

TOWN OF BASSENDEAN
ENVIRONMENTAL MANAGEMENT PLAN
2014 – 2024
(REVISION 3)



Eucalyptus calycogona – Square-fruited Mallee
Photo taken from Streetscape Master Plan (Recommended Tree Species) (2008)

DOCUMENT CONTROL

In accordance with best practice principles this document is to be reviewed annually.

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REV 3	Feb 2014	Council (OCM-7/10/13) deferred consideration to allow for further consultation with relevant stakeholders. Amendments submitted to the March 2014 Council meeting	OCM – 18/3/14

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EXECUTIVE SUMMARY

The Town of Bassendean has a unique environment shaped by its rich Aboriginal history and European settlement patterns of the last 200 years. Although the Swan River continues to be the focus for recreation and environmental activities, over the years much of Bassendean's natural environment has been heavily modified by land use activities both past and present. As a result the small remnants of bushland and wetland remaining represent high conservation value requiring ongoing protection.

The Town of Bassendean has identified the requirement for a strategic approach to environmental management activities and as a result the Environmental Management Plan 2014 – 2024 (EMP) has been developed to provide an overview of the environmental management activities which are currently undertaken.

The Town of Bassendean has in place a number of effective environmental policies, plans, and procedures that are action oriented and are progressively being undertaken for each respective document.

Town of Bassendean's Strategic Plan Vision states:

- *To value our heritage, protect and enhance our environment and provide sustainable living environments.*
- *To provide good governance with a focus on sustainable outcomes.*

The Aim for the Environmental Management Plan is:

To articulate the numerous plans which are currently being implemented and to strategically guide the Town's environmental management activities over the next 10 years, in order to protect and enhance the Town's natural assets. Additionally this document will form the key reference document to other Town strategies, policies and plans in reference to the environment.

INTRODUCTION

The Town of Bassendean is a metropolitan municipality, 10 kilometres north east of the Perth central business district (CBD) and approximately 20 kilometres from the coast. The Town covers an area of 10.4 square kilometres, maintains 97 km of roads and has an estimated population of 14,404 (2011 - Australian Bureau of Statistics).

The Town is bounded by the Swan River to the east, by the City of Swan to the north and east and by the City of Bayswater to the west. The Town of



Figure 1 – Town of Bassendean location map

Bassendean incorporates the suburbs of Bassendean, Eden Hill and Ashfield. The Town of Bassendean is well served by metropolitan train and bus services. The International Airport terminal is 20 minutes, and the Domestic Terminal 10 minutes from the town centre by car.

HISTORY AND DEVELOPMENT OF THE PLAN

The Town of Bassendean is an area rich in cultural, ecological and historical importance. It is located along the Swan River, opposite the mouth of the Helena River and has a border with Bennett Brook at Pyrton.

Archaeological evidence has shown that Aboriginal people inhabited the Bassendean area for over 30,000 years and the land was once used by them for hunting turtles and gilgies, camping, fish trapping, fire-stick farming, finding fresh water mussels, traditional digging of wells for freshwater and ochre mining. Bennett Brook is of significant mythological importance as it is said to have been created by the waugal and be the place where it still lives beneath the river.

The Town has numerous sites of cultural significance to the Nyungah people, and the importance of Bassendean for Nyungah hunting and gathering activities and as a meeting place for the various tribes, is affirmed in many documents and personal narratives from the 1830's to the present-day.

After the colony's foundation in June 1829, the fertile alluvial flats along both sides of the Swan River, including Bassendean, were chosen as prime agricultural land. Settlers acquired parcels of land and

farms were established which brought changes to the area including large scale land clearing for timber and farmland and the introduction of exotic plant species and animals.

By July 1831 Guildford needed to expand elsewhere as its town lots had run out. Across the river and to the west was a Government Reserve and this was selected for a new townsite and called West Guildford.

Peter Broun, the first Colonial Secretary, took occupation in 1832 of Stoke Farm in West Guildford and of its existing homestead. He named the dwelling *Bassendean* after the name of his family seat in Berwickshire. In 1922 when West Guildford cut its residual ties with Guildford, Bassendean was the new name chosen.

In 1892 removal of a rock bar and dredging works began for the construction of Fremantle Harbour to accommodate large ships. As a result of these works, ocean tidal patterns now affect the Swan River with saline (salty) water flowing in from the sea.

After World War I, in the 1920's large industrial businesses were built around the area of Bassendean and deep cut drains were excavated to channel the flow of industrial waste into the Swan River and to drain the wetlands to develop land. In the 1980's the Tonkin Park Industrial Estate was established and the contaminated ground left from past industry was stored in a 3.8 hectare (Department of Environment Regulation and Environmental Protection Authority) approved containment cell. The containment cell was constructed to prevent further leaching of heavy metals and other industrial pollutants into the stormwater drains, groundwater and the Swan River. Land clearing upstream in the wheat belt has also altered the quality of runoff into the swan catchment, bringing silt, salt and excess nutrient into the river system (ISBN 1 – 920694-38-2).

Due to the long history of the Town, first in agriculture and then in urban and industrial development, there are few places with significant biodiversity conservation value remaining within the Town's boundaries.

In essence, there are 24.2 hectares of native vegetation remaining in the Town that covers 2.39% of the Town's area. This vegetation is located in small local reserves and is owned by the State (12 hectares) and Local Government (6 hectares), with approximately 3 hectares on private freehold land (*Taken from the PBP, 2004*).

Local Governments have often been quoted as primarily responsible for "roads, rates and rubbish". In the past few decades, however, Local Governments including the Town of Bassendean have taken on a much wider range of responsibilities, particularly in relation to social services, community development and environmental matters.

To address the varying environmental issues, the Town of Bassendean developed the previous (2006-2011) Environmental Management Plan which provided strategic direction and included operational actions to protect and manage the local environment. During this period, the Town developed a number of additional strategies, plans, policies and projects that focused on the specific environmental issues and had specific actions.

The Town of Bassendean has demonstrated good environmental stewardship by developing and implementing a wide range of environmental plans and projects to ensure the appropriate management of our precious environment. Some of the plans and projects developed include the Water Campaign, Natural Resource Management, Local Climate Change Adaptation Action Plan, TravelSmart program, Water Quality Monitoring & Improvement program, Street Tree Planting program, Bushcare Volunteer program, School Waste Reduction program, ACEr – Achieving Carbon Emissions Reduction program, Perth Solar City program, Collective Biodiversity Strategy and Strategic Streetscape Master Plan, to name a few. The Town of Bassendean's commitment to the environment is also demonstrated by the increasing number of statutory responsibilities for environmental matters associated with State and Federal legislation and by increasing community expectation on environmental protection and management.

The above stated plans and other programs provide detailed information and have specific actions that are progressively being implemented by Council staff. The 2014-2024 Environmental Management Plan has been developed to provide an overview of the current documents. It is intended that the 2014-2024 Environmental Management Plan will be used by Council staff as an operational working document and will be updated when relevant State or Federal legislation updates or new information becomes available.

REGIONAL PARTNERSHIPS

The Town works with a number of stakeholders to assist with the affective management of Bassendean's environmental assets. These stakeholders include:

- Western Australia Local Government Authority (WALGA)
- Australian Local Government Authority (ALGA)
- Swan River Trust
- Perth Region NRM
- Eastern Metropolitan Regional Council (EMRC)
- Department of Parks and Wildlife
- Department Of Environment Regulation
- Other local government authorities
- Western Australian Planning Commission
- Heritage Council of Western Australia
- Department of Aboriginal Affairs

- National Trust
- Department of Water
- Water Corporation
- Department of Health

For more information on these organisations please refer to **Appendix 1**.

LEGISLATIVE REQUIREMENTS

There are a number of State and Federal acts and regulations to which the Town of Bassendean must comply with. These acts and regulations assist with the protection of environmental assets and the legal operational requirements of the council. For more information about the legal acts and regulations which the Town is obligated to in relation to the environmental please refer to **Appendix 2**.

ENVIRONMENTAL MANAGEMENT PLAN FRAMEWORK

VISION

Town of Bassendean's Strategic Plan Vision states:

- *To provide our heritage, protect and enhance our environment and provide sustainable living environments.*
- *To provide good governance with a focus on sustainable outcomes.*

AIM

The aim of the Environmental Management Plan 2014-2024 is to articulate the numerous plans which are currently being implemented and to strategically guide the Town's environmental management activities over the next 10 years in order to protect and enhance the Town's natural assets. Additionally this document will form the key reference document to other Town strategies, policies and plans in relation to the environment.

GUIDING PRINCIPLES

Several guiding principles have been developed to assist the implementation of the Environmental Management Plan. These guiding principles reflect the benefits and values that underpin the Plan's objectives and actions and indicate the manner in which the Plan will be implemented. The guiding principles are:

- The significance and value of Bassendean's environment is recognised, valued and protected;
- The important relationships between the natural environment and cultural heritage, both European and Aboriginal, is recognised, valued and protected;
- The Town demonstrates environmental leadership by improving the sustainability of its own buildings, operations and activities;
- Relationships with relevant stakeholders are built and maintained to assist in achieving effective environmental management outcomes and information sharing;
- The Town to advocate for the Bassendean environment and community in State and Federal government issues;
- Effective communication and consultation with the community to ensure the community has a sound understanding of the Town's environmental roles and responsibilities;
- Environmental management becomes incorporated into the Town's operations and processes as part of normal business; and
- The Town's plans, strategies and actions continually enhance the Town's environmental position by being SMART (simple, measurable, achievable, realistic and timely).

ROLES AND RESPONSIBILITIES

The Environmental Management Plan 2014 - 2024 provides a strategic overview of all of the numerous plans which are currently in place. The Town of Bassendean's Environmental Officer will have overall responsibility for coordination of the various environmental plans which include, but are not limited to, the following:

- Water Quality Monitoring & Improvement program
- Water Conservation Plan (WCP) for Management of Groundwater
- Collective Local Biodiversity Strategy
- Weed Management Strategy
- Volunteer Bushcare Program
- Natural Resource Management Plan
- Schools Waste Reduction Program
- ACEr – Achieving Carbon Emissions Reduction Program
- Local Climate Change Adaptation Action Plan

Please refer to **Appendix 3** for a full list of projects and plans, plus a summary of each.

The Environmental Officer will continue to coordinate an internal staff Working Group to assist with the administrative workload.

Table 1 - Roles and Responsibilities Involved in Implementing the EMP

DIRECTOR	<p>DIRECTOR OPERATIONAL SERVICES</p> <ul style="list-style-type: none"> • Oversee successful outcomes of plan; and • Provide approval for major projects.
MANAGEMENT	<p>MANAGER ASSET SERVICES</p> <ul style="list-style-type: none"> • Listing sufficient funds to undertake the priority environmental actions in future draft budgets for council consideration; • Ensure that the Environmental Officer progressively implements the environmental actions; • Oversee successful outcomes of plan; and • Provide input and assistance with approval for major projects.
COORDINATION	<p>ENVIRONMENTAL OFFICER</p> <ul style="list-style-type: none"> • Review and understand the diverse range of environmental plans and actions which are required to be implemented; • Coordinating reference group meetings and regularly reporting to upper management, and where necessary Council; • Facilitation of Reference Group meetings; • Support officers with responsibility for actions; • Seek funding for implementation of actions; and • Coordinate monitoring and review processes

	<ul style="list-style-type: none"> Liaison with EMRC Environmental Services on projects and programs. <p>See Appendix 3 for list of projects</p>
SUPPORT OFFICER	<p>CONTRACTS AND SUPPORT SERVICES OFFICER</p> <ul style="list-style-type: none"> Coordination of waste projects Management of waste contract Waste Education

KEY FOCUS AREAS (KFA’S)

Six key themes have been identified to represent various environmental issues as important to the Town. The Key Focus Areas (KFA's) are as follows:

- KFA 1 Governance and Communication
- KFA 2 Land Use and Cultural Heritage
- KFA 3 Atmosphere and Climate Change
- KFA 4 Biodiversity
- KFA 5 Waste Management
- KFA 6 Water Conservation

These key themes are well reflected within the Town of Bassendean Strategic Community Plan 2014-2024 within all six key theme areas of Town Planning and Built Environment, Environmental Sustainability and Adaption to Climate Change, Economic Wellbeing and Prosperity, Arts Heritage and Culture, Inclusiveness Life Long Learning Health and Social Wellbeing, Leadership and Governance. For a list of the strategic enablers in relation to the Town of Bassendean’s Strategic Plan 2014-2024 please refer to **Appendix 4**.

