

ITEM 4

PUBLIC EXHIBITION - DRAFT WOLLONGONG DCP 2009 - CHAPTER E23: RIPARIAN LAND MANAGEMENT

Wollongong Development Control Plan 2009 - Chapter E23 Riparian Land Management was adopted on 15 December 2009. A review of this Chapter has occurred to reflect contemporary legislative and policy amendments and update its currency.

It is recommended that the revised draft Chapter E23 Riparian Land Management be exhibited for a minimum 28 day period to allow community consultation.

RECOMMENDATION

- 1 The draft Wollongong Development Control Plan 2009 - Chapter E23 Riparian Land Management be exhibited for a minimum period of 28 days.
- 2 Following the exhibition period, a report outlining the submissions received from the public exhibition process be prepared for Council's consideration.

REPORT AUTHORISATIONS

Report of: Chris Stewart, Manager City Strategy

Authorised by: Linda Davis, Director Planning + Environment - Future City + Neighbourhoods

ATTACHMENTS

- 1 Summary of Amendments
- 2 Draft Revised Wollongong DCP 2009 - Chapter E23 Riparian Land Management

In 2009 Council prepared and exhibited the Wollongong Development Control Plan (DCP) to accompany the Wollongong Local Environmental Plan 2009. On 15 December 2009, Council adopted the Wollongong DCP 2009 and it came into force on 3 March 2010. Periodic review, update and amendment of DCP 2009 occurs as required, to ensure plans continue to be useful and relevant.

The many watercourses of the Wollongong Local Government Area (LGA) predominantly flow from the escarpment to the coast, through a range of landscapes. Over time, the majority of these watercourses and associated riparian lands have undergone varying modifications and changes due to urban development and rural use.

Effective riparian land management is key to bed and bank stability, water quality, biodiversity and environmental corridor function to promote the long-term health of the catchments within which these watercourses flow. Protecting and properly managing riparian land is vital to reduce the pressure on, and threats to, watercourses and their associated ecosystems, and to support the biodiversity of the Wollongong LGA in the long term.

The purpose of Chapter E23 Riparian Land Management is to outline Council's minimum requirements to minimise adverse impact on riparian lands as a result of development. This includes development on land in or adjacent mapped watercourses, and development which involves watercourse crossings. The requirements reflect the principles and recommendations contained in the *Riparian Corridor Management Study 2004* prepared by the then NSW Department of Infrastructure, Planning and Natural Resources (RCM Study). This Study and its recommendations are based on the local characteristics of the Wollongong LGA and seek to ensure that the long term functioning of each waterway and riparian lands align with its assessed environmental value or category.

The method used to categorise watercourses in the RCM Study, and included in the current DCP Chapter and revised draft DCP Chapter, is different to that used by the NSW Natural Resource Access Regulator's (NRAR) *Guidelines for Controlled Activities on Waterfront Land – Riparian Corridors* (2018). The NRAR Riparian Corridor Guidelines are general, State-wide guidelines that categorise all watercourses

uniformly based on their location within a catchment, while the RCM Study provides width values specifically relevant to the Wollongong LGA, its geomorphology and waterway structure and function.

PROPOSAL

Wollongong Development Control Plan 2009 – Chapter E23 Riparian Land Management was adopted on 15 December 2009. Since its adoption in 2009, there have been updates to the relevant legislation, State Government guidelines and Council Policy relevant to this Chapter of the DCP.

A review of Chapter E23, relevant legislation, guidance documents and Council Policy has been undertaken which identified the need to update and amend the Chapter. Internal consultation was conducted with relevant Council Divisions to understand how the DCP Chapter E23 is referenced, with the aim of incorporating improvements.

The DCP Chapter was also benchmarked against similar Chapters adopted by other LGAs, including –

- City of Sydney
- Woollahra
- North Sydney
- Shellharbour
- Ku-ring-gai
- Newcastle
- Sutherland
- Campbelltown
- Penrith City
- Kiama
- Penrith
- Eurobodalla
- Bankstown
- Lane Cove
- Blacktown
- Shoalhaven
- Lake Macquarie
- Coffs Harbour

Attachment 1 provides a summary of the changes recommended for Wollongong DCP 2009 - Chapter E23 Riparian Land Management.

A revised draft DCP Chapter E23 has been prepared (Attachment 2) and includes new controls to comply and more closely align with the current requirements of the *Environmental Planning and Assessment Act 1979*, *Water Management Act 2000*, *Fisheries Management Act 1994* and *National Parks and Wildlife Act 1974*, a suite of Land Management and Biodiversity Conservation (LMBD) reforms (2017), and updated Council Policy.

The regulatory and policy framework changes that have occurred since adoption of Chapter E23 in 2009 are as follows –

Repealed	Commenced	Amended
<ul style="list-style-type: none"> • Water Management (General) Regulation 2004 • Threatened Species Conservation Act 1995 • Parts 7-9 of the National Parks and Wildlife Act 1974 • Nature Conservation Trust Act 2001 • Native Vegetation Act 2003 • Rural Lands Protection Act 1998 • Catchment Management Authorities Act 2003 • Lake Illawarra Authority Act 1987 	<ul style="list-style-type: none"> • Water Management (General) Regulation 2018 • Biodiversity Conservation Act 2016 • Local Land Services Act 2013 SEPP (Vegetation in Non Rural Areas) 2017 	<ul style="list-style-type: none"> • Environmental Planning and Assessment Act 1979 • Fisheries Management Act 1994 • Land Management and Biodiversity Conservation (LMBD) reforms (2017) • Vegetation Management Plan Guidelines for Development Applications and Unauthorised Works (Council 2019) • West Dapto Open Space Design and Technical Manuals relevant to the West Dapto Urban Release Area (Council 2019)

It is recommended that Council resolve to exhibit the revised draft Chapter E23 Riparian Land Management (Attachment 2) for a minimum period of 28 days.

CONSULTATION AND COMMUNICATION

Internal consultation was conducted with relevant Council Divisions to understand how the Wollongong DCP 2009 Chapter E23 is referenced, with the aim of incorporating improvements. The Council teams consulted included Environmental Planning, Development Assessment and Certification, Land Use Planning, Open Space & Environmental Services, West Dapto Urban Release and Design Technical Services. Advice was also sought from Council’s Legal Team to check for clarity, legibility and legal correctness of the proposed DCP Chapter amendments.

