KIAMA MUNICIPAL COUNCIL
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Kiama Development Control Plan 2020
Chapter 2 – Site Considerations

RESPECT INNOVATION INTEGRITY TEAMWORK EXCELLENCE

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Chapter 2. Site Considerations

Topic 2.1 - Site Analysis

Different types of application will require different plans/reports. To assist applicants, Council has developed a series of Checklists detailing the Application requirements for different development types.

A major reason for delay in the processing of applications lodged with Council is the failure of applicants to provide sufficient information with their applications. Failure to provide the details which Council requires to make an adequate assessment of any application will add to the processing time as Council must request further information from the applicant.

In order to understand this context, a site analysis (at an appropriate scale) should be undertaken as a first step in preparing for a development. This should identify the opportunities and constraints of the site and create a platform from which to develop a design. A site analysis demonstrates that the proposed development is the best possible solution and makes the best contribution to its surroundings.

All development applications should submit a site analysis.

The degree of detail required will vary according to the nature, type and scale of the development and its surroundings. The level of detail required should be clarified with Council's development assessment officers. For detached dwellings, a site analysis that includes information about neighbouring lots will generally suffice. Larger scale developments will need to include the broader context.

A site analysis assessment should document the key opportunities and constraints of a site and its surroundings and show how these, in conjunction with the provisions of this DCP have determined the final proposal for the site. This assessment may include plans, sketches, photographs and supporting written information. A site analysis should include the following information:

Identifying Information:

- orientation
- scale and north point
- date

Property Details:

- site dimensions, property boundaries and site area
- easements for drainage, services and rights of carriageway

Landform and Vegetation:

- spot levels and contours
- differences in ground levels on site as well as between the site and adjoining properties
- existing vegetation on/or affecting the site, location, height, canopy cover and species types
- important views - from the site and from adjoining land
- identification of any contaminated soils on the site and extent of any known landfill
- landscape features - cliffs, rock outcrops, embankments, retaining walls and foreshores
- soil type and depth
- flood liable land, existing means of stormwater drainage, existing stormwater detention systems, flow paths, drainage easements and watercourses and channels etc.
- sun and shade characteristics
- prevailing winds

Access:

- vehicle and pedestrian access to and from the site
- public roads, laneways and pathways
- on corner sites, the provision of a splay corner if required by Council
- driveways, parking areas, loading bays on the site and within the vicinity of the site
- existing cycle facilities within the area
- public transport services

Existing Development:

- existing buildings - on the site and on adjoining land. Show location, distance from the boundary, height and current use. Include elevations showing adjacent buildings
- existing neighbourhood character, including the pattern of development, built form, building materials and colours, fencing and garden styles
- direction and distances to local shops, schools, public transport, parks, community facilities and local activity centres
- overshadowing of and by adjoining buildings
- fences and walls location, height and materials
- swimming pools and slipways
- privacy - adjoining private open spaces, doors and windows
- street frontage features - poles, trees, kerbs, footpaths, crossings and street furniture
- noise, odour and light spillage sources (e.g. main roads, railway lines, sports fields, air conditioning units, pool pumps and industrial areas)
- heritage and/or archaeological features (indigenous and non-indigenous) on site and in the vicinity of the site include landscapes, buildings, conservation areas and special character areas
- existing advertising signs

Assessment of Proposed Development:

It is imperative that a site analysis include likely impacts of the proposed development and the measures proposed to mitigate these impacts. It should also show where the site has been unable to incorporate the opportunities and constraints of the site and the requirements of the DCP. Written and graphical explanations should be provided, for any site analysis, ultimately showing the suitability of the site for the proposed use.

The site analysis should include:

- The urban structure including property boundaries, street network and public spaces;
- the land uses;
- topography and landscape;
- transport routes and stops;
- main building typologies;
- open space and waterways;
- heritage and archaeology;
- key views and vistas; and
- building envelope, including footprint, height, setbacks and through links required in Kiama LEP 2011 and this DCP.

Topic 2.2 - Biodiversity

Riparian Corridors

Kiama LEP 2011 contains clauses relating to Riparian Lands. The land affected by this clause includes a natural waterways and land that adjoins a natural waterway including an estuary or coastal lake/lagoon (eg Werri Lagoon). Riparian land performs important environmental functions including:

- helping to maintain water quality and healthy aquatic ecosystems.
- providing habitat for native wildlife, maintaining the natural functions of waterways including stable banks and channels, providing a scenic interface between development and waterways.

Objectives

O:2.2.1	To ensure that any development maintains, protect and improves water quality within waterways.
O:2.2.2	To ensure that any development maintains, protect and improves the stability of the bed and banks of waterways, aquatic and riparian habitats.
O:2.2.3	To ensure that any development maintains, protect and improves ecological processes within waterways and riparian areas.
O:2.2.4	To ensure that any development maintains, protect and improves the habitat of threatened aquatic species, ecological communities and populations, and the scenic and cultural heritage values of waterways and their adjoining riparian land.

Controls

2.2.1 Development on or near to land identified as being riparian and in the Kiama LEP 2011 must ensure that it does not have significant adverse environmental impact, including, but not limited to, impacts on:·

- water quality,
- bank and bed stability,
- ecological processes and any habitats.

2.2.2 Riparian land affected by proposed development must be protected and improved through any development.

Terrestrial Biodiversity

Development has the potential to negatively impact on the natural environment and scenic landscape. Thorough site analysis is essential to enable evaluation of impacts and to show how they may be avoided or mitigated where some impact is unavoidable due to site context and conditions.

Adverse environmental impacts must be avoided rather than relying on mitigation of impacts to achieve some other private benefit such as an improved view.

Objectives

O:2.2.5	To protect, maintain and enhance native vegetation/biodiversity, endangered ecological communities, natural ecosystems, and riparian and wildlife corridors.
O:2.2.6	To protect rare and threatened species and their habitats.
O:2.2.7	To protect waterways, water quality and drinking water catchments from polluting land use or development activities.
O:2.2.8	To protect the natural and scenic cultural landscape.

Controls

2.2.3 Dwellings and ancillary development must be located as far away as possible from stands of native vegetation to protect biodiversity and threatened species and their habitat, and reduce bush fire risk.

2.2.3 Clearing native vegetation to provide a building envelope in a subdivision in line with clauses contained in chapter 7, or provide access, or provide bush fire Asset Protection Zones (APZ) will not be permitted if cleared areas already exist on the land that would satisfy these purposes without significantly compromising other environmental attributes of the land and the aims and objectives of this chapter.

2.2.4 If development cannot be carried out without clearing native vegetation, an ecological assessment report (prepared by a person with appropriately qualified consultant) must be submitted to:

- identify the amount and type of native vegetation proposed to be removed, identify any endangered ecological communities affected by the clearing of native vegetation.
- justify why that native vegetation or an endangered ecological community should be removed.
- explain what alternatives were considered to clearing of native vegetation or endangered ecological communities and why those alternatives are not justifiable or practical alternatives

[Note: Cost will not be considered to be an acceptable reason].

- identify what native species of native wildlife, threatened species and native wildlife habitat and natural ecosystems will be affected.

2.2.5 Council may impose vegetation improvement conditions on any Development Application. Improvement may include additional planting of biodiversity offsets, the removal of noxious weeds and introduced species, the rehabilitation of riparian corridors, the connection of detached stands of native vegetation, the planting of buffer native vegetation to protect exposed endangered ecological communities.

2.2.6 Where land contains native vegetation or an endangered ecological community or where a proposed development or an activity may affect a threatened species, population or ecological community or their habitat, Council may, require a Species Impact Statement to be submitted in accordance with the provisions of Division 2 or Part 6 of the Threatened Species Conservation Act, 1995.

2.2.7 In consideration of any specialist report, Council must have regard to:

- any measures proposed in a species impact statement to mitigate any adverse effect of a proposed development or activity on a threatened species, population or ecological community or their habitat, and
- any approvals that must be obtained under any other legislation.

2.2.8 The keeping of cats and goats will not be permitted (by condition of consent) on land occupied by a threatened species, population or their habitat or an endangered ecological community.

2.2.9 The keeping of dogs may, by condition of consent, be permitted to be kept on land occupied by, or likely to be occupied by, or periodically used by, a threatened species, population or ecological community subject to:

- the keeping of dogs on the land not being contrary to any measures recommended in a species impact statement or any consent or approval issued under any other legislation.
- dogs being restrained during the hours between sunset and sunrise each day so they cannot roam during the night time.
- dogs being accompanied by a responsible person during daylight hours outside the immediate curtilage of the dwelling.
- dogs being suitably restrained and not permitted to roam on the property when the occupants are not at home.

2.2.10 A property landscape plan (PLP) must be submitted with a development application for the erection of a dwelling house, secondary dwelling, ancillary development, access road, services infrastructure, fencing or works where the proposed development will require:

- clearing of native vegetation.
- revegetation or planting of screening vegetation for land stabilisation.
- biodiversity offsets to maintain and improve biodiversity.

NOTE: Native vegetation cannot be removed unless approval is given under the Native Vegetation Act administered by the Southern Rivers Catchment Management Authority.

2.2.11 The property landscape plan must:

- clearly identify strategically important existing and proposed vegetation aimed at screening development to ensure it will be enduring through time and able to be clearly identified by condition(s) of development consent.·
- include measures to ensure such vegetation will be maintained and replaced over time if this becomes necessary due to damage, natural death or failure to survive due to human intervention or natural causes.
- maximise the use of local endemic species of plants.
- indicate how the visual impact of any access road and services infrastructure and fencing on the landscape will be mitigated by planting of vegetation.
- must not rely on landscaping and planting alone to be used as an alternative to improved siting options which use the natural landscape and landform to screen or reduce the visibility of proposed development to public view.

2.2.12 A property landscape plan must be prepared by a person(s), or with appropriate qualifications in the botanic, ecological or natural sciences.

2.2.13 A property landscape plan that includes biodiversity offsets must have regard to and be informed by "Principles for the use of biodiversity offsets" in NSW government publications".

