

Natural Areas Management Policy

The biodiversity found in the south west of WA, including Bassendean, makes it one of the 25 global biodiversity hot spots. However, climate change, development pressures, clearing, weed invasion, over-extraction of ground water and erosion of soils threaten this natural heritage.

The Town of Bassendean currently has 2.39% of its original pre-European settlement vegetation remaining; this equates to about 21 hectares. The Town is committed to conserving biodiversity and to revegetating areas that are degraded. A detailed Five Year Bushland Management Manual has been developed to provide staff with best practice management tools for actions that need to be implemented in bushland reserves.

Objectives

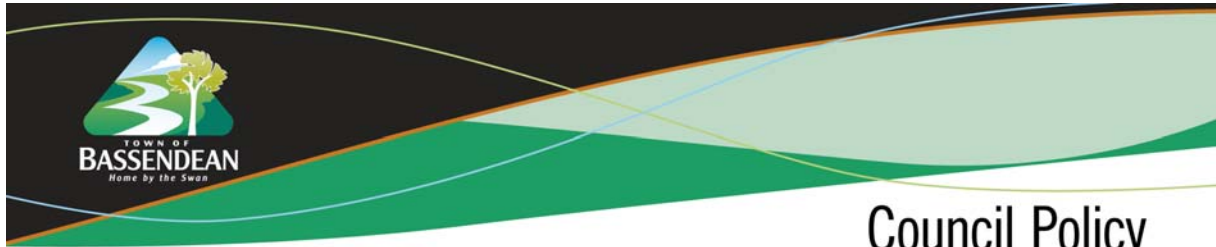
The Town of Bassendean's objectives for its Bushland Reserves Management Policy are:

- To ensure that bushland reserves are maintained and restored to protect and enhance their conservational, ecological and community values;
- To provide appropriate frameworks, timelines and processes for the management of the reserves vested in the care of the Town of Bassendean;
- To develop a long term strategy for bushland restoration works and ongoing maintenance of the reserves vested in the care of the Town of Bassendean;
- To have best practice guidelines in place for staff involved in the management of the reserves.

Strategy

The Town of Bassendean will achieve these objectives by:

1. Ensuring our own operations encompass best practice standards and practices by:
 - Seeking to preserve and increase local endemic native vegetation in all bushland areas which the Town has a management responsibility;
 - Implementing the Five Year Bushland Management Manual;
 - Managing exotic weed species; and
 - Developing and implementing procedures for best practice management procedures in bushland areas for Council operations;



Council Policy

2. Ensuring land use planning decisions and processes take bushland management into account by:
 - Providing guidance on statutory and non-statutory bushland planning mechanisms to promote or secure the protection and enhancement of bushland not owned or managed by the Town;
 - Such guidance to include provision of adequate vegetative buffers, Dieback control, acid sulphate soils, weed control and restrictions on clearing of native vegetation and rehabilitation of native vegetation.
3. The use of chemicals for weed control to be used strictly in accordance with Council procedure and to be used only when necessary.

Application

- This policy applies to all planning projects including Council projects, subdivisions, land development and redevelopment proposals;
- This policy provides direction to Council in respect of any application for rezoning, subdivision and planning approval. The Council will have due regard to the objectives of the policy before making its determination;
- Responsibility for the implementation of this policy rests with all Councillors, staff, volunteers and contractors of the Town of Bassendean. The Five Year Bushland Management Manual is to be implemented and reported upon in the quarterly and annual report;
- Providing training to all relevant employees to ensure that they are aware of this Policy and are involved in assisting Council to implement this policy;
- Openly communicating the Policy to the community.

Acid Sulfate Soils Policy

Acid Sulfate Soils (ASS) and Potential Acid Sulfate Soils (PASS) is the common names given to naturally occurring soil and sediment containing iron sulfides. Release of acid and metals as a result of the disturbance ASS can cause significant harm to the environment and degradation of infrastructure. In Western Australia the main impacts associated with ASS to date have been:

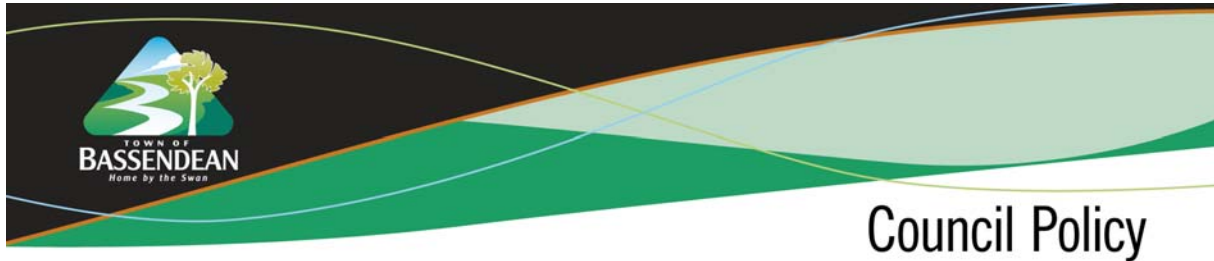
- Wetlands degradation;
- Localised reduction in habitat and biodiversity;
- Deterioration of surface and groundwater quality;
- Loss of groundwater for irrigation and domestic use;
- Increased health risks associated with arsenic and heavy metals contamination in surface and groundwater, and acid dust;
- Risk of long-term infrastructure damage through corrosion of sub-surface pipes and foundations by acid water;
- Invasion by acid tolerant waterplants and dominance of acid tolerant plankton species causing loss of biodiversity.

The risk of ASS and PASS is, therefore, a planning issue that should be taken into account in ASS decision-making.

Objectives

The Town of Bassendean's objectives for ASS and PASS are:

- ASS and PASS should be considered in planning decisions to avoid potential adverse effects on the natural and built environment (including infrastructure);
- To avoid, where possible, or to minimise the disturbance of ASS;
- To ensure any disturbance of ASS in subdivision and developments is planned and managed using best practice standards to mitigate potential adverse outcomes;
- To require the rehabilitation of disturbed ASS and acid drainage;
- All decisions, recommendations and actions will be in accordance with State Government Policy and Guidelines.



Strategy

In order to protect the Town of Bassendean from the adverse effects of ASS and to achieve the objectives the following will be undertaken:

- Any significant risk of disturbing ASS should be accompanied by a Preliminary Site Assessment prepared in accordance with State guidelines where developments are located on Class One, Two or/and Three ASS or moderate to high PASS;
- Where a Preliminary Site Assessment has identified PASS or ASS risks, the application should also be accompanied by a detailed site assessment and an Acid Sulfate Soil Management Plan prepared in accordance with State guidelines;
- Any application for development on land where disturbance of ASS is proposed or likely to occur should be referred to the relevant State government authorities, for advice prior to a decision being made;
- Ensure all of the Town's operations likely to affect or be affected by ASS or PASS be planned and carried out to best management standards.

