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CONTENTS

1. INTRODUCTION.....	4
1.1 Title.....	4
1.2 Purpose.....	4
1.3 What is Offsetting?	4
1.4 Aims and Objectives.....	4
1.5 When does the Offsets Code apply?.....	4
1.6 When does the Offsets Code not apply?.....	4
1.7 Controls to Conserve Indigenous Trees and Native Vegetation	5
2. LAND TO WHICH THE CODE APPLIES.....	7
2.1 Objectives for Land Categories	8
2.1.1 Regional Core and Local Core.....	8
2.1.2 Support for Core.....	8
2.1.3 Remnant EEC Trees and Other Vegetation and Mapped Remnant Trees	8
2.1.4 Creeks, Corridors and Connectivity.....	9
2.1.5 All Other Land.....	9
3. HOW DOES VEGETATION OFFSETTING WORK?	10
3.1 What are the steps in the vegetation offsetting process?.....	10
4. VEGETATION OFFSETTING ACTIONS FOR PRIVATE LAND	11
4.1 Types of Vegetation Offset Actions.....	11
4.1.1 Option 1 – Protection.....	11
4.1.2 Option 2 – Enhance and Protect	11
4.1.3 Option 3 – Create and Protect.....	11
4.2 Receiving Lands: Where can Vegetation Offset Actions be applied?	11
4.3 Vegetation Offset Action performance criteria.....	11
5. THE VEGETATION OFFSETTING MULTIPLIERS	12
6. CALCULATING THE VEGETATION OFFSET	13
6.1 Calculating the amount of vegetation to be offset.....	13
6.2 Mixing options and alternative action.....	13
6.3 Example	13
7. COMPLEMENTARY REQUIREMENTS FOR PRIVATE LAND VEGETATION OFFSETTING.....	15
7.1 Management Fee.....	15
7.2 Performance Guarantee.....	15

8.	APPLICATION REQUIREMENTS FOR PRIVATE LAND VEGETATION OFFSETTING.....	16
9.	OFFSETTING PROCESS SUMMARY FOR PRIVATE LAND VEGETATION OFFSETTING	17
10.	GREEN OFFSETS ON PUBLIC LAND	18
10.1	Vegetation Offset Actions applicable for Council managed land.....	18
10.1.1	Bushland Restoration Offset Program – Create, Restore and Enhance	18
10.2	Criteria for Council managed land offset actions – Where will the actions be applied?	18
10.2.1	Bushland Restoration Offset Works	18
10.3	Calculating the amount of vegetation to be offset.....	18
10.4	How will the cleared area cleared be calculated?	19
10.5	What are the calculated costs of the offset?	19
10.6	High Conservation Lands Acquisition Fund	19
	FIGURE 1 – PROCESS FOR PUBLIC LAND VEGETATION OFFSETTING	20
11.	TREE OFFSET ACTIONS APPLICABLE FOR COUNCIL MANAGED LAND.....	21
11.1	How will eligibility be assessed?	21
11.2	Calculating the number of replacement	21
11.3	Replacement Species	21
11.4	Calculating the cost of replacement planting	21
11.5	Legal Mechanism of Offset Actions.....	21
12.	GREEN ROOFS AND WALLS	23
13.	DICTIONARY	24
	APPENDIX 2: GUIDELINES FOR MAP VALIDATION	28
	APPENDIX 3: CONSERVATION SIGNIFICANCE CATEGORY MAP	30

1. INTRODUCTION

1.1 Title

This code is called the Hornsby Shire Council Green Offset Code.

1.2 Purpose

The purpose of this code is to provide guidance on the approach to conducting offsets for the loss of indigenous trees and vegetation in the Hornsby Local Government Area, integrating the regulatory requirements of state planning and environmental legislation and policies.

Apart from offsetting, other actions that achieve significant net improvements in native vegetation condition, quality and size will be considered on their own merits by Council. This will be undertaken on a case by case basis.

1.3 What is Offsetting?

Offsetting is a mechanism by which the negative impacts at one site can be offset by positive actions within a region. Offsetting, if used strategically could lead to:

- Maintenance of environmental viability.
- An overall net improvement in environmental viability across a region.
- A net gain in vegetation cover.
- An additional level of security for vegetation that is currently not protected.

1.4 Aims and Objectives

The objectives of this code are as follows:

- Ensure that significant vegetation including trees in the shire are protected.
- Facilitate some development, which may have negative impacts.
- Ameliorate negative environmental impacts of development at a regional and local level.
- Provide for environmental enhancement and restoration.

1.5 When does the Offsets Code apply?

The Offsets Code applies when:

- A development is expected to result in unavoidable loss of indigenous trees and native vegetation.
- Council assesses alternative proposals on their merits and decides that if an applicant addresses the principles of the code and demonstrates significant net gains for trees and native vegetation of the Hornsby Local Government Area, offsetting may be used.

1.6 When does the Offsets Code not apply?

An offsetting action shall not be allowed by Council if:

- The applicant has not adequately demonstrated to Council's satisfaction that all measures have been taken to avoid impact on vegetation or removal of indigenous trees through consideration of alternative locations and designs and other mitigation measures.
- The applicant has not adequately demonstrated to Council's satisfaction that all measures have been taken to minimise impact through consideration of additional or alternative amelioration or mitigation measures.
- The site is not suitable for the proposed development in accordance with EP&A Act (Sect. 79(c)1(c) and local plans and policies.
- Subdivision applications where there will be removal or significant fragmentation of over 40% of native vegetation on the development site which is considered an Endangered Ecological Community. In such cases, Council is highly unlikely to approve a subdivision application.

- Subdivision applications where there will be removal or significant fragmentation of over 30% of native vegetation on the development site which is considered a Critically Endangered Ecological Community. In such cases, Council is highly unlikely to approve a subdivision application.
- The applicant has not adequately demonstrated to Council the need for the offsetting action.
- Council considers that the principles and controls in this code have not been adequately addressed.
- Council considers that the environmental impact is not acceptable. This may occur where there is likely to be an irreplaceable loss of indigenous trees and/or vegetation that will not be adequately compensated by the proposed offsetting actions.
- Alternative compensatory arrangements have been made – e.g. Council has already accepted a Masterplan and accompanying Offsetting Management Plan.

The conservation of indigenous trees, native vegetation and habitat in situ will always be the preferred option for the management of biodiversity in the Hornsby Shire. It is Council's objective that all development proposals be designed in such a way that trees, natural habitat and features are conserved and maintained.

Note that losses or impacts to Local Core and Regional Core (land of the highest ecological value) are unlikely to be approved. Conditions will apply to how and where offset actions are applied, and these will be determined by Council as required.

All offsetting of trees and vegetation proposed to be removed or impacted upon should seek to occur on the development site first. Note: In these cases offsetting may occur through the provision of Conditions of Consent.