Topic 2.3 - Natural Resources

Drinking Water Protection (new)

58.26km^2 of land located in the west of the Kiama Municipality is contained within the Shoalhaven Catchment of the Sydney Drinking Water Catchments – this represents 22.5% of the local government area.

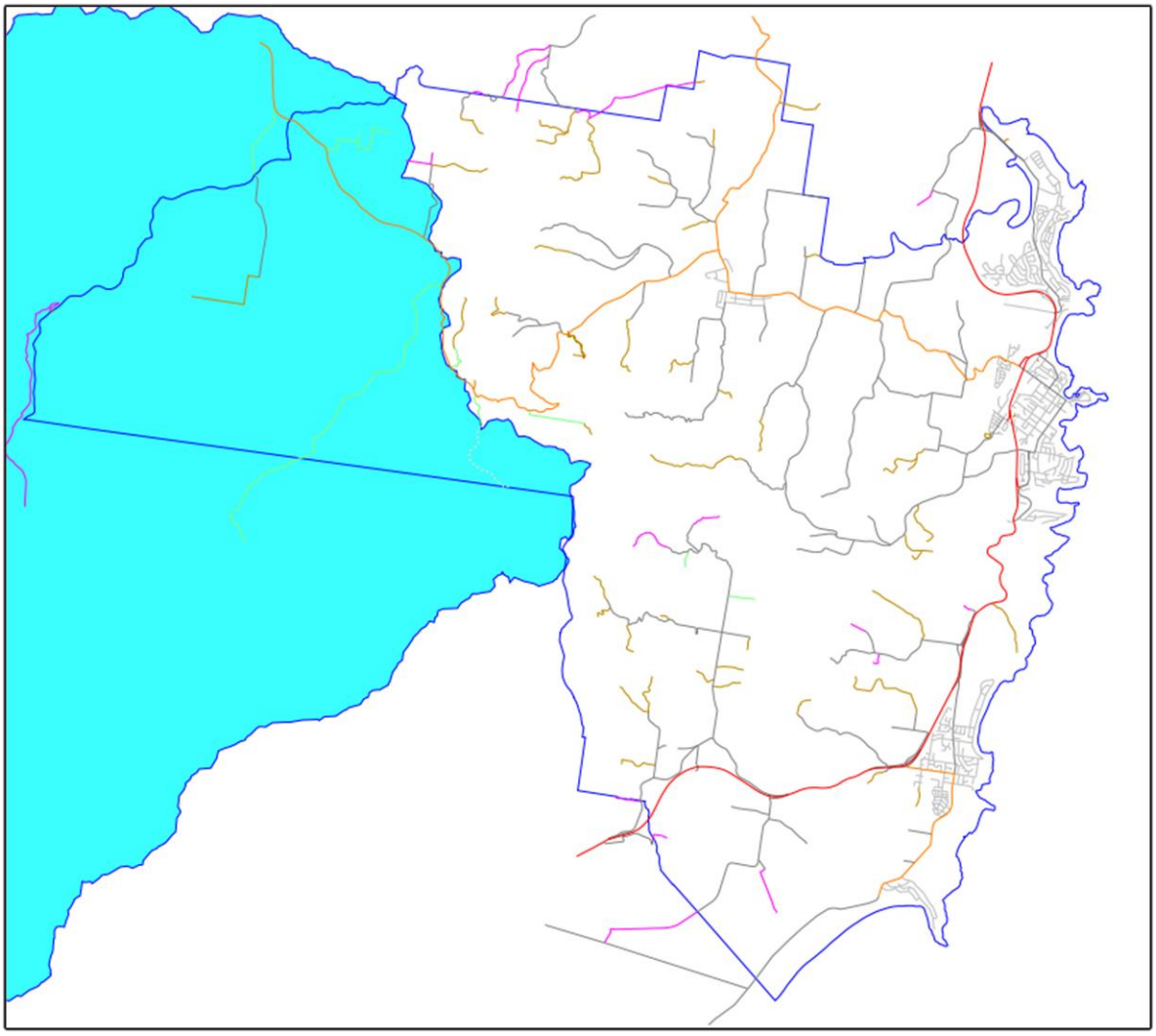


Figure 1. Sydney Drinking Water Catchment

The Shoalhaven catchment covers 5,640 square kilometres - more than one-third of Sydney's drinking water catchment. The Shoalhaven River runs through the heart of the catchment, from the fine wool country around Braidwood in the south-west to the lush rainforests of Kangaroo Valley in the north-east.

Developments in the Sydney drinking water catchment must have a neutral or beneficial effect on water quality.

To ensure water quality continues to be protected in the Sydney drinking water catchment, all proposed developments that require consent under the Kiama LEP 2011 need to have a neutral or beneficial effect (NorBE) on water quality.

Under State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011, proposals need to be assessed to identify potential risks to water quality (eg sediment from construction) and ways to avoid any adverse impacts from those risks (eg by applying current recommended practices and standards).

Possible impacts on both surface and groundwater are considered as part of the neutral or beneficial effect on water quality assessment.

All development applications in the Sydney drinking water catchment must include a water cycle management study (WCMS) or equivalent information to help council and WaterNSW assess whether the development will have a neutral or beneficial effect on water quality (NorBE).

Water Quality Information Requirements (PDF, 269.4 KB) for development in the Sydney drinking water catchment document describes the different reports and modelling you need to include with a development application, and how they vary for different types and scales of development.

To help you choose a consultant to prepare the water cycle management study for your development application, download the Using a Consultant to Prepare Your Water Cycle Management Study (PDF, 181.42 KB) document.

Topic 2.4 - Tree Preservation and Vegetation Management

Introduction

This Section outlines Kiama Municipal Council's requirements for the removal or pruning of trees and other vegetation.

Under Part 2 of *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017* (SEPP Vegetation), a person must not clear vegetation in any non-rural area of the State to which Part 3 applies without the authority conferred by a permit granted by the council under that Part.

Part 3 of the SEPP allows Council to prepare a development control plan and make declarations in any manner, including by reference to any of the following:

a) the species of vegetation;

b) the size of vegetation;

c) the location of vegetation (including by reference to any vegetation in an area shown on a map or in any specified zone); and

d) the presence of vegetation in an ecological community or in the habitat of a threatened species.

Objectives

The objectives of this Topic are to:

O:2.4.1	Give effect to *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017* by listing trees and other vegetation that require approval.
O:2.4.2	Maximise public safety within the Kiama Local Government Area.
O:2.4.3	To establish a framework and, methodology and requirements for the pruning, removal and replacement of trees with the Kiama Local Government Area.
O:2.4.4	To identify Exempt trees and other vegetation that may pruned or removed without the necessity for a Tree Management Application or Development Consent.

Application

This Topic prescribes trees for the purposes of Part 3 of SEPP Vegetation. In accordance with Clause 7(1) of the SEPP, a person must not cut down, fell, uproot, kill, poison, ringbark, burn or otherwise destroy the vegetation, or lop or otherwise remove a substantial part of the vegetation without a permit granted by Council.

A prescribed tree for the purpose of Part 3 of the Vegetation SEPP includes all trees in non-rural areas not listed as exempt which:

- Are five (5) metres or more in height; or
- Have a diameter of 200mm or more when measured at a height of one (1) metre above the ground; or
- Have a branch spread of three (3) metres or more.

Relevant Legislation

Application for the removal of trees and vegetation will need to take the following legislation into consideration:

- Biodiversity Conservation Act 2016 (NSW) - Contact NSW Office of Environment and Heritage;
- Biosecurity Act 2015 (NSW) – Removal of weeds - Contact NSW Office of Environment and Heritage;
- Environment Protection and Biodiversity Conservation Act 1999 (Cth) – Protect and manage native flora, fauna, ecological communities and heritage places;
- Fisheries Management Act 1994 – Prohibits removal of mangroves – Contact NSW Department of Primary Industries;
- Heritage Act 1977 (NSW) - Contact NSW Office of Environment and Heritage.
- Local Land Services Act 2013 (NSW) – Clearing of native vegetation - Contact NSW Office of Environment and Heritage;
- National Parks and Wildlife Act 1974 (NSW) – fauna habitat, protected plants - Contact NSW Office of Environment and Heritage;
- Rural Fires Act (NSW) – '10/50 Vegetation Clearing Code of Practice for NSW' and authorised removal of fire hazards – Contact NSW Rural Fire Service;
- Water Management Act 2000 (NSW) – Controlled activity approvals for certain types of development and activities that are carried out in or near a river, lake or estuary (including removal of vegetation) – Contact NSW Department of Primary Industries – Water;
- Kiama Local Environmental Plan 2011 – Trees that form part of or are identified as an item of environmental heritage listed in Schedule 5.

Land to which this Chapter Applies

This Chapter applies to development for the removal or pruning of trees or other vegetation within non-rural areas (including environmental zones) as defined by *SEPP Vegetation 2017*.

Exemptions

A Tree Management Application is not required for the cutting down, pruning, removal of any tree or other vegetation for the following:

- The tree is listed in the Exempt species list in Appendix 1 (excluding trees in the curtilage of a heritage item or heritage conservation area) and the property owners has notified Council of any proposed work;
- Where a Complying Development Certificate is issued under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* and such tree removal is in accordance with the associated provisions;
- Any works to make safe a prescribed tree outside Council business hours from an extreme weather event where there is an immediate threat of injury to persons or property as identified and directed from either an emergency service department (SES, Fire Brigade,

Police) or AQF Level 3 arborist. Evidence of the threat must be submitted to Council within 48 hours from the work being undertaken. Evidence supplied to Council must contain:

- the name and position of the emergency departments employee,
- photographs and /or name of arborist,
- level of qualifications,
- photographs and arborist report.

