

# Council Policy

<b>Council policy title:</b>	<b>Sustainable Infrastructure Policy</b>
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<b>Council policy owner:</b>	Director Environment, Recreation and Infrastructure
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## 1. Policy intent

The intent of this Policy is to set out Council's commitments and the approach to ecologically sustainable design (ESD) principles in the design, construction, operation and maintenance of Council owned and/or managed infrastructure that will allow Council to adapt to the impacts of climate change, to reduce greenhouse gas emissions and to use energy and water efficiently. This Policy aims to enhance liveability through improved services and higher levels of efficiency and aligns with the targets identified in Council's Environmental Sustainability Framework (ESF) for implementing ESD.

The financial sustainability requirements of Council's infrastructure, which is determined through long term renewal forecasting, is not considered within the scope of this Policy. Infrastructure renewal is dealt with in the Service-Driven Asset Management Policy and the respective Asset Management Plan listed under Section 8 – Related Documents.

## 2. Purpose/Objective

The purpose of Council's Sustainable Infrastructure Policy is to ensure high levels of environmental performance by setting ESD expectations for operations and maintenance, planning, design and construction for new, renewed and expanded infrastructure projects and licence and lease renewals for Council's buildings with the following objectives:

1. Minimum performance standards for ESD in the design and operation of Council owned and/or managed infrastructure have been established;
2. Provide a basis for assessment of operational and capital budgets where investments in ESD provide environmental, economic and social benefits;
3. Manage demand and supporting behavioural change programs within the Council and organisations operating Council infrastructure; and
4. Provide a basis for establishing new lease and licence arrangements with building occupants to implement ESD.

## 3. Background

*Sustainable infrastructure* refers to assets that incorporate design, construction and operational practices to optimise environmental, social and economic outcomes in the long term. This approach is an opportunity to use resources efficiently while creating a healthier built environment for people to live and work in and can significantly reduce construction and operating costs.

The construction and ongoing operations of Council’s infrastructure causes significant environmental impacts through greenhouse gas emissions, consumption of potable water, the use of materials, vegetation removal, impacts on transport patterns and the production of waste.

The integration of ESD principles into the management of all municipal infrastructure will allow Council to demonstrate environmental leadership, particularly as infrastructure development and use are responsible for almost all of Council’s operational greenhouse gas emissions. It also contributes to Council’s potable water consumption and impact on water quality entering Port Phillip Bay. The incorporation of ESD principles provides the greatest opportunity for reducing resource consumption and minimising environmental impacts. Whilst Council has a large diversity of asset types, it has some generic assets that may provide the basis for the development of a consistent approach and standards for improving the environmental performance of Council’s infrastructure.

In terms of the targets identified in Council’s Environmental Sustainability Framework (ESF) for implementing ESD, the following themes apply:

ESF Theme	Targets
Sustainable Development	By 2020 90% of Council capital works projects completed consider Environmental Sustainability in planning, design, construction and operation, including: <ul style="list-style-type: none"> <li>• Indoor Air Quality</li> <li>• Transport</li> <li>• Energy</li> <li>• Water</li> <li>• Waste</li> <li>• Materials</li> <li>• Biodiversity, land use and ecology</li> <li>• Greenhouse Gas Emissions</li> </ul>
Sustainable Buildings	All Council buildings to be developed and delivered in accordance with the reviewed Sustainable Building Policy in 2016/17, and Increase utilisation of existing Council owned buildings

**4. Scope**

This policy applies to all Council owned and/or managed infrastructure assets that are either under the direct operational control of the Council or under the control of lessees and licensees. It requires the integration of ESD within the planning, design and construction of new, upgraded and renewed assets and the maintenance and operations of existing assets.

**5. Roles & Responsibilities**

The Director, Environment, Recreation and Infrastructure is responsible for ensuring the intent of this Policy is achieved.

The Manager Sustainability and Transport is responsible for Policy development, evaluation/review and periodic updates;

The Manager City Assets and Projects is responsible for deployment of the Policy in the delivery of capital works, operations and maintenance of Council’s infrastructure;

The Manager Commercial Services is responsible for capturing the objectives of the Policy within new building lease agreements where applicable; and

Relevant Service Area Managers that deliver services with assets are required to consider demand management approaches to service delivery and where new or upgraded assets are deemed necessary, support the integration of ESD in capital budget submissions.