If the development site is unsuitable for offsetting then options for offsetting on private lands may be sought. As a last resort, after pursuance of all other options, Council may consider actions on public lands, in accordance with Section 10: Green Offsets on Public Land of this code. Note: In these cases offsetting may occur through the submission of a Voluntary Planning Agreement or other legal agreement.

[Table 1](#) ~~Table 4~~ outlines the principles that underpin the offsetting code.

Table 1: Principles

The Principle of Avoid, Minimise and Mitigate - Offsetting should only be considered once all efforts to avoid, minimise and mitigate any negative impacts have been exhausted.
The Precautionary Principle - In conducting an offsetting action the precautionary principle should be applied so that a cautious and conservative approach is taken towards risk where there is uncertainty or lack of scientific confidence in an action.
The Principle of Net Gain - This code should lead to a net gain and improve the condition of the environment. The primary objective of an offset activity should be to create, enhance, or protect in perpetuity ecologically viable habitat for locally endemic species.
The Principle of Avoiding the Effects of Cumulative Impacts - Offsetting should not be used as a justification for granting approval to developments, where the cumulative environmental impacts of that development are greater than the benefit to be obtained from the offset action.

1.7 Controls to Conserve Indigenous Trees and Native Vegetation

All development proposals shall be prepared in accordance with Hornsby Shire LEP, relevant Development Control Plans and other associated guidelines.

All development proposals are to be sited and designed in such a way that native vegetation, remnant bushland, habitats and natural features are conserved and managed.

Council should not issue approval for activities or consent for development that will result in the loss of indigenous trees or native vegetation unless the following performance criteria are met:

- Demonstrate the protection of any rare or threatened species of flora or fauna and/or its habitat.
- Develop ecological objectives reflecting the biodiversity values and ecological/landscape context of the site.

- Address the performance requirements for specific categories of 'bushland of conservation significance' (below).
- Demonstrate a net improvement in the conservation of indigenous vegetation in the Hornsby Shire.
- Demonstrate the maintenance or improvement of native fauna habitat.
- Demonstrate that on-site abiotic factors (such as water, nutrients, or soil) are maintained or improved where they are essential to the maintenance and survival of the bushland and its values. Impacts to abiotic factors, both direct and indirect impacts, should be removed or minimised. All aspects of the proposal should be considered including: impact of construction, onsite effluent disposal, APZs, drainage works, retaining walls, provision of services, driveways, footpaths, private open space.
- Demonstrate the protection of on-site biodiversity values through the appropriate management of pests, invasive weed species (noxious, environmental and garden escapees) or other threats to the long term security or management of the identified values.
- Not adversely affect the ecosystems functions of existing bushland corridors, riparian corridors or other desirable areas providing bushland connectivity.
- Demonstrate that the risk to persons or property has been minimised through appropriate layout, design and management, whilst protecting and enhancing bushland.
- Landscaping has utilised native species consistent with the locally indigenous community occurring on-site.

2. LAND TO WHICH THE CODE APPLIES

This code will apply on land where there is the presence of bushland or remnant bushland or native vegetation or indigenous trees in the Hornsby LGA. This code may apply to all activities, developments and master planning processes being undertaken in accordance with the EP& A Act on such land.

This Offsets Code categorises lands containing vegetation into the following conservation significance categories:

- Regional Core.
- Local Core.
- Support for Core.
- Remnant EEC Trees.
- Other native vegetation and remnant trees.

These categories are based on the combination of type, size, and location of vegetation and represent a measure of the conservation significance of these lands.

The following discussion refers to patch sizes when discussing areas of vegetation. A 'patch' is defined as an area of adjoining vegetation, not taking into consideration vegetation type. When we assess and categorise land in a conservation significance ranking based on size, we use patch size. This is discussed in further detail in Appendix 2: Guidelines for Map Validation

Core – Regional: This category comprises areas that are necessary to create and maintain a viable conservation network across the landscape at a regional and local scale.

For Hornsby these have been split into the following 3 sub categories:

- Blue Gum High Forest – all bushland mapped with a community patch size of >0.5 ha.
- Bushland mapped as Endangered Ecological Communities (listed by the NSW Scientific Committee) with a patch size >3 ha.
- Bushland mapped as Hornsby Regionally Significant Communities with a patch size >4 ha.

Core – Local: This category comprises areas that are considered significant to achieving local conservation and management goals.

For Hornsby these have been split into the following 4 sub categories:

- Blue Gum High Forest – all patch sizes of bushland mapped <0.5 ha.
- Bushland mapped as Endangered Ecological Communities: patch size <3 ha.
- Bushland mapped as Hornsby Regionally Significant communities: patch size <4ha.
- Bushland mapped as Locally Significant Communities patch sizes >0.5ha.

Support for Core: This category comprises areas that provide a range of support values, such as increasing remnant size, buffering edge effect and providing corridors and connectivity, to the core areas. They are generally small isolated remnants (within 40m of a core area and not captured in the preceding categories) where restoration, rehabilitation or regeneration works could be undertaken to enhance the overall values of the area and the core area it supports.

Remnant EEC Trees: This category comprises of all mapped patches of remnant tree areas which contribute to the ecological values of the Shire and are considered part of the listed Endangered Ecological Communities and Critically Endangered Ecological Communities.

Other Vegetation and Mapped Patches of Remnant Trees: This category is comprised of other mapped native vegetation and patches of native remnant trees, including:

- Native vegetation communities that have been mapped and do not meet the above criteria of the other categories.
- All mapped patches of native remnant trees.

All vegetation within the CSA mapping is based on the criteria and mapping within the following Smith and Smith studies:

- Native Vegetation of Hornsby Shire 2008 update.
- Remnant Trees of the Southern Rural District of Hornsby Shire 2008.
- Remnant Trees of the Urban District of Hornsby Shire 2009.

The land category map provided in Appendix 3 details the distribution of these areas across the Shire of Hornsby. This map is available on Council's website.

Applicants will need to identify the category of their land on the land category map in order to apply the Offsets Code.

If there is uncertainty about whether this code applies to your land, or if you disagree with the mapping, then the guideline in Appendix 2 will help you determine the appropriate steps to take.

This code defines performance criteria for these types of areas. Offsets involving land in a conservation significance category and in these areas will need to meet the relevant performance criteria (including that of the classification), and will likely be target lands for receiving offset actions.

2.1 Objectives for Land Categories

2.1.1 Regional Core and Local Core

For land that is classified as Regional Core/Local Core the following performance objectives will apply. The applicant must demonstrate:

- The long term protection and enhancement of vegetation classified as Regional Core/Local Core.
- That the action does not fragment an occurrence of vegetation classified as Regional Core/Local Core.
- A provision of a buffer considered appropriate to protect this vegetation and no adverse effects on the capacity of a buffer area.
- A provision for the ongoing management of this vegetation.

2.1.2 Support for Core

For land that is classified as 'Support for Core' the following performance objectives will apply. The applicant must demonstrate:

- That the action enhances and does not restrict the consolidation of vegetation classified as 'Support for Core' with other 'Core' bushland.
- That where it promotes consolidation then bush regeneration and appropriate locally indigenous landscaping is to occur.