This report proposes public exhibition of the amended Wollongong DCP 2009 draft Chapter E23 for a minimum period of 28 days. All submissions will be reviewed and any post exhibition revised amendments will be reported to a future Council meeting for further consideration.

PLANNING AND POLICY IMPACT

This report contributes to the delivery of Wollongong 2028 Objective *“The Sustainability of our urban environment is improved”* under the Community Goal *“We value and protect our environment”*. It specifically delivers on the following -

Community Strategic Plan Strategy	Delivery Program 2018-2022 4 Year Action	Operational Plan 2021-22 Operational Plan Actions
Manage land uses to strengthen urban areas	1.3.1 Impacts from development on the environment are assessed, monitored and mitigated	Action 1: Assess new developments and planning proposals for environmental impacts.
Manage visual and urban amenity resulting from urban development.	1.3.2.2 Mitigate the impact of development on the natural environment and visual amenity of our open spaces and urban areas	Action 1: Review and implement planning controls to mitigate the impact of development on the natural environment and visual amenity of our spaces and urban areas.

CONCLUSION

A review of Wollongong Development Control Plan 2009 Chapter E23 Riparian Land Management has been conducted and identified the need for amendments in line with current legislation, State Government guidelines and Council Policy. The revised draft DCP Chapter E23 also includes new controls to comply and more closely align with the suite of Land Management and Biodiversity Conservation Reforms.

This report recommends that the revised draft Wollongong Development Control Plan 2009 Chapter E23 Riparian Land Management be endorsed for public exhibition for a minimum period of 28 days.

Wollongong DCP 2009 Chapter E23: Riparian Land Management Summary of Proposed Amendments

Section in existing DCP	Proposed Change	Comment
Chapter generally	<p>Updated with current legislation and names of Government departments. Summaries of legislation deleted. Overall tightening of requirements/development controls and new requirements/controls added. Restructured to be more logical and consistent with other WDCP 2009 Chapters recently reviewed and updated.</p>	
Contents	<p>Updated to reflect the new structure. The new structure contains the following additional or changed section and subsection headings -</p> <ul style="list-style-type: none"> 2 Purpose 3 Land to which this Chapter Applies 4 Development to which this Chapter Applies 6 Related Legislation 7 Relationship to Clause 7.4 of Wollongong Local Environmental Plan 2009 8 Relationship to Other DCP Chapters and Council Manuals 9 Development Controls 9.1 Watercourse Categorisation 9.2 Riparian Corridor Width Requirements 9.3 Riparian Corridor Design and Management 9.4 Bush Fire Asset Protections Zones 9.5 Fencing 9.6 Watercourse Crossings 9.7 Stormwater/Water Quality Treatment 	<p>Contents restructured to be more logical and consistent with other WDCP 2009 Chapters recently reviewed and updated. Summaries of legislation considered inappropriate in a DCP chapter. Updated relevant legislation listed and references to obsolete legislation deleted.</p>

Section in existing DCP	Proposed Change	Comment
	9.8 Restoration Works 9.9 Vegetation Management Plan 9.10 General	
	The new structure has incorporated previous sections 7. Bush Fire Asset Protection Zones; 8. Fencing; 9. Infrastructure Services and Roadway Crossings; and 10. Riverbank Restoration Works, under new section "9. Development Controls".	
	The new structure has deleted the following previous section and subsection headings - 4.1 Water Management Act 2000 4.2 Fisheries Management Act 1994 4.3 National Parks and Wildlife Act 1974 5 Other Relevant Legislation 5.1 Native Vegetation Act 2003 6 Development in Riparian Corridors Appendix 1	
1 Introduction	Reworded to contain information on the importance of protecting and properly managing the Wollongong Local Government Area's riparian land. Previous clause 1(1) moved to a new section titled "2. Purpose" - reworded and the following new sentences added: "This study and its recommendations are based on the local characteristics and values of the Wollongong LGA and seek to ensure that the long term functioning of each waterway and riparian lands align with its assessed environmental value or category." Previous clause 1(1) moved to a new section titled "2. Purpose" - reworded and the following new sentences added: "This study and its recommendations are based on the local characteristics and values of the Wollongong LGA and seek to ensure that the long term functioning of	Clarifies that the requirements for development reflect the principles and recommendations contained in the Riparian Corridor Management (RCM) Study 2004 prepared for Wollongong Council – the RCM recommendations are based on the local characteristics of the Wollongong LGA and provide width values specifically relevant to the Wollongong LGA, its geomorphology and waterway structure and function.

Section in existing DCP	Proposed Change	Comment
	<p>each waterway and riparian lands align with its assessed environmental value or category.</p> <p>It should be noted that the method used to categorise watercourses in the Riparian Corridor Management (RCM) Study 2004 is different to that used by the NSW Natural Resource Access Regulator's (NRAR's) <i>Guidelines for Controlled Activities on Waterfront Land – Riparian Corridors</i> (2018). The NRAR Riparian Corridor Guidelines are general, statewide guidelines that categorise all watercourses uniformly based on their location within a catchment, while the RCM Study provides width values specifically relevant to the Wollongong LGA, its geomorphology and waterway structure and function."</p>	
	<p>Previous clause 1(2) moved to a new section titled "4. Development to which this Chapter Applies" and reworded to clarify the types of development the chapter does not apply to. New sentences added "This Chapter must also be considered in the Neighbourhood Planning process for the West Dapto Release Area as detailed in Chapter D16: West Dapto Release Area of this DCP. Endorsed site specific provisions of Chapter D16 or other site specific chapters override the general provisions of this chapter, and will be used for the assessment of Development Applications."</p> <p>Previous clause 1(3) moved to a new section titled "6. Relationship to Legislation" with legislation listed in dot point form and updated to refer to current and additional relevant legislation.</p> <p>Information contained in previous clause 1(4) moved to a new section titled "9. Development Controls" and distributed under subsections "9.1. Watercourse Categorisation" and "9.3. Riparian Corridor Design and Management".</p>	<p>Inclusion of section to link this Chapter to the Neighbourhood Planning process for the West Dapto Release Area and Chapter D16.</p>
<p>2 Objectives</p>	<p>Edited to improve focus and clarity.</p> <p>Previous objectives (d) and (e) deleted as these are considered to be covered by changed objective (a) and existing objective (b). Objectives re-sequenced.</p> <p>Objective (a) changed from "Protect urban creeks and riparian corridors from further degradation and improve their environmental function" to "Protect Wollongong LGA's</p>	<p>Based on feedback from the Environment Planning Team and internal legal advice, the objectives have been strengthened to achieve improved riparian land management outcomes.</p>