## 6. Implementation, Monitoring, Evaluation & Review

This Policy will be implemented through the integration of ESD principles described in the project management of new, renewed and expanded infrastructure, and in the delivery of infrastructure operations and maintenance activities. A Sustainable Infrastructure Procedure will detail Bayside's ESD approaches regarding project management documentation, procurement templates, lease and license agreements and operations and maintenance standard operating procedures.

The effectiveness of the implementation of this Policy will also be addressed in the Sustainable Infrastructure Procedure and will be assessed by performance against the Policy objectives described above and the following Policy Statement. Monitoring and evaluation of performance outcomes will be assessed against the targets in Council's ESF, as shown in section 3.

The Policy will be reviewed on a four year cycle to determine the impact of the Policy in achieving sustainable infrastructure outcomes.

## 7. Policy Statement

- Council will assess the risks and potential impacts of climate change in the location and construction of infrastructure, e.g. projected sea level rise, and increased frequency of extreme weather events.
- Council will reduce the consumption of energy and increase energy efficiency in the design and operation of infrastructure.
- Council will reduce the consumption of potable water, increase water efficiency, and improve the quality of discharged wastewater and stormwater in the design and operation of infrastructure.
- Council will reduce waste to landfill from construction, demolition and ongoing infrastructure operations, and design infrastructure to avoid waste generation.
- Council will utilise more environmentally sustainable materials to minimise the environmental impact of in design, construction and maintenance activities, consistent with Council's Procurement Policy.
- Council will consider the 'whole of lifecycle' cost of materials in the design, construction and operation of infrastructure, including material production, transport, use and disposal.
- Council will utilise a variety of sustainability ratings tools and standards applicable to guiding asset design and specifying construction and operational activities to maximise the performance and minimise the ecological footprint of Council's infrastructure.

Descriptions of how Council will achieve each Policy Statement are provided in Attachment 1.

The Sustainable Infrastructure Procedure will provide details on the applicable sustainability rating tools and standards and specifications for their use. These include tools such as: GreenStar, Built Environment Sustainability Scorecard (BESS), Nationwide House Energy Rating Scheme, (NatHERS), National Australian Built Environment Rating System (NABERS), and the Infrastructure Sustainability Rating Scheme (ISCA) rating tool. Due to the speciality of some Council assets, and the ongoing development of rating tools, this list is not prescriptive and other standards, including Council's own, may need to be developed in some cases. These tools may change as the various tools evolve and new tools are developed.

### 7.1 Resourcing of ESD Implementation

Council will implement this Policy with all Council owned and/or managed infrastructure as opportunities arise during the construction of new, renewed or expanded infrastructure. Council will also implement this Policy during operations and maintenance by integrating ESD at the earliest

possible stage of the project/activity to reduce capital costs of retro-fitting ESD initiatives and optimise ongoing operational savings.

Specifically, this will occur by:

- Implementing all improvements that incur no additional cost during maintenance and renewal using normal budget allocations for the service or project (e.g. replacing incandescent light bulbs with energy efficient bulbs) ;
- Implementing improvements that have a payback in operational savings of 10 years or less by funded sustainable building elements in capital and non-capital budgets;
- Implementing improvements specifically aimed at sustainable infrastructure enhancement by allocating funding in the annual budget (e.g. installation of photovoltaic cells);
- Allocating adequate maintenance budgets so traditional elements can be replaced by more efficient elements and so that the ESD elements of projects can be maintained into the future, and
- Providing adequate resources for monitoring the performance of the implementation of the Policy and the associated Procedure.

## **7.2 Managing Demand and Behaviour Change**

The utilisation of existing infrastructure must be maximised through the promotion and planning for shared use of Council's assets. This will be an effective means of reducing demand for additional new infrastructure to meet service needs.

The need for new assets identified by Service Area Managers must consider the following criteria as part of their service planning:

- Alternative non-asset means of delivering the services has been evaluated;
- Available capacity and options for re-configuration within existing infrastructure have been reviewed, and
- The impacts (environmental, financial and social) of new or expanded assets.

