

GUIDELINES for Preparing a Waterways Impact Statement

Introduction

This guideline is intended to provide advice to applicants on Preparing a Waterway Impact Statement.

What is a Waterway Impact Statement?

A Waterway Impact Statement is a document which is to be prepared to enable Council to conduct an adequate environmental assessment of development works so as to protect, maintain and enhance waterways and riparian lands within Warringah.

Note: For definitions of terms used within these guidelines please see "Definitions" at the end of this document.

When is a Waterway Impact Statement Required?

A Waterway Impact Statement is required for any development works located within waterways and riparian lands as per the requirements of the Council's *Protection of Waterways and Riparian Land Policy* (PL 740) and the Warringah Development Control Plan 2011. Riparian land is all land within 100 metres of a wetland or within 40 metres of a watercourse (taken to start at the highest bank of the watercourse, for ephemeral streams without a defined channel, the start of the riparian land is the creek centre line).

Scope of Report

Any report submitted should reflect the size, type and location of the development, be commensurate to the scope of the works proposed, and consider its relationship to surrounding development.

Technical Requirements of a Waterway Impact Statement

The technical requirements of a Waterway Impact Statement are to be provided in four (4) main areas:

1. **Waterway Analysis**

The Waterway Analysis will include the following details:

- the ecological value of waterway and riparian land to be impacted upon by the proposed development. This must be established using the [Warringah Creek Management Study \(2004\)](#);
- the nature and extent of proposed construction activities such as cut and fill and clearing
- the nature and extent of proposed operational activities such as agriculture, materials storage and on-site wastewater disposal
- the location of proposed construction and operational activities relative to:
 - the riparian buffer,
 - riparian zone,
 - creek centreline,
 - wetland,
 - and wetland buffer



- site and surrounds - the quality of the on-site and off-site waterways and riparian lands which may be directly or indirectly affected by the development, including, but not limited to:
 - physical characteristics of the waterway and riparian land;
 - connectivity with waterway corridors, bushland and open space;
 - details of the location of threatened or endangered aquatic flora and fauna (a map is usually the best way of showing this, but other documentation, such as a flora or fauna survey report, may also be necessary);
 - existing erosion and sediment conditions;
 - channel form, erosion rate and bank stability; and,
 - stormwater discharge points and stormwater treatment measures.

2. Assessment of Impacts

In regard to the factors addressed in Part (1), detail the likely impacts of the development such as:

- impact upon water quality. Reference should be made to C4 – Stormwater of the Warringah Development Control Plan 2011;
- impacts on channel form, erosion rate and bank stability;
- impacts on stormwater discharge points and stormwater treatment measures;
- ecological impacts of the development;
- landscape impacts of the development
- flood impact assessment (refer to appropriate Flood Policy);
- bank stability assessment demonstrating the building and development is not at risk from erosion processes;
- the extent of native vegetation proposed to be removed; and
- any modifications to natural creeklines or overland flow.

3. Assessment of Compliance with the Warringah Development Control Plan

This section is to demonstrate compliance with the objectives and requirements of the Warringah Development Control Plan 2011 where applicable, with particular emphasis on the following clauses:-

- C4 Stormwater
- C5 Erosion and Sedimentation
- E2 Prescribed Vegetation;
- E3 Threatened species, populations, ecological communities listed under State or Commonwealth legislation, or High Conservation Habitat;
- E4 Wildlife Corridors;
- E5 Native Vegetation;
- E6 Retaining unique environmental features on site;
- E8 Waterways and Riparian Lands.



4. Provision of Mitigation Measures

Detail proposed mitigation measures for the works, having regard to the following outcomes:

Outcome 1: Protecting native species and communities (e.g. migration routes, habitat, streamflow, water quality)

Performance criteria	Acceptable mitigation measures
Maintain natural habitats	<ul style="list-style-type: none"> • Improvement of Endangered Ecological Communities • Improvement of riparian vegetation OR • Compensatory habitat provided for any disturbance
Provide fauna movement routes	<ul style="list-style-type: none"> • Improved connection of riparian zones AND • Improved fish movement through removal of barriers OR • Install fishways on any temporary or permanent barriers
Prevent unnatural erosion or sediment deposition	<ul style="list-style-type: none"> • No increase in peak flows AND • No increase in total sediment loads
Maintain acceptable water quality	<ul style="list-style-type: none"> • Council approved sediment and erosion control plan
Maintain connectivity between waterways and floodplains	<ul style="list-style-type: none"> • Reduction of barriers between waterways and floodplains

Outcome 2: Prevent loss of natural diversity through protecting waterway and riparian vegetation (including non-native vegetation)

