The Hills Shire is a Local Government Area within the Greater Metropolitan Area of Sydney and forms part of the Central City District, along with the Blacktown, Cumberland and Parramatta Local Government Areas. It is unique within the district, being the only LGA that extends into the Metropolitan Rural Area (MRA). Approximately 70% of the land area of The Hills is within the MRA, with the remaining 30% spanning urban areas of varying densities and characters. For the foreseeable future, development within the Shire will be constrained to this urban area.
## Contents

### Executive Summary

#### 1 Introduction

<table>
<thead>
<tr>
<th>Purpose of the Strategy</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing the Strategy</td>
<td>4</td>
</tr>
<tr>
<td>Our Environment</td>
<td>4</td>
</tr>
<tr>
<td>Population Growth</td>
<td>5</td>
</tr>
</tbody>
</table>

#### 2 Biodiversity

<table>
<thead>
<tr>
<th>Biodiversity</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protecting areas of high environmental value and significance</td>
<td>9</td>
</tr>
<tr>
<td>Promoting increased urban tree canopy cover</td>
<td>13</td>
</tr>
</tbody>
</table>

#### 3 Natural Resources

| Carbon Emissions | 15 |
| Energy Consumption | 16 |
| Water Consumption | 18 |
| Waste Generation | 20 |
| Managing natural resources and waste responsibly | 23 |

#### 4 Environmental and Urban Risks + Hazards

| Preparing residents for environmental and urban risks and hazards | 31 |

#### 5 Implementation, Monitoring + Review

### Appendix

1. List of Threatened, Endangered and Critically Endangered Species | 37 |
Executive Summary

The Hills Shire is located in North West Sydney, approximately 30 km from the Sydney CBD. Spanning approximately 38,500 hectares (386km²), the LGA includes land between Baulkham Hills and West Pennant Hills in the south, to Wisemans Ferry in the north. In 2016, The Hills was home to approximately 162,500 residents within 55,000 households, 64% of which are occupied by families.

The Hills is proud of our ‘Garden Shire’ image. Protecting our natural environment is critical to ensuring that future generations have the opportunity to benefit from The Hills’ unique blend of urban and natural environments which contribute to our community’s health and wellbeing.

The significant growth in population to 2036 and the associated increases in density in targeted locations will place increasing pressure on our natural resources. The majority of growth is expected to occur in Release Areas and Sydney Metro Northwest station precincts, with significant growth in the form of high density dwellings. Rapid growth of high density areas presents challenges in regards to environmental and waste management, as well as ensuring our new and existing buildings and public spaces are designed and constructed to withstand environmental and urban hazards. Beyond this, The Hills approach to environmental protection and management is based on clear identification of environmentally sensitive lands through our land use planning framework and decision making.

This Strategy is based around the following Planning Priorities to guide the planning for, and management of our environment in the longer term as well as Council’s actions over the next 5 years:

- Protect areas of high environmental value and significance;
- Promote increased urban tree canopy cover;
- Manage natural resources and was responsibly; and
- Prepare residents for environmental and urban risks and hazards.

The Environment Strategy 2019 provides the overall strategic context for protecting and managing the Shire’s natural environment. It supports the commitments contained in Council’s Community Strategic Plan (CSP) Hills Future, specifically the outcome of ‘valuing our surroundings’. Further it supports the commitments contained in the Central City District Plan towards a sustainable Central River City.
The Hills Natural Environment Snapshot

- 1,375ha Environmental Protection Land managed by Council
- 31 Bushcare groups supported by Council
- Council cares for 4 biodiversity stewardship sites
- Over 900km of natural and constructed waterways across 38 subcatchments
- 62,319 plants propagated and planted by the Bidgiwong Community Nursery in 2017/18
- 3 critically endangered ecological communities
- 650 hectares of environmentally sensitive land protected through Rural Cluster Subdivision
Introduction

Council has been well served by a series of environment-related strategies which have guided planning for and management of the environment within the Shire since 1998. The most recent strategies, the Environment and Leisure Direction and the Waterways Direction, were prepared in 2009. This document provides a refresh of these strategies within the context of the recent Greater Sydney Region Plan and Central City District Plan.

Purpose of the Strategy
The purpose of this document is to clearly establish the basis for strategic planning for and management of our environment to 2036. It is the evidence base that informs the planning priorities and 5 year actions contained in our Local Strategic Planning Statement. It provides the finer detail about how we will achieve our vision and guide growth into the future.

To shape exceptional living, working and leisure places where expected growth brings vibrancy, diversity, liveability and prosperity for the Hills.

Vision - Hills Future 2036 Local Strategic Planning Statement

The purpose of this Strategy is to communicate Council’s vision of a healthy environment that will support a healthy and vibrant community. The Strategy outlines the actions that Council will take to achieve our vision. The Strategy will guide Council’s direction and decision-making to 2036 and support community action and education.

As outlined in the Community Strategic Plan Hills Future, Council is committed to creating a Shire in which our surroundings are valued, maintained and enhanced, and impacts are managed responsibly through education and regulatory action. We aim to encourage and educate our residents to live sustainably by facilitating resource recovery and minimising waste.

It is important to note that, while Council has direct influence over many outcomes that can improve our local environment, we cannot do it all. Educating businesses and residents about ways to lessen their environmental impact, as well as continuing to support volunteer programs such as Bushcare and our Community Environment Centre, will assist in achieving the Shire’s goals.
In developing the strategy the following has been completed:

- A review of State Government policies including the Greater Sydney Region Plan and the Central City District Plan;
- A review of the Environment and Leisure Direction and the Waterways Direction to confirm the status of work undertaken and determine any outstanding matters;
- Forecast of population growth and assessment of likely implications for managing and protecting our environment; and
- Identification of opportunities to improve the state of the environment and opportunities to create a more sustainable environmental future.

Additional documents supporting this strategy and Council’s Local Strategic Planning Statement may be found on Council’s website (www.thehills.nsw.gov.au).

**Our Environment**

The natural environment requires our protection and management. Not only does it provide vital habitats for plants and animals, and open green spaces for our communities to enjoy, it supports our entire way of life. On a global scale, the World Wildlife Fund’s Living Planet Index 2018 observes that nature underpins all economic activity, presently worth an estimated US$125 trillion.
Similarly, the economic value of Australia’s environmental assets is high. In 2016-17 the Australian Bureau of Statistics put the combined value of Australia’s environmental assets at $6,412.8 billion. This includes land, mineral, energy and timber resources.

Communities all around the world face a similar range of environmental issues and challenges. A coordinated response by governments, businesses, communities and individuals is required to respond to these challenges to ensure decisions made today do not adversely impact on the quality of life of future generations.