- Where a prescribed tree has been approved for removal or management under a previous valid development consent.
- Where the clearing of native vegetation is permitted under the Local Land Services Act 2013 or Biodiversity Conservation Act 2016, as administered by Local Land Services or the responsible State Government Department/Agency.
- Where a prescribed tree is identified as a noxious weed under the Biosecurity Act 2015 or any management plan published by the Illawarra District Weeds Authority or other Authority.
- Where action is carried out by Council, State Emergency Service, Rural Fire Service, or another infrastructure authority/emergency service authority in response to an emergency (i.e. where there is an immediate threat of injury to persons or damage to property).
- Removal of dead trees and dead wood, as long as the trees are not a threatened species, fauna habitat or a habitat tree.
- Where clearing or pruning of a tree, including prescribed trees, is required or authorised to be undertaken under one of the following:
  - Section 88 of the Roads Act 1993;
  - Section 48 of the Electricity Supply Act 1995;
  - Plantations and Reafforestation Act 1999 - where a prescribed tree is located within an "approved plantation", as per the definitions stated within this Act.
  - Forestry Act 2012 - where a prescribed tree is located within a "State Forest" or on land reserved for sale as a "timber forest reserve", as per the definitions within this Act.

Assessment Criteria

Controls

2.4.1 Where tree pruning or removal is to be carried out as a result of a Tree Management Application, all works are to be carried out in accordance with the following:

a) Australian Standard 4373 2007- Pruning of Amenity Trees (AS4373)

b) Australian Standard 4970 2009 - Protection of Trees on Development Sites (AS4970)

2.4.2 Council must take into consideration whether the growth habitat or predicted mature size of a tree is likely to come into contact with, interfere with or the drip line overhang: power lines, utility services, infrastructure, dwellings or high occupancy areas.

2.4.3 Where a Tree Management Application is submitted for tree removal or pruning, Council will base any decision to remove a tree or trees on one or more of the following:

a) The condition of the tree, where a tree is dead or dying, or where it is assessed to pose a hazard as in the consequence consideration points in the Tree Risk Assessment Matrix. In the application of the risk assessment and determining the risk posed by a tree, Council will take into consideration the advice of trained Council officers; alternatively, Council will consider a report prepared by a person who has obtained an AQF level 5 or higher qualification in Arboriculture (Horticulture);

b) Whether the tree has any structural defects which may impact on the integrity of the tree;

c) Whether the tree is causing structural damage to a building, structure, water main or sewer;

Note: A report may be required by a suitably qualified and experienced consultant where the damage is not visually evident demonstrating that the tree, its trunk, or its root system is causing damage and the damage cannot be controlled by mitigation measures;

d) Whether the tree is severely stressed, diseased or is suffering insect damage and whether the health of the tree can be improved;

e) Whether a tree species is appropriate in terms of its proximity to an existing habitable dwelling, adjoining dwellings or other buildings;

f) Whether the growth habit or mature size of a trees is undesirable in a given situation (e.g. power lines, root interference with service, infrastructure or building);

g) Whether the tree is too large for its location or is interfering or likely to interfere with public infrastructure or private utilities;

h) Whether the tree shows poor form and shape and/or vigour typical to the species;

i) Whether the removal of the tree(s) will pose any adverse impact upon the amenity or scenic environmental quality of the locality;

j) Whether the removal of the tree(s) will cause any potential adverse slope instability or geotechnical impacts upon the site or the locality;

k) Whether removal of the tree has the potential to affect a threatened species, endangered population, endangered ecological community or critical habitat for any fauna species;

l) Whether the tree is an irritant to the applicant affecting quality of life. (Medical Certificate maybe required from a suitably qualified specialist);

m) Whether any previous condition of development consent required the retention of the tree(s)

n) The ecological significance of the tree, including the trees habitat value.

o) Whether or not the tree is listed as being of Special Significance as identified in Appendix 4.

p) Any other reason at the discretion of Council staff, which can be justified on either legal or technical grounds.

Trees on Public Land

Where a private property adjoins public land, a Customer Request may be submitted to Council for the removal of a tree on public land, provided:

a) The tree is on the Exempt Species list in Appendix 1; or

b) The condition of the tree, where a tree is dead or dying, or where it is assessed to pose a hazard as in the consequence consideration points in the Tree Risk Assessment Matrix. In the application of the risk assessment and determining the risk posed by a tree, Council will take into consideration the advice of trained Council officers; alternatively, Council will consider a report prepared by a person who has obtained an AQF Level 5 or higher qualification in Arboriculture (Horticulture)

Trees on Neighbouring Property

The owner of a neighbouring property may lodge a Tree Management Application to prune a neighbour's tree, if it overhangs their property. The application will be subject to the assessment criteria and shall be carried out in accordance with AS 4373–2007 Pruning of Amenity Trees and any root pruning will be subject to maintaining the tree's stability. All approved pruning shall be restricted to the applicant's side of the common property boundary only, where the tree owner's consent has not been obtained. Property owners are encouraged to cooperate where a branch overhangs a property boundary. Council has no direct legal role in dealing with neighbourhood disputes regarding trees on property boundaries or damage caused by trees. The Trees (Disputes Between Neighbours) Act 2006 allows the owner of an adjoining property to apply to the Land and Environment Court for an order to remedy, restrain or to prevent damage to their property or persons as a consequence of a tree situated on the neighbouring property. An individual must make a reasonable attempt to resolve the situation before an approach is made to the Court. Further information is available on the NSW Land and Environment Court's website.

Topic 2.5 - Risk Minimisation and Management

Contaminated Land

The information in this section forms the basis for the management of land contamination within Kiama Municipal Council. The following information references the *Managing Land Contamination Planning Guidelines (EPA, 1998)* and *State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55)* in order to implement a contaminated land management framework within Kiama Municipal Council.

The Office of Environment and Heritage or OEH intervention in relation to contaminated land is triggered when contamination poses a significant risk of harm to public health or the environment (*Contaminated Land Management Act* 1997).

Council deals with all sites not posing a significant risk of harm, under the provisions of the *Environmental Planning and Assessment Act* 1979, in accordance with *Managing Land Contamination: Planning Guidelines* and SEPP 55.

A Council who acts substantially in accordance with the *Managing Land Contamination Planning Guidelines* when carrying out specified planning functions are taken to have acted in good faith and receive statutory protection under the *Environmental Planning and Assessment Act* 1979.

This section relates to and should be read in conjunction with *Kiama Local Environmental Plan 2011* and all relevant Chapters.

The controls apply to all land within the Kiama Local Government Area.

Objectives

O:2.5.1	To ensure that changes of land-use will not increase the risk to health and the environment;
O:2.5.2	To avoid inappropriate restrictions on land-use; and
O:2.5.3	To provide information to support decision-making and to inform the community.

Council's Decision-Making Process

In determining all rezoning, subdivision and development applications, Council must consider the possibility of land contamination and the implications it has for any proposed or permissible future uses of the land. A precautionary approach will be adopted to ensure that any land contamination issues are identified and dealt with early in the planning process.

Initial evaluation

Council will conduct an initial evaluation as part of the development assessment process to determine whether contamination is an issue, and whether sufficient information is available for Council to carry out its planning functions in good faith.

The initial evaluation will be based on readily available factual information provided by the applicant and information available to Council such as previous investigations about contamination on the land, previous zoning and uses of the subject land, and restrictions relating to possible contamination such as notices issued by NSW OEH. Council may also conduct a site inspection of the subject land.

The following flowcharts provide an overview of the process involved where different forms of development are proposed on land which is or is suspected of being contaminated. More comprehensive information is available from Council's Environmental Services Department.

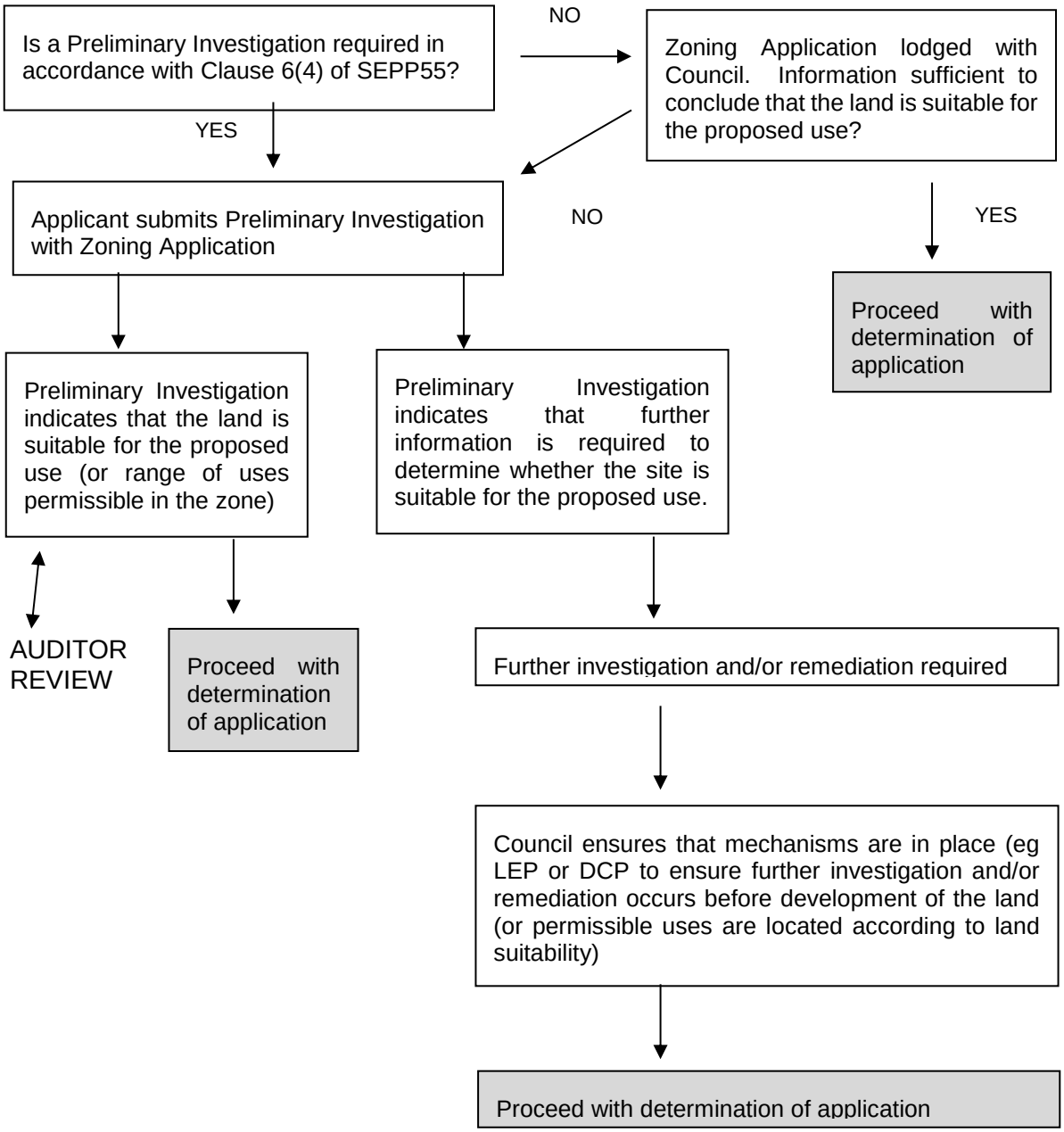


Figure 1: Council procedure for considering land contamination issues for zoning and rezoning applications (adapted from SSROC (1999) Model Policy on Contaminated Land)