Performance criteria	Acceptable mitigation measures
Avoid introducing plants or animals which may displace natural species	<ul style="list-style-type: none"> • Construction activities must not introduce new weeds species or allow weeds to spread (Bio-diversity Management Plan)
No increase in nutrient loads to riparian soils and waterways	<ul style="list-style-type: none"> • Use of best practice Water Sensitive Urban Design to capture net increase in nutrient loads following development
Avoid displacing species by habitat changes	<ul style="list-style-type: none"> • No development within the riparian buffer OR • Provision of compensatory habitat
Protect natural areas from contamination	<ul style="list-style-type: none"> • No activities within the riparian buffer which may contaminate soils or vegetation • No storage of chemicals, fuels or oils within riparian buffers OR • Adequate bunding of stored materials
Prevent the loss of any rare or threatened natural features	<ul style="list-style-type: none"> • No loss of any species, community or habitat listed under relevant conservation legislation • No loss of natural features identified in the DCP/LEP as rare or threatened
Protect downstream protected areas, such as National Parks	<ul style="list-style-type: none"> • On-site detention through On-site stormwater detention (OSD) technical specification or infiltration through best practice Water Sensitive Urban Design AND • On-site sediment capture through best practice Water Sensitive Urban Design



Outcome 3: Minimise damage to public and private property by waterway processes through maintaining the relative stability of the bed and banks

Performance criteria	Acceptable mitigation measures
Avoid increases in peak channel flows and sediment exports for events smaller than 2 year Average Recurrence Interval (ARI).	<ul style="list-style-type: none"> On-site detention through On-site stormwater detention (OSD) technical specification or infiltration through best practice Water Sensitive Urban Design AND On-site sediment capture through best practice Water Sensitive Urban Design
Avoid local erosion at stormwater outlets	<ul style="list-style-type: none"> Energy dissipation at stormwater outlets entering waterways AND Infiltration and on site detention with minimal use of pipes or lined drains AND Stabilisation of actively eroding banks using best practice Natural Channel Design Principles (as per Warringah Creek Management Study 2004 – Appendix F s.3)
Avoid export of weeds from private properties into waterways	<ul style="list-style-type: none"> No disposal of garden refuse in riparian lands.
Channel banks are not over steepened	<ul style="list-style-type: none"> Stabilisation of actively eroding banks using best practice Natural Channel Design Principles (as per Warringah Creek Management Study 2004 – Appendix F s.3)
Channel banks are stable	<ul style="list-style-type: none"> Stabilisation of actively eroding banks best practice Natural Channel Design Principles (as per Warringah Creek Management Study 2004 – Appendix F s.3)

Outcome 4: Preserve natural ecological processes

Performance criteria	Acceptable mitigation measures
Streamflow and water quality are natural	<ul style="list-style-type: none"> No artificial barriers to capture water No removal of water for consumptive use (except riparian use rights) Impervious surfaces offset by stormwater management controls so there is no net change in peak loads or pollutant loads in waterways (see On-site stormwater detention (OSD) technical specification) Site design adheres to best practice Water Sensitive Urban Design principles AND On-site uses do not involve specific risks to water quality (e.g. chemicals, organic materials, exposed soil, effluent generation)
Aquatic and riparian vegetation are undisturbed and unmodified	<ul style="list-style-type: none"> All development is outside riparian zone
Aquatic and riparian fauna habitat and movement corridors are retained	<ul style="list-style-type: none"> Improvement to stream bed or banks

Outcome 5: Create opportunities for public access and recreation in waterway corridors

Performance criteria	Acceptable solutions
Provide public access along creek corridors where appropriate	<ul style="list-style-type: none"> Set back developments to allow public access within riparian buffers



Other General Requirements of Reporting

All reports are to:

- include an executive summary,
- be professionally prepared in an accepted academic format,
- include calculation formulae,
- be clearly referenced using an accepted academic referencing system (eg. Harvard),
- provide analysis of development against relevant Commonwealth and State Legislation,
- provide analysis of development against relevant State and Regional Planning Policies,
- provide analysis of development against relevant Local Environment Plan and Policies,
- include a conclusion detailing key points,
- provide development recommendations and construction methodologies and,
- provide qualifications of author.

For further information contact Natural Environment Unit on 9942 2111 or [via webmail](#)

Definitions

Connectivity means the interconnection of functionally related ecological elements of a landscape so that species can move amongst them (MWH Australia Pty Ltd 2004, *Warringah Creek Management Study*).

Creek means any watercourse, whether ephemeral, intermittent or perennial, whether on its natural course or altered by human interference, whether channelled or not. It also includes any drainage lines able to be identified by a linear vegetation assemblage reflective of regularly moist soil conditions or by a weed plume consistent with regularly moist soil conditions (MWH Australia Pty Ltd 2004, *Warringah Creek Management Study*).

