

Waste and Recycling for Commercial and Industrial Land Use and Development

Better Practice Guidance



1 What's in this guide?

This guide has been developed as a resource to assist architects, building designers, developers, building managers, waste management staff and consultants, land use planners and local councils to help businesses incorporate effective waste management and recycling systems into all stages of a development's design and operation.

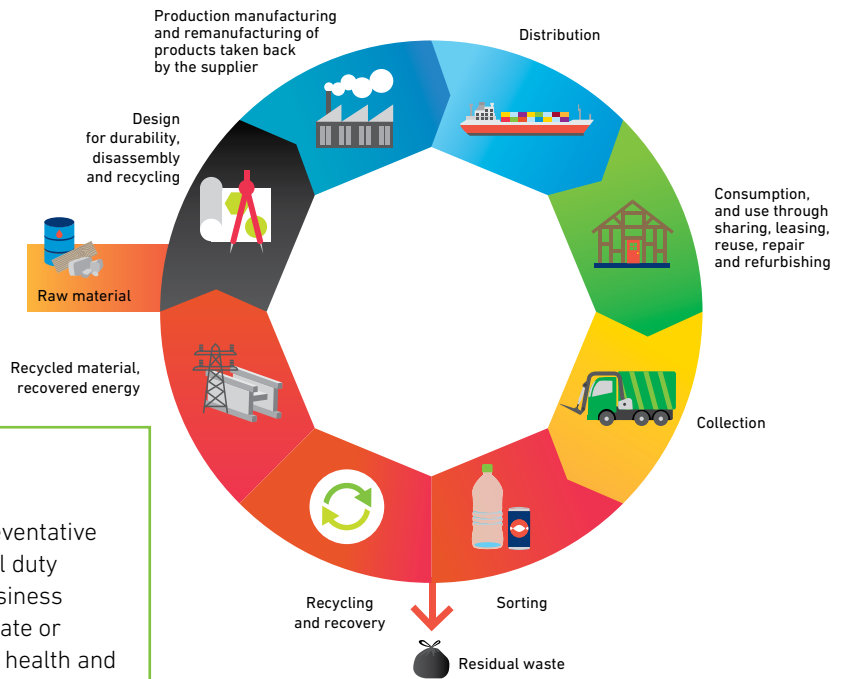
Guidance is provided on the design, management and ongoing operation and maintenance of waste and recycling systems in commercial and industrial (C&I) land uses and development. Guidance is included to support the preparation of waste and recycling management plans and planning permit applications. It is intended to be a helpful tool for businesses such as (but not limited to):

- › Offices (including medical centres)
- › Shops (including department stores and retail outlets)
- › Industry (including manufacturing)
- › Accommodation (including residential aged care facilities)
- › Warehouses
- › Food and drink premises (including hospitality, restaurants and cafes)

This introductory guidance does not cover all aspects associated with waste and recycling for C&I uses, and it is essential to consult local councils, waste managers and land use planners regarding any specific requirements for waste and recycling services and facilities.



The Circular Economy



General Environmental Duty

The *Environment Protection Act 2017* has a preventative focus and introduces a general environmental duty (GED). The GED requires every person and business to take reasonably practicable steps to eliminate or otherwise reduce the risks of harm to human health and the environment from waste and pollution.

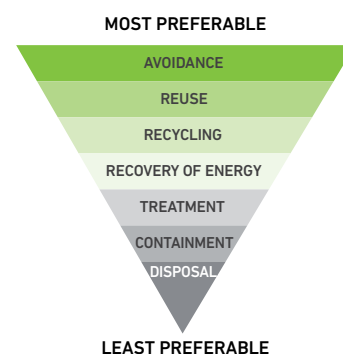
Did you know?