**Population Growth**

![Population Growth Diagram]

Source: NSW Department of Planning and Environment population forecast

**Figure 2:** Existing and expected Hills population

Between 2016 and 2036, The Hills population will grow by around 80%. Almost all of this growth will be contained within the Shire’s urban area, maximising efficiency of existing and planned infrastructure as well as minimising the impact on our environmentally sensitive lands within the rural and northern parts of our Shire.
2 Biodiversity

The term ‘Biodiversity’ refers to the ‘variety of all living things; the different plants, animals and micro-organisms, the genetic information they contain and the ecosystems they form.’  
(Australian Museum)

To ensure our environment is healthy and can contribute to healthy lifestyles of our residents, we need to ensure the Shire’s biodiversity is maintained and improved where possible. The most effective way to do this is to focus on protecting habitats and ecosystems.

A substantial portion of the Shire is covered by vegetation, waterways and wetlands, some of which is utilised as open space. Within these areas the level of biodiversity is significant, with both public and privately owned land providing habitat for numerous species of native animals and plants, including endangered ecological communities and threatened species.

The Hills is home to 81 known threatened entities, including three critically endangered and eight endangered ecological communities listed in the Biodiversity Conservation Act 2016. A full list of species, populations and communities may be found in Appendix 1. Our three critically endangered ecological communities are Blue Gum High Forest, Cumberland Plain Woodland and Shale-Sandstone Transition Forest.

Our community plays an integral role in maintaining and improving the biodiversity of our Shire. Council supports 31 Bushcare groups as well as a Community Environment Centre in Annangrove. Bushcare volunteers work with some of our most vulnerable ecological communities in both urban and bushland environments.

Our Community Environment Centre is run with the assistance of volunteers and offers on-site demonstration facilities including water wise garden and sustainable home demonstration sites, information and research materials as well as facilitating community workshops and information sessions. The number of volunteers involved with the Centre has been steadily increasing in recent years, as has the number of people participating in environmental workshops (THSC State of the Environment Report 2012-2017).

Urban tree canopy is green infrastructure that mitigates the urban heat island effect, supports cleaner air and water and provides local fauna habitat.

According to the United Nations’ ‘New Urban Agenda, 2016’, trees can cool cities by between 2 and 8 degrees Celsius. When planted near buildings, trees can cut air conditioning use by up to 30%. One large tree can absorb 150kg of carbon dioxide a year, as well as filter airborne pollutants. The urban
tree canopy can also help communities adapt to warmer summer conditions, by reducing the impact of heat waves and extreme heat.

The Hills is fortunate to benefit from good urban tree canopy cover in the eastern portions of the urban area. These areas contain typically older detached dwellings on large lots; these are the areas of the Shire which have historically contributed to the Garden Shire Image. Residential streets with wide setbacks containing established street trees, intermingled with large swathes of urban bushland such as Fred Caterson and Bidjigal reserves give rise to the feeling of connection to nature in established urban areas.

![Urban Tree Canopy Cover Map](image)

**Figure 3: Urban Tree Canopy Cover**

As residential development has expanded to the west and north of the Shire, development lots have become smaller and house sizes larger, reducing opportunities for tree planting. This is clearly evident in the above urban tree canopy map which shows the transition between the older suburbs and newer suburbs in regards to density of tree canopy coverage. Some more established suburbs including Bella Vista still have a leafy feel, but the density of tree cover is perceived to be less than in the more established eastern suburbs.
In response to decreasing lot sizes, the public domain becomes increasingly important in the provision of urban tree canopy. However, this comes with its own challenges. The location of services and smaller road verges limits the potential to provide tree cover in urban release areas.

**Protecting areas of high environmental value and significance**

*This planning priority relates to PP17 in The Hills Local Strategic Planning Statement*

Council recognises the importance of biodiversity and the need to increase habitat connectivity, improve water quality, and provide recreational and educational opportunities for the community. Where possible, we seek to embellish our open spaces with natural landscaping features so that they integrate with the surrounding environment. As well as improving quality of life and amenity for our residents, preserving and expanding our existing playing fields and other public open spaces contributes significantly to the Shire’s biodiversity through improved vegetation and habitat linkages.

This Strategy complements Council’s Recreation Strategy 2019, which aims to provide additional and enhance existing open space to create healthy urban environments that benefit our residents. Opportunities to collaborate with our neighbouring LGAs will be sought to ensure we make the most of our Green Grid links.
The Terrestrial Biodiversity map has been a key tool in the assessment of potential impacts on biodiversity values within The Hills. The map assists in the identification of potential biodiversity constraints so that these may be considered early in the development assessment process.

In light of changes to regulations and laws governing the management of vegetation in NSW since the development of the Terrestrial Biodiversity map, we are reviewing the map to ensure the protection of our threatened species. The revised Terrestrial Biodiversity map will apply to land in the rural area north of the proposed urban growth boundary and will incorporate the latest available information on vegetation types and habitat quality. It will also incorporate waterways to ensure these valuable ecosystems are given sufficient recognition and protection through the Local Environmental Plan. To ensure that the terrestrial biodiversity map does not restrict reasonable development of rural properties, exclusion zones will be included around established and approved dwellings and outbuildings on affected land.

If required, the scope of the mapping may be extended into urban areas of the Shire in future. The revised Terrestrial Biodiversity Map will:

- acknowledge the significance of biodiversity in the Shire;
- afford additional protections to valuable areas of vegetation and habitat not previously covered under the existing map; and

Note: Yellow lines show opportunities for collaboration

Figure 5: Green Grid Priorities
• ensure that biodiversity is an integral consideration of development in sensitive areas that may not necessarily fall under the consideration of the Biodiversity Conservation Act 2016.

Council will continue to utilise rural cluster subdivision to facilitate an appropriate level of residential growth in the metropolitan rural area whilst ensuring that biodiversity principles are upheld. Rural cluster subdivision allows subdivision for rural residential purposes, with associated environmentally sensitive land protected or improved. This provides an opportunity to facilitate biodiversity improvement works on private land, securing a more certain future for important vegetation corridors and preserving the bushland character of the Shire.

Since the introduction of rural cluster subdivision Council has:

- Approved 62 applications for Rural Cluster Subdivision resulting in 436 development lots
- Ensured the protection of over 650 Hectares of land for biodiversity conservation

Figure 6: Rural Cluster Subdivision

In the North West Growth Area precincts of Box Hill and North Kellyville, biodiversity is managed through a process of Biodiversity Certification. This is a process which seeks to balance the protection and management of conservation values with the efficient supply of land for urban development in Sydney’s Growth Areas. Within these precincts, landowners seeking to develop land that is certified under the Biodiversity Certification Order are not required to undertake a threatened species assessment, streamlining the development process.

