SEDIMENT TASK FORCE - FOR BUILDERS

EROSION AND SEDIMENT CONTROL FOR BUILDERS

GOVERNMENT OF WESTERN AUSTRALIA
Department of Biodiversity, Conservation and Attractions
SWAN CANNING RIVERPARK
Perth NRM

Erosion and Sediment Control for Builders

This Information Sheet provides guidance to builders and homeowners on the erosion and sediment control measures that should be implemented on building sites in Western Australia. It has been prepared acknowledging that a one-size-fits-all approach may lead to unnecessary buildings costs.

It's the law! Government Authorised Officers inspecting building sites can issue penalties of up to $5,000 for individuals and $25,000 for a corporate body for non-compliance with erosion and sediment control regulations.

The **builder or manager** has prime responsibility for controlling and supervising the construction operation including all site works.

The **site supervisor or foreman** is responsible for coordinating and establishing good practices on site.

The **individual trades** carry responsibility for their work and actions.

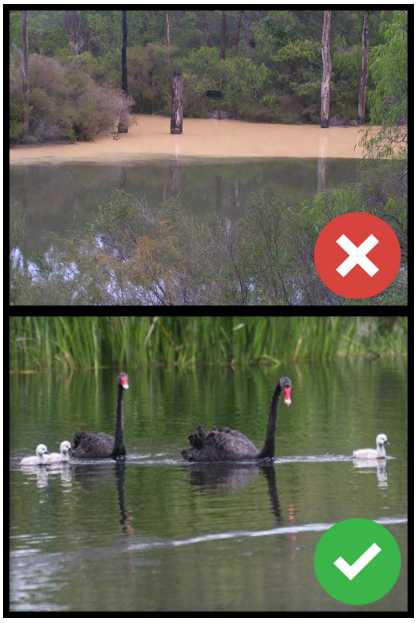
10 Financial Benefits to You

Controlling erosion and sediment on building sites reduces the potential for financial loss to builders by:

1. Reduced risk of fines or prosecution for polluting the environment.
2. Economical and efficient use of sand for building sites, and as fill.
3. Reduced clean-up costs.
4. Better "all-weather" site access and improved wet weather working conditions.
5. Better tender processes (companies with a poor compliance history may be subject to more stringent conditions).
6. Work completed on time and reduced downtime.
7. Fewer complaints related to mud, sand drift, dust and stormwater pollution.
8. Public recognition for responsible site management.
9. Improved relationships with local councils and the community.
10. Promoting and associating your business with protecting the environment.

Treat preventing erosion and controlling sediment loss and sand drift as importantly as your health and safety obligations

Your Actions Benefit Your Community and the Environment



Controlling erosion on your building site improves water quality and protects the environment as sediment (soil, mud, silt and builders sand) runoff from building sites can enter the drainage network and be deposited into rivers and wetlands, resulting in sedimentation.

Sedimentation causes multiple undesirable economic, environmental, recreational and health and safety impacts. It also increases the risk of localised flooding from the "clogging" of drains and Water Urban Sensitive Design infrastructure and degrades recreational values and the streetscape.

Be part of the solution – do the right thing by our rivers and comply with environmental regulations by preventing erosion and sediment run-off from your site reaching roads, gutters, drains, wetlands, streams & rivers.

Start with a Site Assessment - Is your site low risk, medium risk, or high risk?

Low Risk	Medium Risk	High Risk
Soils comprised of coarse sand	Soils comprised of mainly sandy clays or silts	Soils comprised mainly of clay and silt material
Undisturbed vegetation onsite	Property and surrounding slopes between 1:10 and 1:4	Presence of dispersive clay soils onsite and downstream
Property and surrounding slopes <1:10	No waterways (creeks, rivers, streams, wetlands) within the development boundary or within 100m downstream	Property and surrounding slopes > 1:4
No waterways (creeks, rivers, streams, wetlands) within the development boundary or within 250m downstream	No downstream drainage infrastructure (roadside entry pits, grates, pipes, Water Urban Sensitive Design infrastructure (rain gardens etc)	Downstream waterways (creeks, rivers, streams, wetlands) within 100m of property boundary (including any waterways within the property)
		Waterways (creeks, rivers, streams, wetlands) within the development boundary or within 250m downstream

Ensure contingency plans are in place for unexpected high rainfall or storm events such as sediment fence materials located in advance on-site to facilitate emergency repairs.