PART II: IMPLEMENTATION

KFA 1 GOVERNANCE AND COMMUNICATION

BACKGROUND

The Town of Bassendean has a strong environmental focus and many years of successful policy development and action implementation which has assisted with the continued protection and enhancement of Bassendean's environmental assets. While the Town has taken numerous steps to manage and protect the environment there is always room for improvement. Continual management and review will ensure that the Town continues to perform at a high standard.

GOVERNANCE AND COMMUNICATION OBJECTIVES

- Obj. 1.1 Improve the integration of environmental management into the Town's policies and procedures.
- Obj. 1.2 Improve communication about the environment, and the Town's environmental management activities, both internally and externally.

POTENTIAL RISKS

There are a number of potential risks that may impact on the Towns ability to effectively protect and enhance the Towns environmental assets in relation to Governance and Communication.

Table 3 - the Processes and Associated Impacts Relating to Governance and Communication

KFA	Process	Probability	Impact	Comments
Governance and Communication	Uncertainty about future governance and service arrangements such as amalgamation	HIGH	HIGH	Currently there is no clear direction in relation to the Perth Metropolitan amalgamation. Continue with business as usual approach until a decision is made and a direction is known in 2014.
	Lack of understanding within the community of the Town's roles and responsibilities	LOW	MEDIUM	The Town of Bassendean has a good reputation of informing community members about current and future environmental issues and actions through publications such as the Bassendean Briefings. The Town assists with educating the community on current environmental issues through their publications.
	Level of Council staff turn over	MEDIUM	HIGH	A significant amount of corporate knowledge is lost when staff leave the

KFA	Process	Probability	Impact	Comments
				organisation . Potentially holding up projects and a lag time in action progression.

POLICY AND OPERATIONAL ACTION PLANS

The Town of Bassendean has developed a number of policies and environmental documentation to assist with good governance and maintaining effective environmental management and responsibility. In addition the Town has developed several communication policies to assist with more effectively disseminating information to the community. These documents with greater reference to Governance and Communication include:

- Environmental Reference Group – Terms of Reference
- Town of Bassendean Purchasing Policy
- Volunteer Bushcare Guidelines
- Communication & Consultation, Community & Stakeholders Policy
- Town of Bassendean Cultural Plan
- Corporate Governance Charter
- Aboriginal Consultation Process
- Town of Bassendean Volunteer Policy
- Sustainable Bassendean Policy

For a full list of environmental policies, guidelines and documents please refer to **Appendix 4**.

ACHIEVEMENTS

The Town has exhibited a number of achievements in relation to Governance and Communication including the development of an extensive number of environmental policies and guidelines as referenced within **Appendix 5**. Additionally the Town of Bassendean has a strong relationship with its volunteer Bushcare groups. As a result of the strong relationship and continued support the Volunteer Bushcare Guidelines were developed.

BACKGROUND

The Town has a rich and varied cultural, natural and aboriginal heritage that has shaped the location and type of land use that occurs within the Town today.

Bassendean's Geology

Bassendean is located close to the eastern edge of the Swan Coastal Plain and has given its name to the ancient eroded beach sands known as the Bassendean Sands. Bassendean's landform and topography reflect these origins, as well as the influence of the Swan River itself.

At Bassendean, the Swan Coastal Plain has a relatively flat topography, with very little separation between high and low points in the landscape. In some locations, such as the northwest of the Town, the land rises to 30 metres above AHD (Australian Height Datum – above sea level) and is separated by low-lying interdunal swales.

Soils

Bassendean soils originate from two sources and are shaped by the actions of wind and water. To the west and north, the soils were originally beach sands that have been gradually eroded by the wind. The Bassendean Sands are present west of Hardy Road and are characterised by highly leached quartz sands (more than 99.4% quartz), poor in organic matter and plant nutrients. Where the soils occur in the interdunal swales, soil nutrients are higher due to the presence of peat.

The soil pH for Bassendean sands is generally low and therefore acidic. The soil pH is a measure of the acidity or alkalinity in soils. pH is defined as the negative logarithm (base 10) of the activity of hydronium ions (H^+ or, more precisely, H_3O^{+aq}) in a solution. A pH below 7 is acidic and above 7 is alkaline.

The river foreshore and low-lying riverine flat soils have been deposited through water action of the Swan River (alluvial). Two alluvial soils are present:

- The alluvial red earth terraces of the Swan Association, comprising loams, silts, silty sands and clays. These are present in the Ashfield Flats area and along most of the river foreshore for a distance of 100-300 metres from the river bed. The soils of these riverine flats are richer in nutrients, but are also high in iron sulphides in some locations.
- The yellow duplex soils of the Guildford Soils can be seen around the Success Hill area.

Present in the north-west corner of the Town is a small transition area between the Bassendean Sands and the Guildford Soil Formation where the sands overlie the alluvial clays and silts.

Acid Sulphate Soil Risk

Where low-lying and usually waterlogged soils are rich in iron sulphides and organic matter, there is the potential for acid sulphate soils (PASS); these soils generate acid sulphate soils (ASS) when disturbed or drained. PASS are naturally occurring soils containing sulphide minerals, predominantly pyrite which is an iron sulphide, left undisturbed these soils are benign and not acidic. It has been identified that these soils pose no risk to human health or infrastructure in their undisturbed state. However, when soils are drained, excavated or exposed by lowering the water table, the sulphides react with oxygen to form sulphuric acid. Inappropriate disturbance of these soils can generate large amounts of sulphuric acid and leach contaminants (heavy metals) into the groundwater and surrounding surface waters.

Soils with a high potential to become acid sulphate soils occur in the interdunal swales, river foreshore or riverine flats, such as:

- Ashfield Flats Reserve and surrounding areas;
- Bindaring Park and surrounding areas;
- Industrial Area between Railway Road and Collier Road;
- Between Collier Road, Grey Street, Broadway and Hanwell Way; and
- Success Hill Reserve.

The remainder of the Town of Bassendean is identified as being at low to moderate risk of developing acid sulphate soils.

Culture

Aboriginal Heritage

The original inhabitants of the Town of Bassendean area were the Nyungah Aboriginal people. The Town acknowledges the Traditional Owners of the land. The Town endeavours to undertake its functions, services and actions in a sensitive and respectful manner, in accordance with relevant statutory obligations.

The Department of Aboriginal Affairs is responsible for administering the Aboriginal Heritage Act 1972 which was introduced in Western Australia in 1972 to protect Aboriginal heritage. The Act recognises Aboriginal peoples' strong relationships to the land, which may go back many thousands of years.

The Department maintains a Register of Aboriginal Sites as a record of places and objects of significance to which the Act applies. The presence of an Aboriginal site places restrictions on what can be done to the land. Anyone who wants to use land for research, development or any other cause, must investigate whether there is an Aboriginal heritage site on the land.

The Department of Aboriginal Affairs (DAA) has eight (8) registered Aboriginal sites and an additional nineteen (19) “other heritage places” within the Town site. The known sites include campsites, artefact scatters, fish traps, quarries and structures, as well as sites of ceremonial and mythological significance. Areas of the Town are subject to Native Title claims through the Combined Swan River and Swan Coastal Plain Native Titles Claimants.

Where land users conclude that impact to a Site is unavoidable, the consent of the Minister may be sought under Section 18 of the Act to impact the Site by giving notice to the Aboriginal Cultural Material Committee (ACMC) accompanied by the information as to the intended use of the land and Sites on the land.

To ensure compliance to the Act the Town of Bassendean has in the past consulted with Aboriginal Native Title Holders regarding registered aboriginal sites giving notice to the ACMC accompanied by the information as to the intended use of the land and Sites on the land and subsequently obtain the following:

- 15 November 2005, Section 18 Approval and the Conditions of Consent for Reserve 35099 located on the Swan River near the corner of Anstey Road and Daylesford Road, Bassendean.
- 15 November 2005, Section 18 Approval and the Conditions of Consent for Ashfield Parade Reserve.
- On the 15 November 2005, Section 18 Approval and the Conditions of Consent for Mary Crescent Reserve, Eden Hill
- 14 December 2007, provided a Section 18 Approval and Conditions of Consent for Pickering Park - Reserve 18091 and Lots 11 & 12 Bassendean Parade, Bassendean.
- 23 January 2006, provided a Section 18 Approval and Conditions of Consent for Lot 661, Lot 642, Reserve 18092, Lot 15524 prescribed Reserve 18092 and Lot 300, Sandy Beach Reserve, Bassendean.
- 3 May 2000, provided the Town of Bassendean with a Section 18 Conditions of Consent and then on the 8 February 2007, provided a Section 18 Conditions of Consent to the State Land Services for Success Hill Reserve.
- February 2014, Aboriginal Consultation was conducted for Anzac Terrace Foreshore Reserve.

The Town of Bassendean will only undertake bush rehabilitation work on registered Aboriginal sites in accordance with the Minister for Aboriginal Affairs Conditions of Consent or with Department of Aboriginal Affairs approval.

Post-European Settlement

The name “Bassendean” was first recorded by Surveyor J.W. Gregory in 1841 as the name of 1,455 acres for Mr P. Brown, who had his homestead on the West Band of the Swan River. Peter Brown

(Broun) was Western Australia's first Colonial Secretary in 1832 and in 1833 renamed his 'Stoke Farm' property on the Swan River to 'Bassendean' after a family property in Berwickshire, Scotland. This area was also previously known as West Guildford, which became a separate Local Government identity in 1901. A competition to choose a new name for the area was held in 1922, two children nominated the name "Bassendean" after Peter Brown's property.

The Town of Bassendean maintains a Municipal Heritage Inventory for all known and recognised sites of heritage value.

People of Bassendean

The human population can have a positive or negative impact on the natural environment. Community groups, sustainable behaviour and bushland regeneration activities assist with the protection and enhancement of the environment for current and future generations. The Town has a positive role to play through education, leadership and facilitation to increase the positive impact from its communities.

The use of natural resources, production of greenhouse gases, waste and other pollutants and physical impacts on the natural environment such as littering, spreading weeds and clearing vegetation have a negative effect on our environment.

Specifically local governments can use their Local Planning Schemes, planning policies and development approvals to:

- reserve and protect bushland areas and other natural areas of value;
- avoid development that may result in unacceptable environmental impact;
- attach environmental conditions to development approvals that can enhance environmental benefit;
- promote energy efficient development and urban design incorporating energy efficient building design, walkable neighbourhoods, transit orientated development and solar orientation of lots;
- promote water conservation, management of stormwater and the use of water sensitive urban design; and
- use zoning to manage environmental impacts and to reduce the likelihood of incompatible land uses to be located next to environmental assets.

LAND USE AND CULTURAL HERITAGE OBJECTIVES

Obj. 2.1 To protect, enhance and conserve the Town's Indigenous, natural and cultural heritage areas.

Obj. 2.2 To facilitate and support community engagement in environmental protection and bushland management activities.

Obj. 2.3 To educate the community about environmental issues and positive environmental behaviours.

Obj. 2.4 To continue to sustain the Town of Bassendean's planning and development in a manner that is environmentally and sustainability productive.

POTENTIAL RISKS

There are a number of potential risks that may impact on the Towns ability to effectively protect and enhance the Towns environmental assets in relation to Land Use and Cultural Heritage.

Table 4 - Processes and Associated Impacts Relating to Land Use and Cultural Heritage

KFA	Process	Probability	Impact	Comments
Land Use and Cultural Heritage	Lack of heritage consideration during decision-making.	LOW	MEDIUM to HIGH	Significant loss of culture.
	Improper (or lack of) Aboriginal consultation.	LOW	MEDIUM to HIGH	Loss of knowledge, traditional cultural practice and social connection. Destruction of Aboriginal sites.
	Urban expansion	LOW	HIGH	Loss of value, heritage sites and amenity.
	Loss of natural heritage	MEDIUM	MEDIUM	Destruction and degradation of natural landscapes; removal of bushland and vegetation; decreased biodiversity.
	Increased urban development	LOW	MEDIUM	Degradation of land and loss of habitat.
	Inappropriate development	LOW	MEDIUM	Degradation of land and loss of habitat.
	Lack of education of Town residents	LOW	MEDIUM	Lack of community ownership of the region. As a result the community may become less proactive.
	Population growth	MEDIUM	MEDIUM	Increased pressure on land for housing and need for drinking water.

POLICY AND OPERATIONAL ACTION PLANS

The Town of Bassendean has developed a number of policies and environmental documentation to assist with managing the Town's Land Use activities and protecting the regions Cultural Heritage.

