



Comprehensive regulatory framework intended to decrease sedimentation caused by urban development



Our success factors for preventing and managing sediment loss from building, subdivision and construction sites:

1. Implementation of a comprehensive regulatory framework supported by policies, strategies, guidelines and conditions;
2. Introduction of our *Sand Drift and Litter Control Local Law 2006*;
3. Conditions on the timing and staging of bulk earthworks; and
4. Collection of an *Asset Protection Bond* for subdivision, demolition or land clearing.



Sedimentation resulting from urban development a continuing concern.

Most urban development within the City disturbs the natural environment and this, in combination with the common practice of importing sand fill from coastal areas, results in soils that are susceptible to erosion.

Blocked stormwater entry pits/drains, reduced aesthetic value of surrounds and dust nuisance are experienced in the City as a result of sediment loss from subdivision development, construction and building sites.

There is also evidence of a lack of effective erosion control from formed access driveways on steep sites, which results in soil erosion after heavy rain events, inundating roads. The impacts of erosion are predominantly experienced during winter when stormwater runs down driveways that are unsealed, where loose gravel, clay and sand pad fill washes onto the road.

Sediment loss is exacerbated by inadequate space for sediment fencing, skip bins and sand stockpiles on site, with often the front building setbacks on residential building sites being too small.

In the summer, sand drift is an issue as builders report dust control fencing impedes site access, and is often destroyed as a result.



Using a combination of State and Local Laws, policies and guidelines to prevent and manage sediment loss

To address these issues, the City of Kalamunda utilises a suite of regulatory tools for the prevention and management of soil erosion, sediment runoff, sand drift and dust from building sites, subdivision and construction sites. Specifically:

- All subdivisions and development work in the City must comply with the DWER's guidelines "*Land Development Sites and Impacts of Air Quality: A guideline for the prevention of dust and smoke pollution from land development sites in WA*";
 - The City imposes development approval conditions for dust control, stormwater management and waterways as well as standard conditions provided through the Western Australian Planning Commission which address the management of water and activities that may carry sediment off the site;
 - The City may require developers to submit a *Dust Management Plan* or *Construction Management Plan* for significant developments during the building planning approvals process. It's a targeted approach, so if a dust/sediment issue is identified through internal referral or by the City's Development Control Unit review, it can usually be added as a condition. Management plans are only enforced or required when the size of the development requires it. Stormwater disposal strategies are often required as part of the process. Dust management plans are also required but generally only for broad acre type developments;
 - The City's *Sand Drift and Litter Control Local Law 2006* deals specifically with the regulation, control and management of sand drift, rubbish and litter on building sites and subdivisions on land within the district so as to protect the amenity of the area. Under this local law, no owner or occupier shall allow any land in the district to be kept in such a condition, during building and/or subdivision works so as to allow sand or dust to be released or escape whether by means of wind, water or other causes, from that land onto adjoining or nearby land;
- The City's *Keeping and Control of Animals and Nuisance Local Law 2011* also deals with the escape of sand and liquid waste and states that activities that cause or permit sand or dust on building sites to be released or escape premises so as to cause a nuisance are not permitted;
 - The City has developed guidelines that outline conditions to address dust and sand nuisances caused by cleared land and building sites. Their *Guidelines for Dust & Sand Control for Subdivisions & Building Sites in the Shire of Kalamunda* aim to assist developers and builders to comply with the DWER's *Dust and Smoke Control Guidelines*. The City's guidelines state that at least one of the following recommendations are to be implemented: preventing sand drift by wetting areas and/or covering stockpiles which may be causing or potentially causing a dust and sand nuisance, and/or by using wind fencing, surface binding solution (eg hydromulch) and/or vegetative site stabilisation techniques. The City has also developed *Stormwater Design Guidelines for Subdivisional and Property Development*;
 - The City imposes restrictions on the timing and staging of bulk earthworks, namely:
 1. Bulk earthworks will not be encouraged for class 3 and 4 development sites between October to March;
 2. Bulk earthwork will be encouraged to be done in stages.
 - An Asset Protection Bond in excess of \$20,000 which includes a condition to address dust, sand and sediment is required for all residential, industrial and commercial applications;

- All Building Permits have the following conditions placed on them:
 1. The Builder is to ensure that dust from the site is kept to a minimum, especially during site works in accordance with the requirements of the City's Environmental Health Officer, the Health Department of Western Australia and the DWER;
 2. Adequate measures to be taken to prevent wind borne sand drift from the site; and
 3. Sand or similar material spread onto the road surface or washed into street drains will be removed by the City without notice and the costs charged to the Owner or the Builder, (or against the security bond where applicable), and may include penalties under Statute Law.
- Information regarding stormwater and dust management is attached to building permits;
- Policies of relevance are the City's *Environmental Impact Policy EV2– Earthworks and Foundations*, *Hillside Protection – Guidelines for Development Policy ENV6* and *ENV3: Environmentally Sensitive Areas – Guidelines for Development*, and in relevant zones *Policy ENV3*; and
- Erosion and sediment control from subdivision and building sites is also addressed in the City's newly released *Draft Environmental Land-use Planning Strategy Report* under:
 1. Strategy Action Timeline 6.1 *Protect and enhance waterways and wetlands*; and
 2. Strategy Action Timeline 6.1.1 *Develop a local planning policy for waterways and wetlands to protect the environmental value of the waterbody and provide parameters for development in susceptible areas.*



Monitoring and Enforcement

The City's Engineering, Health and Building departments work collaboratively to share responsibility for erosion, sediment runoff, sand drift and dust issues.

Erosion, sand drift and dust resulting from urban development is not actively monitored or controlled by the City. Monitoring for compliance is reactive and involves responding to complaints. Twenty-four complaints related to sediment loss were received by the City during 2018.

In a small number of cases, non-compliance is observed and reported by the City's Statutory Officers. This is generally in response to a condition being added, and often a stop work notice will be issued until a Dust Management Plan has been prepared and implemented.

Non-compliance is commonly dealt with by asking developers and builders to resolve the non-compliance in the first instance and then by issuing an infringement if the issue persists.

In the City's experience, infringements are an effective mechanism for ensuring compliance for smaller sites. For larger sites however, the nominal amount of the infringement as compared to the costs of preventing and controlling sediment loss from larger sites confirms that the fine for a breach of the Local Law is not sufficient to act as a deterrent to potential offenders. It is believed a greater fine with a daily penalty would be a more appropriate incentive not to cause nuisance.

Moreover, ensuring compliance is usually more difficult after subdivision is completed, as commitments made in Site Management Plans are not well enforced when the various trades enter the site and the site/soil is disturbed by the various earthworks and trades, vehicle manoeuvring, scaffolding and material storage.



All images supplied by the City of Kalamunda

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