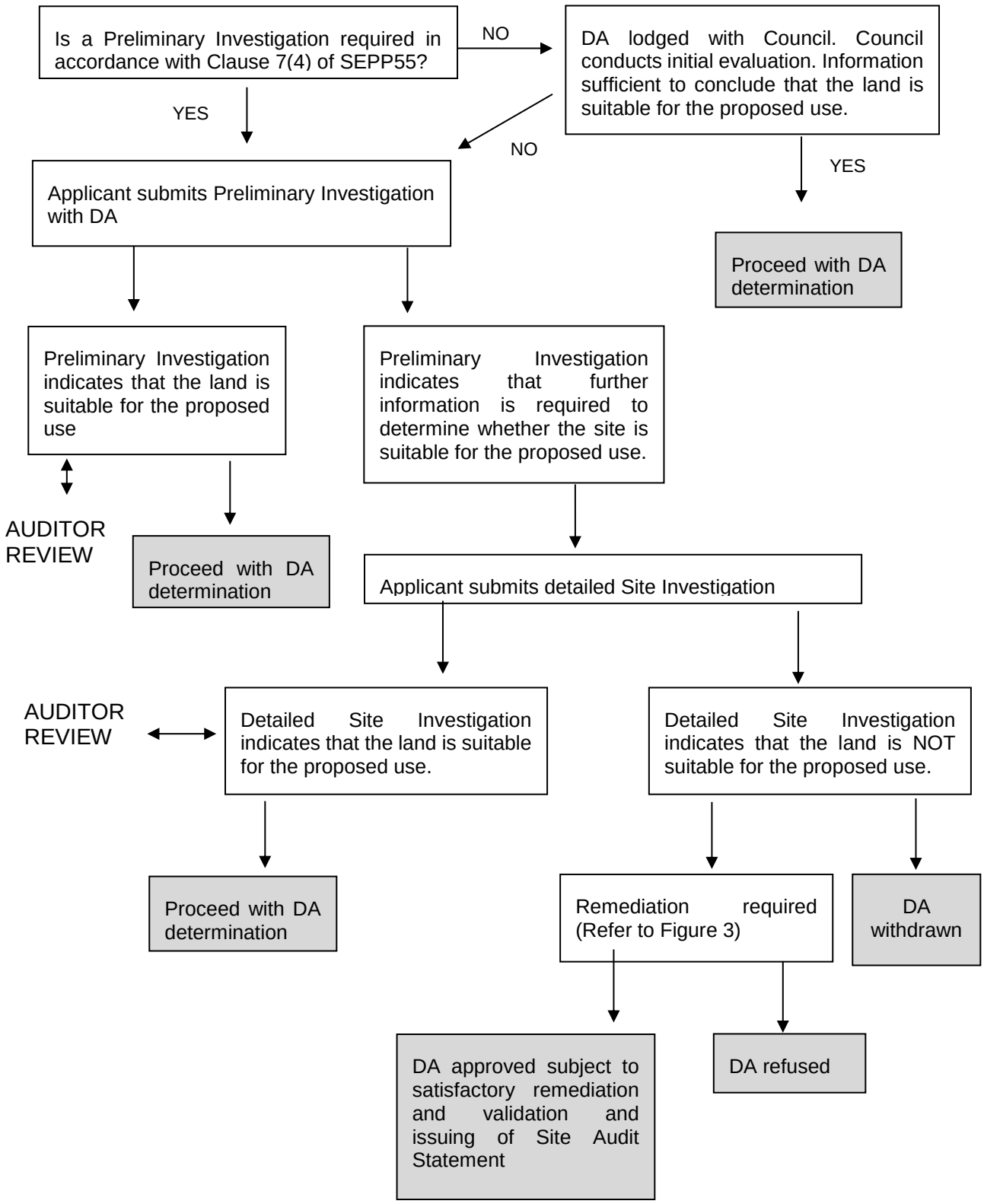


Figure 2: Council procedure for considering land contamination issues for subdivision and development applications (adapted from SSROC (1999) Model Policy on Contaminated Land)

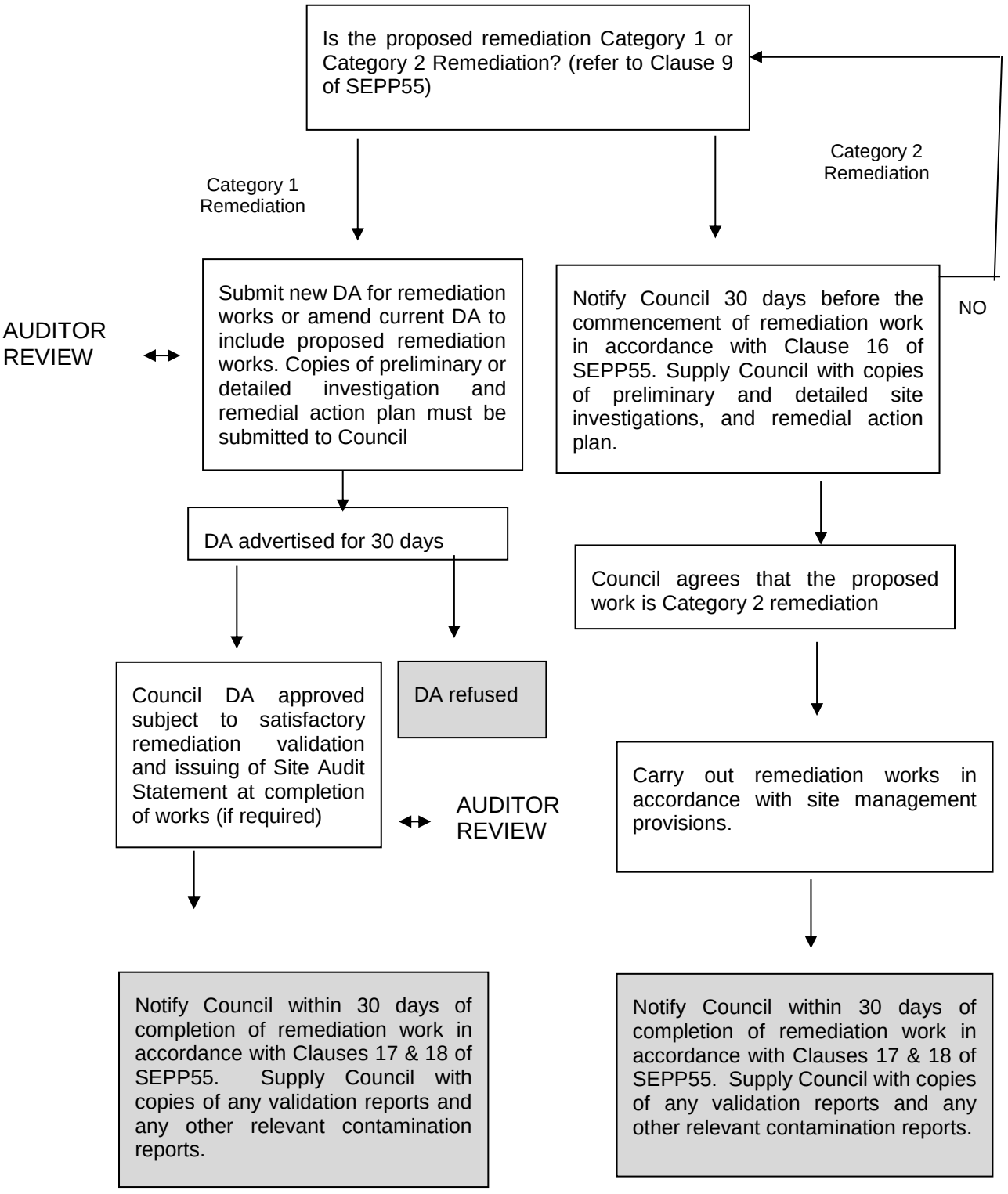


Figure 3: Council procedure for considering site remediation proposals (adapted from SSROC (1999) Model Policy on Contaminated Land)

Flood Prone Land

Introduction

This Chapter of Kiama Development Control Plan 2012 provides information and development controls needed to prepare and assess development applications on flood prone land.

The NSW Flood Prone Land Policy provides a framework for Council to manage flood prone land. Council is required under the *Environmental Planning Assessment Act 1979 (EP & A Act)*, and in Clause 6.3 of Kiama LEP 2011, to ensure that due regard is given to the impact of flooding upon development. This DCP provides the guidelines relating to development on flood prone land to assist Council in fulfilling this requirement.

Objectives

O:2.5.4	To ensure that dwellings and ancillary buildings are not subject to flooding (including sea/storm surge/tidal inundation).
O:2.5.5	To minimise the risk posed by floods to people and property and emergency services officers who provide assistance in flood emergencies

Application

This DCP applies to all

objectives:

To minimise risk to life and damage to property by controlling development on flood prone land; development on land that is potentially impacted/inundated by floodwaters.