These documents with greater reference to Land Use and Cultural Heritage include:

- Regional Aboriginal Consultation Guidelines

- Local Planning Strategy
- Sustainable Landscaping Strategy
- Landscaping with Local Plants Policy
- Nutrient and Irrigation Management Policy
- Streetscape Information Policy
- Streetscape Protection Policy
- Vision 2030 Community Plan
- Managing Phytophthora Dieback Guidelines
- Management of Dieback Disease
- Town of Bassendean Cultural Plan
- Swan and Helena Rivers Management Framework
- Heritage Audit and Statement of Significance
- Swan Canning Riverpark Iconic Trails Project
- Verge Treatment Policy
- Heritage Audit and Statement of Significance
- Regional Aboriginal Consultation Guidelines
- Street Tree Illegal Removal Prosecution
- Street Tree Master Plan – Strategic Streetscape Plan
- Street Tree (During Development) Policy
- Street Tree Protection Policy
- Street Tree Removal & Replacement Policy
- Street Tree Information Policy
- Local Planning Policy No. 10 – 5.7.7 – Tree Preservation
- Local Planning Policy No. 13 – Trees on Developed Sites
- Local Planning Policy No. 14 – On-site stormwater
- Amenity Tree Evaluation Policy

For a full list of environmental policies, guidelines and documents please refer to **Appendix 5**.

ACHIEVEMENTS

The Town of Bassendean has carried out Section 18 Conditions of Consent for Success Hill Reserve, Pickering Park, Anstey Road (Daylesford Road), Reserve 35099, Sandy Beach Reserve, Ashfield Parade Reserve and Mary Crescent Reserve.

A section 18 is required on land where an Aboriginal site is located, and the Town want to use this land e.g. for development, consent from the Minister for Aboriginal Affairs is required under section 18 of the Aboriginal Heritage Act 1972. The Aboriginal Cultural Material Committee (ACMC) considers applications from landowners to use land on which Aboriginal sites and objects are located. The

ACMC then recommends to the Minister for Aboriginal Affairs whether consent should be given to use the land for the purpose sought.

As a result the Town has implemented the Success Hill Reserve, Pickering Park, Anstey Road (Daylesford Road), Reserve 35099, Sandy Beach Reserve, Ashfield Parade Reserve and Mary Crescent Reserve environmental rehabilitation and civil works projects.

There are two significant heritage projects that are currently being undertaken within the region.

1. The Swan and Helena Rivers Management Framework Heritage Audit and Statement of Significance was undertaken by the EMRC in partnership with the four of its member Councils, Swan River Trust and Department of Planning. The document is a valuable reference for river projects that will guide themes, development and location of interpretive experiences along the river foreshore trail. The Statement of Significance identifies overarching themes that link the natural, indigenous and historic values and include river of life; power of the landscape; and sustainability.
2. The Swan and Canning Riverpark Iconic Trails Project: Indigenous Consultation Project aims to connect the community to the natural and cultural environment surrounding the Swan Canning Riverpark through the development of a network of trails. Development of the project is co-ordinated by the Swan River Trust. The project will map out significant Indigenous, European and natural heritage sites and identify missing links in the existing trail network.

The implementation of planning decisions can have an impact on the environment and other natural resources. Local government has significant opportunity to influence the impact of urban development on the environment through strategic land use planning and its development and planning approval processes. By incorporating environmental considerations and resource management into the planning process, decisions can be made in the context of potential impacts on the environment, similarly there is opportunity to utilise the planning system to manage environmental issues.

Up to 2004 the Town was the state host of National Sorry Day, conducted at Ashfield Reserve. Since 2004, the Town of Bassendean and Derbarl Yerrigan Health Services have hosted the National Aborigines and Islanders Day Observance Committee (NAIDOC) Family Fun day annually in July. The family fun day typically commences with the 'Dandjoo Koorliny' reconciliation walk to Ashfield Reserve. There are information stalls on Aboriginal services, activities for all ages and free lunch and refreshments.

The Town also participated in the National Green Jobs Corps training program which provided 21 young people aged 17 to 24 years, mostly Aboriginal and Bassendean residents accredited training in Conservation and Land Management in a six-month-long project in environmental bushland restoration skill development work.

Recently the Town has also implemented formal Cultural Awareness Training for all new staff. The training was developed to assist all staff, including the Environmental Officers, to better understand Aboriginal culture and to assist with Aboriginal consultation.

KFA 3 ATMOSPHERE AND CLIMATE CHANGE

BACKGROUND

Climate

The Town of Bassendean is located in a mild Mediterranean climate characterised by mild winters and hot dry summers. Data from Perth Airport Weather Zone provides a breakdown of the climate average within the region. Mean long term average temperature ranges from 24.4°C to 12.1°C. Bassendean’s average rainfall is 776.1mm (down from 860mm in 2005). Figure 2 shows a breakdown of the temperature and rainfall of the Perth Airport (closest weather station to Bassendean).

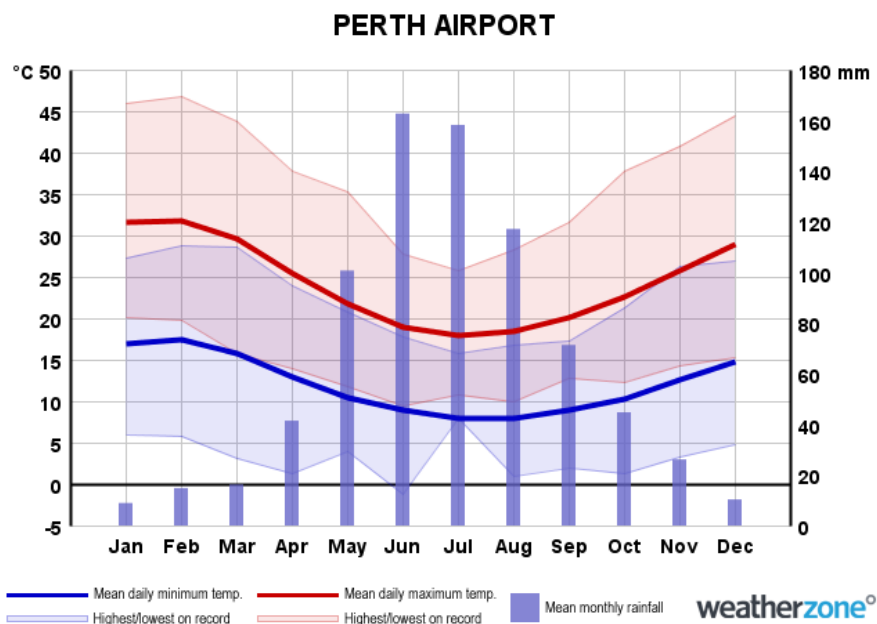


Figure 2 – Perth Airport weather station temperature and rainfall.
<http://www.weatherzone.com.au/climate/station.jsp?lt=site&lc=9021>

Carbon Management

In 2000 the Town of Bassendean joined the Cities for Climate Protection (CCP) Program which assisted local governments to reduce their greenhouse gas emissions through a five milestone process and then continued with the CCP Plus program. As participants in this program the Town developed a Corporate Greenhouse Action Plan. When Federal Government funding for the CCP program was withdrawn in 2009, the Town of Bassendean joined the ACER – Achieving Carbon Emissions Reduction Program. As part of this program the Town monitors, reports on and undertakes initiatives to reduce its corporate carbon emissions. The ACER Program also provides information and

education to the community and local businesses in the region on reducing energy consumption and other climate change related issues.

The Town is also part of the Perth Solar City program. The Perth Solar City Program is one of seven designated Solar Cities funded by the Australian Government. The Program offers a suite of initiatives designed to bring together individuals, communities, governments and businesses to trial and showcase practical and creative ways to be smarter about our energy use. By changing the way we think about and use energy, we will be in a better position to be able to adapt and prepare for a low carbon future making Perth's Eastern Region a greater place to live, work, play and do business.

In recent years the importance of climate change adaptation has become apparent. The Town of Bassendean, along with other EMRC member Council, participated in staff workshops to assist with the development of a Regional Climate Change Adaptation Action Plan (RCCAAP). The RCCAAP looks at the type of actions that need to be addressed at a regional scale in relation to climate change adaptation. From the work compiled from the workshops the Town developed a Local Climate Change Adaptation Action Plan (LCCAAP). The LCCAAP focuses on actions related to the Town's operation that are local in nature and/or partner with the community. This will ensure that climate change adaptation is integrated into the day to day planning and risk management activities of the Town and its communities.

Air Quality

Air quality is predominantly regulated by State Government agencies such as the Department of Environment and Conservation. The Town has responsibility in enforcing state controls at the local level related to noise and dust.

Transport

Traffic congestion and delays cause a number of environmental, social and economic issues. Such issues include the high cost of managing and maintaining the road network, air and noise pollution, increased dependency on non-renewable fuels and the loss of native vegetation due to the increased need to expand and widen our road network. The Perth metropolitan region is a highly car dependent city that is continually expanding outwards increasing demand on new infrastructure and increasing the impacts on the environment.

ATMOSPHERE AND CLIMATE CHANGE OBJECTIVES

- Obj. 3.1 Reduce greenhouse gas emissions resulting from the Town's operations and activities.
- Obj. 3.2 Encourage the use of alternative transport modes within the Town.
- Obj. 3.3 Ensure the Town is ready and able to adapt to expected climate change impacts.
- Obj. 3.4 Improve air quality within the Town.
- Obj. 3.5 Increase uptake in renewable energy within the Town.

POTENTIAL RISKS

There are a number of potential risks that may impact on the Towns ability to effectively protect and enhance the Towns environmental assets in relation to Atmosphere and Climate Change.

Table 5 - Processes and Associated Impacts Relating to Atmosphere and Climate Change

KFA	Process	Probability	Impact	Comments
Atmosphere and Climate Change	Vegetation clearing	MEDIUM	HIGH	Removal of vegetation leads to reduced CO ₂ uptake. Reduces shading and creates heat banks.
	Urban sprawl	LOW	HIGH	Increased population and car use adding to particulate pollution.
	Particulates	MEDIUM	MEDIUM	Increased potential for health issues.
	Rise in temperature	HIGH	HIGH	Health issues, loss of plant and animal life, reduction in the water table.

POLICY AND OPERATIONAL ACTION PLANS

The Town of Bassendean has developed a number of policies and environmental documentation to assist with managing the Atmosphere and Climate Change. These documents with greater reference to Atmosphere and Climate Change include:

- Perth Network Planning Policy and Guidelines
- Bassendean Bike Plan
- Local Area Traffic Management Plan
- EMRC Regional Climate Change Adaptation Action Plan
- Local Climate Change Adaptation Plan
- Corporate Greenhouse Action Plans (CCP)
- Energy Use Policy
- Regional Cycle Network Master Plan
- EMRC Regional Integrated Transport Strategy Action Plan
- EMRC Swan and Helena Rivers Regional Recreational Path and Development Plan
- Carbon Reduction Strategy
- Energy Efficient Design Policy

For a full list of environmental policies, guidelines and documents please refer to **Appendix 5**.

ACHIEVEMENTS

The Town of Bassendean has done a lot of work in the area of Atmosphere and Climate Change. In 2000 the Town joined the International Council for Local Environmental Initiatives – Cities for Climate

Protection Program (CCP). This program progressed the Town through a 5 Milestone framework which looked at monitoring and mitigating the council's corporate carbon emissions. In 2005 the Town received the CCP Plus recognition. In 2009 when CCP was defunded by the Australian Government the Town played an integral role in assisting with the development of the EMRC's ACEr – Achieving Carbon Emissions Reaction program. Along with this the Town strongly advocated to the Western Australian Local Government Authority (WALGA) to assist local governments in continuing with the capture and monitoring of corporate emissions. This gave birth to the WALGA Emissions Reporting Platform.

Since the development of ACEr and WALGA's Emissions Reporting Platform the Town has also develop a Carbon Reduction Strategy which builds on the work started by CCP through the Corporate Greenhouse Action Plan.

As part of the Town of Bassendean's commitment to the Perth Solar City program, two demonstration projects were implemented. This project included the installation of:

- A 3.6kW grid connected solar photovoltaic (PV) system was installed at the Bassendean Memorial Library. This system is estimated to save approximately \$1,493 and 5,580kg of emissions per year. Additionally a lighting retrofit was undertaken.
- A 4.08kW photovoltaic (PV) system was installed at Ashfield Reserve. It is estimated that the system will save approximately \$1,649 and 6,300kg of emissions per year. Additionally a street lighting retrofit was undertaken.