With the urban area of the Shire poised to be transformed in the coming years with the commencement of the operation of the Sydney Metro Northwest as well as unprecedented population growth, we need to explore mechanisms that will allow us to protect significant areas of public and privately owned vegetation and habitat within our urban environment. Given the Terrestrial Biodiversity Map does not extend into the Shire’s urban area, Biodiversity Certification may be an appropriate tool to accomplish this.

Community Involvement

Council runs a variety of events that involve and educate the community about improving our environment. Due to the high level of private ownership of land within our Shire, involving our
community in conserving our biodiversity and educating residents and students about ways to reduce their impact on the environment is paramount to improved biodiversity outcomes.

Bushcare volunteers and the work of the Community Environmental Centre will continue to play a significant role in improving biodiversity outcomes and educating our residents about improving our biodiversity. Continued support in growing these resources will assist in providing the skills and materials necessary to continue to review and develop programs for improvement of vegetation in key corridors.

![Figure 7: Community Environment Centre services and resources](image)

**Council will:**
- Protect natural assets and ensure the biodiversity of our Shire is appropriately identified and preserved for future generations.
- Retain and enhance vegetated riparian corridors, bird habitats and wildlife corridors across the Shire to support biodiversity and water quality outcomes.
- Seek opportunities to improve access to Green Grid corridors in our urban areas.
- Continue to manage areas of high environmental value.
- Continue to protect and enhance water quality in local catchment areas.

**Actions**
- Review and update Terrestrial Biodiversity mapping as contained in Council’s local environmental plan.
- Review and update Waterway Health mapping.
- Identify opportunities to collaborate with adjoining LGAs to link Green Grid corridor initiatives across boundaries.

**Future work**
- Investigate biodiversity certification as a tool for managing biodiversity outcomes in our urban area.
Promoting increased urban tree canopy cover

This planning priority relates to PP18 in The Hills Local Strategic Planning Statement

As our Shire is becoming more densely populated, it is increasingly important to include trees in plans for our public and open spaces as decreasing average lot sizes coupled with increasing house sizes are removing the opportunity for residents to plant significant trees within their property. More established suburbs including Bella Vista still have a leafy feel, but the density of tree cover is perceived to be less than in the more established suburbs in the east of the Shire.

Data from the State Government’s Sharing and Enabling Environmental Data (SEED) portal reveals suburbs within our Shire that require particular attention to improve tree canopy coverage. Kellyville and Box Hill for example, have less than 10% coverage. We will continue to use data from the SEED portal to establish baselines and to monitor progress towards improving urban our tree canopy cover.

Master Planning and Urban Design

Council uses a master planning approach to plan for new areas of development, and to plan for the renewal of existing places. Master planning is a holistic approach to planning for an area that takes a long term view and seeks to consider all elements that come together to create a place - buildings, open spaces, public spaces, community facilities, services and landscaping. Council’s master planning approach ensures housing is located close to transport locations, that infrastructure is planned and used efficiently, and that active transport is prioritised where possible. Incorporating a significant amount of landscaping within new and existing urban areas will benefit the environment by making efficient and appropriate use of land, reducing the level of car dependency and increasing the amount of tree coverage in our urban areas.

Council has extended our master planning approach to include the development of street tree master plans for areas of high growth. Implemented through conditions of consent on development applications as well as through Council works programs, these plans establish a list of trees suitable for each location and allow property owners, developers and Council to work towards a common plan. Opportunities to increase tree coverage also arise when new open spaces are built or existing open spaces expanded or enhanced.

Carefully planned landscaping to increase the number of trees and plants within our urban area also plays a part in ensuring good urban design outcomes, significantly lessening the urban heat island effect and contributing to the appeal of places by making the outdoor environment more pleasant to be in. It also translates to better health outcomes for our community, as well as providing opportunities for increased biodiversity in our urban areas. New and diverse habitat types, such as green roofs and walls, can complement natural areas and help grow the urban forest.

Preparation of Council’s Public Domain Strategy may give additional guidance in regards to strategies that may increase the number of street trees, such as their use as traffic calming devices where deeper soil may be available away from services and footpaths.
Street Tree Planting Program
Council’s existing Street Tree Planting Program assists residents in greening their suburbs through the provision of appropriate street trees and advice on how to care for them. The program has been offered since Council’s establishment in 1906, with approximately 250 requests for new trees received in the last financial year – almost half of these requests coming from Kellyville and North Kellyville.

Whilst the program has been available for some time, it is unclear how many residents are aware of it. Increased promotion and education may assist in increasing participation rates in turn increasing urban tree canopy. Further detailed analysis of areas with sufficient attributes including available verge space and convenient location of services, will assist in identifying areas that may be targeted for more direct promotion or education in order to increase participation. This program is in addition to Council’s Community Nursery which provides Hills residents with four free plants each year that are native to the Shire.

Council will:
- Incorporate measures to increase urban tree canopy and shading within the Public Domain Strategy.
- Progressively develop street tree master plans for high growth areas.
- Continue to educate residents in regards to the street tree planting program and the benefits of street trees.

Actions
- Identify areas vulnerable to the urban heat island effect and direct planting and education efforts to these areas.
Many of the comforts and amenities we enjoy in our daily lives on energy and water derived from natural resources including finite sources such as coal and oil, and renewable sources including solar and wind generated energy.

Whilst demand for renewable sources of water and energy is increasing, the technology required is often expensive, which has in the past impacted uptake of new technologies. However, more and more households are adopting renewable energy sources including the installation of residential solar panels and including grey water recycling options in new dwellings, which over time will have a positive impact on the cost of these technologies. Measuring our carbon emissions and their sources enables us to gain an understanding of our use of natural resources.

**Carbon Emissions**

As of 2016, The Hills was producing approximately 1.65 million tonnes of carbon emissions, this is equivalent to an average of 10.49 tonnes per person, slightly below the Greater Sydney average of 10.69 tonnes per person. The majority of our emissions are attributed to electricity and transport use with waste another significant contributor.

![Pie chart showing carbon emissions by source 2016-2017](image)

**Figure 8:** The Hills Shire Carbon emissions by source 2016-2017
Energy Consumption
Rising energy costs and increasing demand on Council’s services and facilities present challenges for the continued delivery of the high standards of service our community expects. The following image provides a breakdown of energy use in the private sector in The Hills. Most notably, residential detached dwellings make up the largest proportion of energy usage. However, this is indicative of the significant amount of that development type in The Hills, rather than it necessarily being a higher energy consumer than other development types. The average energy consumption per person for residential dwellings in The Hills is 14,223 Mega joules per annum, slightly above the Greater Sydney average.

