2011

Maitland Development Control Plan

Part B

Environmental Guidelines

Part B – Environmental Guidelines

Contents

B.1 – Introduction

This Part of the DCP contains specific environmental guidelines for matters that are relevant to the Maitland Local Government Area. Some of the sections contained in this Part will assist the general public in the pre-planning or site analysis work that is required before the design phase of a development, such as the section on Vegetation Management. Other sections will assist in the design process, requiring an environmental outcome in the planning phase of an overall project.

NOTE: This section must be read in conjunction with the remaining section of this DCP.

B.2 – Domestic Stormwater

Application

This section applies to all new development where stormwater is generated from roofs of domestic and ancillary buildings and hardstand areas such as driveways, patios, compacted gravel areas and the like on land within the Maitland Local Government Area where residential development is permitted with consent. For larger developments and intensifications of dwellings/lots there may be additional requirements such as those listed in Part C.

Objectives

- To ensure that compliance with BASIX objectives and requirements are achieved.
- To ensure that an acceptable standard of water quality is maintained within storm water lines and rain water storage tanks.
- To ensure the most suitable rainwater storage method is employed pursuant to the relevant site conditions, including health and safety aspects of the storage installation.
- To ensure the method of laying storm water lines is in accordance with the relevant Australian Standard, (AS/NZS 3500.3:2021).
- To ensure that storm water discharge points at kerbs and inter-allotment drainage pits are of an acceptable standard and location.

Performance criteria

The objectives of this plan may be achieved by compliance with the following criteria:

1. **Retention capacity.** For each new dwelling development, the storm water retention capacity is to be in accordance with the BASIX requirements in regard to the designated roof area to be employed for catchment. This means the required roof area catchment shall be adequately served by sufficient downpipes directing flows to the tank and equally sufficient discharge via overflow lines.

2. **Location of feed lines.** All feed storm water lines shall be of 100mm sewer grade PVC. The PVC pipes and components shall be handled and joined in accordance with AS/NZS 2032:2006.

   Storm water lines shall be located away from the foundation/s of the building/s. Storm water lines shall have a minimum of 300mm ground cover.

   The configuration of the charged stormwater line to rainwater tanks shall be such

that the initial flow into the line is directed to the lowest flush point, (refer figs 1 & 3).

Charged stormwater lines shall be laid so that a flush point is provided at finished ground level at the lowest point of the charged line. This flush point is required in addition to any first flush provided in the lines directed to the tank. The purpose of the flush point is to enable simple access to the charged line by the property owner to facilitate periodic draining of the charged line so as to avoid accumulative contamination of the charged line/s. Ideally the flush point should be located where discharge can disperse onto grassed area, gardens or rubble pit. The flush point is to be provided with permanent signage to indicate the purpose of the flush point (refer fig 1).

3. **Rain water tanks.** On-site rainwater tanks shall be constructed of an approved material. Preference should orientate toward lighter colours for the exterior of the tank where the tank is located above ground. All exposed PVC stormwater lines shall be painted with a U.V resistant paint. The tank shall be located so as not to compromise fire separation of buildings or access to the exterior of buildings.

   Sub surface detention systems are not acceptable as a method of rainwater storage for the purpose of non-potable domestic use. This means on site storm water *detention* systems are not to be used for the purpose of BASIX compliance unless the installation of the underground detention is specifically designed as on-site detention and subsequently approved by Council.

   Above ground tank installation should be the preferred method of rainwater storage and shall be provided with an adequate reinforced concrete slab for support or a base in accordance with the tank manufacturer's recommendation.

   Piering below the slab may be required and will depend upon site conditions.

   The tank manufacturer's recommendations are to be followed where a substrate material is required between the underside of the tank and the concrete slab.

   Bases for supporting tanks shall provide adequate provision to disperse water away from the building and avoid accumulated moisture build up around the tank area.

   Underground tank installation is not acceptable where sufficient fall from the tank overflow to the street or inter-allotment drainage (IAD) infrastructure is not achievable.

   The minimum gradient (fall) from the tank overflow to the discharge point shall be 1:100 measured at the invert at the (underground) tank overflow and the invert of the discharge point. The overflow from (above ground) tanks shall achieve the same fall of 1:100.

Where overflow lines serve underground tanks, backflow prevention devices are to be provided within the overflow line to deny the re- entry of flood water and vermin. (Refer fig 7).

4. ***Configuration of stormwater lines.*** Stormwater lines shall be laid in a configuration that directs the initial flow to the lowest discharge point. All lines shall be laid with fall to the lowest (flush) point.

   Stormwater lines laid that are not level or with fall to the flush point will not be acceptable (refer fig 5).

   The overflow line should be of sufficient capacity to permit discharge without overflow from the tank itself occurring.

   Stormwater management plans shall be prepared by the applicant to be lodged with the Development Application. The stormwater management plan shall consist of the following:

   (i) RL's of the kerb, tank location and flush point.

   (ii) A site plan depicting the proposed location of the stormwater lines, the location of the flush point and the proposed location of the rainwater tank. The rainwater tank will be clearly marked as in-ground, above ground, or erected on a tank stand. The tank location should also indicate the proposed location of the weather-proof GPO (general power outlet) and pump.

5. ***Stormwater lines over Council's nature strip.*** Stormwater lines laid across the Council nature strip shall be 100mm sewer grade PVC and achieve 300mm cover where possible. Where the line approaches the kerb, a 15^{o} fitting shall be provided to enable the line to maintain the required coverage and angle up towards the kerb outlet fitting. The kerb outlet fitting shall be a pre-cast alloy or aluminium fitting with the rear (footpath side) of the fitting adequately concreted around the connection. (Refer fig 6). The kerb fitting should be either cut as low into the kerb as possible to provide maximum concrete cover, or neatly flush with the top of the kerb with no concrete cover.

6. ***Stormwater generated from hardstand areas.*** Stormwater that is generated from overland flow and hardstand areas such as driveways, shall be directed to the tank overflow line to discharge to the street, rubble drain or IAD pit as applicable. This stormwater drainage is acceptable in 90mm PVC but must not inter-connect with any line directed to the rainwater storage. This means that any overland flows intercepted by grates, spoon drains and the like must discharge directly through overflow lines and not be permitted to enter the tank storage. It is recommended that this line be independent of all stormwater lines interconnected to the tank feed/discharge.

7. ***Mosquitoes.*** Adequate provision shall be made to ensure all stored rainwater in

charged lines and the tank/s is protected from mosquito infestation and subsequent breeding.

Figures

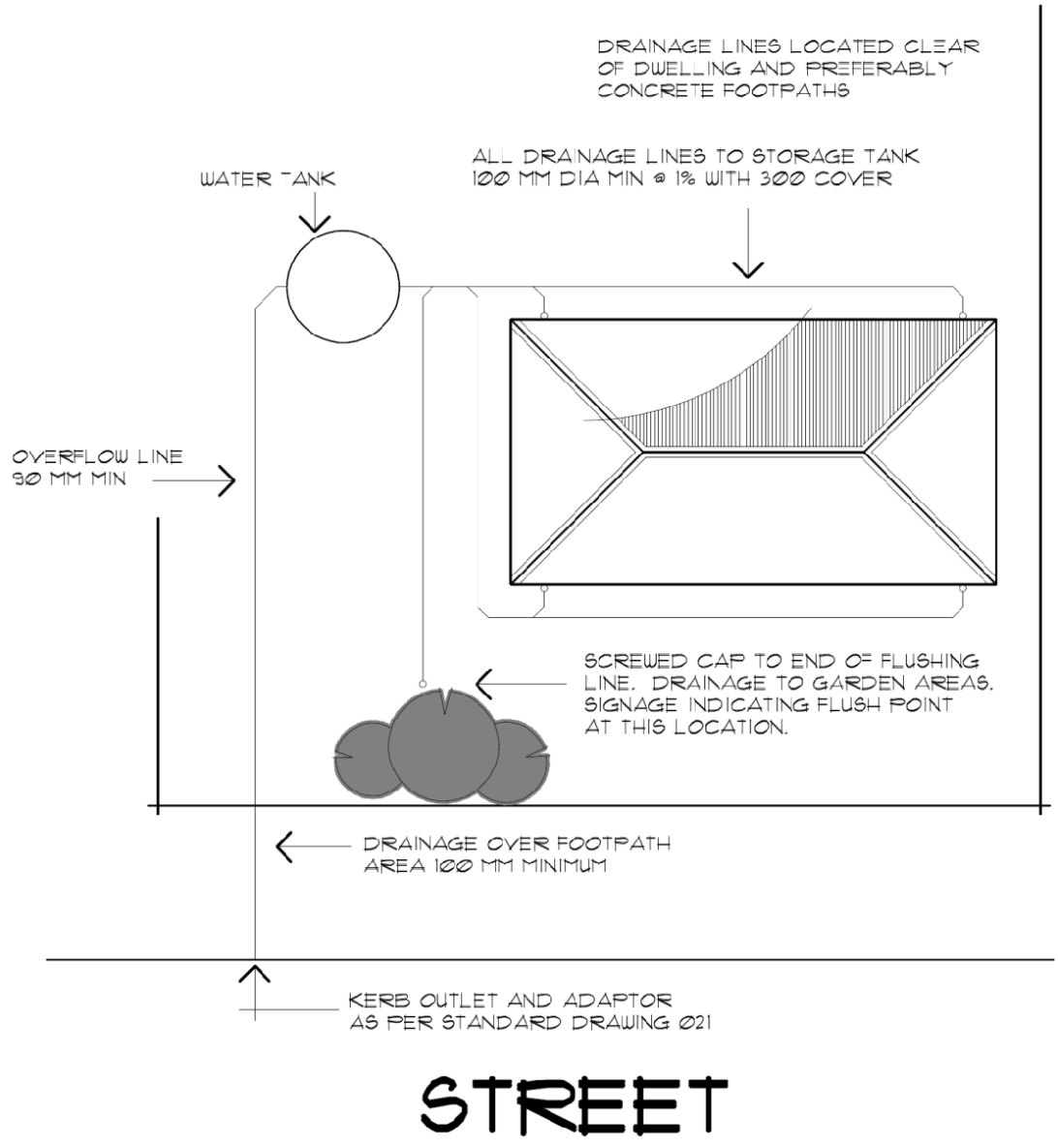
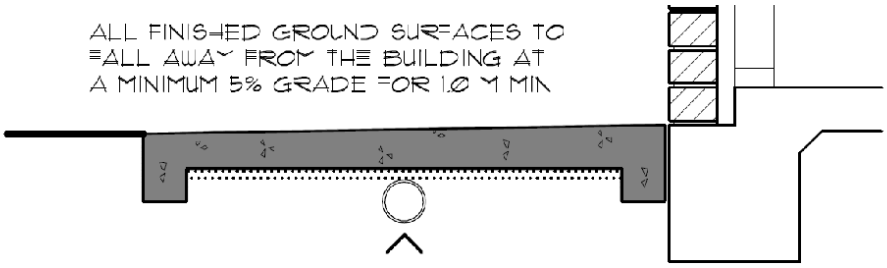


FIGURE 1. PREFERRED DRAINAGE LOCATION PIPELINE LOCATED CLEAR OF PATHWAYS



WHERE DRAINAGE LAIN BELOW PERIMETER FOOTPATH ENSURE 25 MM SAND LAYER BETWEEN TOP OF PIPE AND UNDERSIDE OF SLAB. AT EDGES ENSURE 100 MM OF SLAB EXTENDS 50 MM MIN INTO NATURAL GROUND.