- It's important to reduce contamination (e.g. incorrect materials being placed in with recyclable materials) so that materials don't lose value and can be readily recycled.
- If waste and materials are not managed appropriately, they can pose great risks to human health, the environment and waterways.
- Businesses are required to manage their risks under the [General environmental duty \(GED\) | Environment Protection Authority Victoria \(epa.vic.gov.au\)](https://www.epa.vic.gov.au).
- The *Circular Economy (Waste Reduction and Recycling) Act 2021* (the *Circular Economy Act*), provides for mandatory sorting of waste and recycling materials by certain entities or businesses. The Victorian Government will consult with C&I businesses on the development of these rules. [Circular Economy \(Waste Reduction and Recycling\) Act 2021 \(legislation.vic.gov.au\)](https://www.legislation.vic.gov.au)
- The *Circular Economy Act*, also allows for Victoria's introduction of a Container Deposit Scheme (CDS) in 2023 which will reward Victorians with a 10-cent refund on eligible containers.
- The storage, transport, treatment and disposal of any hazardous waste from your business may be subject to policies and regulations under the *Environment Protection Act (2017)*, and that it is illegal to dispose of e-waste to landfill. Contact the Environment Protection Authority for details: [How to manage industrial waste | Environment Protection Authority Victoria \(epa.vic.gov.au\)](https://www.epa.vic.gov.au).
- [Single-use plastic drinking straws, cutlery, plates, drink stirrers, cotton bud sticks and expanded polystyrene food service items and drink containers were banned from sale and supply in Victoria from 1 February 2023.](https://www.epa.vic.gov.au)
- C&I operators can engage with the Regional Circular Economy Plans. [Regional circular economy plans | Victorian Government \(www.vic.gov.au\)](https://www.vic.gov.au)

Key Principles

Waste and recycling systems should:

- Be designed in line with the 'principles of the 'Waste Hierarchy' to reuse or recycle materials in preference to disposal as set out in the adjacent diagram.
- Consider options to improve efficiencies and reduce waste (circular economy principles).
- Maximise source separation and recovery of recyclable materials.
- Be designed to appropriately manage on-site waste and recycling systems, including safe handling, storage and collection.
- Plan for appropriate occupational health and safety.
- Be intuitive and easy to use.
- Include contingency planning in order to avoid stockpiling, which can increase fire risks.
- Mitigate any potential health and amenity impacts (e.g. vermin, noise or odours).



2 Better Practice Guidance

2.1 Options to improve efficiencies and reduce waste

All products and materials have a life cycle, beginning with how they are manufactured, distributed, used, and then reused or recycled. Each stage offers opportunities to think about how products and materials can be managed more sustainably. For further information, see the Victorian Government's circular economy policy, [Recycling Victoria: a new economy and Circular Economy \(Waste and Recycling\) Act 2021](#), which will support Victoria's transition to a more sustainable circular economy. A circular economy approach includes maximising the use of recycled content.

State Government support for the recycling sector

The Victorian Government provides a number of funding opportunities aimed at increasing recycling. It is recommended that applicants review the [Sustainability Victoria website](#) for current grants and funding options that may be available.

Circular Economy Business Innovation Centre

This initiative has been developed to support business productivity, reduce waste and accelerate innovation in the transition towards a circular economy. For circular economy related events, programs and funding opportunities, see [Circular Economy Business Innovation Centre](#).

Developing programs and schemes

Develop education and information resources for workers and contractors about the benefits of waste avoidance and understanding the true cost of waste and materials.

Encourage supplier take back schemes, e.g. for packaging, containers and crates to be reused.

Develop programs to facilitate the back-loading of materials, simultaneous unloading and loading - as well as reusing packaging where appropriate.

Buy green (sustainable) goods

Talk to your suppliers about using environmentally friendly products or materials. Buying recyclable or eco-friendly products are often the same price but better for the environment and can be easier to dispose of.

Sustainable procurement

Procuring goods and services with sustainability principles in mind presents an opportunity to provide more value to an organisation by enabling communication between purchasers, suppliers and stakeholders, and by encouraging innovation. For waste and recycling, it presents opportunities

for business to be more sustainable with the use of resources. (For further information see [Victoria's social procurement framework Building a fair, inclusive and sustainable Victoria through procurement](#), (Victorian Government, April 2018) and Municipal Association of Victoria's (MAV) current [Best Practice Procurement Guidelines](#).

How can your business recycle more?

For further information on how your business can recycle more materials see [Recycle or reduce waste in a business](#).

Commercial & Industrial synergies

It is recommended that C&I uses and development consider and plan for synergies between waste producers, reprocessors and material product end users. For example, bottle manufacturers could use plastic wastes generated by industry, and composting facilities can process organics wastes generated from food manufacturing. Where these uses are sited within proximity, this can encourage C&I land uses and operators to work in synergy and save money and resources on associated transport costs.