During pre-construction planning of site works, landowners and occupiers (including builders and contractors) should undertake a site assessment and apply the appropriate erosion and sediment controls for their site risk.

If your site meets any of the criteria in the higher risk categories, that is the risk level to apply. If you are unsure of how to assess your site, contact your Local Government Authority.

Sediment controls can be up to 90% effective at reducing sediment runoff during normal flow. The effectiveness of sediment controls reduces dramatically during storm events, so make sure your site is well prepared and your sediment controls are regulary inspected and maintained (weekly, at minimum) and after during and after every rainfall event to ensure they are working properly.

Remember, each site is different and effective erosion and sediment control should be based on your sites' local soil and rainfall conditions. Builders should check the weather forecast to ensure clean sites ahead of any wet weather.

As little as five minutes of sweeping of footpaths, roadways and driveways at the end of each working day is relatively inexpensive and provides considerable benefits (DBCA).

Low Risk Sites

The following sediment controls represent the minimum requirements for all building sites. All control measures should be maintained until the completion of all earthworks and landscaping, and disturbed areas have been rehabilitated. Where repair works or additional controls are required, they must be installed as soon as possible to prevent further sediment movement on the site.

The focus of these controls is to ensure a clean building site and prevent building materials and litter leaving the site.

- Maintain a clean site, including sweeping up loose material and placing all waste material in bins (with regular collection).
- Ensure all wash down areas (including concrete and mortar slurries and tools) are contained within the site and the wash down zone is well away from drains.
- Do not allow material to enter drainage systems.
- Set up vehicle access points away from storm drains.
- Stop sand, mud or soil from moving to or entering stormwater entry pits.
- Install sediment bunding around drains and stormwater drain inserts in gully entry drains if necessary.
- Educate all staff about the requirements to maintain a clean site and prevent wash down of wheelbarrows on driveways.
- For larger lots, vegetation should be retained and replaced as quickly as possible if removed.

Covering soil is the best way to stop erosion caused by rain and wind

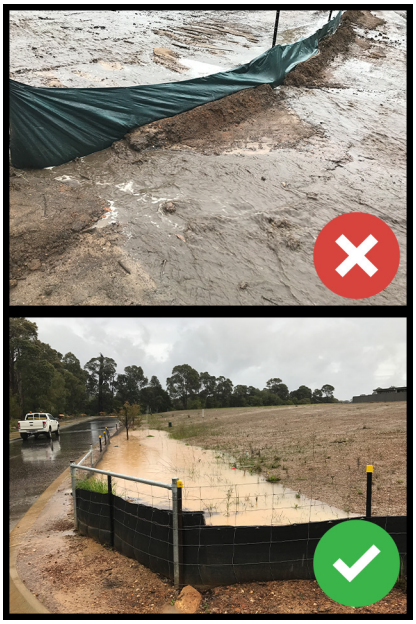
Unlike sediment barriers (such as sediment fences), which capture eroded coarse sediment, **erosion controls can stop both coarse and fine sediment from eroding in the first place.**

Medium Risk Sites

These sites must implement the basic controls outlined above for low risk sites (above).

As the risk of erosion is increased, additional measures are required which focus on building site arrangement:

- Define a single site access location and prevent contractors driving over exposed surfaces such as unplanted verges or front yards.
- Stabilise the site access location using crushed rock (150-200mm deep pad of minimum 40mm crushed rock), with a hump to divert flow from the road.
- Consider using trackout mats.
- Minimise material stockpiling by scheduling deliveries. Place material within the lot and away from the roadway.
- Store sand within bags (where possible) and locate material stockpiles within the lot boundary (away from verges) and 2m away from driveways and other hardstand areas.
- Cover stockpiles with plastic sheeting or other material.
- Stabilise slopes to prevent erosion.
- Implement sediment control fences.
- Careful site planning can minimise the number of physical controls that are required for effective management.
- Consideration should also be given to any land upstream to divert flows away from your building site.