FIGURE 2. SECTION SHOWING LOCATION OF DRAINAGE BELOW CONCRETE PATH

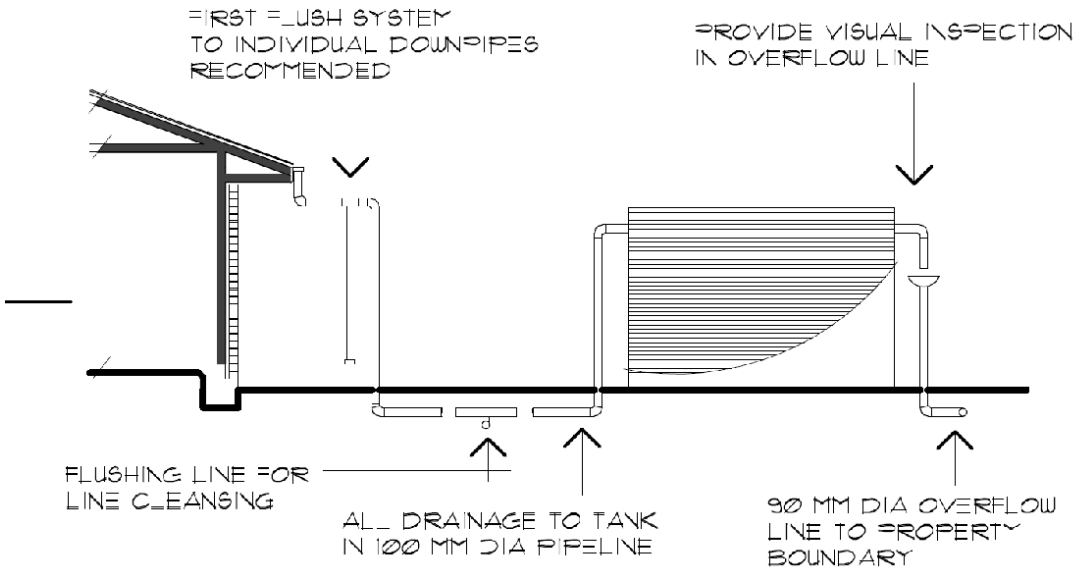
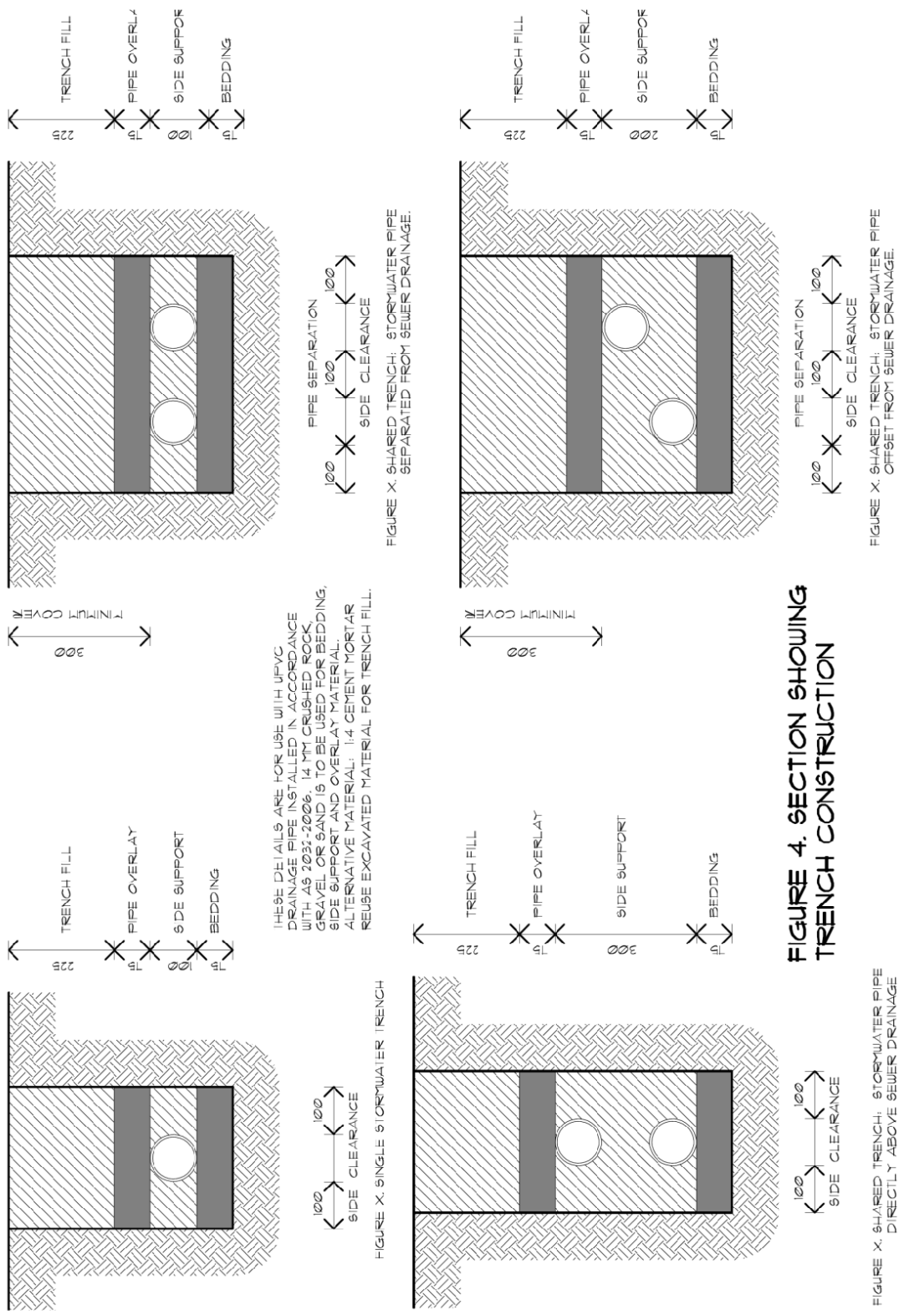


FIGURE 3. DRAINAGE SECTION DOWNPIPE TO WATER TANK OVERFLOW



THESE DETAILS ARE FOR USE WITH UPVC DRAINAGE PIPE INSTALLED IN ACCORDANCE WITH AS 2032-2006. 14 MM CRUSHED ROCK, GRAVEL OR SAND IS TO BE USED FOR BEDDING, SIDE SUPPORT AND OVERLAY MATERIAL. ALTERNATIVE MATERIAL: 1:4 CEMENT MORTAR REUSE EXCAVATED MATERIAL FOR TRENCH FILL.

FIGURE X. SINGLE STORMWATER TRENCH

FIGURE X. SHARED TRENCH: STORMWATER PIPE SEPARATED FROM SEWER DRAINAGE.

FIGURE X. SHARED TRENCH: STORMWATER PIPE OFFSET FROM SEWER DRAINAGE.

FIGURE X. SHARED TRENCH: STORMWATER PIPE DIRECTLY ABOVE SEWER DRAINAGE

FIGURE 4. SECTION SHOWING TRENCH CONSTRUCTION

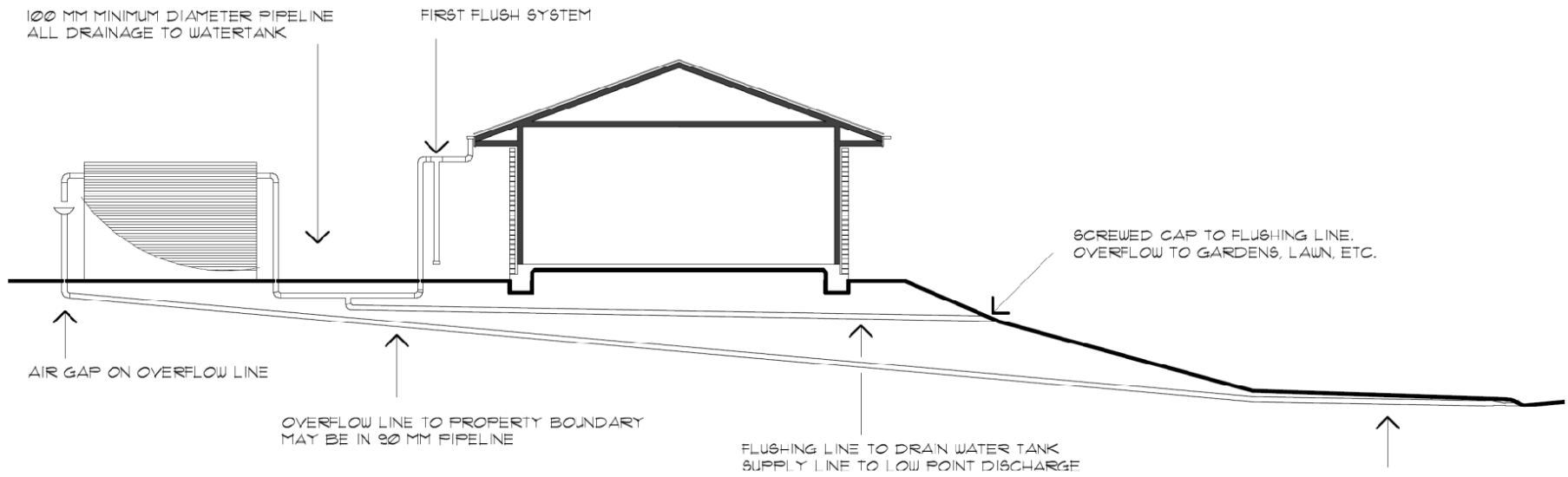


FIGURE 5. SECTION SHOWING DELIVERY LINE TO TANK AND OVERFLOW LINE TO KERB

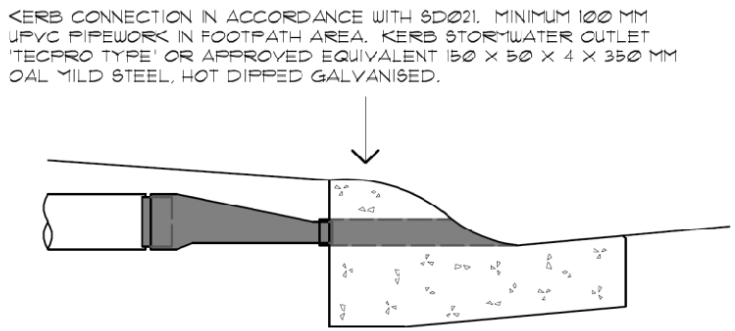


FIGURE 6. SECTION SHOWING KERB CONNECTION

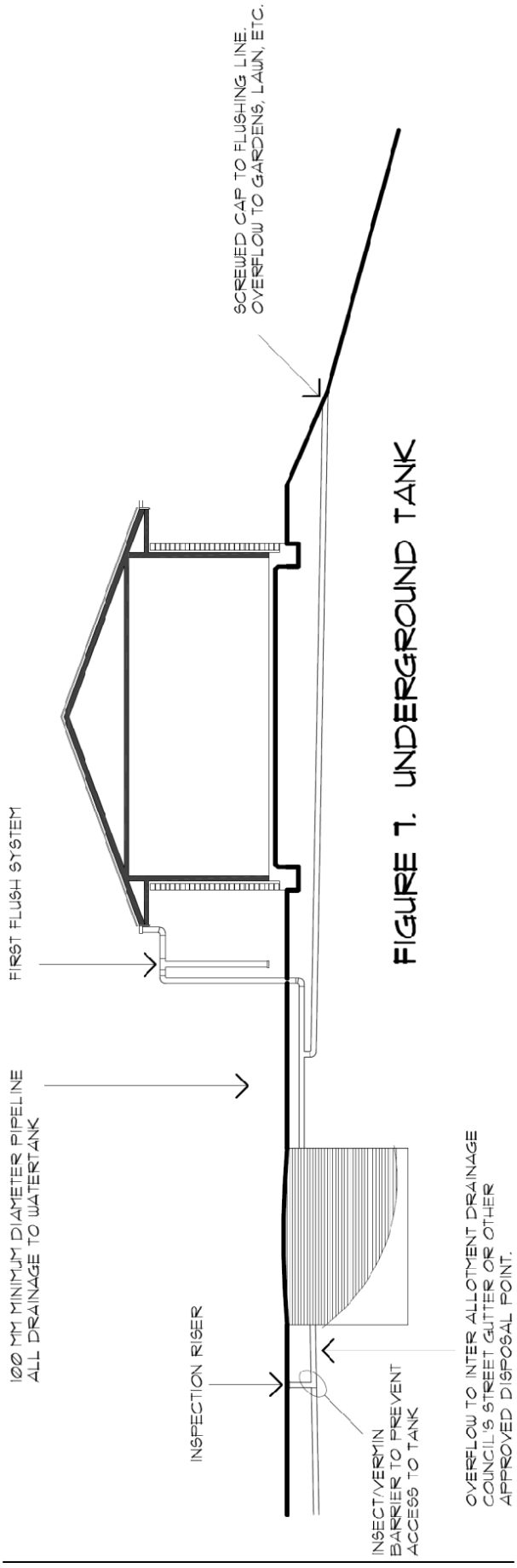
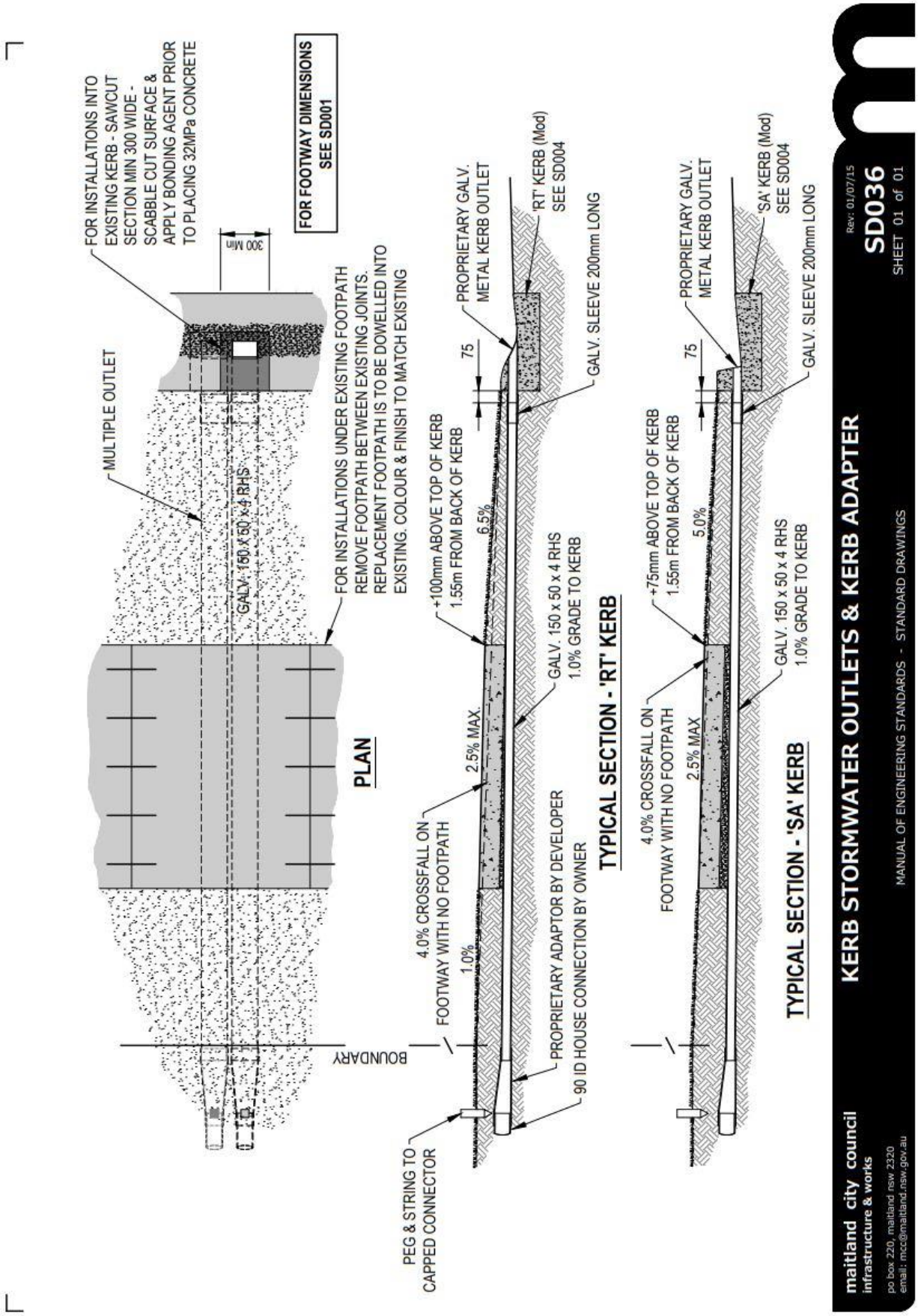