Application

- This policy applies to all planning projects including Council projects, subdivisions (administered by the WA Planning Commission), land development and redevelopments and is to be carried out in accordance with State policies and guidelines;
- This policy provides direction to Council in respect of any application for rezoning, subdivision and planning approval. The Council will have due regard to the objectives of the policy before making its determination;
- Responsibility for the implementation of this policy rests with all Councillors, staff, volunteers and contractors of the Town of Bassendean. Acid Sulfate Soils are to be measured and reported upon in the quarterly and annual report. This policy is to be reviewed every 3 years.
- This Policy will be reviewed to reflect changes in community expectations, changes in state and federal government legislative, policy and guidelines;
- Provide training to all relevant employees to ensure that they are aware of this Policy;
- Openly communicate the Policy to the community.

Energy Use Policy

Policy and programs in areas such as urban development, transport planning, local economic development, and community development and education have an impact on greenhouse gas emissions. Local Government is also a user of energy itself through its own operations and facilities. The Town of Bassendean is a leader in energy management through the Cities for Climate Protection Program which works to ensure that energy consumption is as efficient and effective as possible. This policy is designed to assist in strategic energy management in the Town.

Objectives

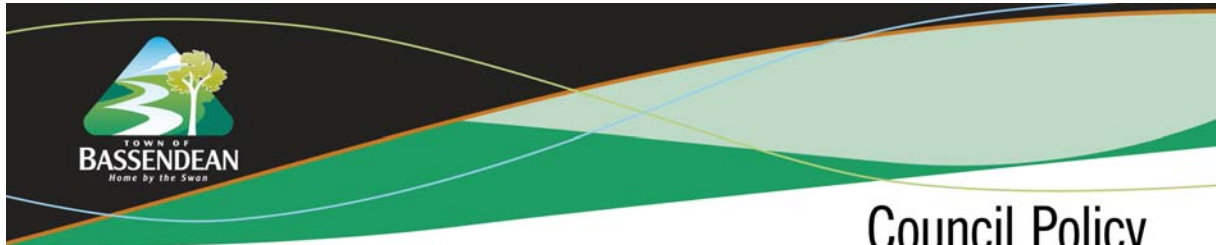
The Town of Bassendean policy objectives for Energy Use are:

- To progressively reduce greenhouse gas emissions beyond the Town of Bassendean's Greenhouse target of 20% of 1998 levels by 2010 to meet international best practice targets;
- To ensure that energy efficiency is a key criteria for consideration in purchasing decisions.

Strategy

In order for the Town of Bassendean to minimise energy use and to achieve the objectives the following will be undertaken:

- Improve Bassendean's greenhouse gas management and performance through the CCP Plus Program by setting achievable targets;
 - Ensure that all future Council buildings utilise energy efficient hot water systems, solar hot water systems to be considered where practical;
 - Insulate exposed pipes from water heaters, to prevent heat loss;
 - Progressively replace electric water heaters energy efficient systems e.g. solar, heat pump or gas water heaters;
 - Insulate all Council buildings and use tinting and window treatments to reduce energy use for heating and cooling;
 - Ensure that the Council vehicle fleet and travel requirements consider the associated greenhouse gas emissions;
 - Manage the Council fleet to reduce vehicle emissions, including vehicle downsizing and alternative fuels where practical;
 - Develop a data management system to record energy consumption and changes;
 - Ensure that new and existing Council infrastructure minimises energy/water/waste usage;

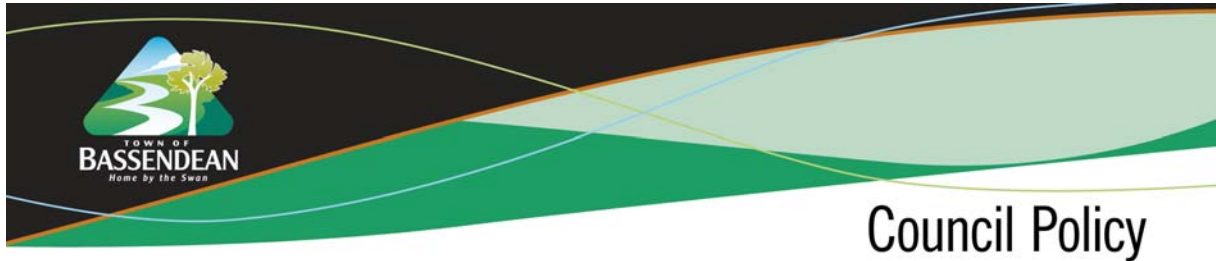


Council Policy

- Annual inventories of Council buildings shall be undertaken to monitor and to minimise energy/water/waste usage;
- Maintain a commitment to the Green Bassendean program to offset carbon emissions;
- Support research to quantify the carbon sequestration potential of native vegetation plantings.

Application

- This policy applies to Council projects, building applications, subdivisions, land development and redevelopments and proposals;
- This policy provides direction to Council in respect of any application for rezoning, subdivision and planning approval. The Council will have due regard to the objectives of the policy before making its determination;
- Responsibility for the implementation of this policy rests with all Councillors, staff, volunteers and contractors of the Town of Bassendean. Energy use is to be measured and reported upon in the quarterly and annual report. This policy is to be reviewed every 3 years;
- This Policy will be reviewed to reflect changes in community expectations, changes in state and federal government legislative, policy and guidelines;
- Provide training to all relevant employees to ensure that they are aware of this Policy and are involved in assisting Council to reduce energy use;
- Openly communicate the Policy to the community and formulate local partnerships to reduce community energy use.



Environmental Purchasing Policy

Local Government can influence energy purchasing decisions that can support markets for environmentally preferred products and services, support products with minimum packaging and contribute to improved environmental quality and progress towards sustainability. This policy provides a purchasing framework that will promote the sustainable use of resources and reduce negative impacts.

Objectives

The Town of Bassendean will lead by example through ensuring that the products and services it purchases are in line with the Town's objectives for a sustainable future.

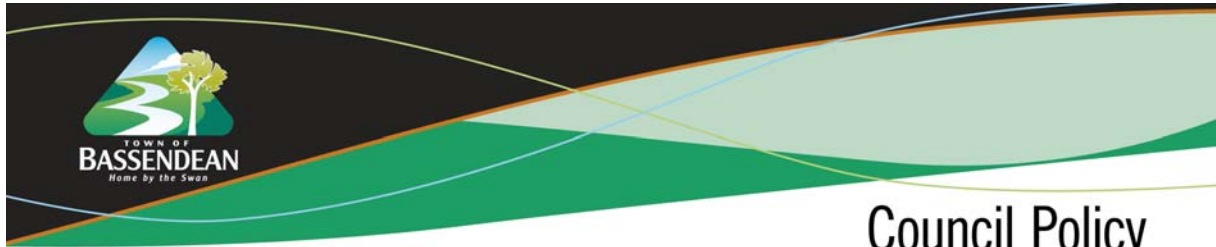
The Town of Bassendean's policy objectives for Environmental Purchasing are:

- To eliminate unnecessary purchasing;
- To minimise the amount of packaging waste going to landfill;
- To minimise greenhouse gas emissions through purchase of energy efficient goods and services;
- To minimise wastage of water resources through choosing water efficient goods and services;
- To consider the full life cycle of a product in purchasing decisions;
- To support local businesses through purchase of local goods and services where this meets other sustainability objectives;
- To raise awareness of the range and quality of environmentally friendly products available to local residents and businesses.