The controls that apply to development on flood prone land will depend on the hydraulic and hazard categorisation for a site, which can only be determined if flood information is available. Due to the number of water bodies within the Kiama Municipality, the information that is available for different catchments varies significantly, and could range from historical information to detailed flood modelling data formulated as part of the Floodplain Risk Management process.

It is therefore necessary to determine what existing information is available in regard to the behaviour of floodwaters for your site. You can determine the type of information available, including whether or not a Floodplain Risk Management Plan has been adopted for your area, by checking with Council.

For areas where sufficient flood information is available, you will be able to obtain site specific flood details from Council.

There are catchments within Kiama Local Government Area that have not been the subject of a detailed flood study. Any development application proposing works on land that is likely to be flood effected within such an area must therefore be accompanied by a Flood Assessment Report undertaken by a suitably qualified hydraulic engineer.

For areas where Council has not adopted a Floodplain Risk Management Plan, generic development controls as outlined in this policy will apply. These controls will also apply if the property is within 40m of a watercourse or within 10m of a major drainage system, overland flood path.

a) For areas where Council has adopted a Floodplain Risk Management Plan, site specific controls will apply in addition to generic controls as mentioned above. These specific controls have been formulated having regard to the following
b) To ensure that the impacts of the full range of flood sizes up to and including the Possible Maximum Flood (PMF) are considered when assessing development on flood prone areas.

c) To ensure that development does not have a significant impact on flood behaviour, people's safety, surrounding properties and structures, and the natural environment;
d) To ensure that the effects of climate change are considered when assessing development in flood prone areas, including increased ocean level boundary conditions.
e) To ensure that development on the floodplain is consistent with the NSW Flood Prone Land Policy (1984) and NSW Floodplain Development Manual (2005);
f) To ensure that developers and the community are conscious of the potential flood hazard and consequent risk associated with the use and development of land within the floodplain;
g) To protect the integrity of floodplains and floodways, including riparian vegetation, environmental processes and water quality;
h) To ensure that all land uses and essential services are appropriately sited and designed in recognition of all potential floods; and
i) To ensure that development on flood prone land does not place an unacceptable financial burden on landowners or the community.

Controls

Flood Study

2.5.1 Where no flood study/management plan has been adopted for a specific site, applications for significant development in flood prone areas will need to be accompanied by a flood assessment report carried out by a suitably qualified and experienced engineer in this field. The full name of the person who prepared the report and relevant qualifications are to be provided in the report. The assessment report is to provide information on assessed flood risk to the site and is to be commensurate with the NSW Floodplain Development Manual. The following information is to be included;

a) A description of the creek or drainage system that is relevant to the flood characteristics of the site, whether located on, adjacent to or remote from the development site;

b) A plan showing cross-sections through the site, at minimum, at the upstream end and at the downstream end of the proposed development site;
- Cross-sections should extend at least as high as the highest flood level available at the site and if possible be wide enough to cover the full width of the floodplain at that location; and,
- The cross-sections should be plotted at a suitable exaggerated scale (i.e. the vertical scale is not necessarily the same as the horizontal scale);

c) Flood levels for the PMF, 1%, 5%, 10% and 20% Annual Exceedance Probability(AEP) events for the pre and post development scenario are to be provided (all assumptions, calculations and modelling output tables must be included). All levels must contain consideration of relevant Climate Change and Sea Level Rise factors. In regard to Sea Level Rise, 400mm up to the year 2050 and 900mm up to the year 2100 are relevant levels for inclusion.

d) Flood velocities and vectors for the 1% AEP event for the pre and post development scenario are to be provided (all assumptions, calculations and modelling output tables must be included);

e) Provisional Hazard categories based on depth and velocity as well as obvious other hazards such as evacuation difficulties as per the requirements of the 2005 NSW Floodplain Development Manual;

f) Provisional Hydraulic categories based on depth and velocity as per the requirements of the 2005 NSW Floodplain Development Manual; and

Floor Level

2.5.2 All new buildings shall be constructed to the 1% AEP flood level + 0.50M freeboard. For minor additions to existing buildings, i.e. 10% of existing floor area or a maximum of 30m² floor level may be at existing or higher as practical. This concession is able to be used on one occasion only.

Building Components

2.5.3 Any portion of the building or structure below the Flood Planning level (FPL) is to be built from flood compatible materials and all electrical installations to be above the FPL.

Structural Soundness

2.5.4 A report shall be provided from a suitably qualified and experienced engineer certifying the building can withstand forces of floodwaters including debris and buoyancy forces up to the 1% AEP flooding scenario and that the structure will not become floating debris during such an event

Flood Evacuation Plan

2.5.5 Appropriate engineer's report demonstrating that permanent measures are incorporated in the development to ensure that the timely, orderly and safe evacuation of people is possible from the area and that it will not add significant cost and disruption to the community or the SES.

Management and Design

2.5.6 Applicant to demonstrate that there is an area where hazardous and valuable goods can be stored above the 1% AEP Flood Level. Bunding to the FPL to be installed around hazardous chemical storage areas or the like.

Survey Details

2.5.7 In addition to the requirement to lodge general survey details with the Development Application, the Survey Plan prepared by a Registered Surveyor must also indicate the following:

- Existing ground levels at each corner of the proposed building envelope;
- The floor levels of all existing buildings or structures to be retained as well as proposed floor levels for all new buildings and structures; and
- The location of any existing buildings or structures. All levels must be relative to Australian Height Datum (AHD). Levels relating to an arbitrary assumed datum are not acceptable. Note: Some applications for minor / ancillary.

Note: Some applications for minor / ancillary development may not require survey details if a structural engineering certificate is provided.

In addition to the requirement to lodge general survey details with the Development Application, the Survey Plan prepared by a Registered Surveyor must also indicate the following:

- Existing ground levels at each corner of the proposed building envelope;
- The floor levels of all existing buildings or structures to be retained as well as proposed floor levels for all new buildings and structures; and
- The location of any existing buildings or structures. All levels must be relative to Australian Height Datum (AHD). Levels relating to an arbitrary assumed datum are not acceptable. Note: Some applications for minor / ancillary.

Note: Some applications for minor / ancillary development may not require survey details if a structural engineering certificate is provided.

Waterway Crossing

2.5.8 Where a development proposal requires access over a waterway, consideration must be given in the statement of environmental effects to:

- any alternative development sites investigated that would avoid creek crossings.
- explain why any such alternative options investigated were not considered preferable to the proposed site design requiring access across a waterway.

2.5.9 Where a waterway crossing is unavoidable, the level of any waterway crossing must provide a safe carriageway in low flood conditions (i.e. a 1 in 20 year recurrent flood level) and the engineering design of waterway crossings must accompany the development application.

2.5.10 Council may require:

- the rehabilitation, maintenance and improvement of riparian land in the vicinity of a waterway crossing.
- works to restore the natural form and functions of a waterway within the riparian corridor in the vicinity of a waterway crossing.

2.5.11 Any riparian land rehabilitation, improvement or maintenance must be addressed in the property landscape plan and the Biodiversity Offset Principles outlined in this chapter will apply where biodiversity offsets are involved.

Bush Fire Prone Land

Planning for bush fires and applying bush fire protection measures such as land clearing and hazard reduction for rural housing can have detrimental consequences for the natural environment and biodiversity. Council will require that environmental and biodiversity considerations be taken into account in siting dwellings in bush fire prone areas.

Objectives

O:2.5.5	To have regard to the increased threat of bush fires posed by climate change in building in bush fire prone areas.
O:2.5.6	To reduce the bush fire risk to rural residents, their property assets and emergency services officers who attend bush fire emergencies.
O:2.5.7	To ensure development in bush fire prone areas is sited and designed in accordance with all relevant best practice policies including NSW RFS publications, Government's bush fire protection policy.
O:2.5.8	To avoid widespread clearing of native forest and the associated impact on native biodiversity for bush fire protection purposes where this can be avoided.

Controls

2.5.12 The erection of a dwelling on a lot containing bush fire prone land must:

- be located on a lot so that it is less susceptible to a direct bush fire attack threat.
- comply with bush fire protection measures and control standards in the NSW Rural Fire Services' publication Planning for Bushfire Protection, (including any revised editions or supplementary publications released by the NSW RFS).

2.5.13 A Bush Fire Assessment Report must be submitted with the statement of environmental effects.

2.5.14 Dwellings and ancillary development (including tourist accommodation) must be located as far as possible on cleared land to:

- minimise the bush fire risk, and
- avoid the need to clear native vegetation to reduce the risk of bush fire attack

2.5.15 Where feasible, developments should provide for a perimeter road or reserve around the dwelling(s) and associated ancillary development to assist inner protection area management and bush fire fighting.

2.5.16 Provision must be made for access by bush fire fighting and other emergency services vehicles and where necessary, the ability for these vehicles and their emergency services officers and residents to be safely evacuated in the case of extreme bushfire threat.

2.5.17 In some locations, this may require providing an additional alternative means of access to the development in locations where a property is subject to a severe bush fire attack threat. This may also require the applicant/landowner negotiating alternative access arrangements over an adjoining property.

2.5.18 Select plants that match the conditions of the environment (soils, rainfall, temperatures, frost and wind) but do not overlook fire as a factor. All plants will burn but some are more tolerant of fire than others.

Features of plants that provide protection from fire include:

- High salt content of leaves
- High moisture content of leaves
- Low volatile oil content of leaves
- Thick bark protecting conductive tissues and dormant buds
- Seed enclosed in woody capsules
- Dense crown
- Lowest branches out of reach of ground fires

Refer to publications by the NSW Rural Fire Service for tree selection details.