This can be achieved by working with industry groups and associations. For example, Dandenong, in Melbourne's east, is becoming a precinct for plastics, with materials recycling facilities, plastics processing and manufacturing all being located in the vicinity. For further assistance see [Sustainability Victoria's Buy Recycled Directory](#).

As part of subdivision planning and design of C&I estates, consideration should be given to easements and rear access-ways between properties to facilitate materials exchange between businesses.

Viable recyclable collections

A recycling service for a common material (e.g. cardboard or organics) may be more feasible if several small businesses collect the material at a common location and use one service provider. Small businesses, particularly at industrial estates, can collaborate with other local businesses to collect greater, more economically viable quantities of materials. An appropriate storage and collection area would need to be identified that is accessible to all businesses.

Demolition and Construction Stages

Site management and construction plans should be prepared and include measures that encourage diversion of construction waste for recovery and greater use of recycled content in construction.

2.2 Examples of sustainable businesses and projects



Burwood Brickworks Shopping Centre, Frasers Property – City of Whitehorse

Burwood Brickworks Development has a 6 Star Green Star Design rating and self-sufficient qualities include; 100% renewable energy, 100% repurposed rainwater (stormwater and water within the buildings is captured, treated onsite and repurposed back within the building for irrigation), 99% of construction waste diverted from landfill, and an impressive 2500sqm rooftop urban farm.



Railway sleepers made from recycled plastic, Duratrack Pty Ltd

Duratrack's sleepers last three times longer than traditional sleepers and contain a mix of recycled materials, including: polystyrene and agricultural plastic waste (cotton bale wrap and vineyard covers).



Mullum Creek Development, Haar Architecture

For an example regarding sustainable site and waste management plans, the Mullum Creek Development vision is based on the core principles of environmental sensitivity and sustainability.



Charles Sandford Woodturning & Joinery – Darebin Sustainable Businesses

This wood turning and joinery business has optimised all processes to ensure environmental sustainability.



Moon Rabbit Café & Bulk Foods – Darebin Sustainable Businesses

This hospitality business has implemented a number of sustainability initiatives towards achieving zero waste; and as a result, received the Sustainability Award at the 2019 Darebin Community Awards.

Some initiatives include:

- On-site worm farms to manage food waste.
- Agreement with suppliers to use re-useable cloth bags for bread delivery packaging.

More stories

For more recycling and circular economy related success stories see: Resource Recovery Infrastructure Fund.

3 Preparing an application for a planning permit (waste and recycling)



Developing a new facility or changing the use of an existing commercial or industrial facility may trigger the need for a planning permit. Early in the design stage, it is recommended that applicants contact the relevant council to determine whether there are specific local planning scheme measures or standard planning permit conditions in relation to waste and recycling.

State planning policy sets out objectives to reduce waste and maximise resource recovery to reduce reliance on landfills and minimise environmental, community amenity and public health impacts (Victoria Planning Provisions (VPP) clause VPP clause 15.01-2 and 19.03-5S.).

To assess how a specific proposal responds to these objectives, councils may require information about how waste and recycling requirements applicable to the development have been addressed. This may include any relevant waste and recycling considerations outlined in the relevant planning scheme.

Design and development measures to support Better Practice Standards, include:

- ▶ ensuring sufficient space is allocated to separate waste and recyclable materials, and provide appropriate storage
- ▶ providing safe and effective access and egress for waste and recyclable material collections.
- ▶ design measures to minimise impacts on the neighbourhood and the environment, including from odour, noise, runoff, litter, dust and oil.
- ▶ use of recycled and reusable materials in building construction and undertake adaptive reuse of buildings, where practical (VPP clause 15.01-2).

In addition to land use planning considerations, the storage, transport, treatment and disposal of any clinical and/or hazardous waste may be subject to policies and regulations under the Environment Protection Act (2017).

It is recommended that applicants contact Environment Protection Authority Victoria in relation to management of industrial waste, and WorkSafe Victoria in relation to management of dangerous goods.

Waste and recycling streams

The type and quantity of waste and recycling will depend on the type of development and nature of the use. Separation of materials should be provided so they can readily be collected for reuse or disposal. For example, a warehouse with packaging and storage, may generate greater volumes of plastics and cardboard, and a food manufacturer would generate greater volumes of food waste (organics).