2.1.3 Remnant EEC Trees and Other Vegetation and Mapped Remnant Trees

For land that contains remnant EEC trees and other vegetation and mapped remnant trees the following performance objectives will apply. The applicant must demonstrate:

- That the action protects and enhances the bushland.
- Provision for an experiential sense of native bushland in the Hornsby Shire.

2.1.4 Creeks, Corridors and Connectivity

Other areas of ecological importance include land in creeks, regional corridors, local corridors, or connectivity areas. Land in regional corridors, local corridors, connectivity areas and adjoining lands that are not captured in the above conservation significance categories will still have an important role as offset receiving sites and will still need to meet performance criteria and controls allocated by this code for regional corridors, local corridors, and connectivity areas. For land that is considered part of a creek, corridors or connectivity area, the following performance objectives will apply. The applicant must:

- Minimise the environmental impact of development or activities on this land.
- Protect and enhance the ecological values of the creeks and rivers, riparian corridors and fauna habitat.
- Improve water quality entering the creeks and rivers, riparian land and green corridors.
- Minimise disturbance to creek and river banks and creekline buffers.
- Demonstrate that there is adequate buffer to protect values from the risks being generated by the proposal.
- Promote restoration of the creeks, rivers and riparian corridors.
- Promote consolidation of remnant vegetation.
- Prevent fragmentation and barriers to connectivity in aquatic and riparian habitats.
- Prevent the establishment and spread of weeds.
- Facilitate the longer term management of the creeks, rivers and connectivity.

2.1.5 All Other Land

The applicant will be required to:

- Minimise the loss of indigenous trees; and
- Offset the loss of indigenous trees by planting additional trees, preferably on the same land, or on other land as may be agreed by Council.

3. HOW DOES VEGETATION OFFSETTING WORK?

3.1 What are the steps in the vegetation offsetting process?

The process for offsetting will vary from case to case. However, a summary of the process is outlined in the steps below:

Step	Description	Reference
1	Applicant holds a pre-DA meeting with Council	<input checked="" type="checkbox"/>
2	Applicant demonstrates that all options for retaining vegetation/habitats and features of the site have been exhausted. Proposal is deemed to have unavoidable adverse impacts to native vegetation	<input checked="" type="checkbox"/>
3	The Offsets Code applies	<input checked="" type="checkbox"/>
4	Applicant determines land category of impacted land using land category maps	(Appendix 3)
5	Applicant may query maps using field validation process	(Appendix 2)
6	Area of land in each category to be affected is calculated	<input checked="" type="checkbox"/>
7	Type of vegetation offset action, and land category of receiving lands are determined	Section 4.1, 4.2
8	Land category objectives and action performance criteria are reviewed for compliance	Sections 2.1 & Appendix 1
9	Offset Multiplier is selected	Section 5
10	Area to be offset is calculated using offset formula	Section 6
11	Agreement with Land Owner to be affected by Vegetation Offsetting is negotiated if applicable with a legal agreement	<input checked="" type="checkbox"/>
For private land offsetting, follow steps 12, 13, 14. For		
12	Performance guarantee and Management fees are calculated	Section 7
13	Vegetation Offset Plan prepared (This may include a Vegetation Management Plan)	<input checked="" type="checkbox"/>
14	Vegetation Offset Plan submitted to Council with Development Application	<input checked="" type="checkbox"/>

The above applies where offsets are made on private land. For public land offsetting, see Sections 10-11 of the code.

4. VEGETATION OFFSETTING ACTIONS FOR PRIVATE LAND

4.1 Types of Vegetation Offset Actions

There are three types of vegetation offset actions in this Offsets Code, namely Protection, Enhance and Protect and Create and Protect. Note that a combination of these, along with other suitable actions, may be appropriate.

4.1.1 Option 1 – Protection

Protection actions involve a legal mechanism that binds future owners of that land to manage the land for conservation and for its habitat values. Protection can take place on the proponent's land or on someone else's land. Types of protection actions available include creating covenants (Sections 88b and 88e of the *Conveyancing Act 1919*), rezoning to environmental protection with conservation registration, voluntary conservation agreements, reservation in Council or NPWS reserve and certain secure community schemes.

4.1.2 Option 2 – Enhance and Protect

For this action, receiving sites are enhanced and managed to improve their ecological integrity and viability over time. Protection and ongoing management is an integral part of this action.

4.1.3 Option 3 – Create and Protect

This action will involve works to create new habitat in areas that are adjacent to existing habitat or in areas where there is a sound ecological reason to create habitat (such as provision of connectivity). Protection and ongoing management is an integral part of this action.

4.2 Receiving Lands: Where can Vegetation Offset Actions be applied?

A receiving site for the offsetting action must be selected. The receiving offset site must be ecologically suitable and appropriate – note that the offsetting documentation provided by the applicant must demonstrate this.

Wherever possible, the offset action must involve the same vegetation community. The land category of the receiving site must also be determined using the land category map. The table below outlines where offsetting actions can be applied based on the proposed action and the land category of the receiving site. The table ensures that an appropriate treatment is given to the particular land category receiving the offset action.

Table 2: Where can Vegetation Offset Actions be applied?

Land Categories of receiving site	Vegetation Offset Action on receiving land		
	Protect	Enhance & protect	Create & protect
Regional Core *	Yes	Yes	No
Local Core	Yes	Yes	No
Support for Core	No	Yes	Yes
Remnant EEC Trees	No	Yes	Yes
Other Native Vegetation and Remnant Trees	No	Yes	Yes

More than one action can be applicable to each land category. Other actions that achieve significant net improvements in native vegetation condition, quality and size will also be considered on their own merits by Council. The applicant will need to decide which offset action to apply using the information provided in this code, but the action must be in accordance with [Table 2](#) ~~Table 2~~.

4.3 Vegetation Offset Action performance criteria

Performance criteria for each of the three offset actions proposed apply as identified in Appendix 1. Each offset action has related performance criteria that must be met.

5. THE VEGETATION OFFSETTING MULTIPLIERS

The Offset Multipliers have been developed to compensate for loss of native vegetation from developments. They are a guide to facilitate equity where the focus of the offsetting should be on the conservation outcomes rather than the exactness of the numbers.

Offset multipliers are set out in the table below.

Table 3: Offset Multiplier

Land Categories being impacted on by the activity	Offset Multiplier		
	Offset action on receiving private land		
	Protect	Enhance & protect	Create & protect
Regional Core	2	8	-
Local Core	1.5	6	-
Support for Core	-	4	8
Remnant EEC Trees	-	5	5
Other Native Vegetation and Remnant Trees	-	2	4

The 'Offsetting Multiplier' is based on the following three factors:

1. A representation of the ecological value of the area being lost. This is based on the conservation significance rating that the area has been given in the conservation significance assessment process. A relative value has been given to each conservation class.
2. A representation of the relative risk of the action not working and therefore the benefit not being achieved. Clearly, enhancement and creation works have a much higher risk of not being successful than a protection action on existing high quality areas, therefore they have a higher multiplier to compensate for this risk.
3. The relative time delay until the action provides the appropriate ecological benefit.

