

CONTROLLED ACTIVITIES ON WATERFRONT LAND

Guidelines for instream works on waterfront land

These guidelines relate to the design and construction of works within a watercourse or on waterfront land. Instream works include modifications or enhancements to the watercourse, channel realignment, bed control structures, pipe laying and cable trenching etc.

Instream works are regulated by the controlled activity provisions of the *Water Management Act 2000* (WM Act). The NSW Office of Water administers the WM Act and is required to assess the impact of any proposed controlled activity to ensure that no more than minimal harm will be done to waterfront land as a consequence of carrying out the controlled activity.

Waterfront land includes the bed and bank of any river, lake or estuary and all land within 40 metres of the highest bank of the river, lake or estuary.

This means that a controlled activity approval must be obtained from the NSW Office of Water before commencing the controlled activity.

What are the aims and objectives for instream works?

The design and construction of works or activities within a watercourse or adjoining waterfront land should protect and enhance water flow, water quality, stream ecology and existing riparian vegetation. Impacts on the hydrologic, hydraulic and geomorphic functions of a watercourse should also be minimised.

Consultation with relevant government agencies at the concept stage of development and during the design phase is recommended so that good outcomes can be identified, planned for and achieved.

The design and construction footprint and the extent of disturbances within waterfront land should be minimised.

Asset protection zones and all ancillary infrastructure such as utility easements, detention basins and water quality control structures, roads, paths/cycle ways, should be located outside the riparian corridor or in accordance with the NSW Office of Water guidelines for riparian corridors which may allow some works to be located within the outer 50 per cent of the vegetated riparian zone

All waterfront land disturbed by the construction or installation of a controlled activity should be rehabilitated in such a way that the integrity of the watercourse and its riparian corridor is restored or rehabilitated.

What should be considered?

The design and construction of instream works should consider, but not be limited to, the following:

- Identify the width of the riparian corridor in accordance with the NSW Office of Water guidelines for riparian corridors.
- Consider the full width of the riparian corridor and its functions in the design and construction of any instream works. Where possible, the design should accommodate fully structured native vegetation.
- Identify alternative options and detail the reasons for selecting the preferred option/s.
- Minimise the design and construction footprint and proposed extent of disturbances to soil and vegetation within watercourse or waterfront land.
- Maintain or mimic existing or natural hydraulic, hydrologic, geomorphic and ecological functions of the watercourse. Demonstrate the instream works will not have a detrimental impact on these functions.

- Maintain the natural geomorphic processes.
 - Accommodate natural watercourse functions.
 - Establish natural bed and bank profiles, for example meanders, chain of ponds, surface water pools and riffles and bed controls.
 - Allow for the movement of sediment and woody debris.
 - Prevent increased scour and erosion of the watercourse bed or banks in any storm events.
 - Avoid locating works or structures on bends in the channel unless they are structures to restore stability.
 - Address existing bed degradation to protect structures and restore channel and bed stability.
- Maintain the natural hydrological regimes.
 - Accommodate site hydrological conditions, for example maintain low flows.
 - Do not alter natural bank full or floodplain flows. Modifications to watercourses should be based on roughness coefficients that represent the 'natural' state including fully structured mature riparian vegetation.
 - Do not change the gradient of the bed except to address existing bed and bank degradation.
 - Do not increase velocities by constricting flows.
- Protect against scour by designing and providing necessary scour protection, for example, rock rip-rap and vegetation.
- Stabilise and rehabilitate all disturbed areas including topsoiling, revegetation, mulching, weed control and maintenance in order to adequately restore the integrity of the riparian corridor.
- Monitor and maintain all in-stream works until suitably stabilised.

What information should be submitted for assessment?

When seeking approval to construct instream works, the NSW Office of Water will rely on the above information to undertake its assessment and to determine if the activity should be approved. All instream works/activities should be designed and certified by suitably qualified persons.

The following additional information will also be required:

- Detailed design drawings of proposed works (engineering certification may also be required).
- Detailed design drawings which include a surveyed plan, cross sections (across the watercourse) and a long section of the watercourse, showing the proposed works relative to existing and proposed bed and bank profiles and water levels. The cross section should extend to the landward limit of the identified riparian corridor. All plans must include a scale bar.
- Detailed report of pre and post construction hydraulic conditions. The report should address bank full discharge, velocity, tractive force or sheer stress, afflux (Modified RTA method is acceptable), Froude and Manning's 'n' roughness values, relative to the proposed structure.
- Detailed plans of permanent bed and bank stabilisation works for scour protection.
- Photographs of the site. To assist with future monitoring and reporting, all photo points should be identified by GPS coordinates or by survey - particularly for large scale earthworks or extractive industries.
- A vegetation management plan prepared in accordance with NSW Office of Water guidelines for vegetation management plans.
- Sediment and erosion control plan.
- A site management plan incorporating a works schedule, sequence and duration of works, contingencies (in case of flood or similar), erosion and sediment controls and proposed monitoring and reporting periods.
- Costing of all works (materials, labour) and stages of works (channel stabilisation, rehabilitation).
- Copies of other relevant approvals, for example land owner's consent or development consent.

Will a maintenance period be necessary?

Applicants will also need to provide for a maintenance period of between three and five years after practical completion of each stage, or until the site is stable. The maintenance period will depend on the scope, size and level of risk. Engineering certification may be required at the end of the maintenance period.

Maintenance includes sediment and erosion control; the replacement of any works, vegetation or areas damaged or destroyed by flows and flooding or vandalism; and any other requirements necessary to ensure a naturalised stable watercourse system is functioning by the end of the maintenance period.

Maintenance should include sediment and erosion control, replacement of any works/areas damaged or destroyed by flows and flooding or vandalism, and any other requirements necessary to ensure a naturalised stable watercourse system is functioning by the end of the maintenance period.

Will a security deposit be required ?

Applicants should note that if the likelihood of significant impact on the watercourse or waterfront land is identified, security (as bank guarantees) may be required before the controlled activity is commenced. The amount of security is usually based on the costings provided.

Where do I go for additional information?

Find out more about controlled activities at the Office of Water website www.water.nsw.gov.au.

Contact us

Contact a water regulatory officer as listed on the Office of Water website www.water.nsw.gov.au, free call the licensing information on 1800 353 104 or email information@water.nsw.gov.au.

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