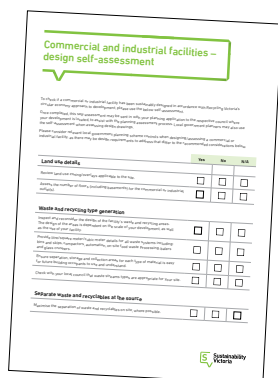
Waste and recycling generation rates calculator

Sustainability Victoria has developed an [online calculator](#) to help estimate the volume of waste and recycling generated. This will assist to determine the number of bins and storage areas required for various commercial and multi-unit developments. Where the eventual land uses are not known, estimations and examples of likely land uses relevant to the zone should be used.

4 Minimum Better Practice Standards

4.1 Waste & Recycling Management Plans

Waste and recycling management plans (WRMP) should be prepared for C&I developments to demonstrate how a development can reduce waste and maximise resource recovery and support management of operational risks. Sustainability Victoria's *Waste and Recycling Management Plan Checklist* ensures the main issues for waste management and recycling are considered, and will need to be provided with the WRMP.



For sites being developed for C&I uses where the future tenant or business is not yet known, a WRMP is still necessary. This can account for estimated future waste and recycling generation rates and space requirements, as well as incorporate other generic waste management features, such as access and egress to waste and recyclable storage areas, bunding and runoff containment and amenity considerations (noise and odour).

Contact your council for details on the availability of collection services and whether there are any specific requirements to be met. For example, some councils have limits on the distance they will enter a building or site to collect bins.

Additional information can be found here: [Waste management plan for commercial and industrial facilities](#)

Whether the land use involves private collections or utilises council's services, a WRMP will need to be prepared in both instances.

A WRMP may also be a planning permit condition or licence requirement issued by the EPA. For facilities that generate high volumes of waste or handle hazardous materials a WRMP should be completed by a suitably qualified professional, such as a waste management engineer or waste management planner.

4.2 Waste and recycling separation and storage

Consider the following site requirements to ensure that the set up of waste and recycling streams facilitate maximum resource recovery.

- ▶ Storage space provided that is large enough to store at least two days' worth of waste and recyclable materials, based on appropriate estimates.
- ▶ Separate storage of liquid and chemical wastes[^] (e.g. oils from restaurants or chemicals from industry).
- ▶ Refrigerated garbage rooms may be needed where large quantities of organic wastes are generated.
- ▶ Clinical or medical waste should be placed in specialised containment bins and collected by specialised/authorised services.
- ▶ Clearly defined and appropriately signed storage areas for relevant waste and recyclable materials.
- ▶ Storage areas should be designed to allow safe and effective access and egress for collection vehicles and users of the storage area.
- ▶ The site and design shall also align with EPA Publication: [Management and storage of combustible recyclable and waste materials - indoor storage guideline](#).
- ▶ Storage areas should be located close to the collection points to avoid manual handling during waste collection.
- ▶ Commercial premises such as food processing, cafes and restaurants, may generate large amounts of food waste.* Therefore, appropriate storage and collection areas, or alternative organics management options**, such as anaerobic digestion, dehydrators, composting or bio-digester (e.g., Green Cone) or Waste to Energy should be considered, where appropriate.

[^]Note that liquid wastes will need to be managed in accordance with EPA Victoria Publication 1698, *Liquid storage and handling guidelines*.

*Mobile Garbage Bin (MGB) for organics should not exceed 240L due to the weight of food waste.

**Note that alternative organics management options may require a development licences from the EPA.

4.3 Land use specific considerations



Industry / Manufacturing

- Include contingency planning to avoid potential stockpiling of materials, which can increase fire risks.
- Any liquid or hazardous wastes are required to be stored, collected and transported in accordance with EPA Victoria requirements.
- Refrigerated garbage rooms where large quantities of organic wastes are generated.
- Consider options to improve efficiencies and reduce waste, by adopting circular economy principles.
- Kitchens, tea rooms and food preparation service areas are to be designed with sufficient space to collect and recycle food waste and other recyclables.
- Agricultural or other industries that generate high volumes of organic materials, should consider alternative processing options, such as: dehydrators to reduce volumes, composting or Waste to Energy.



