Working hard to facilitate cooperation from builders and developers

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

The City of Bayswater estimates about 80% of building, subdivision and construction sites in the City are compliant with State Government legislation and the City's local laws in regard to the management of soil erosion, sediment runoff, sand drift and dust. This is due to:

1. The City effectively engaging with developers and builders at the planning phase of subdivision, commercial and residential building applications.
2. The City maintaining a strong commitment to monitoring sites to ensure compliance with State Government legislation and our local law.
3. Significant investment by the City to install infrastructure and trial new technologies to improve water quality.
4. The formation of collaborative partnerships with State Government (Departments of Biodiversity, Conservation and Attractions, Water and Environmental Regulation, Water Corporation) and the community to improve water quality and biodiversity.
5. Authorised Officers receiving ongoing support from the City's Senior Management Team via the allocation of resources to investigate and check non-compliance and by supporting enforcement action when required.

Aerial view of the sediment build up in the Swan River coming from the Bayswater Brook

A simple targeted approach at the outset works best

The City of Bayswater requires the applicant to submit a dust management plan or construction management plan during the planning assessment and referrals stage. In most cases, the applicant will engage environmental consultants to look at the process and recommend the control measures needed to prevent this issue at subdivision approval stage.

Education and support for builders and developers is important

City of Bayswater's Authorised Officers readily offer information and support to builders and land developers and educate them about the need and methods of controlling sediment loss from building sites. Officers will respond to enquiries and speak to builders/developers on site to educate them about dust minimisation, erosion mitigation, and sediment control. Officers are also contactable via email and phone.

Concentrating our efforts on ensuring compliance

Fortunately, only around 5% of all development related compliance assessments undertaken by Authorised Officers relate to sediment loss from building sites.

To determine compliance, Authorised Officers conduct site inspections in response to a complaint. A site inspection may also occur if an Officer witnesses non-compliance during their travels, even if no one complains.

Non-compliance is then pursued with the applicant/owner or site supervisor if there is sufficient evidence, such as Officer observations, photographs or video footage which show the origin of the sediment/sand/dust.

Encouragingly, the City rarely needs to issue infringements as their compliance approach tends to result in cooperation from the responsible party.

The Eric Singleton Bird Sanctuary prior to restoration works.

Eric Singleton Bird Sanctuary rehabilitation project designed to prevent 40 tonnes of sediment from entering the Swan River annually

The Eric Singleton Bird Sanctuary (ESBS) Wetland Rehabilitation Project was designed to remediate a severely degraded, contaminated, water consuming wetland with limited environmental and social value into a productive, nutrient stripping wetland that is an outstanding community and environmental asset.

One of the largest projects of its kind, this $3 million civil re-construction rehabilitation project was completed in 2015 in partnership with the Department of Biodiversity, Conservation and Attractions.

The Eric Singleton Bird Sanctuary after restoration works.

This project is expected to prevent 40 tonnes of sediment and other rubbish from entering the Swan River each year.

The diversion of flow from the Bayswater Brook into a gross pollutant trap before entering the wetland through a sedimentation pond combined with a wetland treatment train of over 25,000 square metres and 170,000 plants are the key mechanisms in place for reducing sedimentation, of which building/development site erosion, surface runoff and sand drift are a significant contributor.

The estimated annual maintenance cost (sediment removal) of the Gross Pollutant Trap at ESBS is $16,000. The estimated maintenance cost of the sedimentation basin (sediment removal) is $17,500 every ten years.

Gross Pollutant Traps, street sweeping and gully ducting proving effective tools for trapping sediment

The City of Bayswater has installed Gross Pollutant Traps (GPTs) within the catchment which help to remove sediment from sediment laden water before it continues down the stormwater system and enters the Swan River. GPTs have been installed at Eric Singleton Bird Sanctuary, Maylands Lakes, Beard Elbow, Wotton Street and CSBP Fertilisers.

Measures aimed at increasing the incidence of street sweeping and gully ducting have also been rolled out over the Bayswater Brook catchment.

Supporting community to develop solutions for improving water quality at the Maylands Lakes

A management plan which aims to reduce sediment, rubbish and leaves entering the Maylands Lakes is now being implemented in collaboration with the community.

One management action is the installation of algae nets (pictured below) to capture filamentous or string algae and detritus that can accumulate in the lakes.

Using a combination of State and local law to prevent and manage sediment loss

The City utilises three different legislative provisions to prevent and manage sediment loss from building, subdivision and construction sites. These legislative tools allow the City to:

1. **Use local provisions to control dust.**
   The City enforces Section 5.3 of their *Health Local Laws 2001*, which refers to the escape of dust from a premise in such quantity or of such a nature as to cause a nuisance. Authorised officers determine if sediment loss from building sites is deemed to be a "nuisance", either at the time of inspection or via other evidence (such as video footage and photographs).

2. **Use State regulation to mitigate sediment loss from building sites.**
   The City's method of enforcement is via state government legislation, being the *Environmental Protection (Unauthorised Discharges) Regulations 2004*. The regulation lists "sediment" as a material that must not be discharged into the environment by a business or commercial activity. In practice, the City can issue an infringement notice with a modified penalty for such offences. If required, infringement notices can be issued under the *Environmental Protection Act 1986*. The maximum penalty for a successful prosecution under this legislation is $5000. This level of fine appears to be a sufficient deterrent.

3. **Use State planning policies to mitigate sediment loss.**
   The City can mitigate this risk utilising the *Planning and Development Act WA 2005* by imposing conditions of approval for development sites. These conditions include, but are not limited to:

   - Installing air monitoring stations with alarm systems - whereby the City must be notified if there is a breach. Inspections are undertaken by the City in response to complaints and problematic sites may be inspected randomly. Air quality monitoring can also be undertaken by the City and Department of Water and Environmental Regulation Pollution Response Officers if necessary.
   - Placing screening around the perimeter of the site to help contain dust on site (i.e. dust screening on fences).
   - The applicant is required to undertake street sweeping as frequently as required to prevent the build-up of dust/sediment on the roads.

All images supplied by the City of Bayswater

Sand drift and resulting sedimentation a continuing concern

The City of Bayswater remains concerned with sand drifting from vacant lots and building sites onto footpaths and locally adjoining properties.

Not only is this a dust nuisance and a slip hazard, it can harm our natural environment.

When it rains, this sand flows into gutters, blocking stormwater entry pits and drains, causing localised flooding and contributing to the nutrient enrichment and eutrophication of the Swan River, creeks and wetlands.

The City estimates that $15,000 is budgeted for the maintenance of drainage infrastructure where builders' sediment has run-off from building, subdivision and constructions sites and been captured, requiring removal. This cost represents approximately 10% of the City's annual drainage maintenance budget.

Sediment can end up in storm drains.

This case study has been developed as part of the Sediment Task Force Project which is sponsored by:

Perth NRM

City of Armadale

Department of Biodiversity, Conservation and Attractions

Swan Canning Riverpark