Section in existing DCP	Proposed Change	Comment
	<p>watercourses, banks and riparian corridors and improve their environmental function and stability”.</p> <p>Objective (b) changed from “Conserve, enhance and protect existing native riparian vegetation and associated habitat” to “Protect and enhance existing native riparian vegetation and associated habitat”.</p> <p>Objective (c) changed from “Protect and enhance viability of endangered ecological communities and threatened species populations listed under the Threatened Species Conservation Act 1995” to “Protect and enhance the viability of threatened ecological communities and threatened species”.</p> <p>Objective (h) changed from “Protect water quality” to “Maintain or improve water quality” and re-sequenced to f.</p> <p>Included is a new objective “Minimise the number of new waterway crossings”.</p>	<p>Reference to outdated legislation removed. The reference to the [NSW] <i>Threatened Species Conservation Act 1995</i> (now repealed) in objective (c) has been removed and replaced with the more general “threatened ecological communities and threatened species”. Ecological communities and species listed as threatened under the NSW <i>Biodiversity Conservation Act 2016</i> may also be listed as threatened under the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>.</p>
3 Definitions	<p>Definitions moved to back of Chapter and listed in alphabetical order.</p> <p>Definitions added for: “Adjacent to any Category 1, Category 2 or Category 3 watercourse”, “Adjacent to a mapped watercourse”, “Channel width”, “Compensatory Riparian Restoration”, “Core riparian zone”, “Essential infrastructure services”, “Essential watercourse crossings for public road infrastructure”, “Low flow channel”, “Non-essential infrastructure services”, “Non-essential watercourse crossings for public road infrastructure”, “Soft engineering”, “Utility infrastructure” and “Waterbody (artificial)”.</p> <p>Definition of “Riparian vegetation” expanded.</p> <p>Definition of “Watercourse” amended to match the definition of watercourse in Wollongong LEP 2009.</p>	<p>New location of definitions consistent with other updated DCP chapters.</p> <p>Definitions updated to be consistent with WLEP 2009.</p> <p>New definitions added/ definitions expanded based on internal legal advice to define previously undefined terms and to define terms contained in new content.</p>
4 Integrated Development	<p>Relocated to g under section “10. Development Application Information Requirements” and updated and simplified.</p> <p>Summaries of legislation deleted.</p>	<p>Updated to remove outdated references to NSW state government department names and to reflect the current requirements of the <i>Environmental Planning and Assessment Act 1979</i>, <i>Water Management</i></p>

Section in existing DCP	Proposed Change	Comment
		<p><i>Act 2000, Fisheries Management Act 1994 and National Parks and Wildlife Act 1974.</i></p> <p>Summaries of legislation considered inappropriate in a DCP chapter.</p>
5 Other Relevant Legislation	<p>Summaries of legislation deleted.</p> <p>New section “6. Related Legislation” references relevant and updated legislation.</p> <p>New section “7. Relationship to Clause 7.4 of Wollongong Local Environmental Plan 2009” clarifies that this clause applies to “riparian land” shown on the Wollongong Local Environmental Plan 2009 Riparian Land Map.</p>	<p>Summaries of legislation considered inappropriate in a DCP chapter.</p> <p>Updated relevant legislation listed.</p>
6 Development in Riparian Corridors	<p>Heading renamed “Development Controls” and renumbered to section 9. This section contains information under the following new headings: “9.1. Watercourse Categorisation” and “9.3. Riparian Corridor Design and Management”. The previous heading of “Riparian Corridor Width Requirements” has been retained and renumbered to subsection 9.2.</p>	
6.1 Riparian Corridor Objectives	<p>Moved to section “9. Development Controls”</p>	
Table 1 Riparian Corridor Objectives	<p>Renumbered to Table 2, renamed “Objectives and Design Guidance for Watercourse Categories” and moved to subsection “9.3. Riparian Corridor Design and Management”. A new column titled “Design, Siting and Management Measures” added to the table.</p> <p>Objectives considered to be more relevant to design, siting and management measures moved to the new column titled “Design, Siting and Management Measures”.</p>	<p>Contents of table reworded to better reflect the “environmental objectives of riparian land” contained in the <i>Riparian Corridor Management Study</i> (NSW Department of Infrastructure, Planning and Natural Resources, 2004).</p> <p>The measures listed under Design, Siting and Management Measures were taken from information contained in the <i>Riparian Corridor Management Study (NSW Department of Infrastructure, Planning and Natural Resources, 2004)</i> and from internal</p>

Section in existing DCP	Proposed Change	Comment
		feedback, including from the Design and Technical Services Team and the Urban Release Team.
6.2 Riparian Corridor Width Requirements	Renumbered to subsection 9.2. “Any development (excluding new dwelling-houses, new dual occupancy developments or alterations and additions to existing dwelling-houses or dual occupancies) in, upon or adjacent to riparian land” deleted and replaced with “Any development to which this chapter applies within or adjacent to a mapped watercourse”. Reference to Table 2 changed to reference to Table 1.	Wording simplified for clarity.
Table 2 Riparian Corridor Width Requirements	Renumbered to Table 1 and renamed “Minimum Width Requirements for Riparian Corridors” and reworded.	Reworded for clarity.
Clause 6.2(2) Note	Deleted.	The note has allowed developers in certain circumstances to reduce their riparian corridor width requirements - an undesirable result for Council and the affected watercourse and not consistent with the objectives of this DCP Chapter.
	New clause “9.2.3. The minimum width requirements set out in Table 1 may exceed those stipulated in General Terms of Approval from NRAR, a Controlled Activity Approval or within guidelines published by the Department of Planning, Industry and Environment” added. New clause “9.2.4. The minimum width requirements set out in Table 1 may result in riparian corridor widths extending beyond land that has been zoned E3 Environmental Management based on flooding” added.	The proposed new clauses clarify that differences may occur between Council’s riparian corridor width requirements and those of NRAR and between Council’s riparian corridor width requirements and E3 zoning.
Figure 1: Illustrates a typical Riparian Corridor	Moved to the start of subsection “9.2. Riparian Corridor Width Requirements”, amended and retitled “Diagram of a typical riparian corridor for a Category 1 or Category 2 watercourse (not to scale).”	Diagram amended to improve clarity.