In 2009 the Town of Bassendean played an integral part in assisting with the development of the EMRC Regional Climate Change Adaptation Action Plan (2009-2013). From this Regional Plan a Local Climate Change Adaptation Action Plan was developed which looked at more specific actions that the Town can implement to assist with lessening the potential effects of Climate Change.

Additionally in 2012 the Town of Bassendean continued to show its support and commitment to reducing their carbon footprint by signing the WALGA's Climate Change Declaration. The declaration acknowledges that:

- Evidence shows that climate change is occurring.
- Climate change will continue to have significant effects on the Western Australian environment, society and economy, and the Local Government sector.
- Human behaviours, pollution and consumption patterns have both immediate and future impacts on the climate and environment.

The Ashfield area undertook an underground power project which commenced in February 2012. The Underground Power Project was undertaken in partnership with the Government of Western Australia (Officer of Energy), Western Power and a selected number of local government authorities,

including the Town of Bassendean. The aim of the project was to improve residential amenity and security of power supply. On 28 February 2013 the removal of the last power pole in Ashfield signalled the completion of the Ashfield Underground Power Project. The program is a great step forward in environmental responsibility. Previously the suburb of Ashfield utilised 80 watt mercury vapour lamps to illuminate the streets; it now utilises energy-efficient 42 watt Compact Fluorescent lamps. The estimated saving is 41,323 kilowatts per hour of energy, which is the equivalent of an estimated 53,270 kg of greenhouse gases.

In 2012 the Town of Bassendean, as part of an EMRC regional project, was awarded funding under the Australian Government's Community Energy Efficiency Program, (managed by the Department of Climate Change and Energy Efficiency), to upgrade fifty-six 70 watt High Pressure Sodium (HPS) luminaires on twenty-eight poles with 50 watt Light Emitting Diodes (LED). It is estimated that the project will save the Council approximately \$3,956 and abate approximately 6.8 tonnes of greenhouse emissions per year. Physical works in relation to the Town portion of the project was completed June 2013.

BACKGROUND

Perth's biodiversity is part of the Southwest Botanical Province of Western Australia, which is internationally recognised as one of the world's top 25 biodiversity hotspots. It is one of the few hotspots to be found in a developed country and is currently the only internationally recognised hotspot for biodiversity conservation in Australia.

The presence of this significant biodiversity provides a number of ecological, social and economic services. Biodiversity is not only important for cultural identity but also provides valuable recreational activities such as bird watching and photography. The importance of providing an aesthetic and biodiverse natural ecosystem in which to escape the urban sprawl should not be underestimated.

Within the Swan River Precinct, the main ecological services provided by biodiversity are the maintenance of hydrological cycles, protection from erosion, nutrient storage and pollutant breakdown and absorption. Increasing biodiversity may also improve the ability for ecological communities to recover from unpredictable events.

Due to the urbanised environment of the Swan River Precinct of Perth's Eastern Region all remaining natural areas in this inner city landscape will be considered of high biodiversity value. In this way all natural areas providing vital habitat for flora and fauna that inhabit our highly developed urban landscapes, a number of which are unique to the Bassendean soils complex, will be recognised. The loss of such habitat would be significant not only in terms of biodiversity, but for aesthetic values associated with having the natural environment as part of our city and for the sense of well being that natural areas provide.

Vegetation

Bassendean originally supported four vegetation complexes (Figure 3), each of which is closely allied with the particular soil types:

- Bassendean Vegetation Complex – Central and South, found on areas of Bassendean Sands;
- Guildford Vegetation Complex on Guildford Soil Formations;
- Southern River Vegetation Complete on the transition between the Bassendean Sands and the Guildford Formation; and
- Swan Vegetation Complete, on the alluvial clay flats and river foreshores of the Pinjarra Plain.

The Bassendean Vegetation Complex – Central and South occurred on the upland areas and where it still occurs is typified by Banksia Low Open Woodland dominated by Candlestick Banksia (*Banksia attenuata*) and Firewood Banksia (*Banksia menziesii*), with scattered Christmas tree (*Nuytsia*

floribunda), Pricklybark (*Eucalyptus tottiana*) and open shrubby understory, with *Dryandra* and *Xanthorrhoea*. This was originally the most extensive vegetation type in Bassendean, covering approximately 67% of the Town.

The Guildford Vegetation Complex – is found along the river north of Bindaring Park. In this location it occurs in lower lying areas and is typified by Open to Closed Forests and Woodlands of Flooded Gum (*Eucalyptus rudis*) and Freshwater Paperbark (*Melaleuca raphiophylla*).

The Southern River Vegetation Complex – occurs in transitional areas between the Bassendean Sands and the Guildford Formation. In upland areas the vegetation is similar to the Banksia woodland of the Bassendean Sands, and low-lying areas, is more similar to the Flooded Gum forests and woodlands of the Guildford Vegetation Complex. This vegetation type was uncommon in Bassendean, even in pre-European times. Only one hectare of this vegetation complex originally occurred in Bassendean.

The Swan Vegetation Complex – comprises fringing woodlands of Flooded Gum (*Eucalyptus rudis*) and Freshwater Paperbark (*Melaleuca raphiophylla*) with localized occurrences of Swamp Sheoak (*Casuarina obesa*) and Saltwater Paperbark (*Melaleuca cuticularis*) in areas of higher salinity. This vegetation occurred along the Swan River Foreshore and was originally approximately 24% of the Town's pre-European vegetation.

Due to the long history of development in Bassendean, most of the native vegetation has been cleared. The main threatening processes affecting native vegetation in Bassendean are fragmentation, erosion, disease, inappropriate fire regimes, and potential clearing for development, high nutrients, pollution and weed invasion.

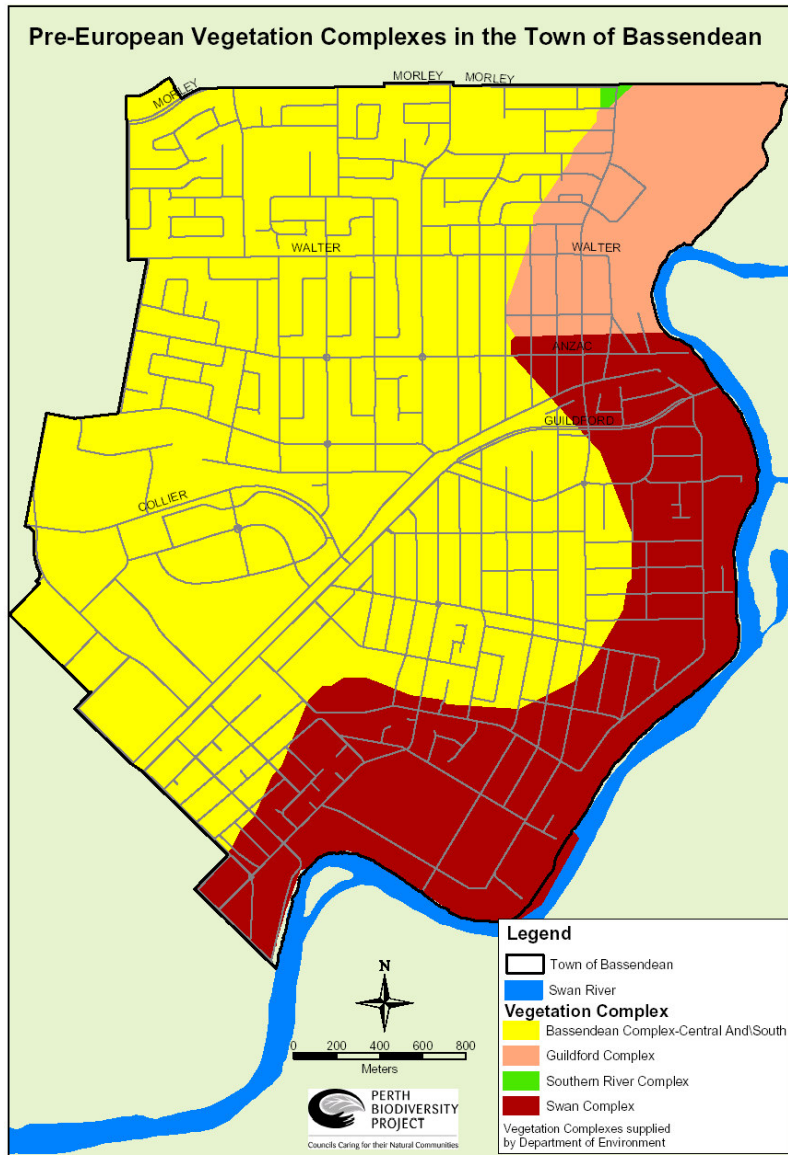


Figure 3 – Vegetation Complexes – Town of Bassendean

Fauna

Deductions have been drawn from extensive knowledge of fauna and their habitat used before European settlement in comparison with the habitats that are still present today.

Mammals

The mammalian fauna of the Town of Bassendean has changed dramatically since European settlement in 1829. Apart from possible localised populations of Quendas (*Isoodon obesulus*), also known as the southern brown bandicoot) and brushtail possums (*Trichosurus vulpecular*), there are few of the original suites of mammal species left.

Original mammal populations would have included such species as Echidnas, the Grey Kangaroo, Brush Wallabies, Pigmy Possums, Honey Possums, Quolls, Antechinus and indigenous placental mammals such as Water Rats and various species of bats. It is possible that small species of bats, such as Gould's Wattled Bat remain in areas of remnant bushland. This species is known to use crevices in the back of paperbark trees as shelters.

Birds

A bird survey of the Ashfield Flats in the mid 1980s identified 51 species using the area. These included water birds, wading birds, bush birds and raptors. A further study was carried out in 1994/1995 by local birdwatchers at Success Hill / Bennett Brook where a total of 100 species were sighted, 38 of which were waterbirds. Studies to date and the presence of significant wetland areas confirm the Town as an important bird habitat. Large numbers of Western Corellas are known to frequent the Town.

Reptiles and Frogs

Much of the Town of Bassendean is situated in low-lying land with several expressions of groundwater such as small wetlands and damplands. These groundwater expressions in conjunction with the Swan River and a number of main drains, provides sufficient habitat to support a variety of amphibian species able to adapt to the now fragmented landscape.

No formal survey has been undertaken specific to amphibians; however *Bush Forever Vol 2* notes a significant number of amphibians are present at Ashfield Flats. Success Hill Reserve identified a number of Frogs common to the Swan Coastal Plain, namely the Quacking Frog (*Crinia georgiana*), Banjo frogs ("pobblebonk", *Limnodonastes dorsalis*), Motorbike frogs (*Litoria moorei*) and the Moaning Frog (*Heleioporus eyrei*).

No formal survey has been undertaken to determine the presence of reptilian species within the Town, but particular species have been identified at reserves within the municipality. Species identified include (but are not limited to) Common Fence Skinks (*Cryptoblepharus plagiocephalus*), Striped Skink (*Ctenotus fallens*), Elegant Lerista (*Lerista elegans*), Tiger Snakes (*Notechis scutatus*) and Dugites (*Pseudonaja affinis*).

Invertebrate Species

Wetland systems support a variety of invertebrates, which are an important food source for both waterfowl and amphibians. Macro invertebrates are an important component of wetland system food webs especially in their ability to assist in the management of midge and mosquito species. The diversity and abundance of invertebrate species is a good indicator of wetland health and water quality. Again no formal survey has been conducted to indicate Bassendean's current invertebrate population.

BIODIVERSITY OBJECTIVES

- Obj. 4.1 To protect, enhance and conserve bushland areas managed by the Town.
- Obj. 4.2 To work with state government agencies and private land holders to protect, enhance and conserve non-Town managed bushland areas.

POTENTIAL RISKS

There are a number of potential risks that may impact on the Towns ability to effectively protect and enhance the Towns environmental assets in relation to Biodiversity.

Table 6 - Processes and Associated Impacts Relating to Biodiversity

KFA	Process	Probability	Impact	Comments
Biodiversity	Loss of ecological communities	HIGH	HIGH	Reduction in vegetated habitat area, effects of climate change, introduction of feral and noxious plant species and diseases.
	Loss of species	HIGH	HIGH	Reduction in number of species, effects of climate change, introduction of feral and noxious plant species and diseases.
	Exotic plants and animals	MEDIUM	HIGH	Weeds and feral animals displacing endemic species.
	Urban sprawl	LOW	HIGH	Removal of communities and species.