![Energy Consumption Pie Chart]

Source: Resilient Sydney 2019

Figure 9: Breakdown of energy use in The Hills by sector 2016-2017

Council measures and manages energy consumption across our entire buildings and property portfolio. Using a range of technologies, we can monitor for changes in energy use to guide necessary improvements can be made to reduce Council’s use of natural resources.
Figure 10: Council's Electricity Consumption 2012-2016

Figure 11: Amount of electricity generated by operational solar power systems on Council buildings

Council’s trend towards reduced energy consumption reflects the overall trend across NSW which has seen a fairly steady reduction in energy consumption rates per person. Peak consumption appears to have occurred in the late 1990’s to early 2000’s but is now steadily decreasing.
Encouragingly, the take up of solar photovoltaic panels in The Hills is on the rise, with a 15.4% increase from 2016/17 to 2017/18. Our transport emissions may also improve depending on the level of use of the Sydney Metro Northwest. These factors may result in a sustained reduction of emissions from these sources over the coming years.

**Water Usage**

Water is a finite and valuable resource essential for life and a healthy environment. The Hills Local Government Area covers 38 major sub-catchments draining to both the Hawkesbury and Parramatta Rivers via more than 900km of natural and constructed waterways. The Shire also contains 52km of Hawkesbury River frontage from Cattai Creek, in Cattai, to the ferry crossing at Wisemans Ferry.

Our local waterways play a vital role within our environment, draining stormwater from urban areas, providing wildlife corridors and aquatic habitats, and helping to improve the quality of water entering the Hawkesbury River. Waterways also provide opportunities for the community to enjoy the outdoors and support sport and recreation activities. Ensuring our waterways are healthy and functioning well is an important priority for Council.

The size and unique diversity of the Shire’s water systems as well as development pressures resulting from an increasing population, present many challenges for management of water. Development and population pressures are significantly increasing the demand for water. Between 2016 and 2036 our Shire’s consumption of potable water could more than double if we continue to use water at the same rate we do today.

On average each person who lives in The Hills uses up to 226 litres of fresh water every day, slightly above the Greater Sydney average of 210 litres. This includes water used for drinking, cooking, washing, laundry, toilet flushing and gardening. When considering this use on a household and Shire wide scale, the amount of fresh water required to sustain our current level of usage is considerable.
Similar to energy consumption, the majority of water consumption is attributed to residential households, reflecting the high number of residential properties as compared to industrial and other non-residential uses in the Shire.

Community demand and expectation for high quality parks and green spaces has resulted in rising water use by Council, as we seek to maintain these spaces to a high standard.
Waste management

Waste and resource management is a key responsibility of local government, and has social, environmental and economic impacts. Over the next two decades, waste generation will more than double within the Central City District. As a community of consumers we have an impact on the surrounding environment through the amount of waste we generate, as well as how we store, transfer and dispose of that waste. Looking to the future with a greatly increased population, we need to be proactive and smart as we seek to avoid the creation of waste, reduce our resource consumption and be as efficient as possible in our waste disposal.

The Environment Protection Authority is currently leading the preparation of a 20 year waste strategy for NSW in partnership with Infrastructure NSW to be completed in late 2019. Council will seek to implement any required actions that result from this strategy as appropriate.

<table>
<thead>
<tr>
<th>The Hills average household weekly waste</th>
<th>23.19kg (total)</th>
<th>LOWER THAN Sydney Metro average (NSW EPA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Hills household waste contamination rate</td>
<td>6.65% for recycling 1.2% for green waste</td>
<td>LOWER THAN Sydney Metro average (NSW EPA)</td>
</tr>
</tbody>
</table>

Figure 15: Average weekly household garbage

On average our red bins contained:
53% potentially compostable material, 14% potential recyclable material and 33% general waste.

Improving ways of separating compostable waste and recycling will significantly reduce the amount of waste in our red lid bins, therefore reducing the amount of waste we send to landfill.
Denser building forms present an ongoing challenge for waste collection. Narrow rear laneways that service terrace housing in some locations limit the size of waste collection vehicles that can safely navigate these areas.

Waste collection within apartment buildings is a significant challenge. The volume of waste generated combined with access requirements necessitating collection by smaller vehicles can result in a single apartment building requiring multiple daily waste collections to satisfy demand and maintain a healthy environment for residents. Smaller vehicles are preferable from an urban design perspective therefore it is necessary to reduce the volume of waste being created to reduce the burden on collection.

The locations for the disposal of our waste are at a considerable distance from The Hills. Table 1 illustrates the distances of the final destinations for waste that is generated by our community.
<table>
<thead>
<tr>
<th>Waste type</th>
<th>Transferred to</th>
<th>Approximate round trip distance (from Council building at 3 Columbia Court Norwest)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garbage</td>
<td>Lucas Heights Resource Recovery Park</td>
<td>90km</td>
</tr>
<tr>
<td>Recycling</td>
<td>Smithfield Material Recovery Facility</td>
<td>35km</td>
</tr>
<tr>
<td>Garden Organics</td>
<td>Eastern Creek Organics Resource Recovery Park</td>
<td>46km</td>
</tr>
<tr>
<td>Clean up Waste</td>
<td>Elizabeth Drive Landfill</td>
<td>80km</td>
</tr>
</tbody>
</table>

Table 1: Round trip distances to waste facilities from The Hills

Across Greater Sydney, there is diminishing capacity in existing landfill sites, so more waste is being sent to landfill outside the region. This increases costs to the community and places an unfair burden on those areas. Additional sites for waste management in Greater Sydney would improve efficiencies in managing waste.

![Chart showing waste generation by type 2016-2017](source: Resilient Sydney)

Figure 17: The Hills Shire all waste generation by type 2016-2017
Managing natural resources and waste responsibly

This planning priority relates to PP19 in The Hills Local Strategic Planning Statement

Water Usage
Reducing our water consumption will reduce pressure on our water systems and natural environment. It will also reduce financial costs to Council, businesses and residents. Whilst not the highest in Australia, water prices have been steadily increasing with inflation in NSW over the past decade (IPART 2016 Sydney Water Price Review – Residential Customers). This is likely to continue due to the growing urban population and the costs associated with building the necessary water infrastructure for these communities. Should a decision be made at the state level to activate the desalination plant to augment Sydney’s water supply in times of low rainfall, the cost of water will rise even further. Conserving water and reducing our consumption is therefore a priority for Council.