High Risk Sites

High risk sites have the potential to directly impact downstream drainage infrastructure and natural waterways.

Additional measures are required to protect these systems include:

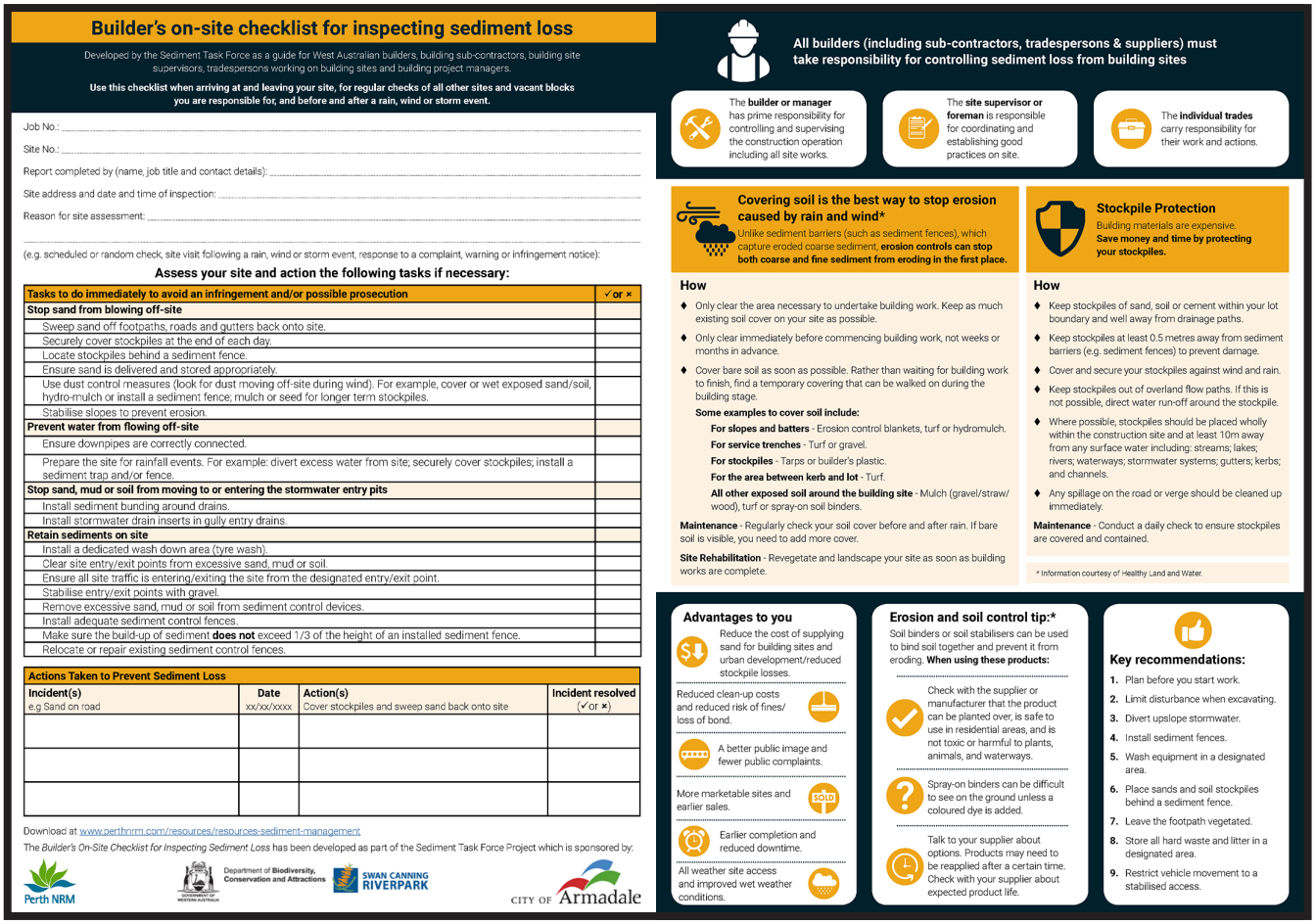
- Sediment traps (multiple sandbags or filter socks) installed in the roadway upstream of kerb inlets (ensuring flows are not directed to other drainage inlets).
- Sediment traps (multiple sandbags or filter socks) around grated drainage inlets and inlets in road sags (ensuring flows are not directed to other inlets).
- Sediment fences installed around any waterways within the property.
- Connection of the roof gutters to soakwells or street drainage, with temporary connections provided during construction (see over).
- Rainwater tank overflows connected as per soakwells.