Strategy

The Town of Bassendean will seek to achieve these objectives by:

- Using the Town of Bassendean Energy Team to coordinate the implementation of this policy and develop a program to support the application of this policy;
- Require contractors and consultants to comply with this policy;
- Review purchasing specifications, tender documentation, consultants briefs and contracts for compliance with this policy;
- Ensuring that all information on goods and services under this policy is up-to-date including reference to evolving best practice standards;
- Establish a system to track and report on the implementation of this policy, with particular regard to any emissions reporting requirements;



- Purchases of goods and services under this policy is a priority whenever they perform satisfactorily and are available at a reasonable cost.

Application

- This policy applies to all Council staff when making purchasing decisions and consultants and contactors providing services to the Town of Bassendean for the provision of materials, goods and services;
- Provide training to all relevant employees to ensure that they are aware of this Policy;
- This Policy will be reviewed to reflect changes in community expectations, changes in state and federal government legislative, policy and guidelines;
- Responsibility for the implementation of this policy rests with all Councillors, staff, volunteers and contractors of the Town of Bassendean. Environmental Purchasing is to be measured and reported upon in the quarterly and annual report. This policy is to be reviewed every 3 years.

Foreshore Restoration Policy

Foreshores are a major conservation resource and are highly regarded for recreational use, property views and proximity. Foreshores also play a very important role in maintaining the ecological health of the Swan River, filtering nutrients and sediments, and providing habitat areas for flora and fauna.

The Town recognises that the Swan River foreshores have significant value for the Bassendean community and to the broader community. The Town, in partnership with other agencies responsible for the management of foreshore reserves, has a responsibility to ensure its own actions meet best practice standards. The Town also recognises that it has an important role in balancing community expectations and environmental needs in relation to foreshore management.

Objectives

The Town of Bassendean's objectives for the Foreshore Restoration Policy are:

- To protect, rehabilitate and enhance the natural functions and biodiversity of the foreshore including the riparian zone through:
 - The employment of best management practices, strategies and other mechanisms to guide management actions in a consistent and co-ordinated manner;
 - To incorporate consideration of these issues into Council's land use planning and development processes and decision-making;
 - To ensure compliance with Western Australian environmental policies, legislation and strategic initiatives relevant to foreshore management;
- To achieve urban design and architectural outcomes which enhance and protect the character and landscape setting of the foreshore;
- To advocate to other agencies with responsibilities for management of foreshore reserves for the protection, enhancement and rehabilitation of the natural functions and biodiversity of the foreshores in line with this policy;
- To take a strong advocacy role in promoting foreshore protection.

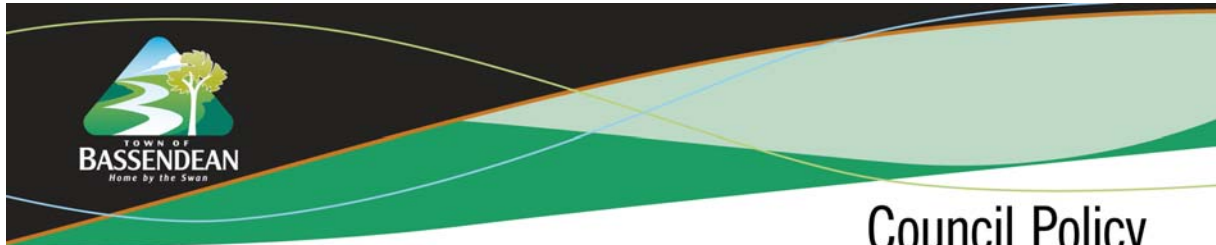
Strategy

The Town of Bassendean strives to achieve these objectives by:

4. Ensuring our own operations encompass best practice standards and practices by:
 - Developing foreshore management plans for all areas for which the Town has a management responsibility;
 - Developing and implementing procedures to minimise and control erosion and sedimentation from Council operations;
 - Managing exotic weed species;
 - Ensuring Aboriginal Consultation is undertaken when required
 - Seeking cost effective standards that can be maintained
 - Seeking to preserve native vegetation within the riparian zone and
 - Delivering projects in a timely manner
5. Ensuring land use planning decisions and processes take foreshore protection and management into account by:
 - Providing guidance on statutory and non-statutory foreshore planning mechanisms to promote or secure the protection and enhancement of foreshores not owned or managed by the Town;
 - Such guidance to include provision of adequate vegetative buffers, erosion and weed control and restrictions on clearing of native vegetation and rehabilitation of native vegetation.
6. Providing leadership identifying and addressing the probable impacts of climate change on the Town's foreshores by:
 - Working at a regional level and with relevant State agencies to identify the likely range of impacts;
 - Seeking partnerships to develop responses to the predicted impacts.
 - Education programs to the local community

Application

- This policy applies to all planning projects including Council projects, subdivisions, land development and redevelopment proposals;
- This policy provides direction to Council in respect of any application for rezoning, subdivision and planning approval. The Council will have due regard to the objectives of the policy before making its determination;
- Responsibility for the implementation of this policy rests with all Councillors, staff, volunteers and contractors of the Town of Bassendean. Foreshore Restoration is to be implemented and reported upon in the quarterly and annual report.



Council Policy

- The policy is to be reviewed every three years to reflect changes in community expectations, changes in state and federal government legislative, policy and guidelines;
- Providing training to all relevant employees to ensure that they are aware of this Policy and are involved in assisting Council to implement this policy
- Openly communicating the Policy to the community.

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Definitions

Biodiversity

The variety of all life forms: different plants, animals and micro-organisms, their genes and the ecosystem processes of which they are a part.

Ecological Health

The ability of an ecosystem to support and maintain key ecological processes, organisms and the structural and functional attributes, including natural variability and succession.