Council seeks opportunities to conserve water and reduce our overall consumption through the utilisation of water sensitive infrastructure. For example, development within the North Kellyville Growth Area precinct is linked to a reticulated grey water recycling system, and our Development Control Plan currently requires new dwellings to implement at least two Water Sensitive Urban Design measures. Council also continues to support and implement the Building and Sustainability Index (BASIX) to promote and encourage the incorporation of grey water recycling into new dwellings.

Parks and gardens are one of the largest consumers of water required to maintain large areas of vegetation, however limited opportunities exist within these facilities to harvest rainwater or greywater for use in watering vegetation. Where we can, we are exploring options for greywater recycling to reduce overall water consumption. Council is currently investigating greywater recycling at Ted Horwood Reserve at Baulkham Hills, with possible further locations considered in future.

Natural and Constructed Waterways
Over the coming decades pressure on our waterways and stormwater systems will increase. Significant expected growth in both release areas and urban infill and densification around station precincts will increase sediment and run-off that if not carefully managed, could detrimentally affect our waterways. This is in addition to the general increase in pressure of additional people seeking to access waterways for recreational purposes.

As our community grows and demand on our stormwater network increases, the effective functioning of our stormwater systems will be crucial to our liveability as a Shire. The constructed stormwater system plays an important role in conveying run off from urban (and some rural) areas to centralised drainage basins and natural waterways. The 927metres of improvements to waterways and stormwater system components made by Council between 2012 and 2017 reflects the importance Council places on ensuring the safe conveyance of stormwater, minimisation of stormwater impact on receiving waters and minimisation of health and safety risks to the general public.

Due in part to increased runoff from development over the past several years, water quality in the Hawkesbury River has declined to the point that turbidity levels are beginning to detrimentally affect recreation and economic opportunities along the Hawkesbury. Continuing to work with State
Government and other LGA’s in the catchment will be necessary to ensuring that water quality is able to sustain all uses which rely on the river.

To further safeguard the health of our waterways and functionality and safety of our stormwater network so they can continue to serve their function and be enjoyed by our community into the future, we are preparing a comprehensive Stormwater Asset Management Plan. The Management Plan will inform the preparation of Council’s Stormwater Capital Works program and include guidance on planning and management of Council’s stormwater assets.

**Wetlands**

Wetlands are a critical part of our natural environment. They reduce the impacts of floods, absorb pollutants and improve water quality. They provide habitat for animals and plants and many contain a wide diversity of life, supporting plants and animals that may not be found anywhere else.

The Ramsar Convention definition of wetlands states: ‘Wetlands occur on land where soils are waterlogged either permanently, seasonally, ephemerally or tidally and which support vegetation dominated by sedges, rushes, reeds and wet-loving or halophytic herbs’.

In consideration of the important role wetlands play in our environment and the Ramsar wetlands definition, Council mapped and zoned 11 wetlands within the Shire E2 Environmental Conservation under The Hills Local Environmental Plan. This zoning has afforded protection to these areas by allowing land owners to protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values by preventing development that could have an adverse effect on those values.

The Hawkesbury River Estuary also has an influence on our Shire due to our 52km of tidal Hawkesbury River frontage. In recognition of this influence on our Shire, Council will take a collaborative approach with other Hawkesbury River coastal councils and the community to develop and implement a Coastal Management Plan that will improve the planning, management and use of identified coastal waterways within the Shire.
We need to take an integrated approach that considers our stormwater network, waterways, wetlands and coastal area in a holistic manner to ensure that future supply is safeguarded, and the health and enjoyment of waterways, wetlands and rivers is valued and managed for future generations.

**Energy Consumption**
Council holds a number of workshops throughout the year, often in partnership with other providers, as well as providing information on reducing energy use through Council’s website. Education will continue to be an important feature in promoting responsible use of energy and water into the future.

Council has been actively engaged in projects to reduce energy consumption and increase the amount of renewable energy generated on Council owned land and buildings. A key project aimed at reducing Council’s reliance on non-renewable energy sources is the establishment of solar power generating facilities across a number of Council owned buildings. The Council administration complex consists of three separate four storey office buildings and two car parking levels and is supported by a 98.7kW photovoltaic system that produces in excess of 130,000kW of electricity annually. This is approximately 7% of the buildings’ energy needs, and reduces energy costs and reliance on non-renewable energy resources.
Other projects reducing Council’s energy consumption include:

- Upgrading of internal and external lighting to LED at several Council owned facilities including libraries and community centres;
- Installation of instantaneous gas hot water systems;
- Installation of Photovoltaic panels on Council owned buildings including Councils administration building;
- Introduction of SMS controls to sports field lighting in Glenhaven and Russell Reserves; and
- Installation of carbon dioxide sensors and variable speed drives to car park exhaust and supply fans at Castle Grand.

Generally, Council’s overall energy consumption across all our facilities is decreasing, reflecting the success of these projects. Further projects to reduce our energy consumption are continuing to be developed and implemented across the Shire.

Waste Generation
Waste generation is outpacing population growth. An integral element of Council’s waste management strategy is education. Our Waste Education programs equip our community with the skills and knowledge necessary to minimise consumption of goods and develop awareness in the value of waste as a resource. Avoiding the use of materials and resources where possible, especially plastics and non-renewable resources, reduces our total waste as well as lessening pressure on our natural resources.
As well as educating our community to avoid waste where possible, Council is currently trialling innovative solutions to reduce waste generation such as on-site organics processing within a residential flat building development. Large waste compactors are also being investigated to reduce collection frequencies thereby requiring fewer trips to distant waste facilities. Further waste innovations could be investigated, including reviewing re-use and recycling options for hard waste clean-up materials.

Council is investigating opportunities to maximise resource recovery from household waste, there is potential to incorporate food organics for composting into the green lid organics bin. This will assist in reducing waste management costs and the amount of waste going to landfill. This is in addition to Council’s long-running provision of compost bins and worm farms to residents at reduced prices.

Council also recognises that new waste systems could be trialled in higher density neighbourhoods with an innovative precinct-based waste collection, reuse and recycling system which would improve efficiency and reduce truck movements.

Council has recently received funding from the NSW EPA’s Better Waste and Recycling Fund to trial an onsite organics processing system in a bid to divert organic waste (food waste and garden vegetation) from landfill.

The objective of this trial would be to provide an onsite organic composting system for one medium or high density development for residents to use. The organic waste will be turned into a compost product which may potentially be used within the communal gardens of the development or alternatively sent offsite for processing. The trial will include an education program, surveys of the residents and ongoing monitoring to check contamination rates.

Council staff will consider the kilograms of waste composted/diverted from landfill, the contamination rate, the participation rate and general satisfaction from the residents before expanding the trial.