Note:

- Council is unlikely to approve clearing of Regional Core or significant clearing/impact on Local Core lands.
- Receiving sites for offsetting actions must be ecologically suitable and appropriate for the type of offset action being proposed.

6. CALCULATING THE VEGETATION OFFSET

6.1 Calculating the amount of vegetation to be offset

In order to calculate the amount of vegetation that will need to be offset, the following information is required:

- The bushland category of the land being impacted on by the activity from the bushland category map (see Appendix 3)
- The offset action you wish to apply to the receiving land
- The area of the land to be cleared in the proposal.

The bushland category and the offset action are used to determine the offset multiplier in [Table 3: Offset Multiplier](#).

Taking all this information together, the following offset formula should then be applied:

$\text{Offset Required} = \text{Area to be Cleared} \times \text{Offset Multiplier}$
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6.2 Mixing options and alternative action

An offsetting management plan may outline a mix of offset actions. Appropriate multipliers are to apply to each action. Apart from offsetting, other actions that achieve significant net improvements in native vegetation condition, quality and size will be considered on their own merits by Council. This will be undertaken on a case by case basis, and may be combined with offsetting actions.

6.3 Example

0.5 hectares of bushland categorised as Support for Core on the land category map is proposed to be cleared for a development. After all other possibilities are exhausted, it is determined that offsetting will apply. The proponent locates an eligible receiving site classified as Local Core, which is suited to Enhance and Protect actions. The proponent agrees to Enhance and Protect land categorised as Local Core, as identified on the Land Category Map, as the offset action.

In this example:

- The area to be cleared = **0.5 ha**
- The bushland category of the land being impacted on by the activity = **Support for Core**
- The receiving site for the offset = **Local Core**
- The offset action to apply to the receiving land = **Enhance and Protect**
- By consulting Table 2 we know that an Enhance and Protect offset can be applied to Local Core land.

Table 2

Land Categories of receiving site	Offset action on receiving land		
	Protect	Enhance & protect	Create & protect
Regional Core	Yes	Yes	No
Local Core	Yes	Yes	No
Support for Core	No	Yes	Yes
Remnant EEC Trees	No	Yes	Yes
Other Native Vegetation & Remnant Trees	No	Yes	Yes

- Using the Offset multiplier table (Table 3), we determine that the offset multiplier is **4**

Table 3

Land Categories being impacted on by the activity	Offset Multiplier		
	Offset action on receiving private land		
	Protect	Enhance & protect	Create & protect
Regional Core	2	8	-
Local Core	1.5	6	-
Support for Core	-	4	8
Remnant EEC Trees	-	5	5
Other Native Vegetation & Remnant Trees	-	2	4

Using the offset formula.....

Offset required = Area to be Cleared x Offset Multiplier

.....we determine that the offset required is 2Ha

Offset required = 0.5 ha x 4 = 2ha of Local Core

Therefore the offset required is: 2 ha of land to be Enhanced and Protected on Local Core land, as mapped on the Land Category Map. This land should be in close proximity to the development site if possible and should aim to be of the same vegetation community type as the bushland being cleared for development.

7. COMPLEMENTARY REQUIREMENTS FOR PRIVATE LAND VEGETATION OFFSETTING

7.1 Management Fee

To enable Council and the public to be sure that required offsets are being correctly implemented, where an offset is required by a Condition of Consent, a Voluntary Planning Agreement or other legal agreement, Council Officers will be required to undertake additional inspections of the proposed works. A management fee will be charged by Council to cover the cost of undertaking additional site inspections and auditing for compliance with the implementation of the Offset Plan and its components. The management fee will be charged at an hourly rate based on the Pre-Development Application Advice in the Fees and Charges schedule for Hornsby Shire Council.

Management fees for works resulting from impacts on urban remnants and remnant trees or other native vegetation attract Council fees in accordance with existing rates.

No performance guarantee or management fee is required where the offsetting action is protection only and it can be demonstrated that there is certainty that the outcome will be achieved.

7.2 Performance Guarantee

A Performance Guarantee for both enhancement and creation work will be required. This is to ensure that offset actions are started and completed to the standard required, and receive ongoing management. To ensure that works are undertaken the guarantee must be set high enough to create an incentive for the developer to comply with the agreed plan.

The Performance Guarantee will be calculated using the following formula:

Performance Guarantee = Cost of undertaking action

The performance guarantee provides an incentive for the proponent to undertake the works as set out in their offsetting plan. The guarantee also enables Council to implement the required works in the event that the proponent is unable or unwilling to comply with the requirements.

- The cost of undertaking the action is calculated at \$209,207 per hectare.

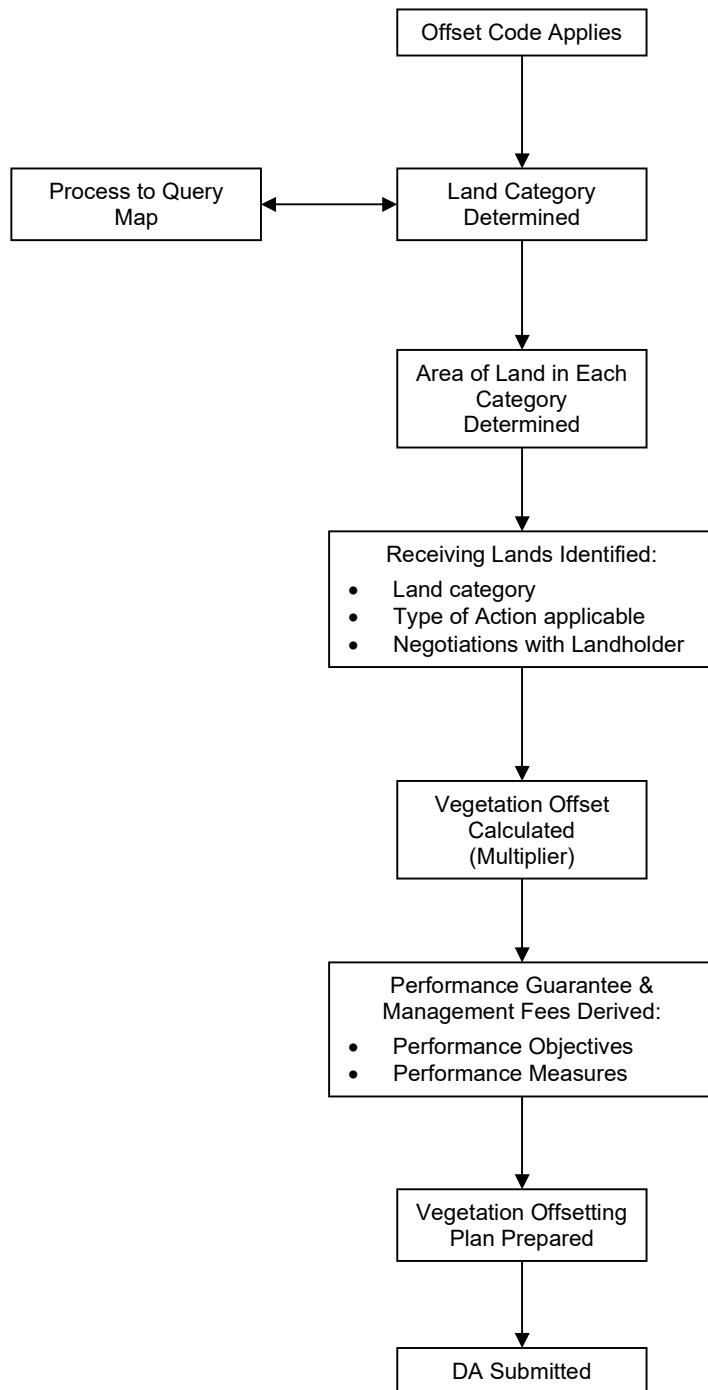
The performance guarantee will be returned when it is deemed by Council Officers that the required works have been undertaken by the proponent and are in accordance with the Conditions of Consent, the Voluntary Planning Agreement or other legal agreement. The return of Performance Guarantee can be staged where the Vegetation Management Plan has a staged implementation and performance measure for each stage of the plan.