Foreshore

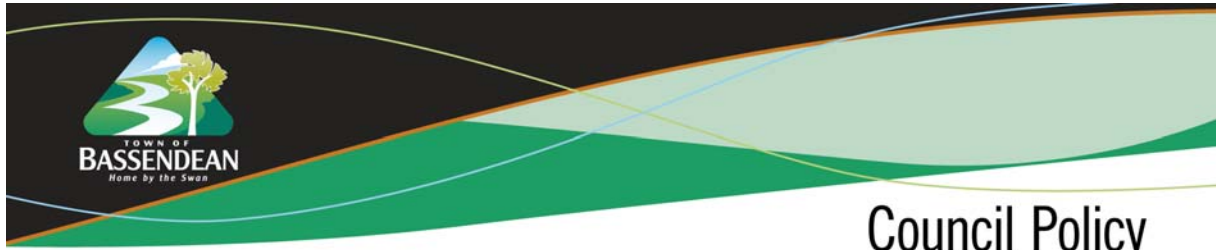
Land adjoining or directly influencing a body of water that is managed to protect waterway and riparian values. It is an area along a waterway where clearing and certain activities are inappropriate.

Foreshore Reserve

A foreshore area or waterway that is to be set aside as a reserve under planning legislation. Many foreshore reserves are reserved parks and recreation areas under the Metropolitan Region Scheme, and are also within the SRT Development Control Area.

Riparian Zone

The area of land bordering a waterway, where the structure, function and composition of the landscape are influenced by the waterway. The riparian zone includes the entire floodplain.



Council Policy

Landscaping with Local Plants Policy

The existing remnant native vegetation is a primary environmental feature contributing to amenity, biodiversity and natural heritage value. The loss of local native vegetation, replacement with exotic landscaping and increased water and fertiliser use is increasingly recognised as an issue impacting on water quality and the health of the Swan-Canning catchment. There is an expectation that Local Governments will make informed decisions and act in a sustainable way to preserve and enhance the natural amenity of their areas.

Objectives

The Town of Bassendean's Landscaping with Local Plants Policy objectives are:

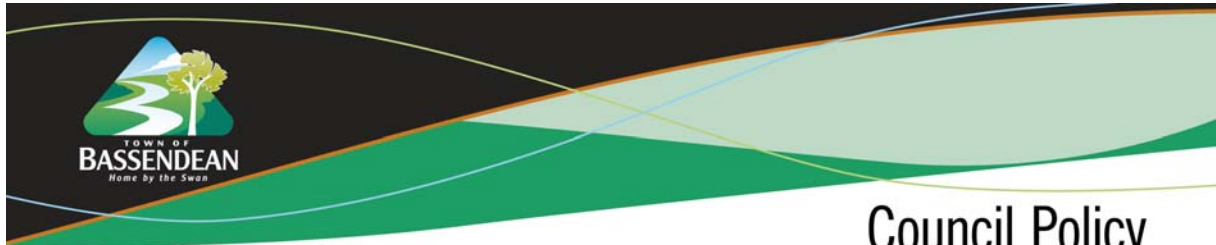
- To increase the use of species of the Perth plant community and those of the South Western Province in landscaping across the public and private land;
- Ensure that landscaping is more sustainable by:
 - Reducing the amount of irrigation water required;
 - Reducing the amount of fertiliser required, minimise nutrient export to groundwater, wetlands and the Swan-Canning river system;
 - Reducing threats to biodiversity by avoiding plant selection that may lead to future environmental weed problems;
 - Preserving and enhancing, the identity and 'sense of place' for the local community through appropriate landscaping. With consideration for historical relationships of other tree types for specific town features.
- Enhance local biodiversity by conserving existing native vegetation areas and by restoring and creating new native vegetation areas to create habitat for indigenous fauna;
- Build pride in the Town of Bassendean's natural environment and 'sense of place' for the local community through appropriate landscaping.

Strategy

The Town of Bassendean strives to achieve these objectives by:

- Promoting the use of local native plants in sustainable landscaping across the public and private land;
- Ensuring that Council, developers and private property owners are aware that landscaping with local native species is more sustainable;
- Encouraging reduction of water use by planting local native species which can survive successfully without excessive watering;
- Reducing the amount of fertiliser required for landscaping purposes, which will minimise nutrient export to groundwater, wetlands and the Swan-Canning river system;

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Council Policy

- Raising awareness of non-native plant species that have the potential to become environmental weeds;
- Using local native species in to enhance local biodiversity by conserving existing native vegetation areas and by restoring and creating new native vegetation areas to create habitat for indigenous fauna.

Application

- This policy applies to all landscaping and streetscaping including Council projects, subdivisions, land development and redevelopments proposals;
- This policy provides direction to Council in respect of any application for rezoning, subdivision and planning approval. The Council will have due regard to the objectives of the policy before making its determination;
- Responsibility for the implementation of this policy rests with all Councillors, staff, volunteers and contractors of the Town of Bassendean. This policy is to be measured and reported upon in the quarterly and annual report. This policy is to be reviewed every 3 years.

Definitions

“**Biodiversity**” means the variety of all life forms: different plant, animals and microorganisms, their genes and the ecosystem processes of which they are a part.

“**Landscaping**” means the physical modification of outdoors to serve the needs of people by planting, altering the contours of the ground, and/or building structures and amenities such as pedestrian ways, paths and picnic areas.

“**Perth Plant Community**” means plants that are considered naturally occurring to a particular local area. They are plants that have evolved in a particular locality and so are adapted to local soils and climate.

Local plants reflect those that are native to the botanic region of the local area, and preferably within the same local provenance. These species are better adapted to local conditions, and maintain the levels of natural diversity within the gene pool. This may have implications for sourcing of plants.

“**Natural Heritage**” natural features consisting of physical and biological formations or groups of such formations, which demonstrate natural significance – natural areas that constitute the habitat of indigenous species of animals and plants, and/or - natural areas which demonstrate natural significance from the point of view of science, conservation or natural beauty.

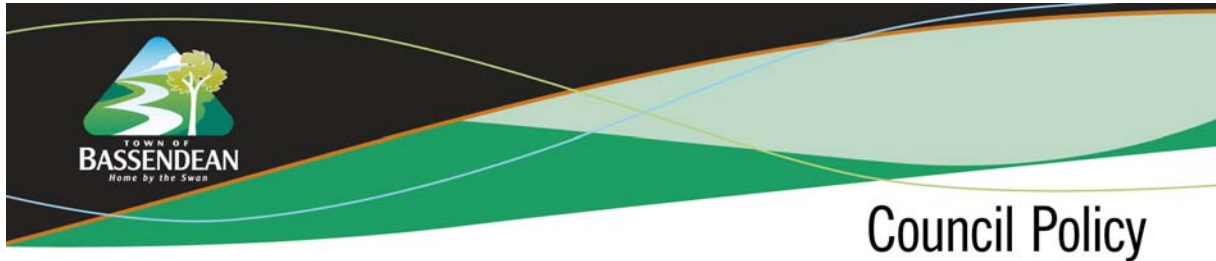
“**Private Property**” Private property is protected from being taken for public uses, and as such belongs absolutely to an individual, who has the exclusive right of disposition. It can include land, house, and businesses (commercial and industrial).

“**Provenance**” The original geographic source of seed, pollen, or propagules.

“**Sense of Place**” means a combination of physical and cultural elements that give place a distinct character that is valued by the community.