A review of waste management controls for high density residential and mixed use developments should be undertaken to ensure waste management systems are convenient, maximise source separation and are responsive to future needs.

**Waste Collection and Disposal**

With the changing nature of dwelling and street patterns in urban areas of The Hills, we will review laneway and local street designs to ensure there is sufficient space for efficient and safe garbage collection. Ideally laneways should be designed to accommodate side-loading driver operated vehicles. This will ensure that waste can be collected and transported efficiently, limiting the frequency of vehicle trips and reducing risk of property damage to dwellings with rear lane access.

We are also collaborating with other Western Sydney Councils to investigate measures to improve efficiency in waste transfer and disposal. Regional contracting opportunities for waste processing may help facilitate development of a new waste facility, such as an alternate waste treatment facility for municipal residual waste in the Western Sydney Region.
Smart Cities
Evolving technology presents many opportunities to monitor and decrease our consumption of natural resources. Smart cities utilise and integrate technology to improve the liveability of places and can contribute to improved environmental outcomes. Smart technologies can help make our places more people focused and responsive to their needs.

As opportunities arise, Council will investigate the use of smart technologies that could assist with the following:

- On demand street lighting;
- Urban temperature monitoring;
- Waste collection and transfer;
- Watering systems;
- Pollution monitoring;
- Electric vehicle charging station availability; and
- Monitoring of energy and water usage.

Council will:
- Continue to educate our community on how to minimise waste generation and raise awareness of waste as a resource.
- Continue to investigate regional contracting opportunities that may assist in the development of an alternative waste disposal facility for the Western Sydney region.
- Investigate opportunities to capture and re-use water on Council owned facilities.

Actions
- Commence a trial of on-site organics waste separation for high density developments.
- Seek community feedback on the collection of food waste in existing green lid bins.
- Review development controls for residential flat buildings and rear laneways to ensure that sufficient space is available for efficient and safe waste collection.
- Complete the Stormwater Asset Management Plan.

Future work
- Develop a Water Sensitive Urban Design checklist for applicants and planners.
- Review and update Council’s Development Control Plan to reflect best practice in water sensitive urban design.
- Review development controls for residential flat buildings to consider larger loading areas for waste vehicles and options for on-site waste management systems to maximise source separation.
Urban and natural hazards have the potential to impact residents and infrastructure within The Hills, now and in the future. Managing environmental and urban risks and hazards is important for our safety and quality of life. Living in close proximity to natural environments brings with it inherent risk from variable and extreme weather conditions and the devastating effects of natural disasters including storms, floods and bushfire.

The Hills Shire contains 38,642ha of bushfire prone lands spread across both rural and urban areas. In addition the Shire contains approximately 6,450 flood affected lots. Bushfire and flooding are critical considerations in land use planning both at planning proposal stage and in consideration of development applications.

Councils are required to undertake Floodplain Risk Management Studies for all flood prone land within their LGA and adopt and implement Floodplain Risk Management Plans to address existing, future and continuing flood risk. Councils are also required to utilise NSW Rural Fire Service’s risk categories and require compliance Asset Protection Zones and associated building standards to mitigate bushfire risk.

Extreme heat is natural hazard which primarily impacts our established urban areas. Increased development of dwellings on smaller lots has reduced vegetation cover and limited opportunities to increase existing tree canopy particularly in growth areas. In the western and northern portions of the urban parts of the Shire land temperatures may exceed 43 degrees in extreme heat conditions. As the North West Growth Areas around North Kellyville and Box Hill continue to develop in this manner
it is likely that surface temperatures in these areas will continue to reach these levels in extreme heat events.

Compounding the effect of smaller lots, less trees and more hard surfaces, is choice of building materials. Increasingly home owners are requesting darker coloured materials for aesthetic reasons; however darker materials absorb heat and contribute to increased surface temperatures.

The above photographs depict development occurring in the Box Hill land release area and established areas in West Pennant Hills where surface temperatures are considerably lower. The release area dwellings are almost exclusively constructed with dark roof materials where the established areas show a variety of materials that are generally of a lighter palette.

While planning and design of new housing incorporates controls guiding development, in contrast, there is no regulatory framework driving adaption of existing properties. Property purchasers and property owners need to be able to access information on potential environmental risks and identify actions that will improve resilience of their property to future extreme weather events and conditions.

Raising awareness of and preparing residents for extreme heat, storms and floods can have numerous benefits including reducing damage to houses, reducing demand for emergency services (including SES), and reducing costs of utilities. Modifications such as more efficient glazing, shading, water capture and storage, and passive solar heating can reduce household usage of electricity and water, and in turn lessen cost of living pressures.
Our urban areas are noticeably hotter on average than our rural area. The above image shows that during the summer of 2015-2016, most of our urban area was between 3 and 9 degrees hotter than average temperatures in vegetated non-urban areas in Greater Sydney.

While shaping our Shire to accommodate population growth, we have to consider how the use of evolving technology can improve the way we design and manage our places and spaces, and the best way to increase the number of trees in our urban area. Increasing the use of smart technology and taking opportunities to ‘green’ our urban areas have the potential to lessen the impact of our places on the environment.

**Preparing residents for environmental and urban risks and hazards**

*This planning priority relates to PP20 in The Hills Local Strategic Planning Statement*

**Bushfire and Flooding**
Recent amendments made to The Hills bushfire prone land map ensured that the most up to date information is available to the community to assist them in making informed land use choices and to guide assessment of applications for development on bushfire affected lands. Hazard identification maps assist in identifying areas where growth should be avoided and where special development
considerations should be given and inform emergency response measures. Currently available hazard maps include:

- Bushfire Prone Land Map – prepared by the NSW Rural Fire Service; and
- Landslide Risk Maps that identify sites constrained by geotechnical instability.

Council has been actively participating in the preparation of the Hawkesbury Nepean Flood Study, providing local input and expertise on local flooding conditions throughout the development of the study, which is anticipated to be completed in mid-2019. At the conclusion of the study Council may choose to make use of the finished data as a basis for the development of a Floodplain Risk Management Plan.

Council will continue to obtain advice from NSW Rural Fire Service regarding the bushfire risk that affects the majority of our Shire.

Council assists residents by providing information on how they can best prepare themselves and their properties for various emergencies. Council’s Local Emergency Management Plan outlines various ways in which Council and Emergency Services respond in an emergency.