8. APPLICATION REQUIREMENTS FOR PRIVATE LAND VEGETATION OFFSETTING

At a minimum, applications that include an offsetting should include the following:

- An Offset Management Plan, which outlines the proposed offset action to be undertaken to compensate for habitat loss and clearing, and which provides details about the offsetting action - to be submitted with DA, REF or Masterplan proposal.
- Proposed commercial agreement between Council and developer/landowner.
- Flora and Fauna assessment – refer to Council guidelines.
- Documentation showing legally binding consent of land owner of proposed receiving site, if owned by another party, company, organisation or individual.
- A Vegetation Management Plan.

9. OFFSETTING PROCESS SUMMARY FOR PRIVATE LAND VEGETATION OFFSETTING



10. GREEN OFFSETS ON PUBLIC LAND

In cases where proponents have pursued all other options to Avoid, Minimise, and Mitigate the loss of native vegetation or significant remnant or indigenous trees within a development, Council may consider offsetting this loss within Council managed lands. This option would only be considered if the offset action leads to a net gain and overall improvement of the native vegetation.

All of the aims and objectives and principles for offsetting in the Green Offsets Code apply to Green Offsets on Public Lands.

Offsetting on Public Lands will require the proponent to enter into a Voluntary Planning Agreement under Section 93F of the Environmental Assessment and Planning Act (1979) with Hornsby Shire Council. This legal agreement commits the proponent to providing an appropriate monetary contribution for the calculated green offset and commits Council to expend that contribution on the offset actions.

10.1 Vegetation Offset Actions applicable for Council managed land

10.1.1 Bushland Restoration Offset Program – Create, Restore and Enhance

For this action, receiving sites are restored and enhanced through active bushland regeneration and restoration; and actions are taken to improve their ecological integrity and viability over time. Receiving sites undergo bushland restoration and revegetation works to create new habitat in areas that are adjacent to existing habitat or in areas where there is a sound ecological reason to create habitat (such as provision of connectivity or enhancement of existing local bushland). Actions may also include protection measures such as fencing, stabilisation and reconstruction of natural habitats.

10.2 Criteria for Council managed land offset actions – Where will the actions be applied?

Contributions made under this section of the Green Offset Code – Green Offsets on Public Land will go into the Bushland Restoration Program for implementation of the offset action.

10.2.1 Bushland Restoration Offset Works

Contributions made into this program will go towards restoration and revegetation works on Council managed bushland. Wherever possible, the offset action will be undertaken in the same vegetation community as the loss. Works on the receiving public land will be undertaken through time to ensure ongoing restoration and maintenance of high conservation local bushland reserves.

10.3 Calculating the amount of vegetation to be offset

The calculation for the amount of vegetation to be offset will be based on the following criteria:

- The bushland category of the land being impacted on by the activity from the bushland category map (see Appendix 3); and
- The offset action multiplier
- Maintenance of environmental viability
- An overall net improvement in environmental viability across a region
- A net gain in vegetation cover
- An additional level of security for vegetation that is currently not protected.

Public Land Offset Program: Vegetation Offset Multipliers

	Bushland Restoration Offset Program
Regional Core	N/A
Local Core	6
Support for Core	5
Remnant EEC Trees	5
Other Native Vegetation and Remnant Trees	2

The following offset formula should then be applied:

Vegetation Offset required = Area to be Cleared x offset multiplier
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10.4 How will the cleared area cleared be calculated?

The vegetation offset area will be calculated using the amount of native vegetation removed in square metres. This may include areas of native vegetation including indigenous trees to be impacted and modified due to the installation of Asset Protection Zones.

For areas of remnant trees where an ecologist has assessed that the development site is an EEC or CEEC, the area of that vegetation community lost will be calculated on the square metres of the canopy spread of the remnant tree or group of remnant trees in cases where understorey and shrub vegetation is not adequately represented.

10.5 What are the calculated costs of the offset?

Bushland Restoration Offset Program contribution is based on amount per unit area of calculated offset area required. The calculated costs for the Bushland Restoration Offset Program will be set at \$209,207 per hectare. This figure is subject to amendments in line with the CPI.

This is based on current bush regeneration costs through time on a site which would be considered moderately degraded. The amount of time to restore bushland varies and there is always ongoing maintenance in any degraded sites. These costs can be well over \$475,000 per hectare for highly degraded sites. This figure is considered an average of the costs of bushland restoration over a ten year period.

The calculated offset x \$209,207 plus a 10% management fee would equal the amount of contribution required for the Bushland Restoration Offset Program.

Vegetation Offset required = Area to be Cleared (in hectares) x Offset multiplier x \$209,207 plus 10% Management fee.

Example:

300 square metres (.03ha) of Blue Gum High Forest is removed or impacted by the development in an area classed within the Conservation Significance Assessment (CSA) mapping as Remnant EEC Trees:
.03ha x 5(offset multiplier) =.15ha x 209,207 =\$31,381 plus \$3,138 = \$34,519 contribution to the Bushland Restoration Offset Program.