“**Streetscaping**” means the landscaping of a street or road.

“**Sustainable Landscaping**” means the creation of aesthetically pleasing environments, catering for human needs while minimising the use of resources and conserving natural assets for future generations to enjoy.



Local Biodiversity Policy

The Town of Bassendean values biodiversity and recognises the importance of protecting natural areas. There are significant threats to biodiversity from development pressures, inappropriate management and from climate change.

The purpose of this policy is to ensure the long-term protection of biodiversity and to provide guidance to Council on the identification, assessment and protection of biodiversity and natural areas.

Objectives

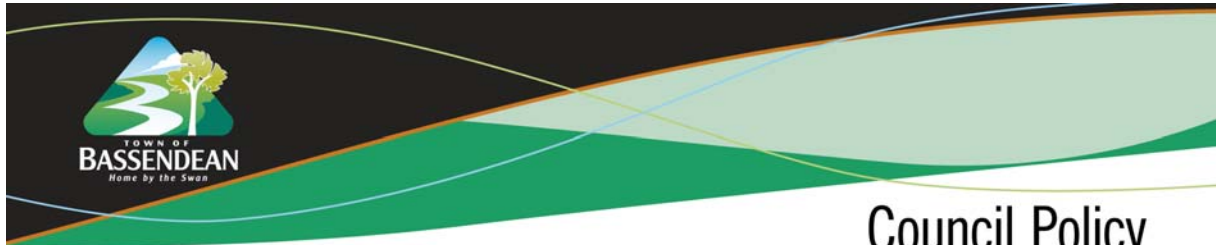
The Town of Bassendean's Local Biodiversity Policy objectives are:

- To secure the protection and conservation of bushland areas, in particular habitat for flora and fauna and vegetation corridors;
- To promote the retention, conservation, protection, effective management and restoration of all remnant vegetation;
- To ensure that biodiversity conservation and management issues are appropriately addressed and integrated in all Council's activities including strategic land use planning and decision making;
- To ensure that development and land use are compatible with biodiversity protection and/or provide for an improved environmental outcome and incorporate best practice planning, design and management outcomes.

Strategy

The Town of Bassendean strives to achieve these objectives by:

- Developing a partnership with adjacent Councils to develop and implement a local biodiversity strategy for the Town;
- Protecting, restoring and enhancing bushland remnants, local reserves, vegetation corridors and buffer zones;
- Ensuring that a comprehensive ecological assessment is undertaken in development proposals and activities;
- Applying an equivalent or higher standard of environmental assessment to planning and carrying out its own works;



Council Policy

- Exploring options for incentives to property owners and developers to conserve biodiversity on private land;
- Only approving development proposals or other activities within its control with likely impacts to biodiversity if the Town is satisfied there are measures in place to avoid or mitigate adverse impacts.
- Reporting implementation of these measures for the life of the development;
- Improving and enhancing management of natural areas existing reserves ensuring local and regional linkages;
- Landscaping to increase and enhance local biodiversity.

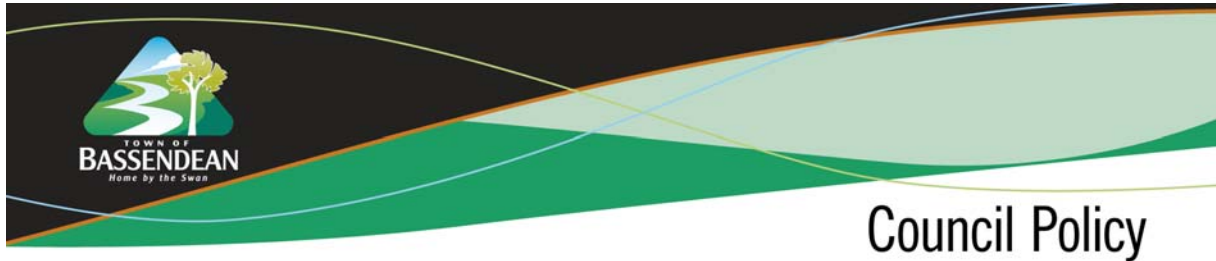
Application

- This policy applies to all bushland and foreshore areas within the Town of Bassendean;
- This policy applies to all planning projects including Council projects, subdivisions, land development and redevelopments proposals;
- This policy provides direction to Council in respect of any application for rezoning, subdivision and planning approval. The Council will have due regard to the objectives of the policy before making its determination;
- Responsibility for the implementation of this policy rests with all Councillors, staff, volunteers and contractors of the Town of Bassendean. This policy is to be measured and reported upon in the quarterly and annual report. This policy is to be reviewed every 3 years.

Definitions

Biodiversity

The variety of all life forms: different plants, animals and micro-organisms, their genes and the ecosystem processes of which they are a part.



Nutrient and Irrigation Management Policy

The Town of Bassendean is committed to protecting the natural environment and water quality. Good planning and operational practice is vital to ensure that water is used efficiently and effectively.

The Town recognises that the application of artificial fertilisers and irrigated water supply can have unwanted impacts on the natural environment, especially water bodies, if not carefully managed.

Objectives

The Town of Bassendean's objectives of the Nutrient and Irrigation Management Policy are:

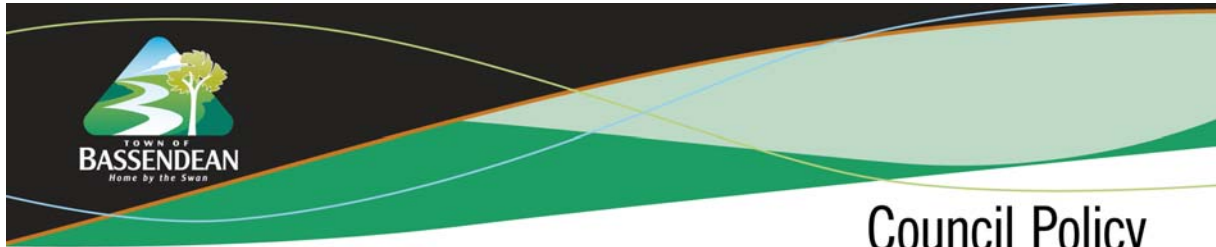
- To protect water quality in the Town's water courses and drainage systems;
- To contribute to reducing nutrient inputs to water courses and drainage systems to levels that have minimal impact on human health, the environment and associated values;
- To reduce the frequency and intensity of toxic or nuisance algal blooms caused by nutrient pollution.