Section in existing DCP	Proposed Change	Comment
7 Bush fire Asset Protection Zones	Moved to new section "9. Development Controls", subsection "9.4. Bush Fire Asset Protection Zones". Variations deleted.	Previous requirements tightened to ensure asset protection zones do not impact on the required riparian corridor and to improve the resultant environmental outcome.
8 Fencing	Moved to new section "9. Development Controls", subsection "9.5. Fencing". The word "generally" deleted. Reference to Part B of the DCP changed to reference Part E. A new requirement added for fencing to avoid steep batters and retain views.	New requirement added following feedback from the Council's City Wide Development Team.
9 Infrastructure Services and Roadway Crossings	Moved to new section "9. Development Controls", subsection "9.6. Watercourse Crossings". New controls to minimise the total number of watercourse crossings and require all watercourse crossings to achieve specified environmental outcomes. Watercourse crossing requirements for cycleways/shared paths and utility infrastructure added, and allowances introduced in the form of encroachments for essential public road infrastructure.	New controls in recognition of the need for cycleways and shared paths to cross waterways, and special conditions that may be required for essential public road infrastructure. The controls were developed in consultation with various Council Divisions, including Project Delivery, City Strategy and Legal Services, in accordance with best practice.
Clause 9(2) Stormwater detention basins	Moved to new section "9. Development Controls", subsection "9.7. Stormwater/Water Quality Treatment" and reworded from "Stormwater detention basins are to be installed outside the riparian corridor, wherever possible" to "Water quantity and quality treatment systems such as stormwater detention basins are to be constructed and located outside the riparian corridor". New requirement added to ensure sediment and litter capture and management is undertaken outside the riparian corridor.	Previous requirement tightened and new requirement added to ensure the full width of the required riparian corridor is provided and to protect the riparian corridor from the adverse impacts of sediment and litter.
10 Riverbank Restoration Works	Moved to new section "9. Development Controls", subsection 9.8 and renamed "Restoration Works". The words "where possible" deleted. The word "should" replaced with the word "must". Third sentence of previous clause 10(1) separated out into a new clause. "Department of Water and Energy (DWE)" replaced with "Natural Resources Access Regulator". New requirement "Stream bank stability is to be promoted by retaining and establishing well vegetated riparian zones" added.	Previous requirement tightened so that restoration works can better achieve the objectives of the DCP chapter. New requirement taken from "General Principles of Riparian Management" contained in the <i>Riparian Corridor Management Study</i>

Section in existing DCP	Proposed Change	Comment
		(NSW Department of Infrastructure, Planning and Natural Resources, 2004).
11 Development Application Information Requirements	Renumbered to section "10. Development Application Information Requirements". Previous first sentence replaced with "The following information and matters must be provided/addressed with a Development Application to which this Chapter applies". References to "the riparian land" replaced with "in the riparian corridor". References to "noxious plants" replaced with "non-native plants".	Terminology updated in line with current legislation and policy.
12 Vegetation Management Plan	Moved to new section "9. Development Controls", subsection "9.9. Vegetation Management Plan". Simplified and reference made to Council's <i>Vegetation Management Plan Guidelines for Development Applications and Unauthorised Works</i> .	Updated to reflect recently adopted Council Guidelines.
Appendix 1 – Riparian Vegetation Rehabilitation Guidelines	Deleted	This level of detail is inappropriate for a DCP chapter.
	New subsection "9.10. General" added. Contains requirements about subdivisions and new development fronting riparian land, bush fire assessment reports, services and access to the watercourse.	Requirements about subdivisions, services and access added, based on the <i>Riparian Corridor Management Study</i> (NSW Department of Infrastructure, Planning and Natural Resources, 2004) and feedback from Council's Environment Planning Team and Design and Technical Services Team. Requirement about bush fire assessment reports taken from <i>Planning for Bush Fire Protection</i> (RFS 2019).



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Part E – General Controls – Environmental Controls

Chapter E23: Riparian Land Management

Document Control			
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Rev No	Adoption Date	In force date	Revision Details
0	15/12/09	1/3/10	Adopted
1			Revised

1 INTRODUCTION

The many watercourses of the Wollongong Local Government Area (LGA) flow from the escarpment to the coast, through a range of landscapes. Over time, the majority of these watercourses and associated riparian lands have undergone varying modifications and changes due to urban development and rural uses.

Effective riparian land management is key to bed and bank stability, water quality, biodiversity and environmental corridor function to promote the long-term health of the catchments within which these watercourses flow.

The riparian land within and beside watercourses provides, or has the potential to provide, a number of important environmental and other quality of life related functions, including:

- habitat for a diversity of plant and animal species;
- movement corridors for wildlife;
- conveyance of flood flows;
- reduction of bank and channel erosion;
- maintenance of water quality;
- a protective buffer between development and watercourses;
- visual amenity; and
- nature-based recreation.

Protecting and properly managing riparian land is vital to reduce the pressure on, and threats to, watercourses and their associated ecosystems, and to support the biodiversity of the Wollongong LGA in the long term.

2 PURPOSE

The purpose of this Chapter is to provide Council's minimum requirements for development to minimise any adverse impact on riparian lands as a result of development. This includes development on land in or adjacent to mapped watercourses, and development which involves watercourse crossings.