POLICY AND OPERATIONAL ACTION PLANS

The Town of Bassendean has developed a number of policies and environmental documents to assist with managing Biodiversity. These documents with greater reference to Biodiversity include:

- Ashfield Parade Operational Maintenance Action Plan
- Bindaring Park Operational Maintenance Action Plan
- Bushland Weed Management Plan
- Central Grow Local Plants Brochure
- Collective Local Biodiversity Strategy
- Sustainable Landscaping Strategy
- Local Plants Community Education Strategy
- Acid Sulphate Soils Policy
- Environmental Purchasing Policy
- Foreshore Restoration Policy
- Landscaping with Local Plants Policy
- Local Biodiversity Policy
- Natural Area Management Policy

- Nutrient and Irrigation Management Policy
- Wetlands Policy
- Jubilee Reserve Operational Maintenance Action Plan
- Local Planning Strategy
- Management of Dieback Disease
- Managing Phytophthora Dieback Guidelines
- Pickering Park Operational Maintenance Action Plan
- Street Tree Master Plan (Recommended Tree Species Information)
- Sandy Beach operational Maintenance Action Plan
- Success Hill Operational Maintenance Action Plan
- EMRC Swan and Helena River Management Framework Report
- Significant Tree Policy
- Significant Tree Register
- Treatment of Weeds and Noxious Plants

For a full list of environmental policies, guidelines and documents please refer to **Appendix 5**.

ACHIEVEMENTS

The Collective Biodiversity Strategy was developed for the Town of Bassendean and the Cities of Bayswater and Belmont and is based on the Local Government Biodiversity Planning Guidelines. The focus of the strategy is the protection and effective management of natural areas directly managed by the three local governments. The collective approach enables the consideration of ecological linkages within a broad landscape beyond municipal boundaries.

The strategy was developed collectively through a Stakeholder Working Group and included, Town of Bassendean, Cities of Bayswater and Belmont, EMRC, WALGA, Perth Biodiversity Program (PBP) and community representatives. The development of the strategy was funded jointly by the three local governments and WALGA. The Council endorsed (OCM1-4/09/09) Biodiversity Strategy identifies local ecological linkages. The local linkages strengthen the links between the regional linkages and Bush Forever sites using local natural areas, reserves and waterways and drainage lines.

The Vision Statement for the Strategy is:

Urban biodiversity values are protected managed and enhanced in the Swan River Precinct of Perth's Eastern Region to enable future generations to experience continued social benefits and ecological services.

Additionally the Town has developed individual Operational Maintenance Action plans dedicated to six key biodiversity sites:

- Sandy Beach;
- Success Hill;

- Pickering Park;
- Jubilee Reserve;
- Ashfield Parade Reserve; and
- Bindaring Park.

The Action Plans have been developed with the assistance of an environmental contractor to undertake natural area assessments at various reserves for the purpose of natural area rehabilitation and management. The works undertaken include:

- Natural areas rehabilitation planning (bushland and riverine environments) including site assessments, preparation of works quotations, works schedules and species selection with the overall objectives of creating an annual Action Plan for the six reserves identified;
- Weed mapping was undertaken in 2012 and 2014 for all six reserves and in future further weed mapping will be undertaken with the objective of creating new weed maps and management guidelines for new weeds identified; and
- Implementation of rehabilitation plans (Action Plans) which are likely to involve site assessments, watering, removal of plant aids, installation of erosion control products and planting.

KFA 5 WASTE

BACKGROUND

As our population grows, the amount of combined waste that is produced increases. As a result of this increased waste local councils have introduced recycling bins, green waste, bulk rubbish collections and a range of waste education programs to encourage residents to reduce waste.

The Town of Bassendean, as a member council of the Eastern Metropolitan Regional Council, contributes to Red Hill Waste Management Facility. Red Hill is situated approximately 12km north-east of Midland on the south side of Toodyay Road, and east of the Darling escarpment.

The Town of Bassendean is heavily involved in actions to educate the community in relation to reducing waste to landfill through Earth Carers, Living Smart and other educational programs.

WASTE OBJECTIVES

- Obj. 5.1 Make improvements, where feasible, to the Town's existing waste management facilities and practices.
- Obj. 5.2 Participate in best practice waste management that includes resource recovery.
- Obj. 5.3 Improve the community's participation in waste collection, recycling activities and educational programs.

POTENTIAL RISKS

There are a number of potential risks that may impact on the Towns ability to effectively protect and enhance the Towns environmental assets in relation to Waste.

Table 7 - Processes and Associated Impacts Relating to Waste

KFA	Process	Probability	Impact	Comments
Waste	Contamination	MEDIUM	HIGH	Risk to health and wellbeing impacts on local flora and fauna and impacts of future redevelopment
	Land clearing	LOW	HIGH	Increased erosion and salinisation
	Littering	MEDIUM	HIGH	Hazardous to local fauna and water ways
	Illegal dumping	LOW	HIGH	Hazardous to local fauna and water ways

POLICY AND OPERATIONAL ACTION PLANS

Land owners, occupiers and polluters are required to report all known or suspected contaminated sites to Department of Environment Regulation. Reported sites are investigated and classified by DER (in consultation with Department of Health), based on the risks posed to the community and environment.

The Town of Bassendean engaged the EMRC to review potential Contaminated Sites. As a consequence funds have been listed in the 2013/2014 – 2017/ 2018 Corporate Business Plan (project list) for Council's annual budget consideration.

For a full list of environmental policies, guidelines and documents please refer to **Appendix 5**.

ACHIEVEMENTS

The Town of Bassendean has a free 'mulch to residents' program. The mulch is generated from the Town's Parks and Gardens maintenance team, shredded and then offered to local for use within their own gardens. This assists with reducing the amount of green waste heading to landfill from council actions. Additionally the use of mulch on home gardens assists in the reduction of water and chemical use with is further environmentally beneficial.

The Town has been involved with the Earth Carers Education and Training Courses. Earth Carers aim to increase community knowledge and skills in waste minimisation at local government level. The program trains volunteers in the community to build their knowledge of waste management issues, learn practical ways of how to reduce waste at home and to promote waste minimisation in their local communities.

The Town of Bassendean also participates within the EMRC R-Gang program. This program has developed a dedicated website for waste education within the Eastern Region. The R-Gang represents ways for local community members to Reduce, Reuse, Recycle and Recover waste at home, at work, at School and within our community. The R-Gang website provides local council information, resources, education programs and practical hints on how to manage waste more effectively.

Another program that the Town of Bassendean has been involved in is the award winning Waste-wise schools program. This program provides professional development for teachers within WA in developing school waste minimisation strategies, such as recycling, composting and worm farming.

Transpacific Cleanaway Waste Education Programs is another program the Town is involved with and is available to local primary schools within Perth's Eastern Region, free of charge. The Transpacific Cleanaway education program focuses on the three R's - recycling, reusing and reducing - through practical demonstrations and entertaining class activities.

BACKGROUND

Over the past hundred years scientists have recorded a reduction of water inflows into WA dams. The reduction of water flow into dams can be attributed to climate change and land clearing. The graph below clearly shows the rapid decline (Figure 4).

Impact on Water Availability - WA Reduced Inflows to Dams

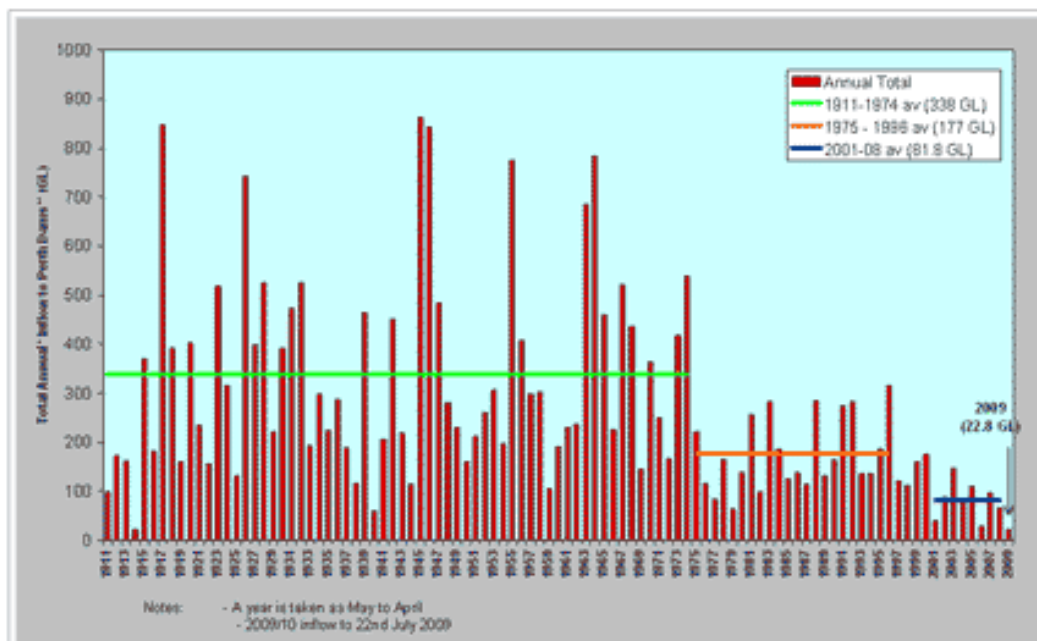


Figure 4 – Impact on Water Availability – WA reduce Inflow into Dams

<http://www.climatechange.gov.au/climate-change/future/rainfall.aspx>

Unmanaged, the cumulative impact of reduced water flows into dams is a real threat to the environment and groundwater aquifers. Water Sensitive Urban Design (WSUD) is the current approach for managing stormwater and aims to improve both water quality and quantity.

WSUD aims to maximise the recharge rate by using stormwater drains, drainage swales, living streams and large tracts of natural open space to minimise the risk of local flooding and allow rainwater to infiltrate and recharge the aquifer. By reducing overland flow, erosion and the subsequent sedimentation of streams and watercourses (which are recognised as contributing to the degradation of waterways and water quality) is also reduced. WSUD also minimises the impact of urban development on water quality by controlling nutrients and pollutants entering receiving water bodies via the stormwater system.

Drains

Surface Water

Although the main surface water body within the Town of Bassendean is the Swan River, there are several small wetlands remaining within the Town, mainly adjacent to the River and its floodplain. Stormwater runoff generated from impervious areas is directed to a network of piped and/or open drains to outlets that discharge into the Swan River.

There are three main drainage lines that exist within the Town of Bassendean, all of which were constructed during the development of the suburbs. The purpose of the drainage was to lower the groundwater table, enabling the swampy land to be developed. The three main drains, Kitchener Street drain, Chapman Street drain and Guildford Road drain, all have open and closed sections and discharge into the Swan River. Numerous local authority stormwater drains, drain runoff from the surrounding residential and industrial areas and discharge into the main drains. Surface water within these main drains can be a mixture of groundwater and stormwater.

Main drains are owned and managed by the Water Corporation but local government assist in monitoring the drains to ensure that they remain functional and that no contamination is occurring.

In 2014 the Town engaged Cardno Pty Ltd to conduct a drainage network desktop assessment for approximately 100 drainage catchments throughout the Town of Bassendean and to identify the runoff variables and flow rates. It is intended that as part of the desk top exercise the consultant will identify water quality treatment points and indicative treatment measures at Swan River outlet points and determine network upgrade requirements and estimated upgrade costs.

The Town of Bassendean connect arterial drains into the main drainage catchment area system and have their own drain outlets to river. The Town of Bassendean installed the Broadway, Brook Street and Success Hill drains and manage and maintain them.

Foreshore

The foreshore ecosystems in the Town of Bassendean have evolved as a result of the influence of clay and loam deposits associated with the upper reaches of the Swan and Helena Rivers.

The low river flats at Sandy Beach Reserve, Ashfield Flats Reserve and Bindaring Park are within the 100-year flood fringe and are characterised by samphire-shore rush species, with healthy stands of shore rush occurring further upstream in front of Pickering Park and Point Reserve.

Near Ron Courtney Island, the Swan River forms a right angle bend forming two main channels either side of the island. Upstream from Sandy Beach Reserve, the river width is more irregular and narrow than downstream. The Swan River channel becomes increasingly narrow upstream, with river banks ranging from less than 2 metres in height, to around 10 metres at Success Hill. The Helena River discharges into the Swan River opposite Point Reserve.

Groundwater

The Town of Bassendean includes part of the south-eastern edge of the Gngangara Groundwater Mound. The Gngangara Mound is a significant water resource for maintaining natural systems, such as wetlands and groundwater dependent vegetation, and for human use, such as public water supply.