FIGURE 7. UNDERGROUND TANK


FOR INSTALLATIONS INTO EXISTING KERB - SAWCUT SECTION MIN 300 WIDE - SCABBLE CUT SURFACE & APPLY BONDING AGENT PRIOR TO PLACING 32MPa CONCRETE
FOR FOOTWAY DIMENSIONS SEE SD001
300 Min
MULTIPLE OUTLET
GALV. 150 X 50 x 4 RHS
FOR INSTALLATIONS UNDER EXISTING FOOTPATH REMOVE FOOTPATH BETWEEN EXISTING JOINTS. REPLACEMENT FOOTPATH IS TO BE DOWELLED INTO EXISTING. COLOUR & FINISH TO MATCH EXISTING
PLAN
BOUNDARY
PEG & STRING TO CAPPED CONNECTOR
4.0% CROSSFALL ON FOOTWAY WITH NO FOOTPATH
1.0%
+100mm ABOVE TOP OF KERB 1.55m FROM BACK OF KERB
2.5% MAX.
6.5%
75
PROPRIETARY GALV. METAL KERB OUTLET
'RT' KERB (Mod) SEE SD004
GALV. SLEEVE 200mm LONG
GALV. 150 x 50 x 4 RHS 1.0% GRADE TO KERB
PROPRIETARY ADAPTOR BY DEVELOPER
90 ID HOUSE CONNECTION BY OWNER
TYPICAL SECTION - 'RT' KERB
4.0% CROSSFALL ON FOOTWAY WITH NO FOOTPATH
+75mm ABOVE TOP OF KERB 1.55m FROM BACK OF KERB
2.5% MAX.
5.0%
75
PROPRIETARY GALV. METAL KERB OUTLET
'SA' KERB (Mod) SEE SD004
GALV. SLEEVE 200mm LONG
GALV. 150 x 50 x 4 RHS 1.0% GRADE TO KERB
TYPICAL SECTION - 'SA' KERB
maitland city council
infrastructure & works
po box 220, maitland nsw 2320
email: mcc@maitland.nsw.gov.au
KERB STORMWATER OUTLETS & KERB ADAPTER
MANUAL OF ENGINEERING STANDARDS - STANDARD DRAWINGS
Rev: 01/07/15
SD036
SHEET 01 of 01

References

AS 2870-2011 Residential Slabs & Footings-Construction

AS/NZS 2032-2006 Installation of PVC Pipe Systems

AS/NZS 3500.3.2021 Plumbing & Drainage Part 3, Storm water drainage

HB 230-2008 Rainwater Tank Design & Installation Handbook

B.3 – Hunter River Floodplain

Introduction

There are risks associated with the use of the floodplain or physical works and structures in the floodplain. The *Maitland Local Environmental Plan 2011* and this DCP section identify controls for managing the development of flood prone land. In the event of any inconsistency between this DCP section and the LEP, the LEP will prevail to the extent of the inconsistency.

Under the *Local Government Act 1993*, the management of flood prone land is primarily the responsibility of local governments. Local governments are required to implement the provisions of the NSW Government's Flood Prone Land Policy and associated NSW Floodplain Development Manual 2005.

The onus is on the proponent to provide an adequate level of information to support any development on land below the FPL. The Council will require a Statement of Environmental Effects (or an Environmental Impact Statement if the proposal is designated development) justifying the development in its location.

1. Application of section

Maitland LEP 2011 clause 5.21 Flood planning, associated Flood Planning Map and also any additional mapping that may be adopted by the Council for the purposes of defining the flood planning area specifies the land to which this section applies.

This section also applies to critical infrastructure and facilities within the Probable Maximum Flood (PMF) area.

NOTE: This DCP section does not apply to areas affected by flooding from local drainage.

2. Flood hazards, costs, and risks to life

2.1 Development below the Flood Planning Level (FPL)

Objectives

- The proposal is supported by adequate information to assess the impact of the proposal on flood behaviour, the environment, flood affectation and risk to life and

property associated with the use of land.

Development controls

1. An application for development below the FPL must demonstrate:
   a. the proposed development will not increase the flood hazard or flood damage or adversely increase flood affectation on other properties, as assessed by a suitably qualified hydraulic engineer;
   b. the design of the proposed development is such that the risks of structural failure or damage in the event of flooding (including damage to other property) up to the FPL would be minimal, as assessed by a suitably qualified structural engineer;
   c. the proposed development has been designed to withstand the effects of inundation of floodwaters up to the FPL, with contents or fittings susceptible to flood damage being located above this level;
   d. if levees are proposed to protect a development, the impact of the levees on flood behaviour must be assessed and the habitable floor level of the proposed development behind the levee must still be set at or above the FPL (assuming no levee is in place);
   e. the proposed measures to allow the timely, orderly and safe evacuation of people from the site (these measures should be permanent and maintenance free), and the measures proposed to safeguard goods, material, plant and equipment in a flood. These measures should be compatible with the SES' Maitland City Local Flood Plan (including vol 1 The Maitland City Flood Emergency Sub Plan);
      i. in rural areas, the proposals for the evacuation of any livestock in a flood;
      ii. the measures to reduce the risks that the development will allow the accumulation and build-up of debris being carried by floodwaters (particularly associated with fences in flood liable areas);
      iii. the design complies with the Table 1: Flood Aware Design Requirements for Residential Development on Flood Prone Land (in this DCP section); and
      iv. Details of any proposed filling to be provided.
2. Survey plans shall be dimensioned in metres with levels to Australian Height Datum (AHD), prepared and signed by a Registered Surveyor.
3. The type and extent of survey information likely to be required to support a development in a flood liable area is as follows:
   a. the location of the site relative to other features such as roads, bridges, etc;
   b. the assessed flood levels at the site (for the 1:100 ARI as a minimum and PMF where critical infrastructure is proposed), the origin of that level and how it was derived;
   c. the position of existing buildings (if any) and proposed buildings and works on the site;
   d. the existing and proposed floor levels of buildings on the site;
   e. the existing ground levels around all existing buildings on the site, or if the site is vacant, ground levels on the site and on adjacent properties within approximately 30 metres of the boundary of the site;
   f. the locations should be shown of any structure of the Hunter Flood Mitigation

Scheme (such as levee banks, spillways, floodgates etc.), which are inside or within 100 metres of the subject property site; and

g. the position and floor and ground levels of buildings on adjacent properties, and the use of the properties within 100 metres of the subject site.

2.2 Development in Floodways

Objectives

- To avoid significant adverse impacts on flood behaviour and the environment.
- To ensure development does not increase flood affectation elsewhere on the floodplain.
- To minimise the flood risk to life and property associated with the use of land.
- To ensure the integrity of the Hunter Valley Flood Mitigation Scheme is protected.

Development Controls

1. No building or structure is to be erected on land identified as floodway on the Hydraulic Category Maps.
2. No fill is permitted on land identified as floodway on the Hydraulic Category Maps.
3. Minor alterations to ground levels associated with surface treatments, below ground structures, or minor landscaping are permitted provided they do not alter the flow distribution or flood behaviour within the floodway.
4. New development shall be designed to avoid fences in floodways.
5. Where dividing fences across floodways are unavoidable, they are to be constructed only of open type fencing that does not restrict the flow of flood waters. The fencing design should be resistant to blockage or designed to be collapsible under heavy flood loadings.
6. Flood mitigation works are permitted with consent subject to Council being satisfied that the works meet the objectives of this DCP and the Flood Risk Management Plan.

   Note: Flood mitigation works are permitted without consent under the *State Environmental Planning Policy (Transport and Infrastructure) 2021* if they are carried out by or on behalf of a public authority.
7. Development within the vicinity of Hunter Valley Flood Mitigation Scheme structures (including levees, floodgates, spillways and drains) operated by the NSW Office of Environment and Heritage are referred to that agency for concurrence in accordance with the *Water Management Act 2000*.

2.3 Filling of Flood Storage and Flood Fringe Areas

Objectives

- To avoid significant adverse impacts on flood behaviour and the environment.
- To ensure filling does not increase flood affectation elsewhere on the floodplain.
- To minimise the flood risk to life and property associated with the use of land.
- To ensure development on land that is compatible with the land's flood hazard, taking into account projected changes as a result of climate change is permitted.

Development controls

1. An application for filling within the flood storage or flood fringe areas must be supported by a fully dynamic computer flood model unless:

    a. There is no net importation of fill within the 1:100 ARI flood extent; or
    b. Filling up to 7,000m^3 or 20% of the total 1:100 ARI flood storage/flood fringe volume of the lot (whichever fill volume is lower) that;
        i. is associated with construction of a dwelling in rural zones, and
        ii. where construction of a dwelling is permitted; and
        iii. all of other flood requirements (such as evacuation) is achieved; and/or
    c. Filling up to 3,500m^3 or 10% of the total 1:100 ARI flood storage/flood fringe volume of the lot (whichever fill volume is lower) associated with construction of a mound to provide refuge for stock during floods.

2.3 General Building Requirements

These provisions apply to all development below the flood planning level.

Objectives

- To minimise the flood risk to life and property associated with the use of land.

Development Controls

1. All habitable finished floors shall be no lower than the FPL.
2. Parts of buildings and structures at or below the FPL shall be constructed in accordance with Table 1: Flood Aware Design Requirements for Residential Development on Flood Prone Land. The development shall be certified by a qualified Structural Engineer that the building has been designed to withstand the depth of inundation, buoyancy and flow velocity forces (including potential for debris impact) at the development site for a 1:100 ARI event.
3. Flood-free access shall be provided from the development to an appropriate evacuation facility (as identified in the Maitland Local Flood Plan), at the 1:20 ARI flood level or higher.
4. Provision shall be made for the safe evacuation of people from the development

in accordance with the Maitland Local Flood Plan.

5. Sufficient storage space for household effects shall be provided above the FPL.
6. Electrical fixtures such as light fittings and switches shall be sited above the FPL unless they are on a separate circuit (with earth leakage protection) to the rest of the building.
7. Requirements 1, 3, 4 and 6 do not apply to the following development:
   - The extension of an existing dwelling house by no more than 50% of its internal floor area,
   - An addition to an existing dwelling house with an area of no more than 50% of the internal floor area of that dwelling to be used for the purpose of a dual occupancy.
   - Tourist and visitor accommodation.

2.4 Multi-Storey Residential Development

Objectives

- Where new multi-storey residential buildings are proposed below the FPL they shall be designed to meet the following additional requirements.
- The flood risk to life and property associated with the use of land is minimised.
- Developments are resilient to flooding.

Development Controls

1. Development for a multi-storey residential building shall be designed and constructed in accordance with the requirements of Table 1: Flood Aware Design Requirements for Residential Development on Flood Prone Land.

2.5 Basement Car Parking

Objectives

- Minimise the flood risk to life and property associated with the use of land.

Development controls

1. Basement garages will generally only be supported where all potential water entry points are at or above the 1:100 ARI.
2. Where this cannot be achieved the following requirements are to be met:
   a. The basement should be designed so that the structural integrity of the building is not compromised if the basement is either partially or fully inundated during a flood.
   Note: A tanked (watertight) basement may not be appropriate due to buoyancy during flood inundation. It may be necessary to allow the basement to fill with water during a flood
   b. All exit points below the FPL must be able to be closed and locked to prevent

access during floods.

c. A steel mesh gate should be used for the vehicle entry/exit points to allow the in-flow of floodwaters.
d. All services (electricity, water, fire, air conditioning etc.) must be designed to prevent damage up to the FPL.
e. At least one stair well from the basement should extend to at least the FPL. This exit should have a lockable entry but be able to be opened from the basement side (as with a fire door).
f. The owner(s) of the building should consult with the SES to determine the most appropriate mechanisms for evacuation/management of the basement car park where the projected flood level would result in its inundation.

2.6 Additions and Renovations

Objectives

- Minimise the flood risk to life and property associated with the use of land.
- Investment in works that provide future protection of the dwelling against flood is encouraged.