The requirements reflect the principles and recommendations contained in the *Riparian Corridor Management Study* (NSW Department of Infrastructure, Planning and Natural Resources, 2004) (RCM Study) prepared for Wollongong City Council. This study and its recommendations are based on the local characteristics of the Wollongong LGA and seek to ensure that the long term functioning of each waterway and riparian lands align with its assessed environmental value or category.

The method used to categorise watercourses in the RCM Study is different to that used by the NSW Natural Resource Access Regulator's (NRAR's) *Guidelines for Controlled Activities on Waterfront Land – Riparian Corridors* (2018). The NRAR Riparian Corridor Guidelines are general, Statewide guidelines that categorise all watercourses uniformly based on their location within a catchment, while the RCM Study provides width values specifically relevant to the Wollongong LGA, its geomorphology and waterway structure and function.

3 LAND TO WHICH THIS CHAPTER APPLIES

This Chapter of the DCP applies to all lands within the Wollongong LGA.

4 DEVELOPMENT TO WHICH THIS CHAPTER APPLIES

This Chapter applies to any development requiring development consent under Part 4 or approval under Part 5 of the *Environmental Planning and Assessment Act 1979* that is proposed to take place on land within, over or adjacent to any Category 1, Category 2 or Category 3 watercourse mapped within Council's published DCP Riparian Corridors mapping layer (www.wollongong.nsw.gov.au/about/maps) or as confirmed by Council.

Part E – General Controls – Environmental Controls

Chapter E23: Riparian Land Management

This Chapter must also be considered in the Neighbourhood Planning process for the West Dapto Release Area as detailed in Chapter D16: West Dapto Release Area of this DCP. Endorsed site specific provisions of Chapter D16 or other site specific chapters override the general provisions of this chapter, and will be used for the assessment of Development Applications.

This Chapter does not apply to development for the following purposes in residential zones of the Wollongong LGA:

- a The erection or demolition of a dwelling-house or dual occupancy building not involving the subdivision of land, or
- b Alterations and additions to an existing dwelling-house or dual occupancy building, or
- c Ancillary facilities associated with an existing dwelling-house or dual occupancy building.

For the above types of development, Council's planning provisions including Chapter E13: Floodplain Management and Chapter E14: Stormwater Management of this DCP apply.

5 OBJECTIVES

The objectives of this DCP Chapter are to:

- a Protect Wollongong LGA's watercourses, banks and riparian corridors and improve their environmental function and stability;
- b Protect and enhance native riparian vegetation and associated habitat;
- c Protect and enhance the viability of threatened ecological communities and threatened species;
- d Minimise the number of new waterway crossings;
- e Enhance the aesthetic qualities and educational values of the local creek landscape;
- f Ensure riparian management is compatible with, and does not adversely affect, floodplain risk management objectives in urban areas;
- g Maintain or improve water quality; and
- h Protect and enhance any cultural heritage values of riparian corridors.

6 RELATED LEGISLATION

The following legislation is related to this Chapter:

- *Environmental Planning and Assessment Act 1979*
- *Water Management Act 2000*
- *Water Management (General) Regulation 2018*
- *Biodiversity Conservation Act 2016*
- *National Parks and Wildlife Act 1974*
- *Fisheries Management Act 1994*
- *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*.

7 RELATIONSHIP TO CLAUSE 7.4 OF WOLLONGONG LOCAL ENVIRONMENTAL PLAN 2009

If a development complies with this Chapter, then the objective of clause 7.4 Riparian Lands of Wollongong Local Environmental Plan 2009 will be met.

Clause 7.4 of Wollongong Local Environmental Plan 2009 applies to “riparian land” shown on the Wollongong Local Environmental Plan 2009 Riparian Land Map.

The watercourses mapped as “riparian land” under Wollongong Local Environmental Plan 2009 have a corresponding mapped category under this DCP Chapter as described in section 9.1 below.

8 RELATIONSHIP TO OTHER DCP CHAPTERS AND COUNCIL MANUALS

This Chapter is referred to in:

- Chapter B2: Residential Subdivisions
- Chapter B5: Industrial Development
- Chapter B6: Development in the Illawarra Escarpment
- Chapter D16: West Dapto Release Area
- Chapter E6: Landscaping
- West Dapto Open Space Design Manual

and is related to:

- Chapter E13: Floodplain Management
- Chapter E14: Stormwater Management
- Chapter E15: Water Sensitive Urban Design
- West Dapto Open Space Technical Manual.

9 DEVELOPMENT CONTROLS

9.1 Watercourse Categorisation

9.1.1 The category of each watercourse within the Wollongong LGA is provided in Council’s Riparian Corridors map within the Constraints and Planning DCPs layer of Council’s public mapping system.

The watercourses have been categorised into one or more of the following four categories, depending upon the nature and function of each watercourse:

- Category 1 – Environmental Corridor
- Category 2 – Terrestrial and Aquatic Habitat
- Category 3 – Bank Stability and Water Quality
- Predominantly piped or heavily engineered.

9.1.2 Watercourses that flow west from the escarpment have not been included in the Riparian Corridors map but are to be considered as Category 1 watercourses.

9.1.3 This Chapter does not have any particular controls for development within, over or adjacent to watercourses mapped as predominantly piped or heavily engineered. Chapter E14: Stormwater Management of this DCP needs to be considered for these types of developments.

Part E – General Controls – Environmental Controls

Chapter E23: Riparian Land Management

9.2 Riparian Corridor Width Requirements

9.2.1 The riparian corridor consists of:

- the channel which comprises the bed and banks of the watercourse (to the highest bank), and
- the core riparian zone measured from the top of the highest bank on either side of the watercourse; and
- the vegetated buffer (where applicable) adjoining the core riparian zone.

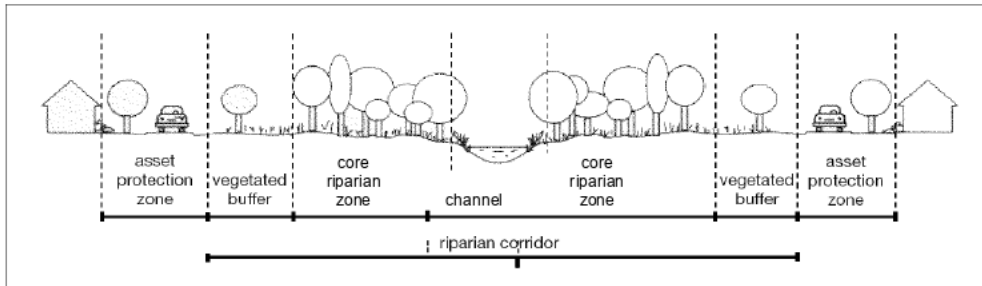


Figure 1. Diagram of a typical riparian corridor for a Category 1 or Category 2 watercourse (not to scale).