Council will provide Council staff and tenants or operators of Council owned and/or managed infrastructure with information and advice in environmentally sustainable procurement, 'green office' practices and behavioural change programs to assist in implementing ESD measures where appropriate, which will be detailed in the Procedure.

## **7.3 Lease and license provisions for ESD**

Licences and leases will be re-negotiated when renewed to ensure that Council's assets are managed and operated in an environmentally sustainable way, to both achieve Council's performance standards for ESD and meet Council's measurable targets for environmental performance. In addition, Council will negotiate with lessees for environmentally sustainable outcomes that benefit both parties, in implementing improvements in premises under existing, long-term leases.

Such improvements to lease/license conditions will be informed by the sustainability ratings tools discussed in Section 7 and detailed in the Sustainable Infrastructure Procedure, and Council's measurable targets for environmental performance.

## 8. Related documents

<b>Policies</b>	Service Driven Asset Management Policy Leasing Policy Procurement Policy
<b>Strategies</b>	Service Driven Infrastructure Asset Management Plan – Buildings Service Driven Infrastructure Asset Management Plan – Drainage Service Driven Infrastructure Asset Management Plan – Roads Service Driven Infrastructure Asset Management Plan – Open Space Environmental Sustainability Framework 2016 Climate Change Strategy 2012 Carbon Neutral Action Plan (under development) Integrated Water Management Strategy (under development) Recycling and Waste Management Action Plan (under development)
<b>Procedures</b>	Sustainable Infrastructure Procedure (under development) Budget Preparation Guidelines
<b>Guidelines</b>	

## 9. Definitions & Abbreviations

<b>Term</b>	<b>Meaning</b>
BESS (Built Environment Sustainability Scorecard)	Building design assessment tool used in Victoria to show how a proposed development demonstrates sustainable design at the planning stage.
ESD (Ecologically sustainable design)	Australia's <i>National Strategy for Ecologically Sustainable Development (1992)</i> defines ecologically sustainable development as: 'using, conserving and enhancing the community's resources so that ecological processes on which life depends, are maintained and the total quality of life, now and in the future can be released'.
Green Star rating tool for infrastructure design	Green Star is a comprehensive, national voluntary rating system that evaluates the environmental design and construction of infrastructure. It is a weighted numerical rating system that includes an accreditation program. Green Star was developed by the Green Building Council of Australia, a not for profit organisation dedicated to developing a sustainable property industry
ISCA	Infrastructure Sustainability Rating Scheme
NABERS	National Australian Built Environment Rating System - Measurement tool that compares the operation performance of buildings
NATHERS	Nationwide House Energy Rating Scheme

**Please note:** This policy is current as at the date of approval. Refer to Council's website ([www.bayside.vic.gov.au](http://www.bayside.vic.gov.au)) or staff intranet to ensure this is the latest version.

## Descriptions of each policy statement

**Council will assess the risks and potential impacts of climate change in the location and construction of infrastructure, e.g. projected sea level rise, and increased frequency of extreme weather events,** through the following actions:

### Buildings:

- Identifying areas of inundation from predicted probable sea level rise by 2100 and designing building works within this constraint.
- Considering impacts of thermal stress on building occupants during extreme heat wave conditions.

### Drainage:

- To consider higher receiving water levels from probable predicted sea level rise by 2100 for flood mitigation performance in the design of all new and renewed drainage pits and pipes.
- To use all drainage projects as opportunities to demonstrate Integrated Water Management (IWM) principles.

### Roads:

- Identifying areas of static (new established sea level) and periodic (from storm surge and flooding from extreme rainfall events) inundation from predicted probable sea level rise by 2100 for the design of new and reconstructed roads.
- Use of recycled quarry products and low carbon emission products in road works.

### Open Space:

- Parkland and oval surfaces to be irrigated with stormwater harvesting water sources where possible,
- Maximising Infiltration of stormwater within the landscape to improve passive irrigation of vegetation using IWM principles,
- Revegetation projects to select indigenous vegetation species tolerant of drought and heat wave conditions.