Strategy

The Town of Bassendean strives to achieve these objectives by:

- Setting appropriate guidelines for irrigation development;
- Strengthening land use controls and planning mechanisms to identify and phase out high nutrient exporting land uses that are unable to meet nutrient reduction targets;
- Reviewing Town Planning Schemes to ensure they minimise nutrient export from various land uses;
- Planting and retaining local native vegetation etc., this will reduce the risks of nutrients and pesticides entering water bodies;
- Using guidelines to determine fertilisation requirements;

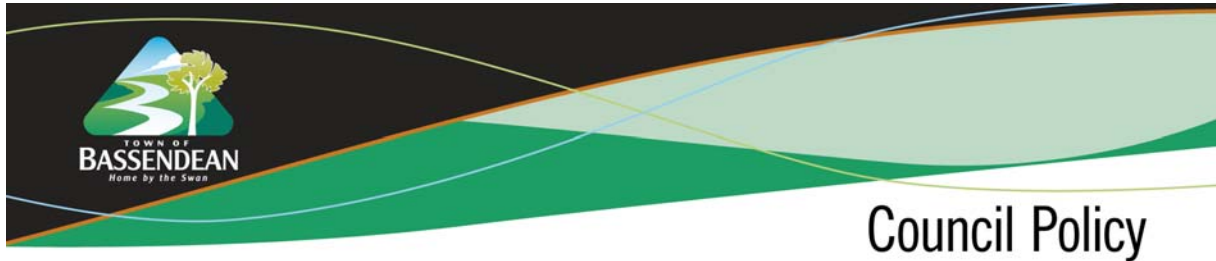
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- Ensuring irrigations systems are water efficient;
- Where nutrient rich wastewater is used for irrigation, control application rates and establish a comprehensive monitoring and evaluation program to ensure surface runoff and shallow groundwater contamination does not occur.

Application

- This policy applies to all Council projects, subdivisions, land development and redevelopments proposals;
- This policy provides direction to Council in respect of any application for rezoning, subdivision and planning approval. The Council will have due regard to the objectives of the policy before making its determination;
- Responsibility for the implementation of this policy rests with all Councillors, staff, volunteers and contractors of the Town of Bassendean. This policy is to be measured and reported upon in the quarterly and annual report. This policy is to be reviewed every 3 years.



Stormwater Quality Management Policy

Urbanisation leads to changes in both the quantity and quality of water that is delivered to receiving waters. The built environment has many sources of pollutants that can contaminate stormwater as it passes through the catchment, including metals, oils, petrol, organic debris, litter, silt and dust, fertilisers, animal waste, pesticides and detergents. Unmanaged, the cumulative impact of these pollutants and altered flow regimes can result in considerable damage to the environment.

Stormwater management requires careful design, planning and implementation to avoid potential problems in the quality of the receiving natural and built environment. Ensuring that best management practices are in place is essential.

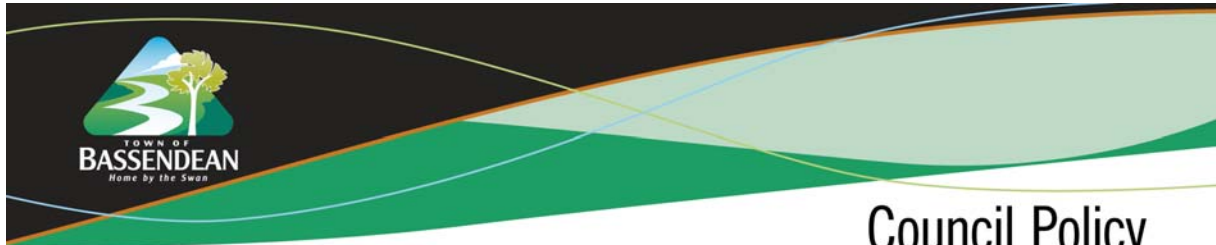
The purpose of this policy is to establish a framework for managing stormwater quality within the Town of Bassendean.

The policy draws on the objectives and strategies outlined within the Department of Water *Stormwater Management Manual* (2007), which provides a comprehensive approach to management of stormwater in WA. This policy is to be used in conjunction both with Local Planning Policy 5.4.19 *Water Sensitive Urban Design* and in the preparation and submission of a Stormwater Management Plan detailing the overall planning, layout and design for stormwater management infrastructure for larger scale developments.

Objectives

The Town of Bassendean's objectives for a Stormwater Quality Management Policy are:

- To minimise disturbance to the Swan River ecosystem from stormwater through effective planning and management;
- To maximise the reuse of stormwater;
- To retain natural drainage systems and protect ecosystem health;
- To implement stormwater management systems that are economically viable in the long term;
- To protect the built environment from flooding and waterlogging;
- To ensure that social, aesthetic and cultural values are recognised and maintained when managing stormwater;



- To ensure the delivery of best practice stormwater management through planning and development of high quality developed areas in accordance with sustainability and precautionary principles.

Strategy

Protect water quality

- Implement best management practices on-site;
- Implement non-structural controls, including education and awareness programs;
- Install structural controls at source or near source;
- Use in-system management measures;
- Undertake regular and timely maintenance of infrastructure and streetscapes.

Protect infrastructure from flooding and inundation

- Safe passage of excess runoff from large rainfall events towards watercourses and wetlands;
- Store and detain excess runoff from large rainfall events in parks and multiple use corridors;
- Safely convey excessive groundwater to the nearest watercourse.

Minimise runoff

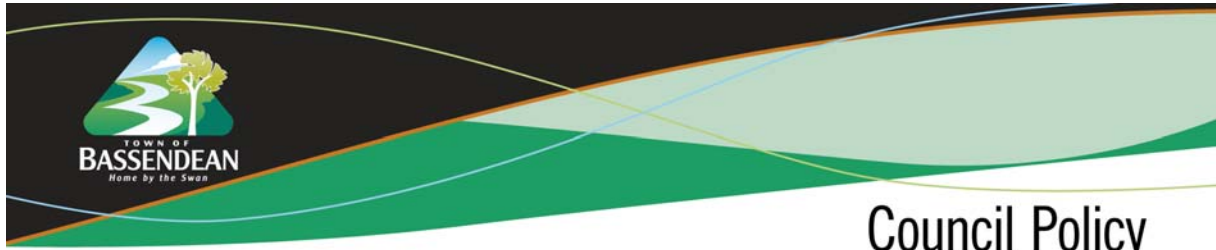
- Retain and infiltrate rainfall within property boundaries;
- Use rainfall on-site or as high in the catchment as possible;
- Maximise the amount of permeable surfaces in the catchment;
- Use non-kerbed roads and carparks.

Maximise local infiltration

- Minimise impervious areas;
- Use vegetated swales and living streams;
- Use soakwells and minimise the use of piped drainage systems;
- Create vegetated buffer and filter strips;
- Recharge the groundwater table for local bore water use.

Make the most of nature's drainage

- Retain natural channels and incorporate into public open space;
- Retain and restore riparian vegetation to improve water quality through bio-filtration;
- Minimise the use of artificial drainage systems.



Minimise changes to the natural water balance

- Retain seasonal wetlands and vegetation;
- Maintain the natural water balance of wetlands;
- No direct drainage to conservation category wetlands or their buffers, or to other conservation value wetlands or their buffers, where appropriate;
- Recharge groundwater by stormwater infiltration.