The Gngangara Mound occurs under the Bassendean Sands and includes a discharge face of seepages where the Bassendean Sands meet the darker clays of the alluvial systems at Ashfield Flats, Bindaring and Pickering Parks.

The average annual maximum of the groundwater table at Bassendean is between 2 and 7 metres below ground. The exact height varies from year to year based on rainfall, river flows and abstraction from public and private bores. The annual fluctuation between maximum and minimum groundwater tables is moderate.

Bore water quality is generally mildly brackish, in the range 500-1000mg/L Total Dissolved Solids (TDS) however, areas close to the river have potential for saltwater intrusion. Under these conditions groundwater may become more saline and unsuitable for gardens.

In 2008 the Department of Water required Local Government to provide Water Conservation Plans to conserve groundwater and improve water use efficiency. The aim is to improve water management of public open space in preparation for the drier and warmer conditions we are experiencing with climate change. It is important to maintain the usefulness and attractiveness of public open space while being more efficient in groundwater use. Refer to the Town of Bassendean Council (OCM-16/7/08) Water Conservation Plan (WCP) for the Management of Groundwater.

The Town has identified nine strategies to be undertaken to achieve the objectives outlined above. The strategies are listed below and covered in detail in the WCP:

1. Measure and record water use and irrigated areas to accurately determine water use
2. Progressive implementation of watering categories and hydrozoning across irrigated playing fields and public open space
3. Improve the performance of irrigation systems
4. Implement improved irrigation scheduling practices
5. Maintain irrigation systems at optimum performance
6. Prepare and implement "water conservation design guidelines" for the development of new and existing turfed areas and/or the redevelopment of garden islands
7. Investigate the use of alternative water sources
8. Develop and implement turf maintenance programs that lead to water savings
9. Communicate the outcomes of the WCP to the community

The Town of Bassendean Currently holds seventeen licences for eighteen bores. Five of the bores draw water from the Leederville aquifer and thirteen from superficial aquifers.

WATER OBJECTIVES

- Obj. 6.1 To protect watercourses through appropriate planning initiatives
- Obj. 6.2 To improve water quality in the Town’s watercourses and water bodies
- Obj. 6.3 To conserve water resources through efficient and responsible water use

POTENTIAL RISKS

There are a number of potential risks that may impact on the Towns ability to effectively protect and enhance the Towns environmental assets in relation to Waste.

Table 8 - Processes and Associated Impacts Relating to Water

KFA	Process	Probability	Impact	Comments
Water	Clearing	LOW	HIGH	Reduced water quality.
	Loss of fringing vegetation	MEDIUM	HIGH	Reduction in habitat and food for aquatic fauna.
	Development not incorporating WSUD	MEDIUM	MEDIUM	Increased connectedness of impervious surfaces reduces recharge to the aquifer and catchment flows, as well as delivering concentrated pollution to receiving environments.
	Subdivision	MEDIUM	MEDIUM	Development of streamlines reduces catchment for water supply.

POLICY AND OPERATIONAL ACTION PLANS

The Town of Bassendean has developed a number of policies and environmental documents to assist with managing the Water. These documents with greater reference to Water include:

- Stormwater Quality Management Policy
- Water Sensitive Urban Design and Water Conservation Policy
- Wetlands Policy
- Water Action Plan
- Water Quality in Bassendean Drainage Network Report
- Water Conservation Plan (WCP) for the Management of Groundwater
- Local Planning Policy No. 14 – On-site Stormwater
- Floodplain Management and Development Policy

For a full list of environmental policies, guidelines and documents please refer to **Appendix 5**.

ACHIEVEMENTS

The Town, in collaboration with the EMRC and other member Councils, have partnered with the Department of Planning (previously the Department of Planning and Infrastructure) and the Swan River Trust to develop the *Swan and Helena Rivers Management Framework* and the *Best Management Practices for Foreshore Stabilisation Project*. The *Best Management Practices for Foreshore Stabilisation* report provides locally relevant information on a range of best practice techniques to improve foreshore stabilisation management. A framework was also developed to assist with the identification of appropriate foreshore stabilisation techniques for specific site situations and provides information to ensure that specialist advice for stabilisation is targeted and cost effective.

The Town is a participant in the Water Campaign™, an international water management program developed by the ICLEI. The program's aim is to reduce water consumption and improve water quality. As part of the program the Town has developed a *Water Action Plan* (2006). Currently the Town of Bassendean is progressing milestone 5 which is due for completion June 2013. After completion of milestone 5 Town of Bassendean will continue undertaking the Water Campaign by starting the cyclic process of undertaking a re-inventory, reviewing and re-setting its water goals, actions and target year, and continue with water action implementation and reporting. In addition, Council has been allocating funds to enable the Water Conservation Plan for the Management of Groundwater to be progressively implemented.

PART III: REVIEW AND RECOMMENDATIONS

As part to the development of this document a review of current documentation was undertaken. As part of this analysis the Town of Bassendean's policies, plans and procedures were analysed and their upcoming review dates identified on each Council policy. It is anticipated that by keeping this review timetable, documents will be reviewed, updated and amended in a timely fashion. Please refer to **Appendix 5**.

In addition the analysis of existing documents, a gap analysis was additionally undertaken to identify gaps in relation to potential policies, plans and programs. This analysis is accompanied by a list of recommendations and priority listings for these gaps to be addressed. Please refer to **Appendix 6**.

PART IV: ACKNOWLEDGEMENTS

The Town of Bassendean would like to acknowledge the Bassendean Preservation Group, Success Hill Action Group and the Friends of Success Hill for all their efforts in bushland regeneration throughout the Town of Bassendean's natural areas. The input from both groups has been invaluable and a key part of both past and future revegetation works in the Town.

PART V: APPENDICES

APPENDIX 1 – GOVERNMENT DEPARTMENTS

Department	Summary
Department of Parks and Wildlife (State)	<p>The Department is the lead agency for protecting and conserving the State's environment. This includes:</p> <ul style="list-style-type: none"> ▪ managing the state's national parks, marine parks, conservation parks, state forests, timber reserves, nature reserves, marine nature reserves and marine management areas; ▪ conserving biodiversity and protecting, managing, regulating and assessing many aspects of the use of the state's natural resources; ▪ developing environmental protection policies, managing the environmental impact assessment process and carrying out regulatory functions to achieve improved environmental outcomes; ▪ managing contaminated sites and responding to pollution incidents; ▪ responsibility for fire preparedness and pest animal and weed control on 89 million hectares of unallocated Crown land and unmanaged reserves; ▪ undertaking science and research on the states flora and fauna; and ▪ having a key role in climate change policy and waste management policy.
Department Of Parks and Wildlife (Swan River Trust)	<p>The Swan River Trust is a State government agency charged with protecting and managing the Swan Canning river system, including:</p> <ul style="list-style-type: none"> ▪ manage and protect the river system ▪ work with State and local government and other bodies to provide facilities around the rivers ▪ advise the Minister for the Environment on development proposals in the Trust Development Control Area ▪ control and prevent pollution of the rivers and keep them clear of rubbish ▪ advise on and control erosion of riverbanks ▪ provide advice to local governments and the Western Australian Planning Commission on town planning issues affecting the rivers ▪ promote community awareness of issues affecting the health of the river system and increase community involvement in river protection and restoration.
Western Australian Local Government Association (WALGA) (State)	<p>The WA Local Government Association is the voice of Local Government in Western Australia. As the peak industry body WALGA advocates on behalf of the State's 140 Local Governments and negotiates service agreements for the sector. WALGA is not a government department or agency.</p>
Australian Local Government Association (ALGA) (federal)	<p>The Australian Local Government Association is the national voice of local government, representing 560 councils across the country.</p> <p>In structure, ALGA is a federation of state and territory local government associations. Since 2001, membership has included the Government of the Australian Capital Territory (uniquely in Australia,</p>

Department	Summary
	<p>the ACT Government combines both state and local government functions).</p> <p>ALGA's strategic priorities are:</p> <ul style="list-style-type: none"> • Strengthening local government finances • Sustaining local roads, transport and other infrastructure • Improving natural and built environmental outcomes • Enhancing regional equity and regional development • Building capacity and sustainability in local communities • Connecting member associations and the Local Government sector • Engaging effectively in Australian Government processes
West Australian Planning Commission (WAPC) (state)	<p>The WAPC is the statutory authority with state-wide responsibilities for urban, rural and regional land use planning and land development matters.</p> <p>The WAPC operates with the support of the Department of Planning (DoP), which provides professional and technical expertise, administrative services, and resources to advise the WAPC and implement its decisions. The WAPC delegates some of its functions to officers of the department. This delegated authority includes decisions on subdivision and development applications, when they comply with the WAPC policies and practices.</p>
Heritage Council of Western Australia (state)	<p>Was established as the state's advisory body on heritage matters and provides for and encourages the conservation of places with cultural heritage significance to Western Australia.</p> <p>The Heritage Council has three main functions:</p> <ul style="list-style-type: none"> ▪ to establish and maintain the State Register of Heritage Places; ▪ to ensure that any development of heritage places is in harmony with cultural values; and ▪ to promote awareness and knowledge of our cultural heritage.
Department of Aboriginal Affairs (state)	<p>The Department is responsible for advising government on the adequacy, implementation and co-ordination of services to Indigenous people in Western Australia. It leads policy development on key issues affecting the lives of Indigenous Western Australians and across-government strategies to improve program planning and coordination. The department administers the <i>Aboriginal Heritage Act 1972</i> and maintains the Register of Aboriginal Sites.</p>
Department of Sustainability, Environment, Water, Population and Communities (federal)	<p>The Department is responsible for implementing the Australian government's policies to protect our environment and heritage, and to promote a sustainable way of life.</p>
National Native Title Tribunal (federal)	<p>The National Native Title Tribunal assists people to facilitate timely and effective native title outcomes.</p> <p>Set up under the <i>Native Title Act 1993</i>, the tribunal is a federal government agency and is part of the Attorney-General's portfolio.</p> <p>On request, the tribunal can provide assistance and information to all people involved in the native title process. This is supported by the tribunal's legal, research, geospatial, library and operations policy services</p>

Department	Summary
National Trust of Australia (WA)	<p>The National Trust of Australia (WA) works to raise knowledge, awareness, understanding and commitment to Western Australia's natural, Aboriginal and historic heritage. It does this through the conservation and interpretation of heritage places it manages on behalf of the community and government of Western Australia, and through its education and learning programs.</p> <p>The Trust is governed by the Council of the National Trust of Australia (WA), and reports directly to the Western Australian Parliament.</p>
Department of Water (state)	<p>The Department looks after the state's water resources. It makes decisions on the adequate and equitable provision of water throughout the state and takes into consideration all the relevant factors in achieving this balance.</p> <p>The Department is involved in measurement and allocation of the state's water resources. It sets the rules for the extraction of water, management of waterways and for water service providers.</p>
Water Corporation (state)	<p>The Water Corporation is the principal supplier of water, wastewater and drainage services in Western Australia to hundreds of thousands of homes, businesses and farms, as well as providing bulk water to farms for irrigation.</p>
Department of Climate Change and Energy Efficiency (federal)	<p>The Department is charged with leading the development and co-ordination of Australia's climate change policies. They are responsible for policy advice, implementation and program delivery in three areas:</p> <ul style="list-style-type: none"> ▪ mitigation policy through domestic emissions reduction (including the design and implementation of the Carbon Pollution Reduction Scheme), ▪ adaptation to the unavoidable impacts of climate change, and ▪ helping to shape a global solution through Australia's international climate change strategy (including carriage of international negotiations).
State NRM Office (state)	<p>The state NRM Office was established by the Western Australian Government to facilitate the coordinated delivery of natural resource management in Western Australia.</p> <p>A key role of the Office is the coordination and delivery of Government funding and grants for natural resource management activities in Western Australia.</p>
Department of Health (State)	<p>Manages the public health system to ensure healthier, longer and better lives for all Western Australians by providing the health care services that people need and delivering a safe, high quality, accountable and sustainable health system.</p> <p>Their services include:</p> <ul style="list-style-type: none"> ▪ public hospitals and community health services; ▪ health protection through public health services and disaster preparedness management; ▪ mental health services including in-patient services, crisis management and community treatment and support services; ▪ drug and alcohol information, prevention and treatment services; ▪ dental health services including school dental health and public community dental services; ▪ Aboriginal health services.
Department of Finance (WA)	<p>The Department of Finance provides a range of services on energy matters to the Minister for Energy, Government, the energy sector and the Western Australian community. It:</p>

Department	Summary
	<ul style="list-style-type: none"> ▪ plans, develops and implements energy policies and strategies for Western Australia; ▪ develops and administers subsidies, rebates and grants for the Western Australian community and energy industry; ▪ researches, analyses and advises on energy sector developments, trends and issues; ▪ provides information and educational materials for industry and consumers; ▪ consults and communicates with industry, consumers and other stakeholders; ▪ monitors the performance of the government-owned electricity corporations; and ▪ contributes to the achievement of government's wider policy outcomes.