**Council will reduce the consumption of energy and increase energy efficiency in the design and operation of infrastructure,** through the following actions:

### Buildings:

- Passive design to maximise the use of solar heating, natural ventilation and cooling and natural light;
- Roof and wall insulation to be incorporated to support passive design and minimise the capacity of active thermal control systems
- Installation of renewable energy sources, such as solar hot water and PV systems with battery storage where required;
- Spaces requiring thermal control to be designed using thermal performance modelling and air conditioning/HVAC systems will be high energy star rated (min 4.0 star); and
- Spaces requiring lighting to use energy efficient luminaires such as LEDs and smart controls activated by motion and light sensors.

### Roads:

- Illumination of streets and lanes by energy efficient luminaires such as LEDs and smart controls activated by motion and light sensors.

#### Open Space:

- Illumination of passive areas of parks, reserves and sportsgrounds by energy efficient luminaires such as LEDs and smart controls activated by motion and light sensors. Opportunities to use energy efficient lighting of active areas to be explored during all projects.

**Council will reduce the consumption of potable water, increase water efficiency, and improve the quality of discharged wastewater and stormwater in the design and operation of infrastructure, through the following actions:**

#### Buildings:

- Plumbed rainwater harvesting tanks for non-drinking water supply;
- Selecting water efficient (min. 4 star) appliances, such as shower heads, taps and toilets;
- Incorporating Water Sensitive Urban Design features into drainage systems, such as rain gardens and stormwater harvesting devices (where appropriate demand is identified);
- Building works involving landscaping features to select hardy native plant stock and irrigation systems to be automated for rain shut-down.

#### Drainage:

- Maximising Infiltration of stormwater within the landscape to reduce volume of low flows entering Port Phillip Bay from the underground drainage network using IWM principles,
- Increasing treatment opportunities and technologies to improve the quality of stormwater entering Port Phillip Bay from the underground drainage network,

#### Roads:

- Employing best practice erosion and sediment management on road reconstruction sites,
- Using alternative sources to potable (drinking-quality) water in construction and maintenance activities, where possible,
- Incorporating Water Sensitive Road Design (WSRD) into streetscape designs so that runoff treatment occurs at the source and is prevented from entering the underground drainage network and Port Phillip Bay.

#### Open Space:

- Parkland and oval surfaces to be irrigated with stormwater harvesting water sources where possible,
- Maximising Infiltration of stormwater within the landscape to improve passive irrigation of vegetation,

**Council will reduce waste to landfill from construction, demolition and ongoing infrastructure operations, and design infrastructure to avoid waste generation through the following actions:**

#### Buildings:

- Buildings where garbage, paper, recyclables and green organic wastes are generated to be serviced with source separated collection facilities that are designed to complement the spatial layout and usage of the building.

#### All Asset Types:

- Construction documentation to include waste minimisation plans that require a separation of building waste for reuse or recycling.

**Council will utilise more environmentally sustainable materials to minimise the environmental impact of in design, construction and maintenance activities, consistent with Council's Procurement Policy, through the following actions:**

All Asset Types:

- The relevant sections of Council's Procurement Policy will be applied to ensure more environmentally sustainable materials are utilised in all asset types.
- Assessment of more environmentally sustainable materials will be applied in the choice of materials.

**Council will consider the 'whole of lifecycle' cost of materials in the design, construction and operation of infrastructure, including material production, transport, use and disposal through the following actions:**

All Asset Types:

- Application of the relevant sections of Council's Procurement Policy will be applied to ensure consideration of 'whole of lifecycle' costs in all asset types.

**Council will utilise a variety of sustainability ratings tools and standards applicable to guiding asset design and specifying construction and operational activities to maximise the performance and minimise the ecological footprint of Council's infrastructure.**

As stated in the Policy, the Sustainable Infrastructure Procedure shall provide details on the applicable sustainability rating tools and standards and specifications for their use.

These include tools such as: GreenStar, Built Environment Sustainability Scorecard (BESS), Nationwide House Energy Rating Scheme, (NatHERS), National Australian Built Environment Rating System (NABERS), and the Infrastructure Sustainability Rating Scheme (ISCA) rating tool.

Due to the speciality of some Council assets, and the ongoing development of rating tools, this list is not prescriptive and other standards, including Council's own, may need to be developed in some cases. These tools may change as the various tools evolve and new tools are developed.