Integrate stormwater treatment into the landscape

- Public open space systems incorporating natural drainage systems;
- Water sensitive urban design approach to road layout, lot layout and streetscape;
- Maximise environmental, cultural and recreational opportunities.

Convert drains into natural streams

- Create stable streams, with a channel size suitable for a 1 in 1 year ARI rainfall events, equivalent to a bankfull flow;
- Accommodate large and infrequent storm events within the floodplain;
- Create habitat diversity to support a healthy, ecologically functioning waterway.

Note: Selection of appropriate measures will be determined by site conditions.

Application

- Responsibility for the implementation of this policy rests with all Councillors, staff, volunteers and contractors of the Town of Bassendean. Stormwater Quality Management is to be implemented and reported upon in the quarterly and annual report. The policy is to be reviewed every three years;
- This Policy will be reviewed to reflect changes in community expectations, changes in state and federal government legislative, policy and guidelines;
- Provide training to all relevant employees to ensure that they are aware of this Policy and are involved in assisting Council;
- Openly communicate the Policy to the community.

Definitions

Bankfull flow

The flow rate at which a channel is filled from bank to bank. The frequency of bankfull conditions is commonly adopted as the criterion for maintaining the channel cross section and freedom from sedimentation in the longer term. This frequency will vary according to climatic regions, but usually occurs once every 1.5 years.

Best management practices

Devices, practices or methods for removing, reducing, retarding or preventing targeted stormwater runoff constituents, pollutants and contaminants from reaching receiving waters.

Channel

The bed and banks of a stream or constructed drain

Groundwater

Water found under the land surface that occupies pores and crevices of soil and rock.

Impervious surface

The part of the catchment surfaced with materials, either natural or constructed, which prevent or limit the rate of infiltration of stormwater into the underlying soil and groundwater (ARMCANZ & ANZECC 2000) and subsequently increases stormwater runoff flows.

Non-structural controls

Institutional and pollution-prevention practices designed to prevent or minimise pollutants from entering stormwater runoff and/or reduce the volume of stormwater requiring management. They do not involve fixed, permanent facilities and they usually work by changing behaviour through government regulation (e.g. planning and environmental laws), persuasion and/or economic instruments.

Runoff

Water that flows over the surface of a catchment area, including streams.

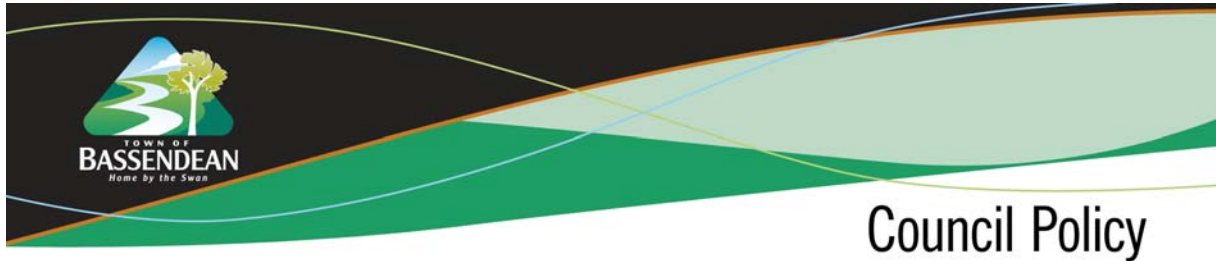
Stormwater

Stormwater is water flowing over ground surfaces and in natural streams and drains, as a direct result of rainfall over a catchment.

Structural controls

Permanent, engineered devices implemented to control, treat or prevent stormwater pollution and/or to reduce the volume of stormwater requiring management.

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Urban

Land used for residential, rural-residential, commercial or industrial development (includes regional townsites).

Watercourse

A river, stream or creek in which water flows in a natural channel, whether permanently or intermittently.

Water sensitive urban design (WSUD)

A design philosophy that provides a framework for managing water-related issues in urban areas. WSUD incorporates the sustainable management and integration of stormwater, wastewater and water supply into urban design. WSUD principles include incorporating water resource management issues early in the land use planning process. WSUD can be applied at the lot, street, neighbourhood, catchment and regional scale.

Wetlands

Areas of seasonally, intermittently or permanently waterlogged or inundated land, whether natural or otherwise, including lakes, sumplands, playas, damplands, floodplains, barlkarras, palusplains, paluslopes, palusmonts or tidal flats.

Water Sensitive Urban Design and Water Conservation Policy

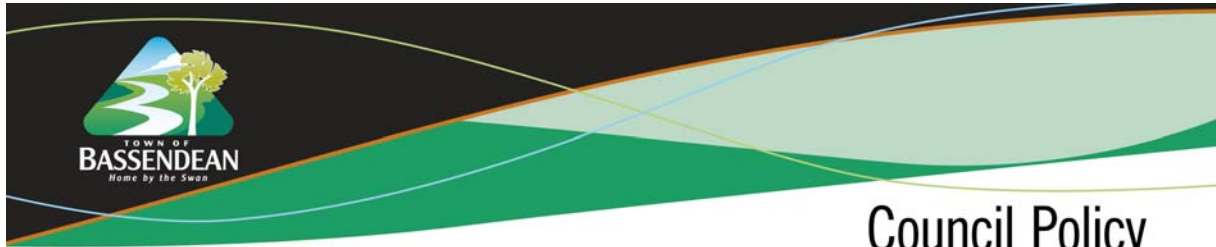
Australia is the driest inhabited continent in the world and Australian Local Governments have a significant role to play in minimising the impact on our limited water resources. The inflow to Perth's dams and catchment areas has significantly decreased due to climate change, which is concerning given the demand for water to supply the Water Corporation's Integrated Water Supply Scheme (IWSS) is nearly twice that of the current dam inflow amount. (Water Corporation, 2005). With the present potable water scarcity being experienced in Perth it is necessary for the Town of Bassendean and its community to reconsider the ways in which water resources are used and managed.

There is also concern about the quality of water discharging from drains into water bodies such as the Swan and Canning Rivers. Stormwater runoff carries sediments and pollutants such as nutrients and heavy metals from impervious surfaces. A mechanism to address water quality of stormwater runoff from developed areas is through Water Sensitive Urban Design (WSUD). The WSUD principles are the detention and retention of stormwater to increase filtration of pollutants by soil, vegetation or other physical means rather than direct conveyance to a water body.

Objective

The Town of Bassendean's objectives for Water Sensitive Urban Design and Water Conservation Policy are:

- Ensure that water sensitive urban design and water conservation best management practices are implemented in all new development and redevelopment proposals;
- Raise awareness about the environmental impacts of water waste;
- Assist in protecting the values of the Swan and Canning River and watercourses, consistent with the requirements of the Environmental Protection (Swan and Canning Rivers) Policy 1998;
- Protect and where possible restore and enhance the environmental, economic and social (i.e. recreation and scenic) values of waterways and wetlands;



- Retain or enhance open drains where possible by converting them to “living streams” in multiple use corridors that provide habitat for wildlife and passive recreation opportunities wherever possible.