APPENDIX 2 – RELATIVE LEGISLATION

Legislation	Summary
<p><i>Environmental Protection Act 1986</i> (WA)</p>	<p>The Act is the key legislation for environmental management in the state and is the main method of considering the environmental impacts of major developments. The Act:</p> <ul style="list-style-type: none"> ▪ established the Environmental Protection Authority (EPA) and its governance arrangements; ▪ allows for the development of environmental protection policies; ▪ outlines the environmental impact assessment process including: referral and assessment of proposals; ▪ establishes the state’s environmental regulations including pollution and environmental harm offences, clearing of native vegetation, and prescribed premises, works approvals and licences; and ▪ provides for enforcement of regulations including legal proceedings.
<p><i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)</p>	<p>The Act provides a legal framework to protect and manage nationally and internationally significant flora, fauna, ecological communities and heritage places. The Australian Government Department of the Environment, Water, Heritage and the Arts administers the Act. The objectives of the Act are to:</p> <ul style="list-style-type: none"> ▪ provide for the protection of the environment, especially matters of national environmental significance; ▪ conserve Australian biodiversity; ▪ provide a streamlined national environmental assessment and approvals process; ▪ enhance the protection and management of important natural and cultural places; ▪ control the international movement of plants and animals (wildlife), wildlife specimens and products made or derived from wildlife; and ▪ promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources.
<p><i>Clean Energy Act 2011</i> (Commonwealth)</p>	<p>The Act provides a legal framework to encourage the use of clean energy, and for other purposes. The objects of the Act are as follows:</p> <ol style="list-style-type: none"> a) to give effect to Australia’s obligations under: <ol style="list-style-type: none"> (i) the Climate Change Convention; and (ii) the Kyoto Protocol; b) to support the development of an effective global response to climate change, consistent with Australia’s national interest in ensuring that average global temperatures increase by not more than 2 degrees Celsius above pre-industrial levels; c) to: <ol style="list-style-type: none"> (i) take action directed towards meeting Australia’s long-term target of reducing Australia’s net greenhouse gas emissions to 80% below 2000 levels by 2050; and (ii) take that action in a flexible and cost-effective way; d) to put a price on greenhouse gas emissions in a way that:

Legislation	Summary
	<ul style="list-style-type: none"> (i) encourages investment in clean energy; (ii) supports jobs and competitiveness in the economy; and (iii) supports Australia's economic growth while reducing pollution.
<i>Local Government Act 1995 (WA)</i>	The Local Government Act 1995 is an act of the Western Australian Parliament which lays down the responsibilities, powers and procedures of Local Government Bodies.
<i>Rights in Water and Irrigation Act 1914 (WA)</i>	This Act provides the legislative basis for the planning, regulation, management, protection and allocation of water resources in Western Australia. The objectives of the legislation include providing for the management, sustainable use and development of water resources to meet the needs of current and future users, and for the protection of their ecosystems and the environment in which water resources are situated.
<i>State Planning Policy 2.9 Water Resources (WA)</i>	This policy is directly related to the overarching sector policy SPP 2 Environment and Natural Resources policy and provides clarification and additional guidance to planning decision-makers for consideration of water resources in land use planning.
<i>Better Urban Water Management (WA)</i>	<p>Better Urban Water Management has been designed to facilitate better management of our urban water resources by ensuring an appropriate level of consideration is given to the total water cycle at each stage of the planning system.</p> <p>It also provides guidance on the implementation of State Planning Policy 2.9 Water Resources.</p>
<i>Planning Bulletin 92 Urban Water Management (WA)</i>	This planning bulletin provides guidance on urban water management matters to be taken into account by the Western Australian Planning Commission (WAPC), local governments and applicants in considering planning proposals and applications for new residential, rural-residential, commercial and industrial areas.
<i>Wildlife Conservation Act 1950 (WA)</i>	The Act provides for the conservation and protection of all native flora and fauna. Under the Act, individual species of plants and animals are protected, with the level of protection varying depending on whether the species is rare or endangered. Flora and fauna that needs special protection because they are under identifiable threat of extinction, are rare, or otherwise in need of special protection are placed on the threatened species list.
<i>Conservation and Land Management Act 1984 (WA)</i>	The Act establishes a comprehensive set of legislative provisions dealing with state conservation and land management matters. It also provides for the vesting or reservation of land, particularly state forest or timber reserve, and the ability to enter into agreements with private landholders, state conservation and land management matters.
<i>Contaminated Sites Act 2003 (State)</i>	Imposes significant responsibilities on parties causing contamination, and on owners of contaminated land. Land owners, occupiers and polluters are required to report known or suspected contaminated sites to the Department of Environment Regulation (DER). Reported sites are then classified, in consultation with the Department of Health, based on the risks posed to the community and the environment and responsibility for clean up is allocated.
<i>Health Act 1911 (State)</i>	<p>This is the primary Act dealing with all matters relating to public health, including waste management, sanitary provisions, pest controls and environmental health and defines local government responsibilities.</p> <p>Note a new Public Health Act is being developed for Western Australia to better protect and promote public health as well as prevent illness and injury.</p>
<i>Heritage of Western</i>	The Act provides for, and encourages, the conservation of places which have significance to the

Legislation	Summary
<i>Australia Act 1990 (WA)</i>	<p>cultural heritage in the state and established the Heritage Council of Western Australia. The objectives of the Act are to:</p> <ul style="list-style-type: none"> ▪ identify, conserve and where appropriate enhance those places within Western Australia which are of significance to the cultural heritage; and ▪ in relation to any area, to facilitate development that is in harmony with the cultural heritage values of that area; and ▪ to promote public awareness as to the cultural heritage, generally.
<i>Native Title Act 1993 (Commonwealth)</i>	<p>The Act was enacted as a result of the decision made by the High Court of Australia in <i>Mabo v Queensland (No.2)</i> 1992. It:</p> <ul style="list-style-type: none"> ▪ recognises and protects native title; ▪ provides that native title cannot be extinguished contrary to the Act; ▪ provides for agreement making - Indigenous Land Use Agreements (ILUAs); ▪ validated any past grants of freehold or leasehold interests that were thrown into doubt by the Mabo decision; and ▪ created a National Native Title Tribunal to administer claims to land by Aboriginal people.
<i>Aboriginal Heritage Act 1972 (WA)</i>	<p>An Act to make provision for the preservation on behalf of the community of places and objects customarily used by or traditional to the original inhabitants of Australia or their descendants, or associated therewith, and for other purposes incidental thereto.</p>

APPENDIX 3 – ENVIRONMENTAL PROJECTS AND PLANS

Project	Summary
Bassendean Strategic Community Plan 2013-2024	In 2005 Council adopted the Vision 2030 Community Plan. This plan was then used to develop the Bassendean Strategic Community Plan 2013-2024 and provides the visions and aspirations of our community. On an annual basis the Town's 10 year Corporate Business Plan – Project List is updated and describes how the Town will meet these visions and aspirations.
ACEr – Achieving Carbon Emissions Reduction Program	The EMRC's ACEr Program is an initiative developed to encourage and support member Councils within Perth's Eastern Region to monitor, report on and reduce their corporate emissions. The ACEr Program also provides information and education to the community and local businesses in the region on reducing energy consumption and other climate change related issues
Ashfield Parade Operational Maintenance Action Plan	Natural Area Management & Services (NAMS) was contracted by the Town of Bassendean to undertake natural area assessments at various reserves within the Town for the purpose of natural area rehabilitation and management. SITE DESCRIPTION River foreshore environment with a small vegetation buffer zone, foreshore approx. 675 linear meters, restoration works undertaken 2005-2009
Bassendean Bike Plan	Council (OCM-10/4/13) adopted Bassendean Bike Plan funding priorities were included into the Draft 2014-2024 Corporate Business Plan – Project List for annual funding consideration.
Bindaring Park Operational Maintenance Action Plan	Natural Area Management & Services (NAMS) was contracted by the Town of Bassendean to undertake natural area assessments at various reserves within the Town for the purpose of natural area rehabilitation and management. SITE DESCRIPTION Drainage system, wetland and dryland species, surrounded by residential housing, serious Typha infestations, grasses etc., half the area made up of open water, rated as Degraded or Completely Degraded (northern section poorer than southern section)
Bushland Weed Management Plan	Ecoscope conducted a weed assessment of five reserves vested in the town of Bassendean. Items examined included: <ul style="list-style-type: none"> • bushland condition • weed species inventories • distribution of weed species • priority of weed species • weed types • control options • constraints that may affect weed control activities.
Carbon Reduction Strategy	The Town of Bassendean's Carbon Reduction Strategy supports strategic objectives relating to environmental enhancement by outlining a framework to achieve carbon emissions reduction.
Cities for Climate Protection Program (defunded)	CCP was an international program developed by the International Council for Local Environmental Initiatives (ICLEI) in response to widespread scientific agreement that the global climate is changing as a result of human-induced emissions of greenhouse gases. CCP provided Local Governments with a framework to reduce greenhouse gas emissions from their own operations and those of their communities.

Project	Summary
	The CCP program was defunded in 2009 and the ACEr program replaced the program in 2010.
Collective Local Biodiversity Strategy	This Collective Biodiversity Strategy, developed for the Town of Bassendean and the Cities of Bayswater and Belmont, is based on the Local Government Biodiversity Planning Guidelines (2004). The focus of the strategy is the protection and effective management of natural areas directly managed by the three local governments. The collective approach enables the consideration of ecological linkages within a broad landscape beyond municipal boundaries.
Earth Carers	Earth Carers educate and support their communities to reduce waste at home, school or work and encourage earth friendly living. Earth Carers love to talk about conserving more and consuming less. Earth Carers also get really excited about closing the loop on our block through organic composting and sharing tips and ideas on how to make this happen.
Jubilee Reserve Operational Maintenance Action Plan	<p>Natural Area Management & Services (NAMS) was contracted by the Town of Bassendean to undertake natural area assessments at various reserves within the Town for the purpose of natural area rehabilitation and management.</p> <p>SITE DESCRIPTION</p> <p>Urban parkland environment, dryland species only, adjacent to POS; Area A Very Good with a reduced understorey; Area B Good - Excellent, degraded areas along pathway</p>
Local Area Traffic Management Plan	This plan is required by the Town to consider local traffic issues raised by residents and Council, and to develop a conceptual plan that addresses the concerns and issues identified during the study process.
Local Climate Change Adaptation Plan	The Town of Bassendean developed the Local Climate Change Adaptation Action Plan (LCCAAP) to address impacts of climate change that will create a huge challenge for Local Government, impacting not only on the environment but the Town's business operations and its communities.
Perth Solar City Program (completed June 2013)	Perth Solar City was part of the Australian Government's \$94 million Solar Cities programme designed to understand the benefits and barriers to the uptake of energy efficiency and renewable energy.
Pickering Park Operational Maintenance Action Plan	<p>Natural Area Management & Services (NAMS) was contracted by the Town of Bassendean to undertake natural area assessments at various reserves within the Town for the purpose of natural area rehabilitation and management.</p> <p>SITE DESCRIPTION</p> <p>River foreshore environment with wetland and dryland species mix, foreshore approx. 200 linear meters, drain approx. 100 linear meters; Very Good; restoration works undertaken 2009/2010.</p>
Regional Climate Change Adaptation Plan	The EMRC's Regional Climate Change Adaptation Action Plan outlines what needs to be done at a regional level to assist Perth's Eastern Region to adapt or 'future proof' itself to the effects and impacts of our changing climate.
Regional Cycle Network Master Plan	The development of a regional cycle network in Perth's Eastern Region that is safe and convenient, has a high degree of connectivity to enable users to directly access key destinations and meets both current and future needs.
Regional Integrated Transport Strategy Action Plan	The EMRC and its member Councils are committed to seeing the creation of a regional transport network that is efficient, safe and integrates all modes of transport. This Regional Integrated Transport Strategy and its Action Plan will provide the direction and guidance to ensure that this commitment becomes a reality.