9.2.2 Any development to which this Chapter applies must be designed to achieve the minimum total riparian corridor width requirement for the specific watercourse category as set out in Table 1 below. The core riparian zone width is measured from the top of the highest watercourse bank away from the watercourse.

Table 1 Minimum Width Requirements for Riparian Corridors

Watercourse Category	Minimum Core Riparian Zone Width (each side of watercourse)	Minimum Vegetated Buffer Width (each side of watercourse)	Minimum Total Riparian Corridor Width
Category 1	40 metres	10 metres	100 metres + channel width
Category 2	20 metres	10 metres	60 metres + channel width
Category 3	10 metres	–	20 metres + channel width

9.2.3 The minimum width requirements set out in Table 1 may exceed those stipulated in General Terms of Approval from NRAR, a Controlled Activity Approval or within guidelines published by the Department of Planning, Industry and Environment.

9.2.4 The minimum width requirements set out in Table 1 may result in riparian corridor widths extending beyond land that has been zoned E3 Environmental Management based on flooding.

9.2.5 Except as provided by clause 9.6 of this Chapter, no development other than environmental works is to take place within the applicable minimum total riparian corridor width specified in Table 1.

9.2.6 Any variation to the minimum widths set out in Table 1 are to be addressed as a variation to a control in the DCP as outlined at Part 8 of Chapter A1: Introduction of this DCP and if approved environmental/biodiversity compensation will be required within the development site.

9.2.7 When considering a variation request, the following matters will, at a minimum be considered:

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- i Whether the variation will result in any adverse impact on the functions of the riparian corridor (including as a result of edge effects over time) or flood hazard risk or increased risk from any other hazard; and
- ii Whether reasonable alternative design options exist which would enable the minimum width requirements set out in Table 1 to be achieved.

9.3 Riparian Corridor Design and Management

- 9.3.1** Any new development within, over or adjacent to any mapped watercourse shall be designed, sited and managed to meet the specific riparian corridor objectives for the relevant watercourse category as set out in Table 2.
- 9.3.2** The land within the riparian corridor is to be restored/revegetated as part of a proposed development in accordance with the approved Vegetation Management Plan (VMP) (refer to clause 9.9 for VMP requirements).

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Table 2 Objectives and Design Guidance for Watercourse Categories

Watercourse Category	Watercourse Objectives	Design, Siting and Management Measures
<p>Category 1 – Environmental Corridor</p>	<p>Maximise the protection of terrestrial and aquatic habitat to:</p> <ul style="list-style-type: none"> • provide a continuous corridor width for the movement of flora and fauna; • provide extensive habitat (and connectivity between habitat nodes) for terrestrial and aquatic fauna; • maintain the viability of native riparian vegetation; • manage edge effects at the riparian/urban interface; • provide bank stability; and • protect water quality. 	<ul style="list-style-type: none"> • Provide a continuous riparian corridor that also provides linkages to stands of remnant vegetation where applicable. • Restore/rehabilitate the vegetation, geomorphic structure, hydrology and water quality of the riparian corridor to its original (pre-European) condition as far as practicable. • Locate infrastructure and utility services (ie power, water, sewerage and water quality treatment ponds etc) outside of the core riparian zone and vegetated buffer. Encroachment into the vegetated buffer may be possible if unavoidable and the impact on riparian functions is minimised. Any infrastructure and utility services within the vegetated buffer are to be sited to retain existing trees and the location and construction methods are to be determined by a consulting arborist. Tree locations are to be survey accurate. • Provide a suitable interface between the riparian area and urban development (roads, cycleways, playing fields, open space) to minimise edge effects. • Minimise the number of road crossings • Maintain riparian connectivity by the use of piered crossings in preference to pipes or culverts. • Minimise the impact of cycleways/shared paths, walking tracks and general access points by using ecologically informed design principles. • Locate flood compatible uses (eg playing fields) outside of the riparian corridor. • Manage and treat stormwater run-off outside the riparian corridor before discharge into the watercourse.

Table 2 Objectives and Design Guidance for Watercourse Categories (continued)

Watercourse Category	Watercourse Objectives	Design, Siting and Management Measures
<p>Category 2 – Terrestrial and Aquatic Habitat</p>	<p>Maintain/restore the natural functions of a watercourse to:</p> <ul style="list-style-type: none"> • maintain the viability of native riparian vegetation; • provide suitable habitat for terrestrial and aquatic fauna; • provide bank stability, and • protect water quality. 	<ul style="list-style-type: none"> • Restore/rehabilitate the vegetation, geomorphic structure, hydrology and water quality of the riparian corridor to its original (pre-European) condition as far as practicable. • Locate infrastructure or utility services (ie power, water, sewerage and water quality treatment ponds etc) outside of the core riparian zone and vegetated buffer. Encroachment into the vegetated buffer may be possible if unavoidable and the impact on riparian functions is minimised. Any infrastructure and utility services within the vegetated buffer are to be sited to retain existing trees and the location and construction methods are to be determined by a consulting arborist. Tree locations are to be survey accurate. • Provide a suitable interface between the riparian area and urban development (roads, cycleways, playing fields, open space) to minimise edge effects. • Minimise the number of road crossings. • Maintain riparian connectivity by the use of piered crossings in preference to pipes or culverts. • Minimise the impact of cycleways/shared paths, walking tracks and general access points by using ecologically informed design principles. • Locate flood compatible uses (eg playing fields) outside of the riparian corridor. • Manage and treat stormwater run-off outside the riparian corridor before discharge into the watercourse.
<p>Category 3 – Bank Stability and Water Quality</p>	<p>Minimise sedimentation and nutrient transfer to:</p> <ul style="list-style-type: none"> • provide bank stability; • protect water quality, and • protect native vegetation. 	<ul style="list-style-type: none"> • Emulate a naturally functioning watercourse with a suitable riparian corridor width. • Provide suitable vegetated habitat refuges for terrestrial and aquatic fauna, wherever possible. • Treat stormwater run-off outside the riparian corridor before discharge into the riparian zone, wherever possible. • Use flood appropriate vegetation to ensure a flood hazard free overland flow path.