Strategies

The Town of Bassendean strives to achieve these objectives by:

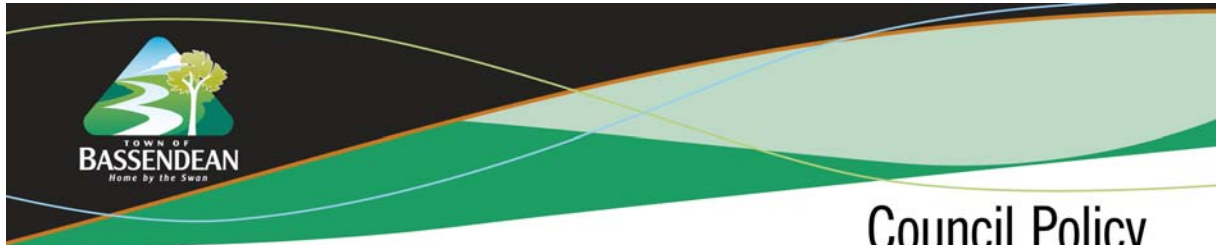
- Incorporating the State Government’s “5 Star Plus” standards early in the land use planning process;
- Addressing water resource management at the catchment and sub-catchment level;
- Storing and reusing stormwater and stormwater treatment is to occur as high as possible in the catchment use of a treatment train approach with the components of stormwater management located so that they follow the natural contours;
- Ensuring stormwater system design incorporates features of waterways that improve water quality;
- Establishing vegetation (particularly native riparian vegetation) in stormwater management to promote filtering and slowing of runoff to maximise settling of particulate-bound pollutants;
- To ensure multiple use corridors are used when appropriate;
- Ensuring structural best management practices which encompass the above principles;
- To protect property from flooding or damage by surface water or groundwater;
- To ensure post-urban development conditions in watercourses approximate pre urban conditions (i.e. water level and flow regimes are maintained).

A comprehensive approach to stormwater management also involves the promotion of non-structural best management practices. These include source controls such as:

- Education to residents on water conservation, appropriate plant species, fertiliser and water use, street sweeping regimes; and
- Improved waste and stormwater management for industrial premises.

Selection of best management practices should follow Town of Bassendean Policy 5.4.19 Water Sensitive Urban Design, Stormwater Best Management Practice Guidelines in the Local Government NRM Policy Manual (SRT/EMRC 2002), the Department of Environment's Stormwater Management Manual for Western

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Council Policy

Australia and the Department of Housing and Works 5 Star Plus – A New Standard in Sustainable Housing.

Application

- This policy applies to all residential development under the Planning Scheme for Residential Development based on the higher code and to development within the Town centre.
- This policy applies to all planning projects including Council projects, subdivisions, land development and redevelopment proposals;
- This policy provides direction to Council in respect of any application for rezoning, subdivision and planning approval. The Council will have due regard to the objectives of the policy before making its determination;
- Responsibility for the implementation of this policy rests with all Councillors, staff, volunteers and contractors of the Town of Bassendean. Water Sensitive Urban Design and Water Conservation is to be implemented and reported upon in the quarterly and annual report;
- The policy is to be reviewed to reflect changes in community expectations, changes in state and federal government legislation, policy and guidelines;
- Providing training to all relevant employees to ensure that they are aware of this Policy and are involved in assisting Council to implement this policy;
- Openly communicating the Policy to the community;
- Educating and promoting the State Government's "5 Star Plus" programme to the community.
- This policy should be read in conjunction with the Town of Bassendean's Draft Stormwater Quality Policy and Nutrient and Draft Irrigation Management Policy.

Wetlands Policy

The Town of Bassendean is committed to protecting the natural environment and recognises that wetlands are a vital part of a complex link between the landscape, soil, groundwater, rivers, plants and animals. Wetlands also provide a habitat, refuge, breeding ground and food source for fauna.

There are significant threats to wetlands from increasing development pressures, clearing, pollutant discharge, altered water regimes, climate change, over-extraction of ground water, erosion of soils and leaching of nutrients from household gardens.

Objectives

The Town of Bassendean's objectives of the Wetlands Policy are:

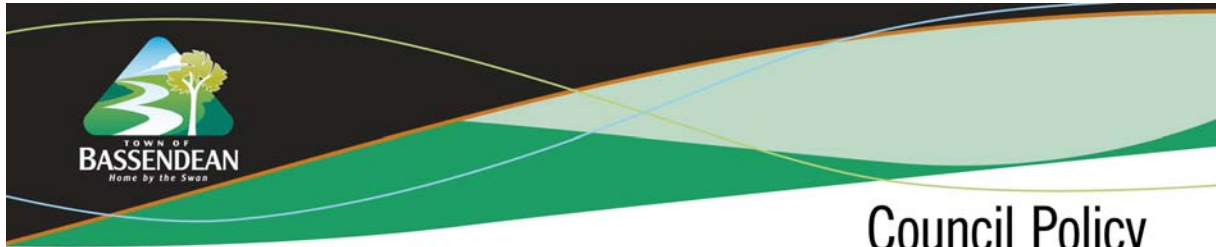
- To conserve and manage wetlands in an ecologically sustainable way and within a framework of integrated catchment management;
- To prevent the further loss or degradation of valuable wetlands and wetland types, and promote wetland conservation, restoration and creation (in some instances);
- To greatly increase community awareness and appreciation of the many values of wetlands and the importance of sound management of wetlands.

Strategy

The Town of Bassendean strives to achieve these objectives by:

- Identifying all wetlands and prioritising in order of significance. This will allow decision making to be accountable in consideration of the wetland;
- Ensuring adequate and appropriate buffering and/or setbacks of wetlands to maintain or enhance the environmental attributes, functions and values of the water resource and minimise the adverse impact of nearby land uses both existing and future;
- Implementing measures to manage vegetation cover and dependant ecosystems;
- Introducing measures that ensure implementation of best planning practice and best management;
- Assessing potential impacts the wetland may have on land use i.e. flooding;
- Protecting, managing, conserving and enhancing the environmental attributes, functions and values of wetlands;

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- Preparing management plans for wetlands of significance;
- Rehabilitating damaged wetlands.

Application

- This policy applies to all planning projects including Council projects, subdivisions, land development and redevelopment proposals;
- This policy provides direction to Council in respect of any application for rezoning, subdivision and planning approval. The Council will have due regard to the objectives of the policy before making its determination;
- Responsibility for the implementation of this policy rests with all Councillors, staff, volunteers and contractors of the Town of Bassendean. This policy is to be measured and reported upon in the quarterly and annual report. This policy is to be reviewed every 3 years.