Restaurants / Cafes and Food Processing

- Dedicated areas that provide sufficient space to collect and recycle food waste and organic material is required.
- Separate storage of liquid waste in line with EPA Victoria requirements.
- It's recommended that establishments promote / remind customers and staff about the CDS and encourage its use, for eligible containers.



Office

- Storage of paper and cardboard is to be in a dry, vermin-proof area. Paper and cardboard is not to be stored for more than two weeks to prevent breeding of vermin.
- Rooms or areas designated for printing or photocopying are to provide space for the interim storage of waste paper (in MGBs up to 240 litres) and used toner and/or printer cartridges for recycling.
- Each tenancy and common area should have centrally located bin stations for each stream to remove the need for individual waste bins under desks.
- If the development includes more than 20,000 m2 of office space, an area for a cardboard baler or compactor is to be provided within or in close proximity to the waste and recycling storage area.
- Kitchens, tea rooms and food preparation service areas are to be designed with sufficient space to collect and recycle food waste and other recyclables.



Retail

- For premises with high volumes of cardboard waste, consideration should be made to allocate space for a cardboard compactor, baler, shredder or similar volume-reduction equipment.
- If the development includes more than 2,000 m2 of retail space, an area for a cardboard baler or compactor should be provided within or in close proximity to the waste and recycling storage area.
- Additional space or reduction systems for handling and storing plastic shrink-wrap should be allocated, where applicable.
- Kitchens, tea rooms and food preparation service areas, are to be designed with sufficient space to collect and recycle food waste and other recyclables.



Mixed Use Developments (Residential and Commercial)

- Complete separation of residential and commercial waste and recyclables is required.
- Any commercial waste and recycling pathways should avoid residential corridors and thoroughfares.
- Should be designed to meet the Mixed Use Development Section as specified in SV's *Better Practice Guide for Waste Management and Recycling in Multi-unit Developments*.



Medical or Clinical

- This type of waste will often need to be separated from other wastes and disposed of at an authorised facility.

For further guidance see EPA requirements on managing clinical and related waste

<https://www.epa.vic.gov.au/for-business/find-a-topic/manage-clinical-and-related-waste>

Note: For applicable developments, provision should be made for any bottles and containers to be collected and recycled in accordance with the Container Deposit Scheme.

4.4 Material Streams

All material streams should be separated, stored and recycled where practicable. Common material streams generated from commercial and industrial uses and developments are listed below:

Paper and cardboard [^] (inc packaging materials) Rigid & Soft	Hazardous waste	Aggregates, masonry and soil
Plastics	E-waste	Mixed recycling
Polystyrene	Textiles	Waste water
Organics (inc food waste, green organics and timber)	Tyres and rubber	
Glass	Medical / clinical waste	
	General rubbish	
	Metals	

[^]Note there are different grades of cardboard that may need to be separated depending on collection contractor requirements.

Further Information

To access the *Circular Economy (Waste Reduction and Recycling) Act 2021* visit www.legislation.vic.gov.au

To access the Victorian Government's circular economy policy, **Recycling Victoria – a new economy** visit www.vic.gov.au

To access Sustainability Victoria's **Better Practice Guide for Waste Management and Recycling in Multi-unit Developments** visit www.sustainability.vic.gov.au

To access Sustainability Victoria's **Guide to Better Practice at Resource Recovery Centres** visit www.sustainability.vic.gov.au

For business guidance relating to the **general environmental duty** visit www.epa.vic.gov.au

For business guidance relating to **storage of large volumes of combustible recyclable and waste materials** visit www.epa.vic.gov.au

For business guidance on how to **lower environmental impacts** visit www.epa.vic.gov.au

For business guidance on **liquid storage and handling** visit www.epa.vic.gov.au

For tools to help you create a safe and healthy workplace visit **WorkSafe Victoria** – www.worksafe.vic.gov.au

Encycle Consulting Pty. Ltd. (2012). **A study into commercial & industrial (C&I) waste and recycling in Australia by industry division**. Department of Sustainability, Environment, Water, Population and Communities, Western Australia. www.environment.gov.au

This guide does not supersede or replace information provided in State or local planning requirements. When designing a development, it is recommended that applicants and developers consult with council staff, such as engineers, waste managers and land use planners regarding any specific local requirements.

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