Development controls

1. All applications for renovations and additions are encouraged to comply with the General building requirements.
2. In deciding whether to support an application for additions and/or renovations of the existing floor area below the FPL, Council will consider whether the renovations, additions and alterations are likely to significantly add to the life span of the residential building and its exposure to future flood impacts.
3. Proposals for additions and renovations will be required to comply with the General building requirements in the following circumstances:
    a. following a flood event where there has been inundation of the dwelling necessitating the removal and replacement of external and/or internal cladding material; or
    b. following a flood event where there has been structural compromise to the dwelling which requires remediation; or
    c. there is a proposal to increase the enclosed habitable floor space of the dwelling by more than 50%; or
    d. there is a proposal to undertake major renovations to the dwelling (e.g. Re-piering, exterior re-cladding, internal re-lining); or
    e. the proposed works have the potential to impact on flood behaviour.

2.7 House Raising and Flood Proofing

Objectives

- House raising and flood proofing works do not adversely impact on the existing streetscape.

Development controls

1. The development will require assessment against the residential design provisions in this DCP.
2. In assessing an application for house raising or flood proofing, Council will consider the impacts of the works on the streetscape.
3. In heritage conservation areas the proposal must address the relevant provisions relating to heritage conservation.

2.8 Critical Infrastructure and Facilities

Objectives

- Key infrastructure is protected from floods greater than a 1:100 ARI flood event.
- Effective emergency response is maintained during a greater than a 1:100 ARI flood event.

Development controls

1. The following developments are unlikely to be supported on land below the PMF:
    a. hospitals and ancillary services
    b. regional communication centres
    c. State Emergency Services stations
    d. sewage plants
    e. electricity plants or substations unless the plant is designed for controlled failure or shut-off when flooding occurs
    f. installations containing control equipment for critical infrastructure; and
    g. operational centres for flood emergency response.

2.9 Mitigating Circumstances

Objectives

- Merit-based assessment of a development is available only in extenuating circumstances.

Development controls

1. Council may consent to a development[3] where:
    a. The land use is permitted in the zone; and
    b. Full compliance with the flood-related development controls is impossible or unreasonable.

    Note: Examples of circumstances where an alternative merits-based assessment may be considered include:

    Rural Dwellings where:

a. *An owner is required to live on-site in order to manage an agricultural enterprise and*
b. *The dwelling is located on the landholding on which the major operational part of the enterprise is located; and*
c. *A dwelling is permitted on the land*

2. Any application will be subject to a comprehensive merits-based assessment against the objectives of the DCP and Clause 7.3 of the LEP.
3. Any application under this clause must be supported by detailed justification including any relevant studies.

Table 1: Flood Aware Design Requirements for Residential Development on Flood Prone Land.

BUILDING ELEMENT **Part of Building Below the FPL**	REQUIREMENT	NOTES
Ground Floor Levels		
Ground floor levels to be established a minimum of 300mm above natural ground level	Mandatory	• Provides some protection against low level more frequent flooding. • Enables creation of deep wall cavity below finished floor level for silt entrapment. • Provides for improved design response in heritage conservation areas.
Ground Floor Construction		
Concrete slab on ground	Preferred	• In areas of high silt deposition use a deeper slab rebate (minimum 2 bricks high) to hold more silt without it bridging the wall cavity.
Infill concrete slab	Preferred	• This method allows for a higher ground floor level to provide increased protection against inundation from low level, more frequent flooding. A deeper slab rebate is still recommended.
Ground Floor Finishes		
Float-finish Concrete	Preferred	• Allows for easier post-flood cleaning / hose-down.
Walls (external)		
Cavity brick	Preferred	• Provide for ingress of water to balance hydrostatic forces inside and outside the walls via vents and flaps (which are compatible with energy conservation requirements). • Include openings into cavity brick walls to facilitate removal of silt from the cavity.
Solid concrete (tilt panel or formed in situ)	Acceptable	• Provide for ingress of water as above. • External surface of solid concrete walls may require architectural detailing (eg. horizontal fillet lines) particularly if the building is being located within a heritage conservation area.
Walls (internal)		
Cavity brick	Preferred	• These materials provide good structural performance when subject to inundation and facilitate easier post-flood clean-up.
Single skin brick	Preferred	
Solid concrete (tilt panel or formed in situ)	Acceptable	

Building Element	Requirement	Notes
Wall finishes		
Exposed face brick	Preferred	• Rendering/ painting of masonry walls is acceptable however painting of walls may lead to increased dry-out time and the need for repainting.
Rendered/bagged finish – painted	Preferred	
Stairs (internal)		
Open stair treads in solid hardwood timber Minimum stair width 1000mm	Mandatory	• Solid timber hardwood treads better suited to immersion. • Stairway width to be suitable for ease of movement of personal belongings to first floor level in preparation for a major flood event.
Doors		
Solid core (external)	Preferred	• Solid core doors have generally improved response to immersion. • Hollow core doors should only be used in conjunction with removable hinges to allow them to be easily relocated to the first floor in a flooding scenario.
Solid core internal or hollow core on removable hinges	Preferred	
Windows		
Aluminium framing	Mandatory	• In heritage conservation areas wide commercial/semi-commercial frame sections to be used to resemble painted timber window treatment.
Ground Floor Cabinetry (for non-habitable spaces)		
Removable vanity cabinet	Preferred	• The cost of flooding can be further reduced if joinery items located on the ground floor can be relocated to the first floor in advance of inundation. • Ensure that flood resistant materials are used in cabinet construction.
Removable laundry cabinet(s)	Preferred	
Storage cupboards to be removable	Preferred	
Electrical Services		
Elevate switchboard as high as possible at exterior of building.	Mandatory	• Consult with electrical service provider to ensure that height of meter box is consistent with its requirements.
Ensure wiring is located as far as practicable within the roof space and as high as possible within walls.		• Ensure that all electrical design and installation is undertaken by licenced contractors and that all relevant design and installation standards are complied with.
Where possible all cable runs should be one length to avoid the	Mandatory	• Ensure that all electrical design and

Building Element	Requirement	Notes
need for electrical junction boxes.		installation is undertaken by licenced contractors and that all relevant design and installation standards are complied with.
Power points should be elevated to at least 600mm above ground floor level to provide some measure of protection against more frequent inundation.		
For two-storey construction lighting and power for each floor should be provided in separate circuits.		
Earth Leakage protection should be provided to all circuits.		
Conduits should be installed to allow free drainage as floodwater recedes.		
Expensive fixed electrical equipment such as air-conditioners and hot water systems should be mounted high to reduce the chance of inundation.		• These types of equipment should be located at the rear of buildings where they are not visible to the public domain and screened.
External Water Tanks		
Above ground	Preferred	• Ensure that tank is located directly adjacent to external wall of building. • Ensure that tank is appropriately fixed to mass concrete foundation to protect against buoyancy forces. • Ensure that all stormwater lead-in pipes are 'snug-fit' against building and tank.
Below ground	Preferred	• Ensure that tank is appropriately anchored to resist buoyancy forces resulting from subsurface waterlogging. • Ensure that all stormwater lead-in pipes are 'snug-fit' against building and buried to appropriate depth.

Building Element **Part of Building Above the FPL**	Requirement	Notes
First Floor Levels[4]		
First floor levels to be established at or above the relevant flood planning level (FPL) for the site.	Mandatory	• Ensures a higher order of protection for a • significant part of the structure in the 1:100 • ARI flood event. Provides for storage of all ground floor furnishings and personal effects above the 1:100 ARI. Provides opportunity for residents to take refuge above the 1:100 ARI event until evacuation occurs.
First floor frame / structure		
Suspended concrete	Preferred	Offers best performance in inundation event
Solid sawn timber frame	Acceptable	Ensure drying to prevent decay – in some cases this might involve removal of ceiling to lower floor. Allow for some loss of load bearing capacity when saturated. Ensure adequate blocking to provide extra restraint and resist distortion. Ensure good ventilation of enclosed areas to reduce the risk of timber decay. Ensure use of either galvanised or stainless steel fasteners
Manufactured engineered beams	Acceptable	
Ground floor ceiling		
Fibre cement sheeting (e.g. villaboard)	Preferred	• In some cases removal of ceiling may be required to assist in drying of floor /ceiling framing. • Under-floor thermal or noise insulation should be avoided where possible. If inundation occurs it should be removed post-flood to assist drying.
First Floor Flooring		
Suspended concrete floor	Preferred	• Offers best performance in inundation event
Fibre cement sheeting	Preferred	• In these cases it is important that the floor framing be exposed post-flood to enable structural timbers to dry out.
Select plywood flooring with	Acceptable	

---

[4] Although the following components of the building will be at a level above the 1:100 ARI event the following construction requirements will nonetheless provide improved performance in inundation events that may be caused by wave action or for events that exceed the 1:100 ARI scenario. Other requirements apply to evacuation planning that must be undertaken to cater for a 1:100 ARI flood.

Building Element	Requirement	Notes
waterproof glue bond		
Walls to Upper Floors (external)		
Cavity brick	Preferred	• Offers best performance in inundation event and can be constructed as a vertical extension to the ground floor cavity brick walls.
Brick veneer - timber framing	Preferred	• In these cases it is important that the wall framing (in whole or in part, be exposed post-flood to enable structural timbers to dry out – this usually involves removal of the lower section of internal wall sheeting. • Providing a 20-30mm gap between the bottom plate and the internal wall sheeting will provide access for cleaning the wall cavity and ventilation following a flood. • Ensure use of either galvanised or stainless steel fasteners.
Brick Veneer - steel framing	Preferred	• In these cases it is important that the wall framing (in whole or in part, be exposed post-flood to ensure that the steel frame sections are not ponding any water – this usually involves removal of the lower section of internal wall sheeting. • Holes will need to be drilled in the sides of the bottom plate channel to allow the channel to drain after a flood. • Providing a 20-30mm gap between the bottom plate and the internal wall sheeting will provide access for cleaning the wall cavity and ventilation following a flood.
Clad frame - timber	Acceptable	• In these cases it is important that the wall framing (in whole or in part, be exposed post-flood to enable structural timbers to dry out – this usually involves removal of the lower section of external/internal wall sheeting. • Providing a 20-30mm gap between the bottom plate and the internal wall sheeting will provide access for cleaning the wall cavity and ventilation following a flood. • External cladding material should perform satisfactorily when subject to inundation.

Building Element	Requirement	Notes
		Sheeting that requires joints to be 'set' may need to be reset following inundation and dry-out. • Ensure use of either galvanised or stainless steel fasteners
Clad Frame - steel	Acceptable	• In these cases it is important that the wall framing (in whole or in part, be exposed post-flood to ensure that the steel frame sections are not ponding any water – this usually involves removal of the lower section of external/internal wall sheeting. • Holes will need to be drilled in the sides of the bottom plate channel to allow the channel to drain after a flood. • Providing a 20-30mm gap between the bottom plate and the internal wall sheeting will provide access for cleaning the wall cavity and ventilation following a flood. • External cladding material should perform satisfactorily when subject to inundation. Sheeting that requires joints to be 'set' may need to be reset following inundation and dry-out.
Insulation	Preferred	• Wall insulation should comprise a non-absorbent material such as polystyrene panel.
Frame connections	Preferred	• Use flood compatible wall plate connectors and brick ties to strengthen structure.
Walls to Upper Floors (internal)		
Solid brick / masonry	Preferred	• Offers best performance in inundation event • Usually only used where first floor is suspended concrete or where the upper floor walls sit directly above lower floor walls.
Frame - timber	Acceptable	• Internal linings should be horizontally jointed to allow for removal of lower section of wall lining to allow for drying of frame. The use of an alternative material to gyprock for the lower half of internal walls –fibre cement based products such as profiled panelling which is screw fixed are recommended – to enable these to be more easily removed.

Building Element	Requirement	Notes
		• Providing a 20-30mm gap between the bottom plate and the internal wall sheeting will provide access for cleaning the wall cavity and ventilation following a flood. • Sheeting that requires joints to be 'set' may need to be reset following inundation and dry-out.
Frame - steel	Acceptable	• Internal linings should be horizontally jointed to allow for removal of lower section of wall lining to allow for drying of frame. The use of an alternative material to gyprock for the lower half of internal walls – fibre cement based products such as profiled panelling which is screw fixed are recommended – to enable these to be more easily removed. • Holes will need to be drilled in the sides of the bottom plate channel to allow the channel to drain after a flood. • Providing a 20-30mm gap between the bottom plate and the internal wall sheeting will provide access for cleaning the wall cavity and ventilation following a flood. • Sheeting that requires joints to be 'set' may need to be reset following inundation and dry-out.
Evacuation Point		
Provision of street facing verandah or balcony at first floor level.	Mandatory	• Street facing evacuation point makes it easier for emergency rescue personnel to identify and access residents in need to evacuation.
Provide external stairs (minimum 1000mm in width) towards front of dwelling to facilitate easier evacuation.	Preferred	• An external staircase located on the street elevation of the building connecting the ground floor level to a first floor veranda or balcony can provide improved evacuation opportunity in a larger flood event when there is substantial inundation of the ground floor. *Note: This may not be possible in heritage conservation areas where the design needs to integrate with streetscape.* • Stairway to comprise open, solid hardwood timber treads better suited to immersion.