2.5.19 Proposed residential subdivision upon bush fire prone land will be subject to compliance with the requirements of the NSW Rural Fire Service publication titled *"Planning for Bush Fire Protection"* guide and hence, the application must be accompanied by a bush fire assessment report. The bush fire assessment report must be prepared by a suitably qualified and experienced bush fire consultant and must provide a comprehensive assessment as to how the proposed development complies with the *"Planning for Bush Fire Protection"* guide. The Statement of Environmental Effects (SEE) should specifically address the findings and conclusions of the bush fire assessment report to ensure compliance with the *"Planning for Bush Fire Protection"* guide. The findings and conclusions of the bush fire assessment report should also be reflected in the design of the proposed subdivision.

2.5.20 New residential subdivisions in bush fire hazard prone lands will generally require a perimeter road system to assist in providing access to fire fighting vehicles. Any such perimeter road must be designed as a through road and cater for two–way vehicular traffic.

2.5.21 The public road system in bush fire prone areas should provide alternative access or egress for fire fighters and residents during a bushfire emergency.

2.5.22 Property access in rural areas, in particular isolated rural properties, can have operational difficulties for fire fighters. As a result the location and standards of property access roads need to be carefully considered. Short property access roads are preferable to long access roads for the safety of evacuating residents and emergency service personnel, and therefore it is preferable to site dwellings as close as possible to public through roads

Acid Sulfate Soils

Objectives

- To ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage.

Controls

2.5.23 Development affecting land identified in the Acid Sulfate Soils Map in Kiama LEP 2011 must only be carried out in accordance with the relevant provisions of that plan.

Land Instability

Objectives

O:2.5.9 To ensure dwellings and other ancillary development on unstable land are located and designed to maximise the structural design of buildings and the safety of their occupants.

O:2.5.10 To minimise the risk of land slip impacting on habitable buildings and access roads.

Controls

2.5.24 Dwellings and ancillary development must not be carried out on slopes with gradients exceeding 20% unless this is in accordance with an approved existing building envelope that has been registered on the land title as a Section 88E restriction under the *Conveyancing Act 1919*.

2.5.25 If there is no approved building envelope registered on the land title, and if development on steep land is unavoidable due to the site terrain and other constraints on the land, the reasons for locating a dwelling or ancillary development on land with a gradient exceeding 20% must be explained and justified in the Statement of Environmental Effects.

2.5.26 Council may require that a geotechnical report suitably qualified geotechnical consultant and submitted with development application for dwelling or ancillary development for habitable purposes. The geotechnical report must include:

- Investigation of the stability and suitability of land identified within the identified building envelope for a dwelling and any ancillary habitable buildings.
- Engineering and design recommendations required to maintain the stability of the development site and the structural safety of any habitable building proposed to be erected within the building envelope.

2.5.27 The design of earthworks associated with dwellings and ancillary development must:

- minimise the extent of cut and fill to reduce the potential for land slip and visual impact on the landscape.
- restrict excavation for a building to not more than 1 metre below ground level (existing).
- restrict the height of any external retaining wall outside the walls of a building to not more than 1 metre above ground level (existing).
- restrict the design of any batter to not more than a gradient of 1:4 (absolute) and preferably 1:6.

2.5.28 Dwellings should be designed to step down steep sites by split level design to avoid the need for significant earthworks.

2.5.29 Any approved construction of a dwelling or ancillary development on land with a gradient exceeding 20% must be designed to minimise cut and fill and the risk of land instability, erosion and visual impact.

2.5.30 Where an earth batter is proposed, details of the revegetation works proposed to stabilise the batter and to prevent erosion and pollution of any nearby waterway must be included in the property landscape plan that accompanies the Development Application. Details must cover both the construction and post construction phases.

Appendix 1- Exempt Tree & Vegetation Species

The following list of exemptions **DO NOT** apply to:

- any trees or other vegetation located on a heritage item, Aboriginal object, Aboriginal place of heritage significance, or on land within a heritage conservation area.
- Habitat trees – meaning a tree which has developed hollows in the trunk or limbs suitable for nesting native birds, arboreal marsupials and mammals.

Clause 10(3) of *SEPP Vegetation* and Clause 5.10 of the Kiama LEP 2011 contain requirements for trees and other vegetation located on heritage items and within heritage conservation areas.

Exempt Species List	
Acacia baileyana	Cootamundra Wattle
Acacia mearnsii	Black Wattle
Acacia saligna	Golden Wreath Wattle
Alianthus altissima	Tree of Heaven
Acer negundo	Box Elder
Celtis sinensis	Chinese Celtis
Cinnamomum camphora	Camphor Laurel
Cotoneaster species	Cotoneaster
Cupressus macrocarpa "Brunniana"	Golden Pine
Eriobotrya japonica	Loquat
Erythrina crista-galli	Cockspur Coral Tree
Erythrinax sykesii	Coral Tree
Ficus elastic	Rubber Tree
Fraxinus griffithii	Evergreen Ash
Grevillea robusta	Silky oak
Koelreuteria elegans	Golden Rain Tree
Lagunaria patersonii	Norfolk Island Hibiscus
Ligustrum lucidum	Privet
Ligustrum sinense	Privet
Morella faya	Candleberry Myrtle
Nerium oleander	Oleander

Exempt Species List	
Olea Africana	African Olive
Pinus radiata	Radiata Pine
Pittosporum undulatum	Sweet Daphne
Populus species	All poplar trees
Radermachera sinica	China Doll Tree
Robinia pseudoacacia	Black Locust
Salix species	All Willows
Schefflera sp.	Umbrella Tree
Syagrus romanzooffianeum	Cocos Palm
Tipuana tipu	Tipuana
Tecoma stans	Yellow Bells
Toxicodendron succedaneum	Rhus Tree
Cupressocyparis leylandii	Leylandii Pines (all varieties)
Fruit trees being grown specifically for their edible fruit for human consumption	

Appendix 2 – Topic 2.4 Definitions

Consulting Arborist is a qualified Arborist who has attained a Diploma (Level 5) of Arboriculture or equivalent qualification, based upon the Australian Qualification Framework.

arboriculture means cultivating and managing trees as individuals and in small groups for amenity purposes.

Council means the council of a local government area and, in relation to a particular development, means the council of the local government area in which the development will be carried out.

dead tree means any tree that is no longer capable of performing any one of the following processes:

- Photosynthesis;
- Take up of water through the root system;
- Hold moisture in its cells; or
- Produce new shoots.

destroy means any activity leading to the death, disfigurement or mutilation of a tree.

development application means an application for consent under the Environmental Planning and Assessment Act (including any application to modify a development consent).

exempt tree species is any tree listed within the Exempt Tree Species list in Appendix 1 of this document.

habitat tree means any tree which is a nectar feeding tree, roost and nest tree or a hollow-bearing tree which is suitable for nesting birds, arboreal marsupials (possums), micro-bats or which support the growth of locally indigenous epiphytic plants such as orchids.

injury means any activity or damage to a tree and includes:

- removal
- lopping and topping
- poisoning, including applying herbicides and other plant toxic chemicals to a tree or spilling of oil, petroleum, paint, cement, mortar, etc onto the root zone or parts of the tree
- cutting, tearing, breaking or snapping of branches and roots that is not carried out in accordance with accepted arboricultural practices or is done for invalid reasons, including vandalism
- ring-barking, scarring the bark when operating machinery, fixing objects by nails, staples or wire or fastening materials that circle and significantly restrict the normal vascular function of the trunks or branches
- damaging a trees root zone by compaction, excavation or asphyxiation and includes unauthorised land filling or stockpiling of materials around the tree trunk
- under-scrubbing, unless carried out by hand tools such as brush cutters and the like.

native vegetation has the same meaning as in the *Biodiversity Conservation Act 2016*

Other Vegetation means:

Remnant Native Vegetation including:

(i) trees,

(ii) understorey plants,

(iii) ground cover,

(iv) plants occurring in a wetland.

prescribed tree - any tree/vegetation that is not listed as exempt which:

- are five (5) metres or more in height; or
- have a diameter of 200mm or more at a height of one (1) metre above the ground; or
- have a branch spread of three (3) metres or more

priority weed means a plant declared a priority weed under the *Biosecurity Act 2015*.

pruning is the removal of any branch or root, dead or alive from a tree which conforms to the pruning types defined within the Australian Standard AS4373 Pruning of Amenity Trees. The pruning types are: dead wooding; crown thinning; selective pruning; formative pruning; reduction pruning; crown lifting; pollarding; remedial pruning; and line clearance. Lopping and topping are not types of pruning.

remnant tree or vegetation means a native tree or any patch of native vegetation which remains in the landscape after removal of the majority of the native vegetation in the locality.

remove means to cut down, take away or transplant a tree from its place of origin.

significant tree: important; of consequence.