These measures should be implemented in addition to the measures for low and medium risk sites. They require regular inspection and cleaning to prevent sediment build up. Ongoing adjustments to the layout of sediment traps may also be required to ensure they are effective.

A Free Handy New Tool for your Builders' Toolbox

Site managers and builders can use the Sediment Task Force's *On-Site Builders Checklist* when arriving at and leaving site for regular checks of sites and vacant blocks, and before and after a rain, wind or storm event.

Erosion and Sediment Control Information Sheets are also available at:
www.perthnrm.com/resource/sediment-management/



Builder's on-site checklist for inspecting sediment loss

Developed by the Sediment Task Force as a guide for West Australian builders, building sub-contractors, building site supervisors, tradespersons working on building sites and building project managers.

Use this checklist when arriving at and leaving your site, for regular checks of all other sites and vacant blocks you are responsible for, and before and after a rain, wind or storm event.

Job No.: .....

Site No.: .....

Report completed by (name, job title and contact details): .....

Site address and date and time of inspection: .....

Reason for site assessment: .....

.....

(e.g. scheduled or random check, site visit following a rain, wind or storm event, response to a complaint, warning or infringement notice):

Assess your site and action the following tasks if necessary:

Tasks to do immediately to avoid an infringement and/or possible prosecution	✓ or ✗
Stop sand from blowing off-site	
Sweep sand off footpaths, roads and gutters back onto site.	
Securely cover stockpiles at the end of each day.	
Locate stockpiles behind a sediment fence.	
Ensure sand is delivered and stored appropriately.	
Use dust control measures (look for dust moving off-site during wind). For example, cover or wet exposed sand/soil, hydro-mulch or install a sediment fence; mulch or seed for longer term stockpiles.	
Stabilise slopes to prevent erosion.	
Prevent water from flowing off-site	
Ensure downpipes are correctly connected.	
Prepare the site for rainfall events. For example: divert excess water from site; securely cover stockpiles; install a sediment trap and/or fence.	
Stop sand, mud or soil from moving to or entering the stormwater entry pits	
Install sediment bunding around drains.	
Install stormwater drain inserts in gully entry drains.	
Retain sediments on site	
Install a dedicated wash down area (tyre wash).	
Clear site entry/exit points from excessive sand, mud or soil.	
Ensure all site traffic is entering/exiting the site from the designated entry/exit point.	
Stabilise entry/exit points with gravel.	
Remove excessive sand, mud or soil from sediment control devices.	
Install adequate sediment control fences.	
Make sure the build-up of sediment **does not** exceed 1/3 of the height of an installed sediment fence.	
Relocate or repair existing sediment control fences.	

Actions Taken to Prevent Sediment Loss

Incident(s)	Date	Action(s)	Incident resolved
e.g Sand on road	xx/xx/xxxx	Cover stockpiles and sweep sand back onto site	(✓ or ✗)

Download at www.perthnrm.com/resources/resources-sediment-management

The *Builder's On-Site Checklist for Inspecting Sediment Loss* has been developed as part of the Sediment Task Force Project which is sponsored by:

Perth NRM · Government of Western Australia Department of Biodiversity, Conservation and Attractions · Swan Canning Riverpark · City of Armadale

All builders (including sub-contractors, tradespersons & suppliers) must take responsibility for controlling sediment loss from building sites

The **builder or manager** has prime responsibility for controlling and supervising the construction operation including all site works.