**Urban Heat Island and Extreme Weather Events**

Using available heat mapping data, we can identify areas within our Shire that are most vulnerable to the effects of extreme heat. In the summer of 2015-2016, the majority of our urban area measured between 3 and 9 degrees hotter than non-urban vegetated areas. A small number of sites were measured at over 9 degrees hotter than this baseline measurement. The combination of built up areas with a predominant amount of hard surfaces and dark roofs in developing residential areas attract and retain heat at greater levels than other areas.

![Heat Island Map](image)

*Source: NSW Office of Environment and Heritage*

**Figure 19: NSW Urban Heat Island Summer 2015-2016**
Fortunately, most of our urban area is well prepared for extreme heat and therefore appears as low vulnerability on the heat vulnerability map in Figure 20 above. This means that most households have access to cooling for their homes including air conditioning, street trees and good quality construction.

Additional methods that Council can employ to reduce these effects across the Shire relate to raising awareness amongst our community about ways to prepare for extreme weather events, including heat waves, and how the use of different building materials and finishes can significantly reduce the absorption and retention of heat. By understanding environmental risks and hazards, existing and future residents can make informed decisions that will make their homes and investments less vulnerable to extreme heat and other weather events.

**Pollution and Public Health**

Our growing population brings with it risks associated with decreased air and water quality, as well as noise and potentially odours. A key ongoing responsibility of Council is to respond to local air, water, noise and odour pollution issues to protect the health of the community. This is in addition to management of public health risks that are associated with food premises, skin penetration businesses and recreational aquatic facilities.

**Council will:**

- Continue to make hazard identification maps available that show areas at risk of bushfire and geotechnical instability.
- Educate and inform our community about environmental and weather-related risks and hazards.

**Actions**

- Prepare a suite of information material to raise awareness of and prepare existing and future residents for environmental and urban risks and hazards.
Implementation and Delivery
The actions contained within this Strategy are to be implemented in accordance with the Implementation Plan supporting the Local Strategic Planning Statement.

Stakeholders
There are a number of stakeholders who will assist in the delivery of the actions outlined in this strategy, including:

- Residents;
- Surrounding local councils;
- State Agencies including the Greater Sydney Commission, Department of Planning, Industry and Environment, NSW Environment Protection Authority;
- Waste Contractors;
- Development Industry; and
- Volunteer groups.

Planning Instrument
The Environment Strategy suggests the following amendment to The Hills Local Environmental Plan subject to further detailed investigation and preparation of a suitable planning proposal:

- Amendments to the Terrestrial Biodiversity Map to reflect best practice and ensure that environmentally sensitive lands are suitably identified and supported by controls to accurately inform decision making.

Monitoring and Review
The Environment Strategy will be monitored annually and reported to Council to inform future review programs. It is anticipated that the Environment Strategy will be reviewed, exhibited and re-adopted on a five yearly basis so it best reflects community concerns and aspirations as well as best practice in land use planning for responsible environmental management.
Appendices
Appendix 1

List of Threatened, Endangered and Critically Endangered Species

<table>
<thead>
<tr>
<th>Commonwealth Status</th>
<th>NSW Status</th>
<th>Threatened Fauna species known in The Hills Shire</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE</td>
<td>V</td>
<td>Common name</td>
</tr>
<tr>
<td>E</td>
<td>P</td>
<td>Scientific name</td>
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<tr>
<td>V</td>
<td>3</td>
<td>Commonwealth status</td>
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<tr>
<td></td>
<td>2</td>
<td>NSW status</td>
</tr>
</tbody>
</table>

Commonwealth Status (Commonwealth Environmental Protection and Biodiversity Act 1999)

- CE: Critically Endangered
- E: Endangered
- V: Vulnerable

NSW Status (Threatened Species Conservation Act 1995)

- V: Vulnerable
- P: Protected
- E1: Endangered
- E4A: Critically Endangered
- 2: Sensitivity Class 2 (Sensitive Species Data Policy)
- 3: Sensitivity Class 3 (Sensitive Species Data Policy)