Project	Summary
Sandy Beach Operational Maintenance Action Plan	<p>Natural Area Management & Services (NAMS) was contracted by the Town of Bassendean to undertake natural area assessments at various reserves within the Town for the purpose of natural area rehabilitation and management.</p> <p>SITE DESCRIPTION River foreshore environment with a vegetation buffer zone, adjacent to large POS, area used for canoeing/kayaking, foreshore approx. 100 linear meters, restoration works commenced in early 2011</p>
Streetscape Master Plan (Recommended Tree Species)	Provides a recommended list of plans species for the use of street scaping the Town of Bassendean
Success Hill Reserve Operational Maintenance Action Plan	<p>Natural Area Management & Services (NAMS) was contracted by the Town of Bassendean to undertake natural area assessments at various reserves within the Town for the purpose of natural area rehabilitation and management.</p> <p>SITE DESCRIPTION River foreshore environment with wetland and dryland species mix, foreshore approx. 300 linear meters, Degraded to Completely Degraded; fire experienced in December 2009, restoration works commenced in 2012.</p>
Swan and Helena Rivers Management Framework	This document was developed by the EMRC in partnership with four of the member Councils to provide a strategic framework to guide the ongoing management and development of the eastern reaches of the Swan River and its major tributary, the Helena River.
Transpacific Cleanaway Waste Education Program	Our aim is to teach students about the positive impact waste avoidance and recycling has on preserving our precious resources. Through our simple to use strategies, students can reduce their own personal carbon footprint and help to make a real difference.
Water Campaign	The Water Campaign™ is an international water management program that builds the capacity of local government to reduce water consumption and improve local water quality. The program provides a 5 milestone framework to assist councils in monitoring, actioning and reporting on their water consumption.
Swan and Helena Rivers Regional Recreational Path and Development Plan	Completion of the Swan and Helena Rivers Regional Recreational Path by the EMRC in partnership with four of its member Councils will provide an integrated trail network along both sides of the Swan River foreshore from Windan Bridge to Guildford, thereby providing public access to social, cultural and natural heritage experiences along the Swan River.
Swan Canning Riverpark Iconic Trails Project	The Swan River Trust works with others to protect the Swan Canning Riverpark, to enhance ecological and community benefits and amenity
Volunteer Bushcare Guide	The Town of Bassendean Volunteer Bushcare Guide seeks to establish mutually beneficial working relationships between volunteers undertaking bushcare activities and Council. The Town of Bassendean recognises and places great importance on the value and skills of volunteers.
Waste Wise Education Program	Waste Wise Schools throughout Western Australia are reducing waste to landfill by implementing the 3Rs - reduce, reuse and recycle - while developing positive environmental values in students and the whole school community.
Water Action Plan	The Water Action Plan (WAP) for the Town of Bassendean represents Council's commitment to improved water management for both Council and its residents and ratepayers. The Water Action Plan has been driven by Council's commitment to two programs, the International Council of Local Environmental Initiatives (ICLEI) Water Campaign™ and the WA State Government, WA Water Strategy (2004).

Project	Summary
Water Conservation Plan	A component of a WCP is the collection, validation, collation and reporting of groundwater use and efficiency data.
Water Quality in Bassendean Drainage Network Report	Three main drainage lines exist within the Town of Bassendean, all of which were constructed during the development of the suburbs to lower the groundwater table, enabling the swampy land to be suitable for development. These three main drains (Kitchener St drain, Chapman Street drain and Guildford Rd drain) all have both open and closed sections and discharge into the Swan River.
Drainage Network - Desktop Assessment	In 2014 the Town engaged Cardno Pty Ltd to conduct a drainage network desktop assessment for approximately 100 drainage catchments throughout the Town of Bassendean and to identify the runoff variables and flow rates. It is intended that as part of the desk top exercise that the consultant will identify water quality treatment points and indicative treatment measures at Swan River outlet points and determine network upgrade requirements and estimated upgrade costs.

APPENDIX 4 – TOWN OF BASSENDEAN STRATEGIC COMMUNITY PLAN 2014-2023

Town of Bassendean Strategic Community Plan 2014-2024

Key Theme 1: Town Planning and Built Environment

- Ensure Town provides choice in housing types
- Foster enhanced public space and street appearance
- Preserve our heritage for future generations
- Provide safe access for all road users
- The Town centre is a vibrant hub for the community

Key Theme 2: Environmental Sustainability and Adaptation to Climate Change

- Conserve, protect and provide access to the Town's waterways
- Reduce adverse impacts of climate changes
- Minimise waste to landfill
- Maintain a healthy environment which supports a diverse range of flora and fauna

Key Theme 3: Economic Wellbeing and Prosperity

- Build a strong local business economy to benefit the community
- Redevelop and revitalise local centres
- Build small business growth
- Strengthen the Town profile as a tourist destination

Key Theme 4: Arts, Heritage and Culture

- Maintain the rich culture of heritage of the community
- Encourage and support community connections
- Enhance partnerships with the local Noongar people
- Protect local history and heritage

Key Theme 5: Inclusiveness, Lifelong Learning, Health and Social Wellbeing

- Build a sense of belonging and connectivity in community
- Provide a safe environment
- Provide opportunities for residents to be lifelong learners

Key Theme 6: Leadership and Governance

- Strengthen and formalise partnerships
- Strengthen Council governance and compliance
- Improve capability and capacity

APPENDIX 5 – STRATEGIC DOCUMENTS

Document List	Endorsement Year	Priority	Comments
Acid Sulphate Soils Policy	No Reference (possibly 2009)	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Amenity Tree Evaluation Policy	2009	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Ashfield Parade Operational Maintenance Action Plan	2012	HIGH	Town of Bassendean responsibility, new maintenance plan developed each year
Bassendean Bike Plan	2013		Adopted
Bindaring Park Operational Maintenance Action Plan	2012	HIGH	Town of Bassendean responsibility, new maintenance plan developed each year
Bushland Weed Management Plan	2010	HIGH	Supplementary weed mapping occurs every 2 years to keep updated
Carbon Reduction Strategy	2012	LOW	Responsibility of EMRC in partnership with the Town
Regional Collective Local Biodiversity Strategy	2009	HIGH	EMRC responsibility in conjunction with member councils
Communication and Conservation, Community and Stakeholders Policy	2009	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Energy Efficient Design Policy	No Reference (possibly 2009)	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Energy Efficiency Policy	No Reference (possibly 2009)	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Environmental Purchasing Policy	No Reference (possibly 2009)	HIGH	This Policy is now included Into Town of Bassendean Purchasing Policy
Floodplain Management and Development Policy	2008	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Foreshore Restoration Policy	No Reference (possibly 2009)	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Heritage Audit and Statement of Significance	2009	LOW	Responsibility of EMRC
Jubilee Reserve Operational Maintenance Action Plan	2012	HIGH	Town of Bassendean responsibility, new maintenance plan developed each year
Landscaping with Local Plants Policy	No Reference (possibly 2009)	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Local Area Traffic Management Plan	2012	LOW/MEDIUM	Town Of Bassendean responsibility, Council to review in accordance to Policy
Local Biodiversity Policy	No Reference (possibly 2009)	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Local Climate Change Adaptation Plan	2011	MEDIUM/HIGH	EMRC are reviewing Regional Plan, ToB will review local plan once regional plan is released

Document List	Endorsement Year	Priority	Comments
Local Planning Policy No. 10 – 5.7.7 Tree Preservation	2009	HIGH/ MEDIUM	Town Of Bassendean responsibility, Council to review in accordance to Policy
Local Planning Policy No. 13 – Trees on Development Sites	2010	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Local Planning Policy No. 14 – On-site Stormwater	2010	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Local Planning Strategy	2008 (Reviewed 2011)	MEDIUM	Town Of Bassendean responsibility, Council to review in accordance to Policy
Local Plants Community Education Strategy	No Reference	LOW	Was the responsibility of the North Metro Conservation Group who no longer exist (Perth Region NRM in the process of restablisng the group – timeframe TBA)
Managing Phytophthora Dieback – Guidelines	2008	LOW	Responsibility of the Dieback Working Group
Natural Areas Management Policy	No Reference (possibly 2009)	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Nutrient and Irrigation Management Policy	No Reference (possibly 2009)	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Path Network Planning Policy and Guidelines	2004	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Pickering Park Operational Maintenance Action Plan	2012	HIGH	Town of Bassendean responsibility, new maintenance plan developed each year
Regional Aboriginal Consultation Guidelines (DRAFT)	Under Development	LOW	Responsibility of EMRC
Regional Climate Change Adaptation Plan	2009	LOW	Responsibility of EMRC
Regional Cycle Network Master Plan	2011	LOW	Responsibility of EMRC
Regional Integrated Transport Strategy Action Plan	2010	HIGH	Responsibility of EMRC
Sandy Beach Operational Maintenance Action Plan	2012	HIGH	Town of Bassendean responsibility, new maintenance plan developed each year
Significant Tree Policy	2012	MEDIUM	Town Of Bassendean responsibility, Council to review in accordance to Policy
Significant Tree Register	2012	MEDIUM	Ongoing basis, updated as needed
Stormwater Quality Management Policy	No Reference (possibly 2009)	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Street Tree (During Development) Policy	1998	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Street Tree Protection Policy	2009	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Streetscape Information Policy	2009	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Streetscape Master Plan (Recommended Tree Species)	2008	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Success Hill Operational Maintenance Action Plan	2012	HIGH	Town of Bassendean responsibility, new maintenance plan developed each year
Sustainable Bassendean	No Reference	HIGH	Town Of Bassendean responsibility,

Document List	Endorsement Year	Priority	Comments
Policy	(possibly 2009)		Council to review in accordance to Policy
Sustainability Implications – Guidelines	No Reference	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Sustainable Landscaping Strategy	2006	LOW	Town Of Bassendean responsibility, Council to review in accordance to Policy
Swan and Helena Rivers Management Framework	2007	LOW	Responsibility of EMRC
Swan and Helena Rivers Regional Recreational Path and Development Plan	2009	LOW	Responsibility of EMRC
Swan Canning Riverpark Iconic Trails Project	2010	LOW	Responsibility of the Swan River Trust.
Town of Bassendean Cultural Plan	2006	MEDIUM	9 year plan
Town of Bassendean Volunteer Policy	2010	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Verge Treatment Policy	2009	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Vision 2030 Community Plan	2005	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Volunteer Bushcare Guide	2013	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Water Action Plan	2006	HIGH	Work is being undertaken to review 2006 Water Action Plan Goals and prepare new goals (2014)
Water Conservation Plan	2008	HIGH	Town of Bassendean responsibility, ongoing
Water Quality in Bassendean Drainage Network Report	2011	HIGH	Ongoing, 2014 data collection and analysis under way
Water Sensitive Urban Design and Water Conservation Policy	No Reference (possibly 2009)	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy
Wetlands Policy	No Reference (possibly 2009)	HIGH	Town Of Bassendean responsibility, Council to review in accordance to Policy

APPENDIX 6 – GAP ANALYSIS

In addition to the analysis of existing documents, a gap analysis was undertaken to identify gaps in relation to potential policies, plans and programs. Below is a list of potential policies, plans and programs that the Town of Bassendean may consider undertaking in the future.

Potential policies, plans and programs for the Town of Bassendean's consideration:

- *Review and update of all outstanding documentation* – the Town of Bassendean have a number of outstanding documents that require review and updating.
- *Community Environmental Participation Strategy* – strategy to look at ways to increase the level of community engagement in relation to the environment.
- *Sustainability and Environmental Education Program and Strategy* – program and strategy to engage and educate the community in relation to environmental issues both globally and locally.
- *Environmental Cultural Awareness Improvement Strategy* – education and awareness of European and Aboriginal cultural heritage and its links to the environment.
- *Wildlife Corridor Strategy* – strategy to look at existing corridors and the potential for new corridors to assist with the movement of native fauna through the Town of Bassendean.
- *Feral Animal Strategy* – appropriate management methods to reduce the number of feral animals entering native reserves.
- *Grey Water Policy* – policy to cover the installation and management of grey water systems within the Town of Bassendean.
- *Update Town of Bassendean Website* – environmental information is hard to access and unclear.
- *Environmental Impact Assessment (ISO 14001)* – environmental management assessment tool.
- *Baseline Environmental Studies* – study of the current flora and fauna present within the Town of Bassendean.
- *Water Use Policy* – to assist with the reduction of water consumption within the Town of Bassendean.
- *Climate Change Adaptation Policy* – to assist the Town of Bassendean with making correct and informative decisions in relation to Climate Change Adaptation.