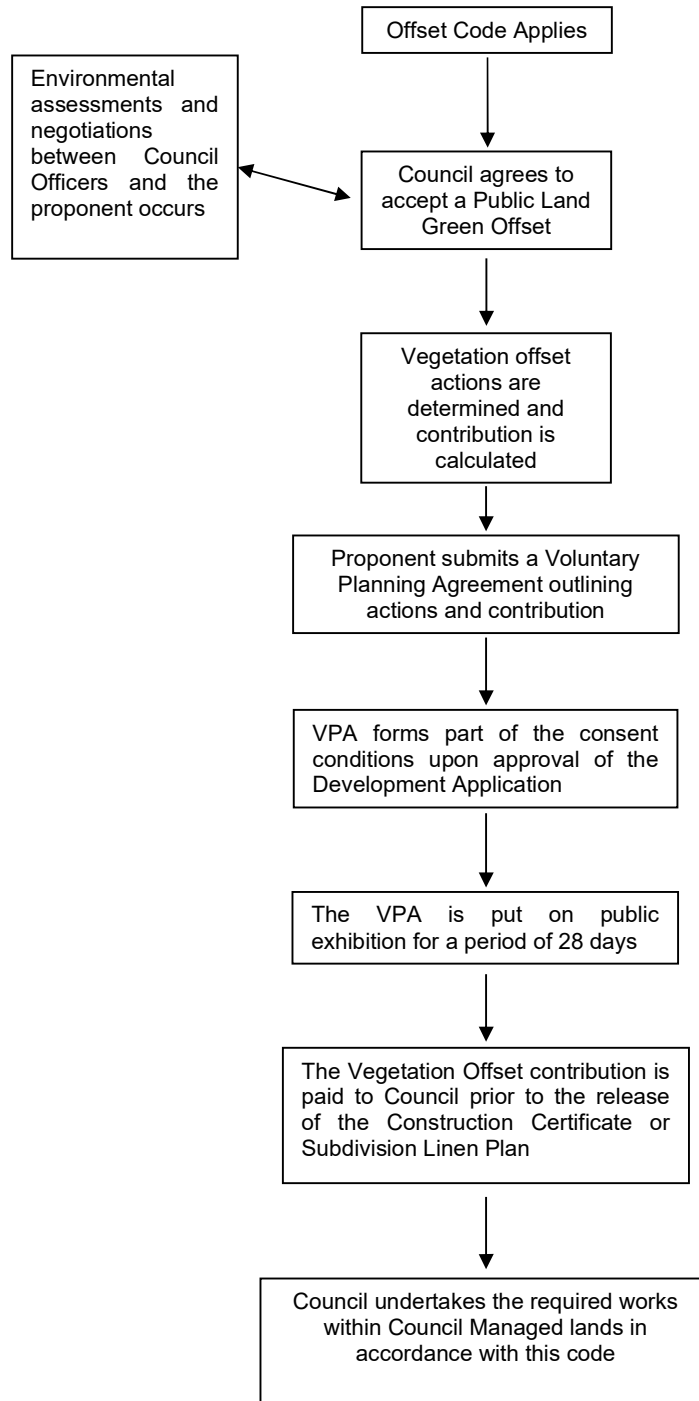
Total offset contribution: \$34,519.

10.6 High Conservation Lands Acquisition Fund

Any offset contributions collected will be placed in a restricted asset account for the Bushland Restoration Offset Program. These funds will be released through time for the restoration and enhancement works in nominated public reserves. This is to ensure sustainable practices and allow for the ongoing maintenance of the restoration works. Funds will attract interest which will be added to the program. The program will not replace Council's normal operational bushland restoration program.

In the event that Council has the opportunity to acquire high conservation lands and protect them within Council's conservation reserves, Council reserves the right to use funds from the restricted offset funds to assist in the acquisition of such lands.

Figure 1 – Process for Public Land Vegetation Offsetting



11. TREE OFFSET ACTIONS APPLICABLE FOR COUNCIL MANAGED LAND

11.1 How will eligibility be assessed?

Offset actions on Council managed land will only be considered where:

- The proposed development will result in the loss of (or impact upon) indigenous trees; and
- All measures to reduce the loss of or effect upon the tree(s) have been exhausted; and
- A landscape plan has been submitted, showing that the required numbers of replacement trees are not able to be replanted on the subject site.

In this instance, only the excess trees that are unable to be replanted on the site will be considered for offset planting on Council managed land.

11.2 Calculating the number of replacement

The number of replacement trees will be calculated on the basis of one tree (45 litre container size) per 20 square metres of canopy area of the tree proposed to be removed.

11.3 Replacement Species

Where possible, and in consultation with Council:

- Replacement trees should be of the same species as those being removed or characteristic of the local vegetation community.
- To ensure genetic lines, viable seed should be collected prior to the removal of remnant local indigenous trees.

11.4 Calculating the cost of replacement planting

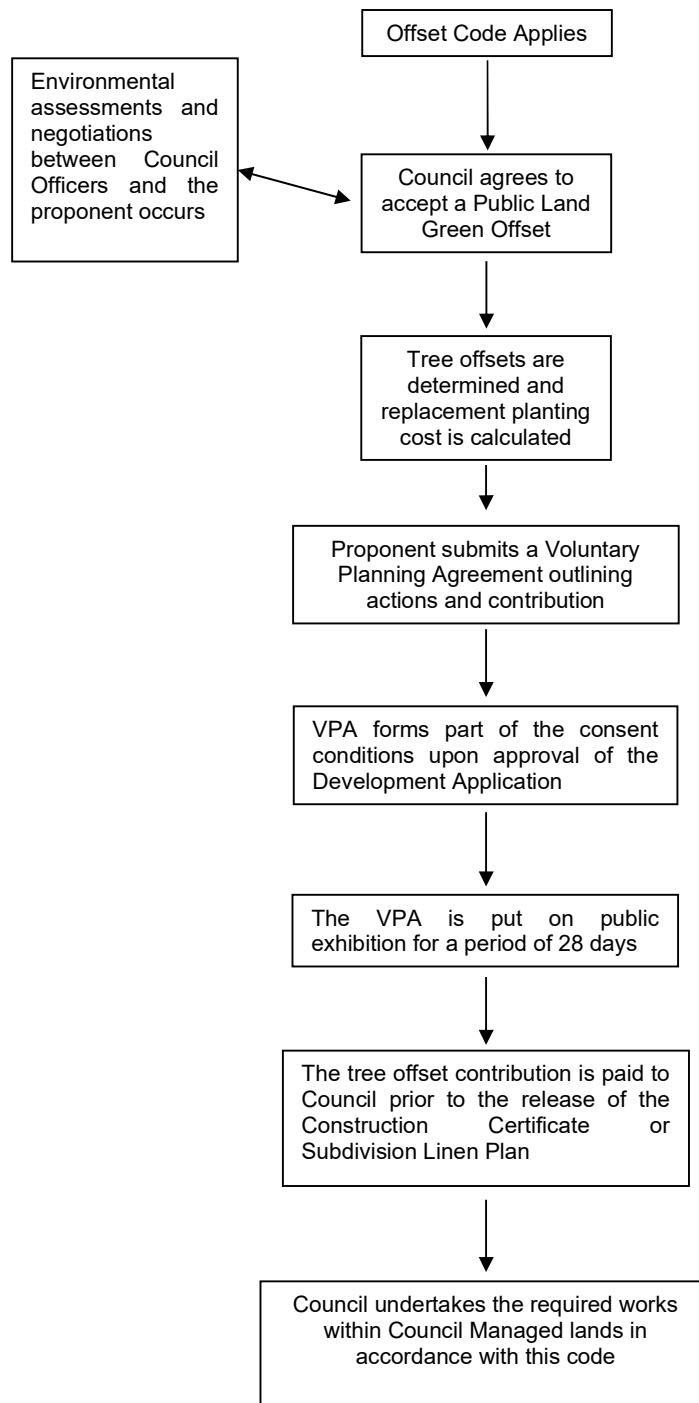
The cost of replacement planting is to be calculated as the cost to Council of purchasing, planting and establishing an advanced provenance tree for a period of two years. All replacement planting will follow NATSPEC guidelines.