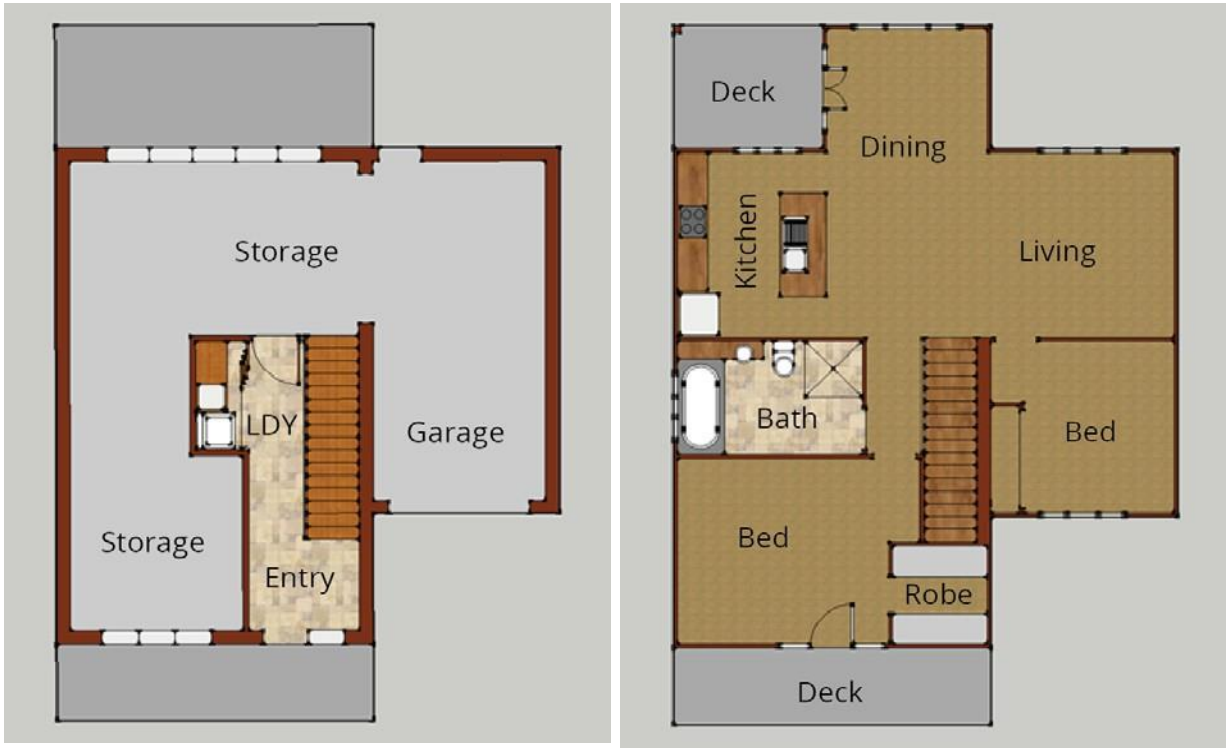


Figure 1: New Residential Development on Flood Prone Land: All habitable floor space located above the FPL. Ground floor area nominated for use as garaging and/or storage (non-habitable space).

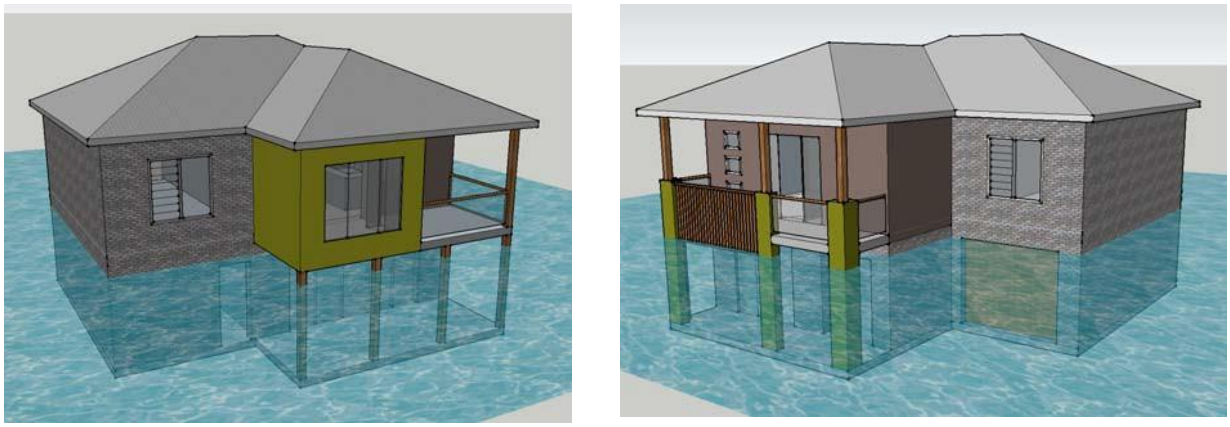


Figure 2: Typical elevations of building with non-habitable floor space below the FPL.

Definitions

The following definitions are provided to help interpret this development control plan. These definitions do not replace the definitions of the Maitland Local Environmental Plan. Where an inconsistency exists, the definition in the LEP prevails.

Annual exceedance probability (AEP)	The chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage. For example, if a peak flood discharge of 500 m^3/s has an AEP of 5%, it means that there is a 5% chance (that is one-in-20 chance) of a 500 m^3/s or larger event occurring in any one year (see ARI).
Australian height datum (AHD)	A common national surface level datum approximately corresponding to mean sea level.
Average annual damage (AAD)	Depending on its size (or severity), each flood will cause a different amount of flood damage to a flood prone area. AAD is the average damage per year that would occur in a nominated development situation from flooding over a very long period of time.
Average recurrence interval (ARI)	The long term average number of years between the occurrence of a flood as big as, or larger than, the selected event. For example, floods with a discharge as great as, or greater than, the 20 year ARI flood event will occur on average once every 20 years. ARI is another way of expressing the likelihood of occurrence of a flood event.
Consent authority	The Council, government agency or person having the function to determine a development application for land use under the EP&A Act. The consent authority is most often the Council, however legislation or an EPI may specify a Minister or public authority (other than a Council), or the Director General of DIPNR, as having the function to determine an application.
Discharge	The rate of flow of water measured in terms of volume per unit time, for example, cubic metres per second (m^3/s). Discharge is different from the speed or velocity of flow, which is a measure of how fast the water is moving for example, metres per second (m/s).
Effective warning time	The time available after receiving advice of an impending flood and before the floodwaters prevent appropriate flood response actions being undertaken. The effective warning time is typically used to move farm equipment, move stock, raise furniture, evacuate people and transport their possessions.
Emergency management	A range of measures to manage risks to communities and the environment. In the flood context it may include measures to prevent, prepare for, respond to and recover from flooding.

Flash flooding	Flooding which is sudden and unexpected. It is often caused by sudden local or nearby heavy rainfall. Often defined as flooding which peaks within six hours of the causative rain.
Flood awareness	Flood awareness is an appreciation of the likely effects of flooding and a knowledge of the relevant flood warning, response and evacuation procedures.
Flood fringe areas	The remaining area of flood prone land after floodway and flood storage areas have been defined.
Flood liable land	Is synonymous with flood prone land. Note that the term flood liable land covers the whole of the floodplain, not just that part below the FPL (see flood planning area).
Flood mitigation structure	A levee, control bank, spillway or flood-gate forming part of the Hunter Valley Flood Mitigation Scheme, as identified on the database held by authority responsible for management of the Scheme
Floodplain	Area of land which is subject to inundation by floods up to and including the PMF event, that is, flood prone land.
Flood plan (local)	A sub-plan of a disaster plan that deals specifically with flooding. They can exist at State, Division and local levels. Local flood plans are prepared under the leadership of the State Emergency Service.
Flood planning area	The area of land below the FPL and thus subject to flood related development controls. The concept of flood planning area generally supersedes the "flood liable land" concept in the 1986 Manual.
Flood planning level (FPL)	For the purposes of this document FPL means the level of a 1:100 ARI (average recurrent interval) flood event plus a 0.5m freeboard.
Flood proofing	A combination of measures incorporated in the design, construction and alteration of individual buildings or structures subject to flooding, to reduce or eliminate flood damages.
Flood prone land	Is land susceptible to flooding by the Probable Maximum Flood (PMF) event. Flood prone land is synonymous with flood liable land.
Flood readiness	Flood readiness is an ability to react within the effective warning time.
Flood risk	Potential danger to personal safety and potential damage to property resulting from flooding. The degree of risk varies with circumstances across the full range of floods. Flood risk in this manual is divided into 3 types, existing, future and continuing risks. They are described below.

	• Existing flood risk: the risk a community is exposed to as a result of its location on the floodplain. • Future flood risk: the risk a community may be exposed to as a result of new development on the floodplain. • Continuing flood risk: the risk a community is exposed to after floodplain risk management measures have been implemented. For a town protected by levees, the continuing flood risk is the consequences of the levees being overtopped. For an area without any floodplain risk management measures, the continuing flood risk is simply the existence of its flood exposure.
Flood storage areas	Those parts of the floodplain that are important for the temporary storage of floodwaters during the passage of a flood. The extent and behaviour of flood storage areas may change with flood severity, and loss of flood storage can increase the severity of flood impacts by reducing natural flood attenuation. Hence, it is necessary to investigate a range of flood sizes before defining flood storage areas.
Floodway areas	Those areas of the floodplain where a significant discharge of water occurs during floods. They are often aligned with naturally defined channels. Floodways are areas that, even if only partially blocked, would cause a significant redistribution of flood flows, or a significant increase in flood levels.
Freeboard	Freeboard provides reasonable certainty that the risk exposure selected in deciding on a particular flood chosen as the basis for the FPL is actually provided. It is a factor of safety typically used in relation to the setting of floor levels, levee crest levels, etc. Freeboard is included in the FPL.
Habitable room	in a residential situation: a living or working area designed, constructed or adapted for activities normally associated with domestic living, such as a lounge room, dining room, rumpus room, kitchen, bedroom or workroom. A garage, storage room, laundry, lobby, bathroom or external verandah, balcony or terrace is not categorised as a habitable room. in an industrial or commercial situation: an area used for offices or to store valuable possessions susceptible to flood damage in the event of a flood.
Hazard	A source of potential harm or a situation with a potential to cause loss.
Hydraulics	Term given to the study of water flow in waterways; in particular, the evaluation of flow parameters such as water level and velocity.
Hydrograph	A graph which shows how the discharge or stage/flood level at any particular location varies with time during a flood.

Hydrology	Term given to the study of the rainfall and runoff process; in particular, the evaluation of peak flows, flow volumes and the derivation of hydrographs for a range of floods.
Local overland flooding	Inundation by local runoff rather than overbank discharge from a stream, river, estuary, lake or dam.
Local drainage	Smaller scale problems in urban areas. They are outside the definition of mainstream flooding in this glossary.
Mainstream flooding	Inundation of normally dry land occurring when water overflows the natural or artificial banks of a stream, river, estuary, lake or dam.
Mathematical/ computer models	The mathematical representation of the physical processes involved in runoff generation and stream flow. These models are often run on computers due to the complexity of the mathematical relationships between runoff, stream flow and the distribution of flows across the floodplain.
Probable maximum flood (PMF)	The PMF is the largest flood that could conceivably occur at a particular location, usually estimated from probable maximum precipitation, and where applicable, snow melt, coupled with the worst flood producing catchment conditions. Generally, it is not physically or economically possible to provide complete protection against this event. The PMF defines the extent of flood prone land, that is, the floodplain. The extent, nature and potential consequences of flooding associated with a range of events rarer than the flood used for designing mitigation works and controlling development, up to and including the PMF event should be addressed in a floodplain risk management study.
Risk	Chance of something happening that will have an impact. It is measured in terms of consequences and likelihood. In the context of the manual it is the likelihood of consequences arising from the interaction of floods, communities and the environment.
Survey plan	A plan prepared by a registered surveyor.

3. Flood maps

3.1 Flood Extent Map Series

Flood Extent Maps show the following:

1. 1:100 ARI Flood Extent (shown pale blue)
2. Flood Planning Area being the 1:100 ARI Flood Extent plus 0.5m freeboard (shown dark blue hatching); and
3. Probable Maximum Flood (PMF) extent (shown as red line).

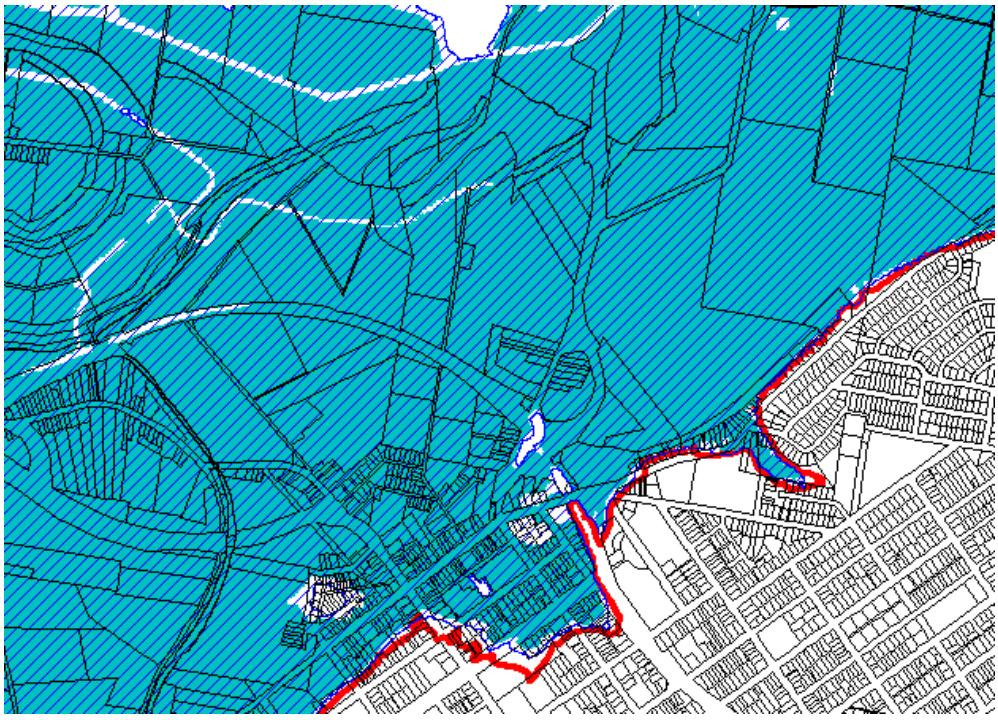


Figure 3: Example of flood extent mapping.