The **site supervisor or foreman** is responsible for coordinating and establishing good practices on site.

The **individual trades** carry responsibility for their work and actions.

Covering soil is the best way to stop erosion caused by rain and wind*

Unlike sediment barriers (such as sediment fences), which capture eroded coarse sediment, **erosion controls can stop both coarse and fine sediment from eroding in the first place.**

How

- Only clear the area necessary to undertake building work. Keep as much existing soil cover on your site as possible.
- Only clear immediately before commencing building work, not weeks or months in advance.
- Cover bare soil as soon as possible. Rather than waiting for building work to finish, find a temporary covering that can be walked on during the building stage.

Some examples to cover soil include:

For slopes and batters - Erosion control blankets, turf or hydromulch.

For service trenches - Turf or gravel.

For stockpiles - Tarps or builder's plastic.

For the area between kerb and lot - Turf.

All other exposed soil around the building site - Mulch (gravel/straw/wood), turf or spray-on soil binders.

Maintenance - Regularly check your soil cover before and after rain. If bare soil is visible, you need to add more cover.

Site Rehabilitation - Revegetate and landscape your site as soon as building works are complete.

Stockpile Protection

Building materials are expensive. **Save money and time by protecting your stockpiles.**

How

- Keep stockpiles of sand, soil or cement within your lot boundary and well away from drainage paths.
- Keep stockpiles at least 0.5 metres away from sediment barriers (e.g. sediment fences) to prevent damage.
- Cover and secure your stockpiles against wind and rain.
- Keep stockpiles out of overland flow paths. If this is not possible, direct water run-off around the stockpile.
- Where possible, stockpiles should be placed wholly within the construction site and at least 10m away from any surface water including: streams; lakes; rivers; waterways; stormwater systems; gutters; kerbs; and channels.
- Any spillage on the road or verge should be cleaned up immediately.

Maintenance - Conduct a daily check to ensure stockpiles are covered and contained.

* Information courtesy of Healthy Land and Water.

Advantages to you

Reduce the cost of supplying sand for building sites and urban development/reduced stockpile losses.

Reduced clean-up costs and reduced risk of fines/loss of bond.

A better public image and fewer public complaints.

More marketable sites and earlier sales.

Earlier completion and reduced downtime.

All weather site access and improved wet weather conditions.

Erosion and soil control tip:*

Soil binders or soil stabilisers can be used to bind soil together and prevent it from eroding. **When using these products:**

Check with the supplier or manufacturer that the product can be planted over, is safe to use in residential areas, and is not toxic or harmful to plants, animals, and waterways.

Spray-on binders can be difficult to see on the ground unless a coloured dye is added.

Talk to your supplier about options. Products may need to be reapplied after a certain time. Check with your supplier about expected product life.

Key recommendations:

1. Plan before you start work.
2. Limit disturbance when excavating.
3. Divert upslope stormwater.
4. Install sediment fences.
5. Wash equipment in a designated area.
6. Place sands and soil stockpiles behind a sediment fence.
7. Leave the footpath vegetated.
8. Store all hard waste and litter in a designated area.
9. Restrict vehicle movement to a stabilised access.

Further Information

Guidance provided in this Building Information Sheet is general and specific site erosion and sediment control designs may be required to ensure compliance with individual Local Government Authorities' Local Laws. Contact your Local Government website or enquiry line. Also check out:

Sediment Task Force Resources (including Builder's Checklist)
Housing industry Association (WA)
Master Builders Association
YourHome - Sediment Control
IECA (Australasia) - Resources
IECA (Australasia) - Best Practice Erosion and Sediment Control (BPESC) Document

For the Latest Innovations in Erosion and Sediment Control

International Erosion Control Association (Australasia) - Environmental Excellence Awards

The Sediment Task Force gratefully acknowledges the input from the following organisations: Housing Industry Association (WA), the Department of Biodiversity, Conservation and Attractions and Healthy Land and Water, and to the Shire of Augusta-Margaret River for allowing us to base this Information sheet on their Sediment and Erosion Management Building Information Sheet 2018.

Government of Western Australia
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Perth NRM

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