This cost will be set in Council's Fees and Charges and will be subject to annual review and endorsement by Council.

11.5 Legal Mechanism of Offset Actions

A voluntary planning agreement under Section 93F of the NSW Environmental Planning and Assessment Act 1979, will be used as the offset plan where offsetting the loss of trees is to occur on Council managed land..

Figure 2 – Process for Public Land Tree Offsetting



12. GREEN ROOFS AND WALLS

On certain lands it may not be possible to effectively offset the loss of indigenous trees and vegetation within the subject site. This may be due to the type of land use, soil depth and associated setbacks and allowable encroachments of proposed development. On these lands it may be suitable to consider alternative solutions to ensure conservation of local biodiversity and to provide an effective offset.

The construction of green roofs and walls are a method of creating an environmental setting in medium and high density developments which can contribute to local biodiversity conservation. The use of green roofs and walls has been identified as an innovative landscaping option in the Hornsby Town Centre element of Hornsby Development Control Plan 2013. Green roofs and walls can readily be designed to incorporate biodiversity elements within the overall landscaping scheme.

The design of green roofs and walls for offsetting the loss of indigenous trees and vegetation must include the use of indigenous species in the planting scheme in accordance with Table 6. The minimum area required for the green roof or wall is related to the area of vegetation removed due to the development as shown in Table 6.

Table6: Application of green roofs and walls for offsetting

Land use zones	Area of green roof or wall required for offset	Indigenous species required within planting schedule
Residential: R3, R4, R5 Business: B2, B4, B5, B6, B7 Industrial: IN1	Equivalent to the area of vegetation or canopy cover removed (not including CEEC or EEC vegetation or threatened species)	Minimum of 30% of plants
	1.5 times the area of vegetation removed or canopy cover if the vegetation is a CEEC or EEC or Threatened species.	Minimum of 40% of plants
Business: B1 Industrial: IN2	Equivalent to 70% of the area of vegetation removed or canopy cover (not including CEEC or EEC vegetation or threatened species)	Minimum of 20% of plants
	Equivalent to the area of vegetation removed or canopy cover if the vegetation is a CEEC or EEC or threatened species.	Minimum of 30% of plants

Note: Critically Endangered Ecological Community (CEEC) and Endangered Ecological Community (EEC) and threatened species as listed in the Schedules of the NSW Threatened Species Conservation Act 1995 or Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

The roof space available on the development site may limit the ability to achieve the required offset. In these cases the alternate options of offsetting contained in this Code may be used in partnership with green roofs and walls to achieve the required offset.

For example: if 300m² of vegetation is required to be offset and the available roof space for a green roof is only 200m², then a further 100m² may be required to offset in accordance with Chapter 6 of this Code.

13. DICTIONARY

Offsetting

A mechanism by which the negative impacts at one site can be offset by positive actions at another site within a region. Offsetting, if used strategically could lead not only to maintenance of environmental viability, but also an overall improvement in environmental viability across a region. It can also provide some additional level of security for vegetation that is currently not protected. In this code an offset refers to both offsetting of native vegetation and trees, unless where specified as 'vegetation offset' or 'tree offset'.

Council

The Council of the Shire of Hornsby.

Council managed land

Land which Council owns or where care control and management of the land devolves to Council.

Protection

Managing impacts and threats to ensure that the natural state of an area is retained (AHC 2005).

Enhancement

Returning existing habitats to a known past state or to an approximation of the natural condition by repairing degradation, or by removing introduced species, or threatening processes (AHC 2005).

Create

To introduce one or more species or elements of habitat or biodiversity that are known to have existed there naturally at a previous time (AHC 2005).

Vegetation Management Plan

A plan that outlines a list of actions for maintaining, restoring and creating vegetation, how each action can be implemented, staging and costs. It is used when the offsetting action requires vegetation to be created or enhanced at a site, and must contain sufficient detail to be able to measure performance. A guideline for VMPs is available on Council's website: <http://www.hornsby.nsw.gov.au/planning-and-building/planning-controls-and-studies/policies,-guides-and-best-practices>

Indigenous Tree

Protected trees are those species or individuals that are protected under Council's various planning instruments, guidelines, policies and codes and their successors including the Local Environment Plan, Development Control Plan, Tree Preservation Order, and any relevant legislation including the NSW Threatened Species Conservation Act 1995 and the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

NATSPEC Guidelines

The publication 'Specifying Trees – A guide to assessment of tree quality by Ross Clark, published by NATSPEC/Construction Information, 2003.

Offsetting Plan

A plan which outlines the proposed offset action to be undertaken to compensate for habitat loss and clearing, and which provides details about the offsetting action. This plan may include sub plans and must be submitted with any DA or proposed Masterplan.

Endangered Ecological Community

A vegetation community listed as Endangered on the schedule of the Threatened Species Conservation Act.

Core vegetation classes, including Local Core, Regional Core

These are the areas of highest conservation value. They represent areas where species or communities are at imminent risk of extinction, or large areas within the region that constitute the backbone of a viable conservation network across the landscape.

Voluntary Conservation Agreement (VCA)

These are joint agreements between a landholder and the Minister for the Environment. The agreements provide permanent protection and are entirely voluntary. The terms of each agreement are negotiated between the landholder and Department of Environment and Conservation.

Voluntary Planning Agreement (VPA)

A VPA is a legally binding voluntary agreement between the developer and Council that may be used to provide an offset for the impacts of a development. The provision to enter into a VPA is under Section 93F of the Environmental Planning and Assessment Act 1979. A VPA under this code could be used to offset the environmental impacts of a development only if the agreement promotes the conservation or enhancement of the natural environment.