3.2 Flood Depth Maps Series

Flood Depth Maps show the following depth scenarios as they apply in the 1:100 ARI flood event:

1. Depth less than 0.5m (shown in blue); and
2. Depth greater than 0.5m (shown in red).

Figure 4: Example of flood depth mapping.

3.3 Flood Velocity Map Series

Flood Velocity Maps show the following velocity scenarios as they apply in the 1:100 ARI flood event:

1. Velocities less than 0.5 metres per second (shown in blue); and
2. Velocities greater than 0.5 metres per second (shown in red).

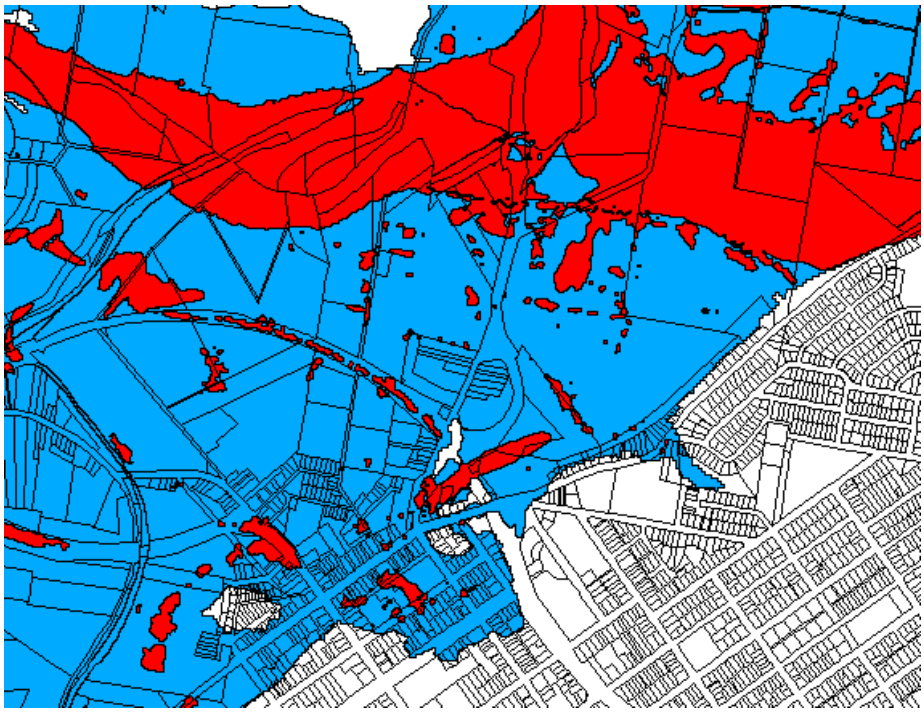


Figure 5: Example of flood velocity mapping.

3.4 Hydraulic Category Maps

Hydraulic Category Maps provide an overview of the various hydraulic categories as they apply in the 1:100 ARI flood event. There is no technical definition of hydraulic categorisation that would be suitable for all catchments, and different approaches must be used in different areas, based on the specific features of the study catchment in question. Where a proponent holds the view that the hydraulic categorisation differs from that shown on the relevant DCP map then the proponent will be responsible for having a suitably qualified consultant undertake the appropriate modelling investigations/analysis to support this view.

The following hydraulic categorisations have been mapped:

- Flood Fringe comprises areas outside the Floodway where peak depth < 1.5 m (shown blue);
- Flood Storage comprises areas outside the Floodway where peak depth > 1.5 m (shown yellow); and
- Floodway (shown red) is defined as areas where:
  - the peak value of velocity multiplied by depth (V*D) > 1.0 m^2/s and peak velocity > 0.1 m/s, or
  - peak velocity > 0.8 m/s.

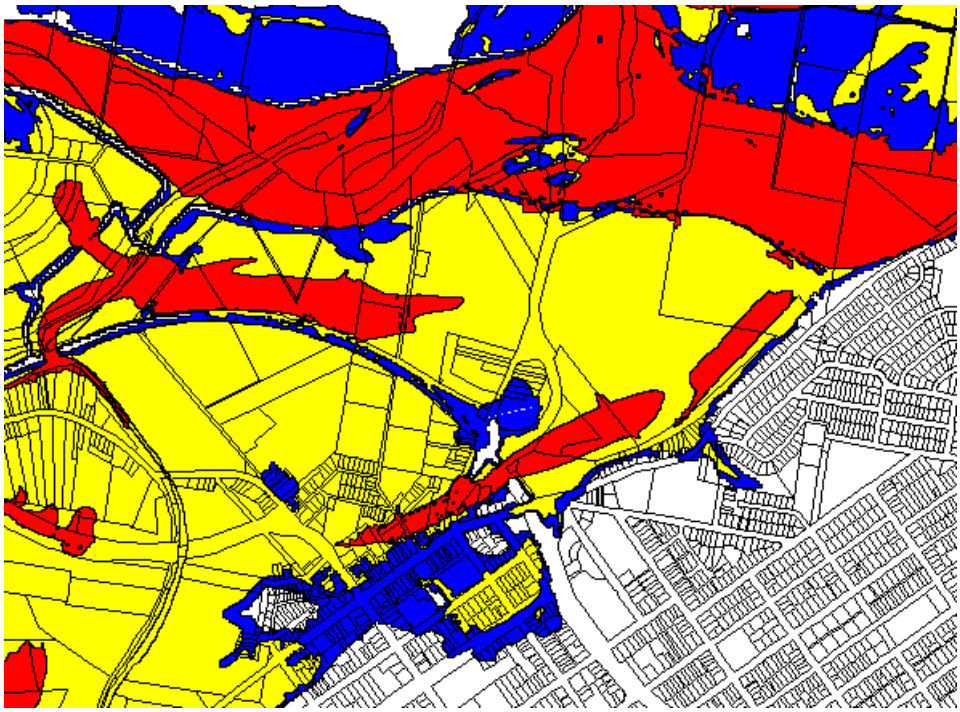


Figure 6: Example hydraulic category mapping.

3.5 Hazard Category Maps

Hazard Category Maps show the various flood hazard categories as they apply in the 1:100 ARI flood event:

- Low Hazard (shown in blue); and
- High Hazard (shown in red).

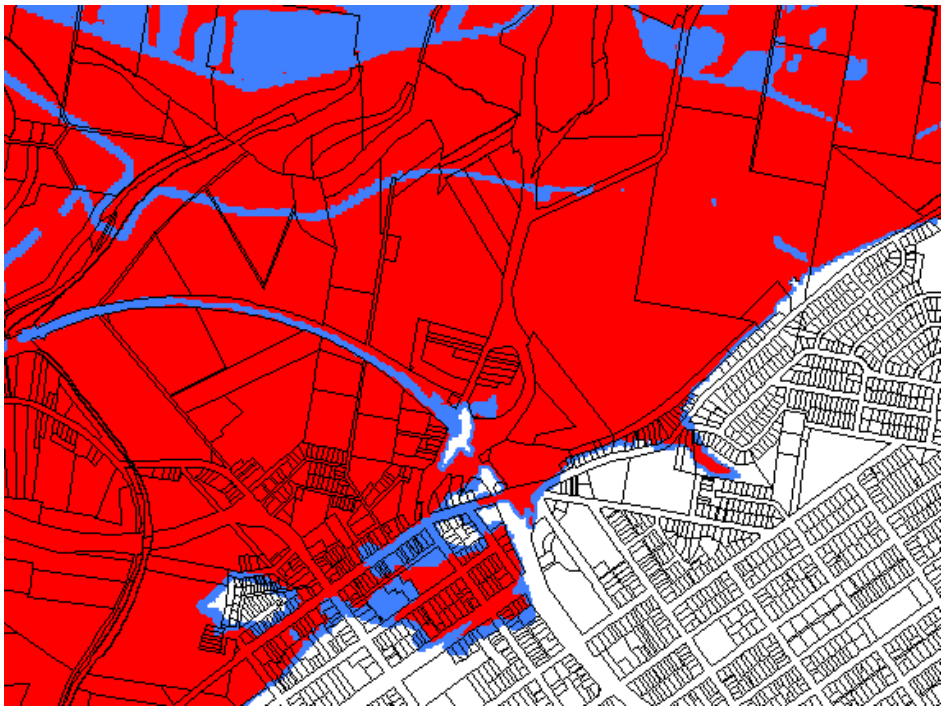


Figure 7: Example View of Flood Hazard Category Mapping.

B.4 – On-site Sewage Management Systems

This section has been repealed. On site waste water treatment systems shall be assessed against the following guidelines and standards:

AS/NZS 1547 (On Site Domestic Waste Water Management) – On-site Sewage Management for Single households, the Environment & Health Protection Guidelines – On Site Sewer Management for single Households (1998) (EHPG), and any other relevant standard, guideline or best practice provisions that are in force at the time that the subject S68 application is lodged with Council.

B.5 – Tree and Vegetation Management

Application

This section applies to all land in the Maitland Local Government Area to which Chapter 2 of the *State Environmental Planning Policy (Biodiversity Conservation) 2021* applies. Council manages approval for clearing of vegetation on all land other than land in RU1 Primary Production or RU2 Rural Landscape zones. Clearing of vegetation in these rural land use zones is administered through Local Land Services: Hunter.

Local Land Services will also administer clearing of vegetation where clearing exceeds the Biodiversity Offset Scheme Threshold (BOST). An approval is required from the Native Vegetation Panel in this instance. Council cannot issue a consent in this circumstance.

For clearing of land below the BOST, Council can require a consent to be issued for the clearing of vegetation under Part 2.3 of the Biodiversity Conservation SEPP. This DCP outlines the circumstances under which a consent is required.

Development consent is, however, required for clearing of any vegetation to which clause 5.10 – Heritage conservation in the Maitland LEP 2011 applies.

Note 1: This section does not apply where clearing of vegetation forms part of the consideration of impacts associated with a development application under Part 4 or an activity under Part 5 of the Environmental Planning and Assessment Act 1979. In this circumstance, clearing of vegetation will be assessed under the Biodiversity Conservation Act 2016. No separate approval under this DCP section is required.

Definitions

The following definitions apply to this section:

Clear vegetation has the same meaning as *State Environmental Planning Policy (Biodiversity Conservation) 2021*. This term includes—

i. cut down, fell, uproot, kill, poison, ringbark, burn or otherwise destroy the vegetation, or
ii. lop or otherwise remove a substantial part of the vegetation

Native Vegetation has the same meaning as *State Environmental Planning Policy (Biodiversity Conservation) 2021*. This term has the same meaning as in Part 5A of the *Local Land Services Act 2013* and means: any of the following types of plants native to New South Wales:

i. trees (including any sapling or shrub or any scrub),
ii. understorey plants,
iii. groundcover (being any type of herbaceous vegetation),
iv. plants occurring in a wetland.

Tree - a long lived woody perennial plant greater than 3m height (or will be at maturity), with one or relatively few main stems or trunks.

Vegetation has the same meaning as *State Environmental Planning Policy (Biodiversity Conservation) 2021*. This term means A tree or other vegetation, whether or not it is native vegetation

Objectives

- To protect, maintain and enhance bushland, remnant vegetation and tree canopy as assets for the people of Maitland.
- To retain trees for the urban amenity, microclimate, scenic, air and water quality, and the social benefits that they provide.
- To ensure that trees listed on Council's Significant Tree register are not adversely affected by development.
- To implement the mitigation hierarchy of "avoid, minimize, offset" when considering the clearing of vegetation.

1. Clearing of Vegetation that Requires a Council Consent

1.1 Consent from Council is required prior to clearing or pruning the following:

a. vegetation in a threatened ecological community or a threatened plant species listed under the *Biodiversity Conservation Act 2016* or *Fisheries Management Act 1994;* or
b. a tree that is required to be retained or planted as a condition of a complying development certificate or development consent, or
c. a tree that was planted as a replacement tree, or
d. any other native vegetation including understorey plants, groundcovers and plants occurring in a wetland and is less than the biodiversity offsets scheme threshold identified under the *Biodiversity Conservation Act 2016*, or
e. all trees and shrubs, regardless of size, on land managed by a public authority including Council, or
f. all other trees or shrubs that are not listed in (a) to (f) above, unless:
    i. the tree or shrub is located within 3m of the wall of an existing principal building (excluding carports, garages, pergolas, fences, retaining walls and the like); or
    ii. the tree is less than 3m in height, or with a Diameter at Breast Height (DBH

measured at 1.3m above ground level) less than 100mm; or

iii. the shrub is less than 5m in height; or

iv. the tree is grown for fruit or nut production;

v. pruning is maintenance of less than 12 months growth or 10% of foliage undertaken in accordance with Australian Standard (AS) 4373– Pruning of amenity trees;

vi. the tree is dying or dead and is not required as the habitat of native animals, where Council is provided with a tree removal notification 10 days prior to removal; or

vii. where there is a risk to human life or property, when Council is provided with a tree removal notification 10 days prior to removal; or

viii. that requires urgent removal on account of immediate failure when Council is provided with a tree removal notification post-event.

ix. the tree is listed as Priority Weed for the Hunter Region, Weed of National Significance (WoNS) or any other exotic species determined to be an invasive species.