Note: Category 3 often applies to open channels with very little remnant vegetation.

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9.4 Bush Fire Asset Protection Zones

- 9.4.1** Any bush fire Asset Protection Zone (APZ) is required to be located and managed within the defined limits of the development site and outside of the minimum total riparian corridor width.

9.5 Fencing

- 9.5.1** Fencing is to be restricted to the outer edge of the total riparian corridor width.
- 9.5.2** The design of fencing shall comply with the requirements stated in the Floodplain Management Chapter contained in Part E of this DCP.
- 9.5.3** Any proposed fence adjoining the riparian corridor is to be designed to avoid steep batters and should be of an open, permeable style to maintain views to and from the riparian area.

9.6 Watercourse Crossings

The objective of this clause is to minimise the total number of watercourse crossings in the LGA and require all watercourse crossings to achieve specified environmental outcomes.

9.6.1 Minimum Riparian Corridor Width Requirements

All proposed watercourse crossings for roads, cycleways/shared paths and utility infrastructure must comply with the minimum riparian corridor width requirements in Table 1 of clause 9.2 by spanning the applicable minimum riparian corridor width.

9.6.2 Encroachments for Essential Public Road Infrastructure

A. Despite clause 9.6.1, watercourse crossings of Category 1 or 2 watercourses and which fulfill the definition of 'essential watercourse crossing for public road infrastructure' in this Chapter, may encroach within the minimum riparian corridor width providing that:

- a The crossing of a Category 1 or 2 watercourse uses a single span or piered bridge design; and
- b Bridge piers or foundations are located outside the existing low flow channel of the watercourse; and
- c The crossing is as close to perpendicular as practical to the natural watercourse; and
- d Any works required within the riparian corridor incorporate soft-engineering solutions and natural channel design techniques, particularly to preserve natural ecological stream functions (aquatic and terrestrial) including fish passage; and
- e The design incorporates sufficient unobstructed width on both sides of the watercourse (ie from top of bank) and vertical clearance between the underside of the bridge and the top of bank to facilitate dry passage for the greatest range of ground dwelling fauna as possible (from reptiles to small macropods), during a 2% AEP (or 1 in 50 AEP) flood event.
- f The design provides access for maintenance, and where applicable, pedestrian connectivity. For any shared path, a minimum 2.5 metre width is required and the overall design must meet the requirements of the relevant Australian Standards and AUSTRROADS Guides.
- g Where the watercourse crossing is new (ie is not replacing and upgrading an existing crossing), appropriate compensatory riparian restoration will be provided at a suitable location as part of the development within the same catchment.

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B. Despite clause 9.6.1, watercourse crossings over Category 3 watercourses and which fulfill the definition of 'essential watercourse crossing for public road infrastructure' in this Chapter, may use a:

- single span,
- piered bridge, or
- box culvert design

and encroach within the minimum riparian corridor width providing that:

- a Bridge piers or foundations are located outside the existing low flow channel of the watercourse; and
- b The shape and sizes of precast elements are designed to optimise dry passage for a range of ground dwelling fauna (from reptiles to small macropods) during a 5% AEP (1 in 20 AEP) flood event.
- c The design provides access for maintenance, and where applicable, pedestrian connectivity.
- d Where the watercourse crossing is new (ie is not replacing and upgrading an existing crossing), and/or results in an impact to existing riparian vegetation, appropriate compensatory riparian restoration will be provided at a suitable location as part of the development within the same catchment.

9.6.3 Co-location of Roads, Cycleways/Shared Paths and Utility Infrastructure

Roads, cycleways/shared paths and utility infrastructure should be co-located within single crossings unless doing so in a particular circumstance will lead to greater impacts to the ecological functioning of the riparian corridor than not co-locating the infrastructure.

9.7 Stormwater/Water Quality Treatment

- a Water quantity and quality treatment systems such as stormwater detention basins are to be constructed and located outside the riparian corridor.
- b Sediment and litter capture and management must be undertaken outside the riparian corridor.

9.8 Restoration Works

- a Works to stabilise the watercourse bed or bank are to be carried out with soft engineering methods. Designs must aim to maintain or mimic existing or natural hydraulic, hydrologic, geomorphic and ecological functions of the watercourse, including regeneration and/or rehabilitation of appropriate local native riparian vegetation and ecological amenity.
- b Stream bank stability is to be promoted by retaining and establishing well vegetated riparian zones. tion works within the riparian corridor must be coordinated through Council or in some cases, the NSW Natural Resources Access Regulator directly.
- c All works involving soil disturbance are to be carried out in accordance with the NSW Landcom publication titled *Managing Urban Stormwater: Soils and Construction, 4th edition (March 2004)*.

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9.9 Vegetation Management Plan

- a A Vegetation Management Plan (VMP) must be submitted with any Integrated Development Application or Development Application lodged for any proposed development this Chapter applies to.
- b The VMP must be prepared in accordance with Council's published *Vegetation Management Plan Guidelines for Development Applications and Unauthorised Works* (available via www.wollongong.nsw.gov.au); and in the case of Integrated Development, the VMP must also be prepared in accordance with the Natural Resources Access Regulator's *Guidelines for Vegetation Management Plans on Waterfront Land*.
- c The VMP must identify maintenance access points and trails.
- d The VMP must consider any relevant flood studies (ie modelled for either the entire catchment or the specific development) to ensure that the proposed vegetation densities do not increase the flood affectation upon surrounding properties in the locality.
- e Where the riparian corridor width is in adjoining lots with different ownership and separate development applications for each lot are proposed, the preparation and implementation of a VMP submitted with a development application is to be coordinated with the adjoining lot landowner(s).
- f For any land proposed to be transferred to Council, all necessary revegetation or other works are to be completed in accordance with the approved VMP to the satisfaction of Council, prior to Council accepting the transfer of the land.