Development means:-

- (a) the use of land, and
- (b) the subdivision of land, and
- (c) the erection of a building, and
- (d) the carrying out of a work, and
- (e) the demolition of a building or work, and
- (f) any other act, matter or thing referred to in section 26 that is controlled by an environmental planning instrument, but does not include any development of a class or description prescribed by the regulations for the purposes of this definition (*Environmental Planning and Assessment Act, 1979*).

Riparian means occurring on the bank of a river (or other waterway, or waterbody). Usually refers to vegetation, "riparian land" (NSW Fisheries 1999, *Policy and Guidelines Aquatic Habitat Management and Fish Conservation*).

Riparian Buffer means land which is additional to the riparian zone necessary to protect the values and health of the riparian zone. The primary purpose of the buffer is to protect the integrity of the riparian zone. The combined width of the buffer and riparian zone then constitute a key protective mechanism for the ecological values of waterway systems. The minimum width of a riparian buffer is generally 10 metres, and is dependent on the catchment characteristics, slope and environmental values associated with the riparian corridor.

The buffer is primarily designed to:

- (a) Prevent water from affecting riparian vegetation (e.g. additional moisture, local erosion, nutrients, toxicants);
- (b) Prevent weeds from invading the riparian zone; and
- (c) Provide habitat for native fauna (thereby protecting it from external threats such as domestic animals) (*Warringah Council Protection of Waterway and Riparian Lands Policy PL-740*).



Riparian Land is land comprising the riparian zone, riparian buffer and wetland buffer identified by DCP Map Waterways and Riparian Land (*Warringah Council Protection of Waterway and Riparian Lands Policy PL-740*).

Riparian Zone means any land which adjoins, directly influences, or is influenced by a body of water. The width of the zone varies according to extent of riparian vegetation, flood levels, water quality, and channel form. This zone is taken to start at the highest bank of the watercourse (as defined in the *Water Management Act, 2000*). For ephemeral streams without a defined channel, the start of the riparian zone is the creek centre line. The riparian zone provides important habitat, protects the creek from water quality and hydrological impacts. It has other functions, including intrinsic value, as well as providing bed and bank stability, providing woody debris to the waterway and a buffer between development and waterways (*Warringah Council Protection of Waterway and Riparian Lands Policy PL-740*).

River includes:

- (a) any watercourse, whether perennial or intermittent and whether comprising a natural channel or a natural channel artificially improved, and
- (b) any tributary, branch or other watercourse into or from which a watercourse referred to in paragraph (a) flows, and
- (c) anything declared by the regulations to be a river, whether or not it also forms part of a lake or estuary, but does not include anything declared by the regulations not to be a river (*Water Management Act 2000*)

Waterbody (artificial) or artificial waterbody means an artificial body of water, including any constructed waterway, canal, inlet, bay, channel, dam, pond, lake or artificial wetland, but does not include a dry detention basin or other stormwater management construction that is only intended to hold water intermittently. (*Standard Instrument—Principal Local Environmental Plan (NSW)*)

Waterbody (natural) or natural waterbody means a natural body of water, whether perennial or intermittent, fresh, brackish or saline, the course of which may have been artificially modified or diverted onto a new course, and includes a river, creek, stream, lake, lagoon, natural wetland, estuary, bay, inlet or tidal waters (including the sea). (*Standard Instrument—Principal Local Environmental Plan (NSW)*)

Watercourse means any river, creek, stream or chain of ponds, whether artificially modified or not, in which water usually flows, either continuously or intermittently, in a defined bed or channel, but does not include a waterbody (artificial). (*Standard Instrument—Principal Local Environmental Plan (NSW)*)

Waterway means the whole or any part of a watercourse, wetland, waterbody (artificial) or waterbody (natural). (*Standard Instrument—Principal Local Environmental Plan (NSW)*)

Wetland means:

- (a) natural wetland, including marshes, mangroves, backwaters, billabongs, swamps, sedgeland, wet meadows or wet heathlands that form a shallow waterbody (up to 2 metres in depth) when inundated cyclically, intermittently or permanently with fresh, brackish or salt water, and where the inundation determines the type and productivity of the soils and the plant and animal communities, or
- (b) artificial wetland, including marshes, swamps, wet meadows, sedgeland or wet heathlands that form a shallow waterbody (up to 2 metres in depth) when inundated cyclically, intermittently or permanently with water, and are constructed and vegetated with wetland plant communities (*Standard Instrument—Principal Local Environmental Plan (NSW)*)



Wetland buffer means 100m buffer of land, measured from the shoreline, surrounding a wetland which directly influences and protects a wetland (*Warringah Council Protection of Waterway and Riparian Lands Policy PL-740*).

The definitions contained are derived from the documentation identified after each definition. Accordingly, the definition contained within the original documentation supersedes the definition contained within this section.