Appendix 1: Performance Criteria for Vegetation Offset Actions

Common Performance Criteria
<p>An offsetting plan must be prepared detailing the critical information about the action, including details of how the performance criteria listed below have been addressed.</p> <ul style="list-style-type: none">• Principles of avoiding impact and mitigating impact must have been demonstrated before the offset can be applied• Appropriate multipliers must be applied and the selected multiplier must be the absolute minimum that is applied.
Specific Performance Criteria for Protection
<ul style="list-style-type: none">• If the donation and transfer of lands (to Council) is selected and the area is less than 5 ha it must be within or adjacent to an existing protected area• The area receiving the protection action cannot already be protected – specifically it cannot be in ownership of Council, Department of Infrastructure Planning and Natural Resources or Department of Environment and Climate Change (NPWS) or on land that is currently secured for conservation/protection or is zoned 7a• The area receiving protection must be identified as either Core Regional or Core Local• The protection action must be supported with resources to develop and implement a plan of management for the land• Where protection is undertaken on another parties land, legally binding consent from that other party must be obtained and this must be provided in writing as part of the offsetting plan• Protection actions must be entered into and finalised, and be legally binding, before any works are undertaken on lands that are being offset and evidence of this must be presented to Council. A consent or approval condition detailing this requirement should be mandatory for offsetting actions.

Common Performance Criteria for 'Enhance and Protect' and 'Create and Protect' Actions
<ul style="list-style-type: none">• If the works are not done on your own land you will need to provide written land owners consent (LOC)• A Vegetation Management Plan, relevant to the needs of the receiving site, needs be developed as part of the Vegetation Offset Plan submitted with the Development Application. This must state what ecological values exist on or adjacent to the site, what values will be created or enhanced and how and when this will be done. The action must restore the indigenous vegetation community• Documentation and evidence that the offsetting actions in the Vegetation Management Plan have been progressed to an agreed level, must be provided to Council prior to issuing a Construction Certificate or Linen Plan• Additional Consent Conditions may be imposed by Council if the Vegetation Management Plan implementation has not met pre agreed performance measures prior to the issuing of a Construction Certificate or Linen Plan• Works and ongoing site management must be secured with a bond and linked to performance measures, held as a bank guarantee made out to Council, for the completion of the works in the Offset Plan and its component plans• A fee may be payable to cover Council's costs to undertaking inspections of the site and evaluation of the performance measures in the Vegetation Management Plan• The area which receives offset enhancement or restoration actions must be protected in accordance with an appropriate protection mechanism.

Specific Performance Criteria for Enhance and Protect.
<ul style="list-style-type: none">• The area receiving the enhancement action must be identified as either Regional Core, Local Core or Support for Core

Specific Performance Criteria for Create and Protect.
<ul style="list-style-type: none">• The area must be identified by Council as a target area for creation of habitat• Any remnant native vegetation within the subject land is to be re-generated and enhanced in accordance with the performance criteria for Enhance and Protect actions

Appendix 2: Guidelines for Map Validation

The categories on the Bushland Vegetation Maps represent the best available information at the time the maps were produced. The maps will be revised over time.

There will be occasions when a proponent will query the information on the maps. Guidelines for field validation have been prepared to give structure to the map revision process.

Steps to Validate mapping and submit to Council

The steps to validate mapping and submit validation to Council are as follows:

- 1) Identify the precise location of the proposed development on the Bushland Vegetation Map;
- 2) Confirm that there is disagreement with the mapped category for the area of the proposed development;
- 3) Engage a qualified ecologist[†] to;
- 4) Conduct a field inspection to validate the vegetation community area, size[‡] and condition^{*} in the area under question; and assess the categorisation - Each vegetation remnant should be assessed based on the conservation significance ranking rules outlined below and using the area of the PATCH^{††} within which it is contained:

CSA value	Criteria
Core Regional	<ul style="list-style-type: none">• Blue Gum High Forest – all Smith and Smith bushland mapped with a community patch size of >0.5 ha;• Endangered Ecological Community (<i>listed by the NSW Scientific Committee</i>); patch size > 3 ha;• Hornsby Regionally Significant Community patch size >4 ha
Core Local	<ul style="list-style-type: none">• Blue Gum High Forest – all patch sizes of bushland mapped• Endangered Ecological Community; patch size <3ha• Hornsby Regionally significant community patch size <4ha• Locally significant community patch sizes >0.5 ha
Support for Core	Any patch (not captured above) within 40m of Core
Remnant EEC Trees	<ul style="list-style-type: none">• All mapped patches of remnant trees of Endangered Ecological Communities and Critically Endangered Ecological Communities
Other native vegetation and Remnant Trees	<ul style="list-style-type: none">• Native vegetation communities that have been mapped and do not meet the above criteria of the other categories.• All mapped patches of native remnant trees

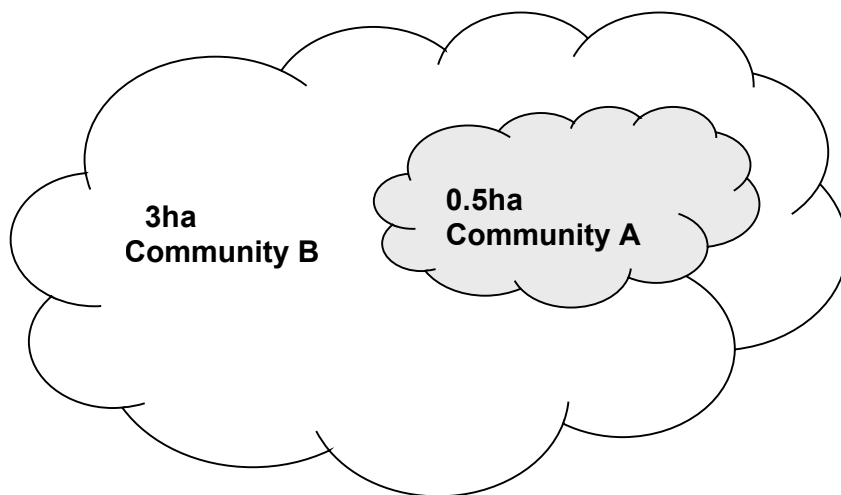
- 5) Review Council's maps and descriptions of relevant vegetation communities and categories;
- 6) Prepare a brief report, supported by photographs, describing the results of the field investigation, and comment if the mapping is valid or needs review;
- 7) Submit a copy of the report and data to Council for use in subsequent map revision;
- 8) If necessary, Council will update the map;
- 9) If applicable, the developer should continue to follow the offset process contained in this code.

† Council to provide a list of suitable consultants.

‡Area boundary should be supplied as GPS waypoints.

*Based on DEC condition classification. Although condition classification is not used by Council at this time this process presents an opportunity to gather this information for future use.

‡Patch is defined as an area of adjoining vegetation, not taking into consideration vegetation type. When we assess and categorise land in a conservation significance ranking based on size, we use patch size. This is illustrated in the example below:



The example illustrates the difference between the area of a vegetation community and the area of a patch. In this example the area of vegetation community B is 3ha. The area of vegetation community A is 0.5 ha.

However the patch area of Community A is considered to be 3.5ha as it is considered part of the vegetation it adjoins.

This definition of patch size is based on the premise that vegetation that is contiguous should be recognised as such in a conservation significance assessment, regardless of its vegetation type. NSW State legislation based tools for Biobanking and Biocertification also recognise and define a patch in this way.

Appendix 3: Conservation Significance Category Map