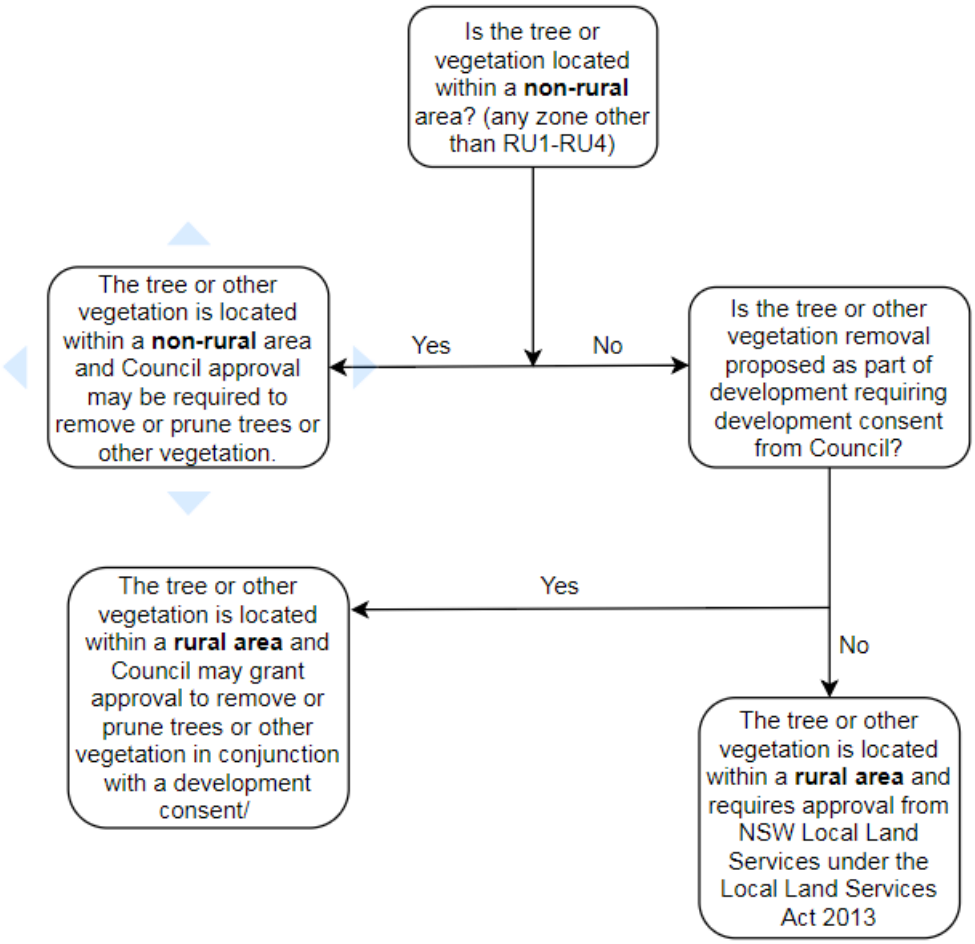
Example: due to prominence of location, or in situ, or contribution as component of the overall landscape for amenity or aesthetic qualities, or curtilage to structures, or importance due to uniqueness of taxa for species, subspecies, variety, crown form, or as an historical or cultural planting, or for age, or substantial dimensions, or as remnant vegetation, or habitat, or a rare or threatened species, or uncommon in cultivation, or of Aboriginal cultural importance, or is a commemorative planting.

SEPP – Any *State Environmental Planning Policy* of relevance to this document – refer to http://www.legislation.nsw.gov.au/

Tree Management Application (TMA) means an application to Council to remove, lop or prune a prescribed tree.

tree management works means any act which is likely to interfere with or cause injury to a tree.

Appendix 3 - Flow Chart – When Approval is required for the Removal of Trees or Vegetation



Appendix 4 - Trees of Special Significance

Kiama Municipal Council is concerned about the conservation of an important part of the heritage of the area that is the trees of special significance in the Municipality. These may be single trees, stands or avenues of trees which may be significant for a number of reasons. The following criteria should be used as a guide in determining if a tree or group of trees are of special significance.

Occurrence

- Species listed as endangered on the schedules of *Biodiversity Conservation Act 2016* and the Federal *Environment Protection and Biodiversity Conservation Act 1999*.
- Species which occur rarely within the Municipality; these may be native or exotic species.

Heritage

- Trees which have an historical significance because of their age or association or commemorative value.

Cultural

- Trees which may have a particular cultural value because of their use or identification by a particular group.

Landscape

- Trees which add special character to a site or form a particular group e.g. avenues, or add to the aesthetics in a special way or are a very prominent feature in the landscape.

Form or Habit

- Trees which are very large, or have a special shape or growth characteristics or have special botanical interest.

Environmental Benefit

- Trees which provide special habitat values or shade or food source or act as a significant erosion control.

Many of these trees are Figs, Norfolk Island Pines and Palms and the following design criteria are provided for those species. However, there are other trees not specified in this document which also require particular treatment because of their significance. Persons preparing landscape plans should consult early with Council's development assessment staff regarding the treatment of these trees. A report prepared by a qualified arborist shall be prepared for any tree of special significance affected by the development.

Indigenous Fig Trees

Ficus macrophylla, Ficus obliqua, Ficus rubiginosa, Ficus superba

The Kiama region mature and historic Fig species are a reminder of the area's once dominant sub-tropical rainforest. As development of the area occurred, many of these trees were lost and so the need to conserve the remaining mature historic trees for future generations is most important.

Design Criteria

No structures shall compromise the health and integrity of the roots and canopy of the tree or trees.

- Wherever possible access ways should be located beyond the dripline.
- In locations where access can only be located or partly within the dripline segmented pavers approved by Council shall be used. Alternatively, a suspended structure will be provided which allows vehicular and pedestrian access without impacting upon the tree root system and which allows aeration and water penetration.

Indigenous Palms

Livistona australis (Cabbage palm)

Easily recognised by their tall slender trunks and palm fronds which once protruded above the rainforest canopy, many mature historic palms remain dotted throughout the hinterland as reminders of the scale of the rainforest vegetation.

Design Criteria

No excavation shall occur within 3.0 metres radius from the trunk. These palms may only be relocated under exceptional circumstances and then only when confirmed by a qualified arborist that the relocation presents little or no risk of harming the palm.

Norfolk Island Pines

Araucaria heterophylla (Norfolk Island Pine)

These trees are synonymous with the coastal landscape. Although not a native tree to this region, mature and historic Norfolk Island Pines are a part of the historical landscape of the Municipality and part of its identity.

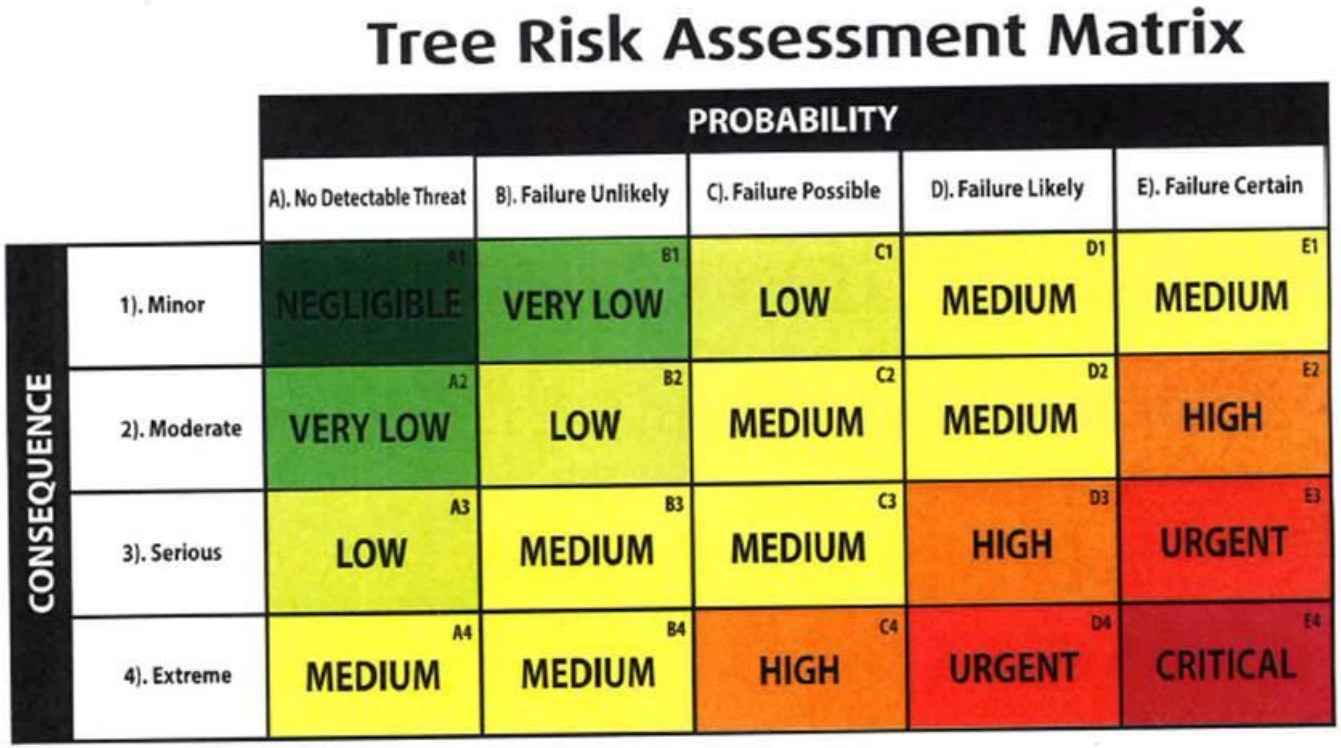
Design Criteria

- No structure shall compromise the health and integrity of the roots and canopy of the tree or trees.
- Wherever possible, access ways should be located beyond the dripline.

In locations where access can only be provided within or partly within the dripline, a segmented paver shall be used. Alternatively, a suspended structure shall be provided to allow vehicular and pedestrian access without impacting upon the trees root system.

Appendix 5 – Tree Risk Assessment Matrix

TREE RISK ASSESSMENT MATRIX



The Tree Risk Assessment is based on a ground based Visual Tree Assessment (VTA) as detailed in the Limitations and Explanation of Assessment Terms document.

WEATHER

An understanding of the destructive capability of wind and adverse weather is necessary and will assist site owners and managers to comprehend the limitations of arboricultural inspections. For further details refer to Weather section of the Limitations and Explanation of Assessment Terms document. **Due to the known destructive capability ofstrong winds on defect-freet rees, the ArborSafe assessment (including the risk assessment) is based on normal weather, wind speeds and directions for the site and the trees, up to a maximum average wind speed of 33 knots and/or a maximum gust of 43 knots, unless otherwise specifically advised in writing.**

PROBABILITY

For both Current Risk and the Residual Risk After Remedial Works, the inspecting Arborist considers the following points when determining the Probability of a future tree failure:

1. The probability of tree failure is considered to be within a 12 month reinspection interval, unless otherwise requested by the site manager.
2. The tree risk assessment is based on normal weather, winds peeds and directions for the site and the trees, up to a maximum average wind speed of 33 knots and /or a maximum gust of 43 knots, unless otherwise specifically advised in writing.
3. Where a tree has multiple defects, theprobability of failure for the Current and Residual Risk is based on the part(s) of concern that presentthe highest risk.
4. Where possible, cavities or hollows within 1.5m of ground are sounded and/or probed to investigate the ir extentan d potential effect on structural integrity.
5. Evidence of previous failures, types of defects and species traits are considered when assessing the probability of failure.
6. Multiple compounding and/or progressive defects may increase the probability of failure.
7. If the structural integrity of the tree or part(s) of concern cannot be adequately determined from ground based VTA, if reasonable, the inspecting arboristwill nominate further detailed inspection or testing of the defect/s and will nominate the location, type of testor report an d detail req uired to make a future informeddecision on the structural integrity of the tree or part(s) thereof.
8. The i nspecting arborist may consider the potential impact of works within the root zone on the probability of failure, only where information on works within rootzones has been accurately provided or is clearly visible at the time of the assessment.
9. The inspecting arborist may consider the effects of changesin wind loading n assessed trees when the site manager has informed the inspecting arborist of all activities that have taken place in proximity toa ssessedt rees.