Note 1: Council's native vegetation is available to assist proponents to identify whether vegetation on their land could be a threatened ecological community or is in proximity to a wildlife corridor.

Note 2: All trees and shrubs within Council's road reserve or located on land managed by Council are declared vegetation. The maintenance or removal of these trees and shrubs can only be undertaken by Council.

Note 3: State Environmental Planning Policy (Biodiversity Conservation) 2021 prohibits Council from issuing a permit for the clearing of native vegetation that exceeds the biodiversity offsets scheme threshold. Refer to the Biodiversity Conservation Act 2016 for further information.

Note 4: The 3m distance is measured from the closest point of the trunk to the footings of the building.

Note 5: The onus of proof is on the landowner and photos should be taken before and after removal. Landowners are encouraged to seek the advice of a qualified arborist in determining the direct threat of any tree.

Submission Requirements

An application must be lodged through the NSW Planning Portal. In addition to the detail required on the Planning Portal, the following additional information is required:

1.2 An application for the removal or lopping of a tree must demonstrate that the action is required because the tree:

a. is dangerous; or

b. has a history of branch fall; or

c. is structurally unsound; or

d. is diseased; or
e. is causing damage to an existing structure or utility service substantiated by a qualified person.

1.3 Council may require compensatory planting for the removal of trees.

1.4 Council will require a report by a qualified Arborist to be provided confirming the condition of the tree and its reasons for removal or lopping where:

a. The tree or other vegetation is listed on the significant tree register; or
b. Council determines the removal of the tree may cause significant impacts on native trees or native vegetation, landscape connectivity or threatened fauna habitat; or
c. inadequate justification for removal or lopping has been provided.

1.5 Council will require a hollow-bearing tree assessment prepared by a suitably qualified ecologist to remove hollow bearing trees.

1.6 A request to remove 5 or more native trees must be accompanied by a Biodiversity Management Plan (BMP). The BMP must be prepared by a qualified ecologist and include

a. A weed and hygiene protocol;
b. Protection of any retained trees or vegetation onsite including considerations of AS 4970 – Protection of trees on development sites
c. Clearing protocol;
d. Protection and relocation of potentially occurring resident fauna; and
e. Offsetting the loss of hollows

1.7 A request to remove 5 or more native trees must be accompanied by a Biodiversity Assessment Report (BAR). The BAR must

a. Be prepared by a qualified ecologist;
b. Includes fauna and flora surveys targeting potentially occurring threatened biota;
c. Include a 5-part test of significance under the BC Act 2016; and
d. Include a significant impact assessment on Matters of National Environmental Significance (MNES) under the EPBC Act 1999

General Requirements

An application seeking a Council consent to clear vegetation under this Part will be considered having regard to the following Performance Criteria and industry standards:

Performance criteria	Acceptable solutions
The amenity of the area is maintained through the preservation of trees and other vegetation.	Council may require compensatory measures and/or plantings on the lot where the tree/s contribute to the established character of the locality. Council may approve the removal of an exotic tree if it is demonstrated that its removal does not significantly affect the amenity of the area.
Habitat and corridor function is maintained.	Council may require compensatory measures and/or plantings on the lot where the tree/s; • provide habitat for threatened species; or • contribute to an identified habitat corridor. Where the application includes removal of hollow bearing trees: • Two replacement hollows are to be provided for each hollow tree identified by the hollow tree assessment • Salvaged hollows are preferred over nest boxes
Trees are managed to minimise risk to person and property.	Lopping and pruning measures should be considered as a first response. The application demonstrates that retention of the tree is not possible.

2. CLEARING OF VEGETATION THAT REQUIRES DEVELOPMENT CONSENT

Development consent is required for the clearing of vegetation on any land to which clause 5.10 – Heritage Conservation (Schedule 5) in the Maitland LEP 2011 applies, or vegetation that forms part of an Aboriginal object or that is within an Aboriginal place of heritage significance.

Submission Requirements

An application must be lodged through the NSW Planning Portal. In addition to the detail required on the Planning Portal, the following additional information is required:

2.1 An application for the clearing of vegetation that is a Heritage Item is required to be accompanied with A Statement of Heritage Impact prepared by a suitably qualified Heritage Consultant.

2.2 An application for the lopping of a tree that is a Heritage Item must be accompanied by an Arborist's report:

a. describing the works; and
b. demonstrating how the health and contribution of the tree is to be protected.

2.3 Clearing of vegetation on land that contains a Heritage Item must be accompanied by An Arborist Report stating that the tree:

a. is dangerous; or
b. is dying and remedial lopping would not improve the deteriorated condition of the tree; or
c. has a history of branch fall (documented or photographic evidence to be provided); or
d. is structurally unsound; or
e. diseased; or
f. is causing property damage; and
g. there are no reasonable measures to retain the tree

2.4 For works on a heritage item that may impact on vegetation in the vicinity of the heritage item, Council may require the submission of an Arborist's report that

a. describes the works;
b. identifies the risks to the health of the tree;
c. describes the measures to be undertaken to protect the tree;
d. any additional measures required after the works have been completed

2.5 For clearing of vegetation in a Heritage Conservation Area, Council may require additional information on assessment.

2.6 An application seeking development consent to clear vegetation under this Part will be considered having regard to the following Performance Criteria and industry standards.

Performance criteria	Acceptable solutions
Heritage items and significant trees are retained in the landscape.	Council may require the replacement of the tree/s where the tree/s; • contribute to the amenity of the street, precinct or area; • are part of a group (such as an avenue or stand); or • are contributory to the heritage qualities of the area.
The heritage qualities of the area are maintained.	Council may require a report by a qualified Arborist to be provided confirming the condition of the tree and its reasons for lopping or removal.
Heritage items and significant trees are protected from works that may damage the tree.	Lopping of a tree that is a Heritage Item must be undertaken in accordance with AS4373-2007 Pruning of amenity trees. Any works in the vicinity of a heritage item or tree must be undertaken in accordance with AS 4970-2009 Protection of trees on development sites.

3. CLEARING OF VEGETATION ON THE SIGNIFICANT TREE REGISTER

Council Consent is required for the clearing of vegetation listed on the Significant Tree Register.

Submission Requirements

An application must be lodged through the NSW Planning Portal. In addition to the detail required on the Planning Portal, the following additional information is required:

3.1 An application for the removal of vegetation on the Register is required to be accompanied by An Arborist's report stating that the tree:

a. is dangerous; or
b. is dying and remedial lopping would not improve the deteriorated condition of the tree; or
c. has a history of branch fall (documented or photographic evidence to be provided); or
d. is structurally unsound; or
e. diseased; or
f. is causing property damage; and
g. there are no reasonable measures to retain the tree.

3.2 An application for the lopping or pruning of a tree on the Register must be accompanied by an Arborist's report:

a. describing the works; and
b. demonstrating how the health and contribution of the tree is to be protected.

General Requirements

An application seeking a Council consent to clear vegetation under this Part will be considered having regard to the following Performance Criteria and industry standards:

Performance criteria	Acceptable solutions
Significant trees are retained in the landscape. The heritage qualities of the area are maintained.	Council may require the replacement of the tree/s where the tree/s; • contribute to the amenity of the street, precinct or area; • are part of a group (such as an avenue or stand); or • are contributory to the heritage qualities of the area.
Adequate information is provided to justify the removal of trees.	• Council may require a report by a qualified Arborist to be provided confirming the condition of the tree and its reasons for lopping or removal.

Performance criteria	Acceptable solutions
Significant trees are protected from works that may damage the tree.	• Lopping of a tree that is listed on the Register must be undertaken in accordance with AS4373-2007 Pruning of amenity trees.
	• Any works in the vicinity of a tree that is listed on the Register must be undertaken in accordance with AS 4970-2009 Protection of trees on development sites.

Table 1: Significant tree register.

Suburb	Address	Species	Description
Maitland	Monte Pio Court, Conference Centre	Agathis Robusta	Queensland Kauri
Maitland	St Mary's High School Corner Grant and Bent Streets	Ficus Microcarpa variety	Weeping Fig
Morpeth	Marlborough House 75 Swan Street	Brachychiton populneus	Kurrajong
Morpeth	Marlborough House 75 Swan Street	Ulmus procera	English elm
Morpeth	Morpeth Conference Centre Tank Street	Lophostemon confertus	Brush Box
Lorn	Nillo Infants School Belmore Road	Corymbia citriodora	Lemon scented gums
Maitland	35 Trappaud Road	Ficus macrophylla	Moreton Bay Fig

B.6 – Waste Not – Site Waste Minimisation & Management

Application

This section applies to the following types of development that may only be carried out with development consent within the Maitland LGA:

- Single dwellings; residential additions/alterations and ancillary structures
- Dual occupancies
- Multi dwelling housing
- Residential flat buildings
- Commercial development and change of use
- Industrial development

The preparation of a Site Waste Minimisation and Management Plan (SWMMP) is not required for exempt and complying development. However, persons carrying out exempt and complying development are encouraged to minimise the generation of waste in the construction and operation of any such use or activity and deal with any waste generated in accordance with the objectives of this plan.

Objectives

- To minimise resource requirements and construction waste through reuse and recycling and the efficient selection and use of resources.
- To encourage building designs, construction and demolition techniques in general which minimise waste generation.
- To assist applicants in planning for sustainable waste management, through the preparation of a site waste minimisation and management plan. This plan is to be completed in the planning stages of a development.
- To facilitate effective waste minimisation and management for development in a manner consistent with the principles of ESD.

Submission/Application Requirements

1.1 Documentation to be submitted

All applications relating to residential developments, as well as commercial and industrial premises are to include a Site Waste Minimisation and Management Plan (SWMMP) as part of documentation submitted to Council. The development plans should also clearly indicate the location of waste management facilities, including recycling bins and the like.

a) Site Waste Minimisation and Management Plans (SWMMP)

A SWMMP outlines measures to minimise and manage waste generated during demolition and construction processes, as well as the ongoing use of the site.

The SWMMP is to nominate the following:

- The volume and type of waste and recyclables to be generated.
- The storage and treatment of waste and recyclables on site.
- The disposal of residual waste and recyclables.
- The operational procedures for ongoing waste management once the development is completed, including the nominated waste management service provider.

b) Submission of a SWMMP

A SWMMP is to be submitted for all types of development listed within this policy. Council's document titled 'Site Waste Management and Minimisation Plan' Standard Form provides the necessary information and examples of SWMPs.

More detailed SWMMPs are required for projects of a larger scale, with additional supporting information required.

The SWMMP is to be submitted with the documentation relating to Development Applications, in order to be considered in the assessment under Section 4.15 of the Act.

1.2 Implementing the SWMMP

When implementing the SWMMP, the applicant must ensure:

- Roads, footpaths, public reserves and street gutters are not used as places to store demolition waste or materials of any kind.
- Any material moved offsite is transported in accordance with the requirements of the *Protection of the Environment Operations Act 1997 and relevant Regulations*.
- Waste is only transported to a place that can lawfully be used as a waste facility, and by contractors who are aware of the legal requirements of the disposal of waste.
- Generation, storage, treatment and disposal of hazardous, offensive or special waste (including asbestos) is conducted in accordance with relevant waste legislation and relevant agencies.
- Evidence such as weighbridge dockets and invoices for waste disposal or recycling services is retained.
- Evidence of compliance with any specific industrial waste laws and protocols,

such as the *Protection of the Environment Operations Act 1997 and relevant Regulations*.

- Materials which are to be disposed of and those which are to be reused/ recycled are to be separated through the demolition and construction process.
- Materials that have existing reuse or recycling markets should not be disposed of in landfill when possible.

1.3 Waste/Recycling Generation Rates

The following waste generation rates shall apply:

Type of Premise	Waste Generation	Recycling Generation
Backpackers accommodation	40L/occupant/week	20 litres/occupant/week
Boarding house, Guest house	60L/occupant/week	20 litres/occupant/week
Food Premises		
Butcher	80L/100m² floor area/day	Discretionary
Delicatessen	80L/100m² floor area/day	Discretionary
Fish Shop	80L/100m² floor area/day	Discretionary
Greengrocer	240L/100m² floor area/day	120/100m² floor area/day
Restaurant	10L/1.5m² floor area/day	2L/1.5m² floor area/day
Supermarket	240L/100m² floor area/day	240 L/100m² floor area/day
Takeaway	80L/100m² floor area/day	Discretionary
Hairdressers, Beauty Salon	60L/100m² floor area/week	Discretionary
Hotel	5L/bed/day 50L/100m²/bar area/day 10L/1.5m²/of dining area/day	50L / 100m² floor area / bar & dining areas / day
Offices	10L / 100m² floor area / day	10L / 100m² floor area / day
Retail (other than food sales)		
Shop < 100m² floor area	50L/100m² floor area/day	25L/100m² floor area/day
Shop > 100m² floor area	50L/100m² floor area/day	50L/100m² floor area/day
Showrooms	40L/100m² floor area/day	10L/100m² floor area/day

2. Site Preparation Phase

2.1 Demolition of Buildings or Structures

a. An area shall be allocated for the storage of materials for use, recycling and disposal, giving consideration to slope, drainage, location of waterways, stormwater outlets, vegetation and access and handling requirements.

b. Waste and recycling materials are to be separated.
c. Measures are to be implemented to prevent damage, minimise health and order risks, and windborne litter.