<table>
<thead>
<tr>
<th>Common name</th>
<th>Scientific name</th>
<th>Commonwealth status</th>
<th>NSW status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Australasian Bittern</td>
<td>Botaurus poiciloptilus</td>
<td>E</td>
<td>E1, P</td>
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<tr>
<td>2 Barking Owl</td>
<td>Ninox connivens</td>
<td>V, P, 3</td>
<td></td>
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<tr>
<td>3 Black Bittern</td>
<td>Ixobrychus flavicollis</td>
<td>V, P</td>
<td></td>
</tr>
<tr>
<td>4 Black Falcon</td>
<td>Falco subniger</td>
<td>V, P</td>
<td></td>
</tr>
<tr>
<td>5 Black-chinned Honeyeater (eastern subspecies)</td>
<td>Melithreptus gularis</td>
<td>V, P</td>
<td></td>
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<tr>
<td>6 Brown Treecreeper (eastern subspecies)</td>
<td>Climacteris picumnus victoriae</td>
<td>V, P</td>
<td></td>
</tr>
<tr>
<td>7 Comb-crested Jacana</td>
<td>Irediparra galinae</td>
<td>V, P</td>
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<tr>
<td>8 Cumberland Plain Land Snail</td>
<td>Meridolum corneovirens</td>
<td>E1</td>
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<tr>
<td>9 Diamond Firetail</td>
<td>Stagonopleura guttata</td>
<td>V, P</td>
<td></td>
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<tr>
<td>10 Dural Woodland Snail</td>
<td>Pommerhelix duralensis</td>
<td>E</td>
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<td>11 Dusky Woodswallow</td>
<td>Artamus cyanopterus cyanopterus</td>
<td>V, P</td>
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<td>12 Eastern Bentwing-bat</td>
<td>Miniopterus schreibersi oceanensis</td>
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<tr>
<td>13 Eastern Cave Bat</td>
<td>Vespadelus troughtoni</td>
<td>V, P</td>
<td></td>
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<tr>
<td>14 Eastern False Pipistrelle</td>
<td>Falsistrellus tasmaniensis</td>
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<tr>
<td>15 Eastern Freetail-bat</td>
<td>Mormopterus norfolkensis</td>
<td>V, P</td>
<td></td>
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<tr>
<td>16 Eastern Osprey</td>
<td>Pandion cristatus</td>
<td>V, P, 3</td>
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<tr>
<td>17 Eastern Pygmy-possum</td>
<td>Cercartetus sydneyensis</td>
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<td></td>
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<tr>
<td>18 Flame Robin</td>
<td>Petroicaphoenicea</td>
<td>V, P</td>
<td></td>
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<tr>
<td>19 Freckled Duck</td>
<td>Stictoneittanaevesa</td>
<td>V, P</td>
<td></td>
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<tr>
<td>20 Gang-gang Cockatoo</td>
<td>Callocephalon fimbriatum</td>
<td>V, P, 3</td>
<td></td>
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<tr>
<td>21 Giant Burrowing Frog</td>
<td>Heleioporus australiacus</td>
<td>V</td>
<td>P</td>
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<tr>
<td>22 Glossy Black-Cockatoo</td>
<td>Calyptorhynchus ululatus</td>
<td>V, P, 2</td>
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<tr>
<td>23 Greater Broad-nosed Bat</td>
<td>Scotopana rueppelli</td>
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<td>Common name</td>
<td>Scientific name</td>
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<td>24</td>
<td>Greater Glider</td>
<td><em>Petauroides volans</em></td>
<td>V</td>
</tr>
<tr>
<td>25</td>
<td>Green and Golden Bell Frog</td>
<td><em>Litoria aures</em></td>
<td>V</td>
</tr>
<tr>
<td>26</td>
<td>Grey-headed Flying-fox</td>
<td><em>Pteropus poliocephalus</em></td>
<td>V</td>
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<tr>
<td>27</td>
<td>Hooded Robin (south-eastern form)</td>
<td><em>Melanodryas scutulata scutulata</em></td>
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<td>Koala</td>
<td><em>Phascolarctos cinereus</em></td>
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<tr>
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<td>Large-eared Pied Bat</td>
<td><em>Chalinolobus dwyeri</em></td>
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<tr>
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<td>Little Bentwing-bat</td>
<td><em>Miniopterus australis</em></td>
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<tr>
<td>31</td>
<td>Little Eagle</td>
<td><em>Hieraaetus morphnoides</em></td>
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</tr>
<tr>
<td>32</td>
<td>Little Lorikeet</td>
<td><em>Glossopsittapusilla</em></td>
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<tr>
<td>33</td>
<td>Masked Owl</td>
<td><em>Tytonovaehollandiae</em></td>
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<td>34</td>
<td>Pink Robin</td>
<td><em>Petroicarodinogaster</em></td>
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<td>Powerful Owl</td>
<td><em>Ninox stenura</em></td>
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<tr>
<td>36</td>
<td>Red-crowned Toadlet</td>
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<tr>
<td>37</td>
<td>Regent Honeyeater</td>
<td><em>Anthochaera phygia</em></td>
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<td>38</td>
<td>Scarlet Robin</td>
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<td>Sooty Owl</td>
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<td>Southern Myotis</td>
<td><em>Myotis macropus</em></td>
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<td>Speckled Warbler</td>
<td><em>Chthonicola sagittata</em></td>
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<td>42</td>
<td>Spotted Harrier</td>
<td><em>Circus assimilis</em></td>
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<td>Spotted-tailed Quoll</td>
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<td>Square-tailed Kite</td>
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<td>Superb Parrot</td>
<td><em>Polytelissonsonil</em></td>
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<td>47</td>
<td>Swift Parrot</td>
<td><em>Lathamus discolor</em></td>
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<td>Turquoise Parrot</td>
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<td>Varied Sittella</td>
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<td>White-bellied Sea-Eagle</td>
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<td>Yellow-bellied Glider</td>
<td><em>Petaurus australis</em></td>
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<td>52</td>
<td>Yellow-bellied Sheathtail-bat</td>
<td><em>Saccocaimus flaviventris</em></td>
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<td>NSW status</td>
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<td>Acacia bynoeana</td>
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<td>Acacia gordonii</td>
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<td>Acacia pubescens</td>
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<td>V,P,3</td>
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<td>Dillwynia tenuifolia</td>
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<tr>
<td>Epacris purpurascens var. purpurascens</td>
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<td>Eucalyptus sp. Cattai</td>
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<td>Grevillea parviflora subsp. parviflora</td>
<td>Small-flower Grevillea</td>
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<td>Melaleuca deanei</td>
<td>Deane's Paperbark</td>
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<td>Micromyrtus blakelyi</td>
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<td>Olearia cordata</td>
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<td>Persoonia hirsuta</td>
<td>Hairy Geebung</td>
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<td>Persoonia mollis subsp. maxima</td>
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<td>Pimelea curviflora var. curviflora</td>
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<td>Pomaderris brunnea</td>
<td>Brown Pomaderris</td>
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<td>Tetrathecaglandulosa</td>
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<td>V,P</td>
</tr>
<tr>
<td>Zieria involucrata</td>
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### Threatened Flora Populations known within the Hills Shire

<table>
<thead>
<tr>
<th></th>
<th>Endangered Population</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Dillwynia tenuifolia</em></td>
</tr>
<tr>
<td>2</td>
<td><em>Darwinia fascicularis ssp. Oligantha</em></td>
</tr>
</tbody>
</table>

### Threatened Ecological Communities known within The Hills Shire

<table>
<thead>
<tr>
<th></th>
<th>Ecological Community</th>
<th>Commonwealth status</th>
<th>NSW status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Blue Gum High Forest</td>
<td>CE</td>
<td>CE</td>
</tr>
<tr>
<td>2</td>
<td>Cumberland Plain Woodland</td>
<td>CE</td>
<td>CE</td>
</tr>
<tr>
<td>3</td>
<td>Sydney Turpentine-Ironbark Forest</td>
<td>CE</td>
<td>E</td>
</tr>
<tr>
<td>4</td>
<td>Shale-Sandstone Transition Forest</td>
<td>CE</td>
<td>CE</td>
</tr>
<tr>
<td>5</td>
<td>Swamp Sclerophyll Forest on Coastal Floodplains</td>
<td>CE</td>
<td>E</td>
</tr>
<tr>
<td>6</td>
<td>River-Flat Eucalypt Forest on Coastal Floodplains</td>
<td>CE</td>
<td>E</td>
</tr>
<tr>
<td>7</td>
<td>Freshwater Wetlands on Coastal Floodplains</td>
<td>CE</td>
<td>E</td>
</tr>
<tr>
<td>8</td>
<td>Sydney Freshwater Wetlands</td>
<td>CE</td>
<td>E</td>
</tr>
<tr>
<td>9</td>
<td>Swamp Oak Floodplain Forest</td>
<td>CE</td>
<td>E</td>
</tr>
<tr>
<td>10</td>
<td>Western Sydney Dry Rainforest</td>
<td>CE</td>
<td>E</td>
</tr>
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<td>11</td>
<td>Maroota Sands Swamp Forest</td>
<td>CE</td>
<td>E</td>
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</tbody>
</table>
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Sydney Water 2016 – IPART Sydney Water Price Review – Residential Customers


http://habitat3.org/the-new-urban-agenda/
The Environment Strategy was adopted by Council on xxxxxxx Minute No.xxx.

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