PROBABILITY	DESCRIPTION	EXAMPLE
No Detectable Threat (Failure Unforeseeable)	The tree has no sighted risk related defects and/or structure where failure of the tree or part is considered not foreseeable during the reinspection period.	The tree may present with good structure which is well suited to the location with no risk related defects sighted.
Failure Unlikely	The tree has a visible defect(s) and/or structure where failure of the tree or part is considered unlikely during the reinspection period.	The tree may present with fair to good structure, which is well suited to the location. The tree may exhibit good response growth, with defects that are well tolerated by the species and are unlikely to fail during the reinspection period.
Failure Possible	The tree has a visible defect(s) and/or structure where failure of the tree or part is considered possible during the reinspection period.	Previous branch failures may be evident in the subject tree. Excessive branch end weight. Included bark not well tolerated by the species. Epicormic branch growth .Bird browsing damage on branch unions. Cavities and/or decay of unknown extent. Small quantity of dead wood. Increased canopy exposure to wind.
Failure Likely	The tree has a visible defect(s) and/or structure where failure of the tree or part is considered likely during the reinspection period.	The tree may present a trend of branch failures. The tree may present with poor structure and known not to be well tolerated by the species. Advanced decay with poor response growth. Significant cavities likely to impact tree structure. Significant earth works within the Tree's Structural Root Zone (SRZ). Tree displays evidence of included bark and/or with significant swelling, cracks, splits, bleeding sap flow or aerial roots within a branch union. Tree exhibits large branch growth at previous lopping points. Significant quantity of deadwood. The tree has multiple defects each deemed a lower probabilitybut combined present as compoundingdefects.
Failure Certain	Thetree has a visible defect(s) and/orstructure and failure of thetree or part is considered certain during the reinspection period.	Thetree may have severe defects that have a potentialof failure at any time and/or compromisedtree or branchstructure is evident. Unstable hanging limbs. Activeroot platemovement is evident via soil lifting/cracking. Active trunk or branch union splits/cracks.

CONSEQUENCE

For both Current Risk and the Residual Risk After Remedial Works, the inspecting Arborist considers the following points when determining the Consequence of a potential future tree failure:

1. The size of the tree part(s) of concern.
2. Fall distance of the tree part(s) of concern.
3. Asset value or importance within the fall zone.
4. If multiple targets within fall zone increase the consequence.
5. The potential severity of injury or asset damage from the size of part(s) of concern.
6. Information provided from the site managers/owners regarding occupancy and usage within the fall zone.
7. The potential for impacting a target considering the intensity of use within the fall zone.
8. Observations at the time of assessment of human activity, visitation, assets and usage within the fall zone.
9. Other trees, branches, hardware or structures that would reduce the severity of impact and provide target protection.
10. Where a tree has multiple defects, the consequence of failure for the Current Risk and Residual Risk After Worksis based on the part(s) of concern that present the highest risk.

CONSEQUENCE	DESCRIPTION
Minor	A low chance of significant human injury or death due to the size of the tree part(s) of concern and/or occupancy within the fall zone and/or asset damage limited to lower value assets.
Moderate	A medium chance of significant human injury or death due to the size of the tree part(s) of concern and/or intermittent occupancy within the fall zone and/or asset damage limited to moderate value assets.
Serious	A high chance of significant human injury ordeath due to the size of the tree part(s) of concern and/or frequent occupancy within the fall zone and/or asset damage to significant value assets and/or disruption to important services.
Extreme	A very high chance of significant human injury or death due to the size of the tree part(s) of concern and/or intense to constant occupancy within the fall zone and/or asset damage to major assets and/or disruption to significant services.

TIME FRAME FOR REMEDIAL ACTIONS

All risk based remedial actions should be prioritised by levels of risk, from Critical to Negligible in a descending manner. Critical risk works should be performed as soon as possible and fall zones of the tree or part(s) of concern should have effective exclusion zones established and maintained until remedial actions are performed. Urgent to High risk remedial work actions should be performed as soon as is practicable, with lower level risk level remedial works to be prioritised at the client's discretion based on resources available.

Appendix 6 – Information Required for Consulting Arborist Report

An Arborist report must include, but not be limited to the following information:

(a) Details of the Consulting Arborist undertaking works, including; name, address, contact details and qualifications
(b) Address details of site subject to the application
(c) Details of person/organisation that commissioned the Arborist's report
(d) Date of inspection(s)
(e) The method of investigation/ techniques used in the research and preparation of the report
(f) A statement outlining the aims of the report and confirming that work are in accordance with AS4970-2009
(g) A scaled site plan illustrating:
    i. lot boundaries, dimensions and north point
    ii. numerical identification of all trees on the subject site, including those proposed for pruning, lopping or removal within the application
    iii. trees located on adjoining properties, that are located within 10 metres of any proposed work should be identified
    iv. identification of tree(s) by botanical and common name(s)
    v. the Tree Protection Zone and Structural Root Zone, as determined by the Consulting Arborist
    vi. existing infrastructure located on the site, including services, driveways and buildings shall be identified
(h) A table showing for each tree:
    i. number of the tree as indicated in the plan
    ii. tree name- botanical and common name
    iii. age class
    iv. height
    v. trunk diameter at 1.4 metres above ground level
    vi. crown spread
    vii. health and condition, and estimated useful life expectancy
    viii. a recognised tree rating system such as SRIV, TREE-AZ or SULE
(i) Details of other relevant information, including presence of tree hollows for wildlife, structure/weaknesses, root form and distribution, pests and diseases and/or a Tree Hazard Assessment
(j) Supporting evidence including photographs and laboratory results, root mapping and any other information deemed relevant
(k) Proposed replacement plantings, landscaping and soil remediation

(l) Tree protection measures and a post-construction tree maintenance program, which can be used if development consent is approved

(m) Sources of information referred to in the report

(n) Any other relevant matters.

Note: Potential habitat trees' containing hollows, and likely to house arboreal wildlife (such as possums) or potential bird nesting sites, require an experienced wildlife handler (i.e. a member of the Native Animal Network Association or WIRES) to be present at the time of pruning/removal. Council requires a signed letter from the wildlife handler at the conclusion of the pruning/removal, reporting observations/sitings. It is recommended that nesting boxes be installed in the closest retained trees to replace hollows, irrespective of whether the lost hollow was a habitat at the time of removal.

Appendix 7 – Tree & Vegetation Assessment Methodologies

Visual Tree Assessment (VTA)

The Visual Tree Assessment (VTA) is an internationally recognised methodology of assessing trees. The system is based around 'The body language of trees' where a trees biology and physiology is visually inspected to identify structural defects, pathogen or insect damage, tree form, vitality and any other environmental and/ or climatic conditions that affect the Safe Useful Life Expectancy (S.U.L.E) rating of a tree.

Safe Useful Life Expectancy (SULE)

SULE is an internationally recognised rating system that refers to an expected period of time a tree can be retained before its amenity value declines to a point where it may detract from the appearance of the landscape and/ or becomes potentially hazardous to people and/ or property above an acceptable level of risk.

Safe Useful Life Expectancy Categories

1. Long SULE: Trees that appeared to be retainable at the time of assessment for more than 40 years with an acceptable level of risk.

    (a) Structurally sound trees located in positions that can accommodate future growth.

    (b) Trees that could be made suitable for retention in the long term by remedial tree care.

    (c) Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long term retention.

2. Medium SULE: Trees that appeared to be retainable at the time of assessment for 15–40 years with an acceptable level of risk.

    (a) Trees that may only live between 15 and 40 more years.

    (b) Trees that could live for more than 40 years but may be removed for safety or nuisance reasons.

    (c) Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.

    (d) Trees that could be made suitable for retention in the medium term by remedial tree care.

3. Short SULE: Trees that appeared to be retainable at the time of assessment for 5–15 years with an acceptable level of risk.

    (a) Trees that may only live between 5 and 15 more years.

    (b) Trees that could live for more than 15 years but may be removed for safety or nuisance reasons.

    (c) Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.

    (d) Trees that require substantial remedial tree care and are only suitable for retention in the short term.

4. Remove: Trees that should be removed within the next 5 years.

    (a) Dead, dying, suppressed or declining trees because of disease or inhospitable conditions.

    (b) Dangerous trees because of instability or recent loss of adjacent trees.

    (c) Dangerous trees because of structural defects including cavities, decay, included bark, wounds or poor form.

    (d) Damaged trees that are clearly not safe to retain.

    (e) Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.

    (f) Trees that are damaging or may cause damage to existing structures within 5 years.

    (g) Trees that will become dangerous after removal of other trees for the reasons given in (a) to (f).

    (h) Trees in categories (a) to (g) that have a high wildlife habitat value and, with appropriate treatment, could be retained subject to regular review.

5. Small, young or regularly pruned: Trees that can be reliably moved or replaced.

    (a) Small trees less than 5m in height.

    (b) Young trees less than 15 years old but over 5m in height.

    (c) Formal hedges and trees intended for regular pruning to artificially control growth.

How to contact Council

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Our Administration Building located at
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Monday to Friday (excluding public holidays)

KIAMA MUNICIPAL COUNCIL
your council, your community