9.10 General

- a Subdivisions and new development should front onto the riparian corridor and not back onto it, perimeter roads are encouraged for this purpose.
- b For subdivisions, where relevant, the bush fire assessment report must assess whether the creation of riparian corridors and the implementation of the VMP will result in the creation of potential future and unmapped Bush Fire Prone Land and assess the bush fire risk for future development.
- c Services should be located outside of the riparian corridor.
- d Access to the watercourse for maintenance and passive recreation should be planned in strategic locations where the existing vegetation will not be impacted and the stream bed and bank stability will not be compromised. The integration of infrastructure to accommodate self-directed recreational activities such as walking, running and cycling and will create activity and opportunities for passive surveillance and encourage social interaction in a natural setting.

10 DEVELOPMENT APPLICATION INFORMATION REQUIREMENTS

The following information and matters must be provided/addressed with a Development Application to which this Chapter applies:

- a A **Site Plan** which shows the siting and design of existing and proposed buildings, including any outbuildings or ancillary structures such as garages, sheds, pergolas and pools. The site plan shall be at a scale of 1:100, 1:200 or 1:500, depending upon the size of the subject development site.

Note: The siting, design and landscape treatment of the proposal should maximise the habitat values (if any) and minimise disruption to the connectivity of riparian habitats.

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- b **A Survey Plan** or a detailed **Site Analysis Plan** must show the following:
- 'Top of bank' and centreline of the watercourse.
 - The setback distances between existing and proposed buildings/structures and the top of bank.
 - Plotting of the riparian corridor buffer according to the watercourse category and widths as identified in table 1.
 - Existing contour levels at two metre intervals.
 - All areas that exceed a slope class of 18°.
 - A suitable scale (ie 1:100, 1:200 or 1:500 scale), depending on the size of the overall landholding.
- c **A Tree Survey Plan** (ie prepared by a registered surveyor) which shows the location and species type of existing trees and understorey shrubs within the site, including the riparian corridor.
- d **A Vegetation Management Plan** (VMP) which indicates how the natural qualities of the riparian corridor have been retained or are proposed to be restored as far as possible through the retention or reinstatement of natural levels and native vegetation and/or the removal of trees (eg willows) and other non-native plants/vegetation.
- e Any Asset Protection Zone required should be clearly shown on the Site Plan and Site Analysis Plan, and the recommendations considered in the Tree Survey Plan and VMP.
- f All plans and documents are to be consistent.
- g An Integrated Development Application is required if any of the following additional approvals are needed to allow the development:
- i Controlled Activity Approval issued under the *Water Management Act 2000*;
 - ii Permit issued under the *Fisheries Management Act 1994*;
 - iii Aboriginal Heritage Impact Permit issued under the *National Parks and Wildlife Act 1974*.

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DEFINITIONS

Adjacent to any Category 1, Category 2 or Category 3 watercourse: Means land within the width of the riparian corridor for the relevant watercourse category as set out in section 9.2 plus an additional ten metres landward away from the outer edge of the riparian corridor.

Adjacent to the bed or bank of any mapped watercourse: Means land within the width of the riparian corridor for the relevant watercourse category as set out in section 9.2 plus an additional ten metres landward away from the outer edge of the riparian corridor.

Channel width: The perpendicular width between the top of bank on each side of a watercourse.

Compensatory riparian restoration: Restoration work with locally indigenous plant species on an area of riparian land located on Council owned land within the same catchment that is generally of similar size as the difference in square metres between the riparian corridor width provided as part of critical public road bridge design, and what would have been required by Table 1 were it not for the exemption provided by clause 9.6.

Core riparian zone (CRZ): Means the minimum land space measured from the top of the highest bank to be fully vegetated with well-structured local provenance native vegetation (including trees, shrubs and groundcovers). Refer to Figure 1.

Essential infrastructure services: Infrastructure services that are essential for the social and economic wellbeing of the community as determined by Council or State authority or utility provider.

Essential watercourse crossings for public road infrastructure: Watercourse crossings identified within the current West Dapto Development Contributions Plan or within Chapter D16 of the Wollongong Development Control Plan 2009 or adopted as part of a Council endorsed Neighbourhood Plan or Planning Proposal.

Low flow channel: The channel within a watercourse in which water is contained during periods of dry weather, base or environmental flow when the watercourse is not in flood. The low flow is usually not constant but varies with groundwater levels and long term weather conditions.

Non-essential infrastructure services: Infrastructure services that are not essential for the social and economic wellbeing of the community as determined by Council or State authority or utility provider.

Non-essential watercourse crossings for public road infrastructure: Watercourse crossings not identified within the current West Dapto Development Contributions Plan and not identified within Chapter D16 of the Wollongong Development Control Plan 2009 and not adopted as part of a Council endorsed Neighbourhood Plan or Planning Proposal.

Riparian corridor: Refers to any land (and its associated vegetation) that adjoins, directly influences, or is influenced by a watercourse. Its outer limit is measured from the top of a watercourse bank away from the watercourse centreline. It includes a core riparian zone (CRZ) and a vegetated buffer.

Riparian vegetation: Is vegetation that grows within the riparian corridor including on water surfaces, below water surfaces, on watercourse banks, and along the edges of watercourses.

Soft engineering: The practice of using sustainable ecological principles and natural elements to resolve a situation and minimise the impact on the environment. This may include the use of vegetation and stones or other natural materials to stabilise or reduce the erosion of a watercourse bank and soften or enhance the watercourse aesthetic.

Top of bank or highest bank: Is where the channel changes to the floodplain.

Utility infrastructure: Infrastructure required for the provision of water, electricity, sewerage and telecommunications services.

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Vegetated buffer: A vegetated buffer extends an additional 10m from the CRZ and applies to Category 1 and 2 watercourses. The vegetated buffer serves to protect the CRZ from edge effects such as weed invasion, micro-climate changes, litter, trampling and pollution.

Waterbody (artificial): 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.

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 channel with bed and banks, but does not include a waterbody (artificial).