3. Construction Phase

3.1 Construction of Buildings or Structures

a. An area shall be allocated for the storage of materials for use, recycling and disposal, giving consideration to slope, drainage, location of waterways, stormwater outlets, vegetation and access and handling requirements. Signage is to be incorporated into this area in order for the clear definition of the space.
b. Waste and recycling materials are to be separated. Signage shall clearly indicate which bins or disposal units are for waste and those for recycling.
c. Measures are to be implemented to prevent health and odour risks, and windborne litter.
d. The use of prefabricated components and recycled materials should be considered when possible.

4. Operational Phase

4.1 Residential Development

a) Single dwellings, alterations and/or additions, ancillary structures

a. The location of the waste and recycling areas is to not create any adverse impact on neighbouring properties in terms of appearance, odour, noise or the like.

b) Dual Occupancy and Multi Dwelling Housing – Individual Storage Areas

a. The location of the waste and recycling areas is to not create any adverse impact on neighbouring properties in terms of appearance, odour, noise or the like.
b. Details of individual bin storage and servicing/collection locations are to be provided

c) Dual Occupancy, Multi Dwelling Housing and Residential Flat Buildings – Communal Storage Areas

a. The waste area should provide separate containers for the separation of general waste from recyclables.
b. There is to be reasonable level of access to waste and recycling area/s or room/s for people including people with a disability

c. The location of any garbage chute(s)
d. Communal storage area/s or room/s is to be provided on common property in order to allow for the management of the area by the body corporate.
e. Consideration shall be given to the incorporation of a bulky waste storage area within the communal storage area/s or room/s.
f. Servicing plan including frequency and servicing location is to be provided.

4.2 Commercial Developments and Change of Use

a. The waste area should provide separate containers for the separation of general waste from recyclables.
b. If Council is not the provided waste contractor, then a valid contract with a licensed waste facility is to be kept by the premises or the body corporate managing the site for the collection of waste and recyclables.

4.3 Industrial Development

a. The waste area should provide separate containers for the separation of general waste from recyclables.
b. If Council is not the provided waste contractor, then a valid contract with a licensed waste facility is to be kept by the premises or the body corporate managing the site for the collection of waste and recyclables.

B.7 – Environmentally Sensitive Land

This DCP section is to be read in conjunction with:

- *Maitland Local Environmental Plan 2011*,
- Maitland Citywide Development Control Plan 2011,
- Guidelines for Riparian Corridors on Waterfront Land (WaterNSW)
- *Native Vegetation Act 2003*,
- *Water Management Act 2000* and
- Council's Manual of Engineering Standards.

1. Introduction and section objectives

Rural and urban land use and development can have significant direct impacts on environmentally sensitive land such as riparian land and waterways, wetlands, wildlife corridors, threatened ecological communities and habitat of threatened and listed migratory species. These impacts include erosion, sedimentation, increased turbidity and increased runoff in local waterways, loss of landscape connectivity and functionality of wildlife corridors, removal or critical habitat for threatened biota leading to local extinction. Less direct or cumulative impacts can include the microclimate effects of vegetation removal (increased temperatures from lack of shading alter riparian and waterway ecosystems and promote algal growth); altered waterway flow regimes; and degradation of corridor linkages above waterways, which only serves to limit fauna movement across waterways.

1.2 Application of section

This plan section applies to land that is any or all of the following:

- Within 40m of the top of the bank of a watercourse that is a 3rd or 4th order stream based on the Strahler method
- Within 40m of the top of the bank of a watercourse identified as 'Watercourse land' on the Maitland LEP Watercourse Map
- Vegetated Riparian Zone, as defined by NRAR's "guidelines for controlled activities on waterfront land"

1.3 Definition of Riparian Corridor

- The channel which comprises the bed and banks of the watercourse (to the highest bank); and
- The Vegetated Riparian Zone (VRZ) adjoining the channel.

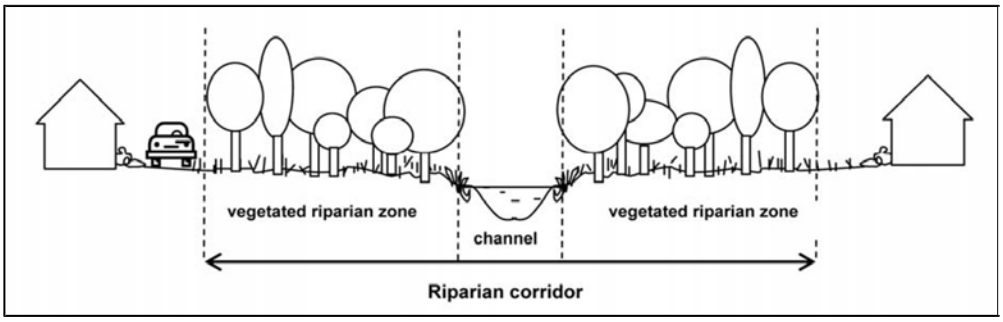


Figure 1: Riparian corridor zones (Source: WaterNSW)

1.4 Section objectives

- To help maintain the functions of waterways and floodplain areas
- To protect natural features and biodiversity within riparian land
- To provide a riparian buffer and manage edge effects appropriately at the riparian land/development interface
- To protect and enhance water quality, biodiversity, terrestrial and aquatic habitat within the waterway and catchment
- To reinstate, where feasible and practical, the natural functions and characteristics of the Vegetated Riparian Zone (VRZ), including reconstruction of existing piped or channelised waterways and natural waterways
- To prevent additional and unnecessary piping and channelisation of watercourses
- To allow appropriate public access to waterways without diminishing the functions of riparian areas
- To preserve and enhance the viability, condition, connectivity and extent of native riparian vegetation
- To protect and provide bank and bed stability along waterways and riparian areas
- To protect and enhance landscape connectivity and improve linkages within wildlife corridors
- To protect threatened ecological communities and habitat of threatened and listed migratory species

Where bushland/watercourse restoration is undertaken:

- To re-create the Vegetated Riparian Zone (VRZ);
- To emulate a naturally functioning watercourse, with associated riparian vegetation where possible;
- To recreate the native vegetation that would have occurred prior to disturbance
- To re-establish landscape connectivity and provide functional corridors
- To prevent development from compromising the ability to re-create the riparian corridor (including the watercourse and VRZ) in the future.

Figure 2: A riparian corridor which has been cleared in association with the historical agricultural use of this land. Restoration of the riparian zone should be sought for these areas.

Figure 3: An example of a rural property that clearly has the potential for restoration of the VRZ. Note the vegetation linkages further upstream.

Figure 4: The same rural property shown in Figure 3, following considerable rainfall.

Figure 5: Another example of a rural property that clearly has the potential for restoration of the VRZ and requires riparian vegetation to stabilise the banks of the watercourse.

Figure 6: The same rural property shown in Figure 5, following considerable rainfall.

Figure 7: Urban drainage networks can be designed to assimilate with riparian land and waterways further downstream, as shown here at Chisholm. Note the proximity of the footpath to the riparian drainage network, which capitalises on amenity.

Figure 8: ***Urban drainage network identified in Figure 7 above, showing*** *detention* ***areas further downstream. These detention areas eventually link with flood prone land further North.***

Figure 9: ***Channelisation and piping works need to address the natural characteristics of riparian areas and waterways in order to manage the interface between urban drainage systems and riparian areas downstream.***

2. Access & Pathways

Objectives

- Pedestrian paths and cycleways shall not interfere with the connectivity or functions of riparian land, but they may be located in such a way that they contribute to management of edge effects and have minimal impact on riparian land. This includes the integration of appropriately designed and engineered drainage and stormwater infrastructure (refer to Council's Manual of Engineering Standards).

- While riparian waterways should allow for public access and integration where appropriate and practical, access paths should not unnecessarily impact upon the VRZ.

- Where perimeter roads are to be incorporated in subdivisions adjacent to riparian land, roads must be located in a way that ensures houses are orientated towards riparian land (as shown in Figure 7 previously).

3. Development Location

Objectives

3.1 The use of services such as stormwater, water and sewer infrastructure within riparian areas shall be limited to those circumstances where no other option exists, and Council is satisfied that the riparian corridor and waterway will not be significantly impacted.

3.2 Subdivision works and other development must not extend into the VRZ, unless there is no other practicable means to achieve an appropriate development outcome or to service development with essential services and infrastructure. The VRZ shall be protected from any unreasonable environmental effects that could be generated by new development. The proponent must demonstrate that any proposal involving interference with the VRZ will result in no significant or unnecessary vegetation loss.

Note: Any application requiring referral to the WaterNSW (in accordance with Guidelines for Riparian Corridors on Waterfront Land administered by WaterNSW) will trigger integrated development, and the respective referral fees and charges will apply.

3.3 Siting, location and design of developments on land that directly adjoins riparian areas shall consider the effects of the development on riparian land,

and comply with the specific requirements as contained in the Maitland Local Environmental Plan 2011 and associated plans identified in section 1.1 above.

3.4 The use of impervious areas within and directly adjoining riparian areas is to be minimised in order to reduce unacceptable rates of runoff that cause erosion, sedimentation and siltation.

3.5 Fencing within riparian areas shall be minimised and be of open design in order to allow for the free passage of water, fauna and flora.

3.6 Bridges and crossings over waterways shall not interfere with connectivity of vegetation, alignment or profile of stream banks, and must not restrict flow during flood events.

3.7 For watercourses traversing urban release areas, rehabilitation shall be assisted through the appropriate design of roads, cycleways, pathways and infrastructure, ensuring that a VRZ and riparian buffer areas are maintained throughout the extent of the urban release area, and that connectivity occurs with adjoining riparian areas and waterways. The width of buffer areas is to be determined in conjunction with the order of streams, as defined in the Guidelines for Riparian Corridors on Waterfront Land administered by WaterNSW.

4. Riparian Watercourses & Flooding

Objectives

4.1 **Soil disturbance** - within riparian areas shall be limited to the purposes of providing critical infrastructure and remediation activities associated with improving flood mitigation and health of waterways. Disturbances within the VRZ should be avoided at all costs.

4.2 **Riparian vegetation -** should not to be removed from riparian corridors for the purposes of new development. Any proposal to consider offsets associated with development are to be assessed in accordance with the Guidelines for Riparian Corridors on Waterfront Land administered by WaterNSW. Where a proponent pursues an offset within the riparian corridor, the application will trigger integrated development, and the respective referral fees and charges will apply.

4.3 **Vegetation Connectivity** - Development shall not compromise connectivity, or opportunities for future connectivity, of riparian vegetation and habitat, or interfere with hydrological flows within waterways or riparian land.

4.4 Any flood study to support a DA which could impact upon riparian land and/or waterways needs to include an assessment of improvements to the health and structure of riparian land. This is necessary in order to determine flood risk and identify possible natural mitigation measures against flooding, as opposed to alternative engineered mitigation measures that could have greater impacts upon the riparian corridor.

4.5 Improvements and remediation of riparian waterway banks should include only endemic native riparian species and complimentary soft engineering techniques.

4.6 Stormwater detention areas and infrastructure shall maintain appropriate engineering design and mechanisms to ensure that all stormwater is treated prior to entering riparian waterways, whilst ensuring that such engineering and the location of stormwater devices does not compromise the connectivity and functioning of riparian vegetation, waterways and wildlife habitat.

4.7 Works shall not be permitted in riparian areas that are likely to require excessive or incompatible piping, cause realignment of natural waterways, or alter the depth or width of natural waterways.

4.8 The stability of waterway banks and channels shall be protected by minimising the removal of vegetation, natural riparian debris and natural stream structure, except where woody debris results in a flood hazard.

4.9 Where there is no alternative but to locate infrastructure and services within riparian areas (i.e. all possible alternative options have been exhausted), the design of such services shall accommodate for the natural functions of the riparian area and waterway.

5. Other Environmental Considerations

Objectives

5.1 Asset Protection Zones (APZs) proposed for bushfire management in association with a proposed development should not be located within the VRZ (see Figure 1). No riparian vegetation should be removed from the VRZ for the purposes of providing an APZ or for bushfire management, unless the proponent pursues an APZ within the VRZ (in accordance with Guidelines for Riparian Corridors on Waterfront Land administered by WaterNSW). Any such application will trigger integrated development, and the respective referral fees and charges will apply.

5.2 Access points to riparian waterways shall be located so as to minimise disturbance to riparian vegetation, banks and wildlife habitat. Access shall be

restricted within the VRZ.

5.3 Rehabilitation - within the VRZ the density of plantings shall be consistent with the naturally occurring density of endemic species in the riparian area, and shall comprise 100% local native species. No substitution for native endemic species will be permitted.

5.4 Rehabilitation of environmentally sensitive land must be accompanied by a 5 year Vegetation Management Plan (VMP) prepared by a qualified restoration ecologist. The VMP must include but is not limited to:

- Planting schedule including species list, planting density, timing
- Key performance indicators
- Maintenance regime and weed control
- Monitoring

5.5 The objectives of the VMP should be to:

- Recreate the original vegetation that was present prior to disturbance.
- Achieve a low maintenance state within 5 years or prior to being handed over to council.