevented from being washed off site and must be kept out of any existing or proposed drainage system(s);
- (c) mulching, revegetation or other stabilisation of disturbed sloping areas;
- (d) construction of a level water spreader, which slowly discharges water from the outlet of a drain or pipe onto an undisturbed area stabilised by vegetation cover. The purpose of the spreader is to convert a concentrated potentially erosive outflow from a discharge point into non-erosive sheet flow;

- (e) provision of stabilised site access. A construction note illustrating this method is included as **Appendix – 4**.
- 5.3 Connection to Council's Stormwater Drainage System will only be permitted where that represents the best drainage solution to a development and the drainage system has been designed to accommodate connection of the development or property to that system. Connection includes the direction of runoff into the Council's Stormwater Drainage System, whether through a physical pipe connection discharging into the System, surface flow, or otherwise.
- 5.4 Without limiting the intent of the above clauses, every Planning Approval granted for development involving impermeable surface areas shall be subject to the following condition:
- “Stormwater runoff from the development shall be managed in accordance with Council's Town Planning Scheme Policy (Code) relating to Stormwater Management. A copy of this Policy is attached.”*
- 5.5 Notwithstanding Clause 5.4 above, Council may at its discretion require the applicant of a development proposal to submit a detailed stormwater management plan for Council's consideration before determining their application, or as a condition of any Planning Approval granted for the development. Where required, such plan shall demonstrate to Council's satisfaction how stormwater runoff from the development will be managed to comply with the objectives of this Policy.
- 5.6 The information contained within and the requirements of this Policy do not remove or replace the need for any professional engineering or hydrological advice in the preparation of stormwater management solutions for new developments.
- 5.7 Further information regarding stormwater management and erosion control measures is available from:
- www.emrc.org.au/files/Section-3---Stormwater-Management---NRM-Policy-Manual.pdf
 - The Local Government Natural Resource Management (NRM) Policy Manual – Erosion and Sedimentation Control Guidelines for the Swan Coastal Plain (EMRC, 2002).
 - The Shire of Mundaring's Urban Drainage Strategy and related Application Guidelines, or by contacting the Shire's Infrastructure Service Staff on 9290 6666.



(Source: Local Government NRM Policy Manual – Erosion and Sedimentation Control Guidelines for the Swan Coastal Plain (EMRC, 2002)).





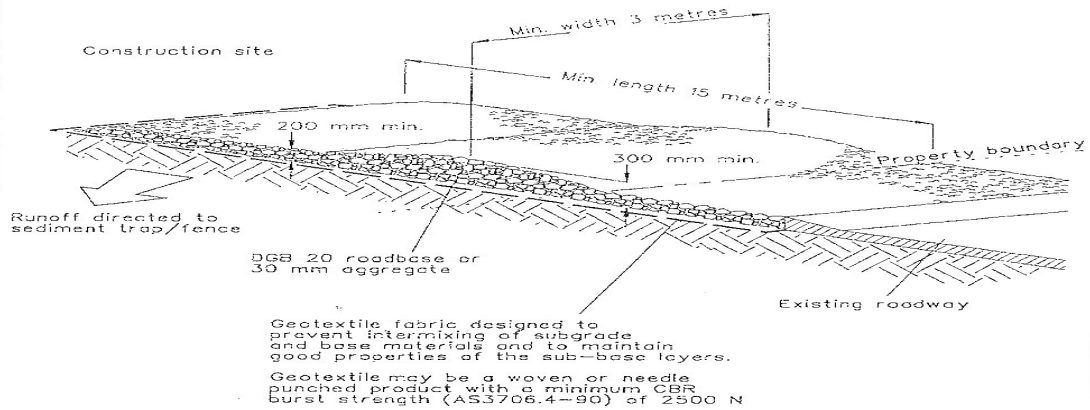
Construction Notes

1. Construct sediment fence as close as possible parallel to the contours of the site.
2. Drive 1.5 metre long star pickets into ground, 3 metres apart.
3. Dig a 150 mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
4. Backfill trench over base of fabric.
5. Fix self-supporting geotextile to upslope side of posts with wire ties or as recommended by geotextile manufacturer.
6. Join sections of fabric at a support post with a 150 mm overlap.

SEDIMENT FENCE

(Source: Local Government NRM Policy Manual – Erosion and Sedimentation Control Guidelines for the Swan Coastal Plain (EMRC, 2002)).

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Construction Notes

1. Strip topsoil and level site.
2. Compact subgrade.
3. Cover area with needle-punched geotextile.
4. Construct 200 mm thick pad over geotextile using roadbase or 30 mm aggregate. Minimum length 15 metres or to building alignment. Minimum width 3 metres.
5. Construct hump immediately within boundary to divert water to a sediment fence or other sediment trap.

STABILISED SITE ACCESS