NSW Waste and Circular Infrastructure Plan

Chapter 1: Meeting our residual waste and food and garden organic waste needs

Acknowledgement of Country

The NSW Environment Protection Authority acknowledges the Traditional Custodians of the lands where we work and live. We celebrate the diversity of Aboriginal peoples and their ongoing cultures and connections to the lands and waters of NSW.

We pay our respects to Elders past, present and emerging and acknowledge the Aboriginal and Torres Strait Islander people that contributed to the development of this NSW Waste and Circular Infrastructure Plan.

We advise this resource may contain images, or names of deceased persons in photographs or historical content.

NSW Waste and Circular Infrastructure Plan

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Minister's message

NSW has a waste and recycling crisis. If we don't act now – by building new infrastructure and driving down our residual waste – red bins will not be able to be collected in Sydney and parts of regional NSW by 2030.

Over the last 10 years, the amount of waste recycled in NSW has flatlined at an average of 66% of waste generated across the state. The waste that we don't recycle – around 7.7 million tonnes in 2022–23 – is sent to landfill for disposal.

If we don't act to increase recycling in NSW, the volume of waste disposed of at landfill will grow with waste generation. We know this cannot be sustained.
Hard decisions have to be made now.

If this landfill shortfall arises, waste collection and disposal services will be disrupted. This will result in an intolerable increase in the amount households pay for the collection of their red-lid kerbside bins, in the middle of a cost-of-living crisis. It will also trigger a slowdown of critical infrastructure projects, including the development of new homes that are urgently needed to address the current housing shortage. This could lead to a $23 billion loss to the NSW economy and a significant decline in employment. To avoid higher waste collection and disposal costs, people may also stockpile or illegally dump their waste, polluting our environment and threatening human health.

We have six years to make sure this doesn't happen.

The NSW Government's first priority is to keep waste out of landfill and in use for as long as possible. This means generating less waste where we can by changing the way products are made and increasing reuse and repair. It also means ensuring the waste that can't be avoided is recycled.

The government has already taken steps this year, including by passing the FOGO mandates to ensure organic waste is recycled.

As we work to move away from landfill and towards a more circular economy, it is critical that options for the safe management of waste that isn't recycled remain available in the meantime. This will ensure households and businesses in NSW are still able to have their red-lid bins collected – an essential service for everyone.

For this reason, I am pleased to release the first chapter of the *NSW Waste and Circular Infrastructure Plan* – the first strategic plan for waste infrastructure in NSW's history. It sets out how NSW Government agencies will work together with industry and with local councils to:

1. streamline planning processes for extending the lifespan of existing priority landfills or expanding them, where doing so is necessary to avoid immediate landfill shortages in Greater Sydney
2. enable energy from waste, where doing so will reduce reliance on landfill, build resilience in waste management, and maintain protections for human health and the environment

3. strengthen how we strategically plan for waste and recycling infrastructure to meet the needs of Greater Sydney's growing populations.

The actions in this plan will ensure every household and business in Greater Sydney will continue to have their red-lid bins collected while we transition to a circular economy. But we won't stop here.

We know that, to increase recycling rates, we need to make sure enough recycling infrastructure is available. We also know that regional NSW faces its own unique waste management challenges. We will release future chapters of the *NSW Waste and Circular Infrastructure Plan* on these issues later in 2025.

NSW is facing a waste crisis

Greater Sydney is on track to run out of landfill within the decade

Waste generation in NSW is increasing. Between 2015–16 and 2022–23, waste volumes across the state rose from 18.7 million tonnes to 22.4 million tonnes.[1] This trend is expected to continue, with waste volumes projected to reach nearly 37 million tonnes in 2041–42.[2]

In 2022–23, around 66% of the waste generated in NSW was recycled.[3] The remaining 7.7 million tonnes of unrecycled waste – known as residual waste – was disposed of at landfill. As waste volumes continue to grow, households and businesses will continue to need to safely dispose of their residual waste. So it is essential that services like the collection of red-lid kerbside bins continue to be delivered. These services rely on the availability of waste infrastructure such as landfills. **But landfills servicing Greater Sydney – home to 66% of NSW's population – are expected to reach capacity within the decade.[4]**

Once these landfills close, waste generated by households and businesses in Greater Sydney will have to be transported to other landfills, most of which are in regional NSW or interstate. **The cost of doing this is expected to hike the household fee for a red-lid bin service by 20%.**[5] And if construction and demolition (C&D) waste can't be disposed of in Greater Sydney's landfills, C&D activity may be delayed or even cancelled. This will disrupt the delivery of critical infrastructure projects such as new housing developments. That in turn **is expected to result in an estimated $23 billion reduction to the NSW economy, a loss of 11,550 jobs, and a 1.7% fall in average wage rates.[6]**

Faced with higher costs for getting waste collected and disposed of, people may stockpile or illegally dump their waste. As options for managing residual waste dwindle, the risk of this behaviour rises. So too does the risk of essential waste services being disrupted, when access to remaining landfills and transportation routes are cut off by floods, fires or other emergencies.

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[1] NSW Environment Protection Authority 2024, NSW waste and recycling performance data for the 2022–23 financial year

[2] NSW Department of Planning, Industry and Environment 2021, NSW Waste and Sustainable Materials Strategy 2041 – Stage 1: 2021 – 2027

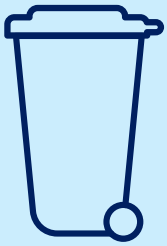
[3]NSW Environment Protection Authority 2024, NSW waste and recycling performance data for the 2022–23 financial year

[4] Arcadis 2024, 'NSW Residual Waste Infrastructure Needs Assessment (2024 – 2040)', prepared on behalf of the NSW Environment Protection Authority

[5] Marsden Jacob Associates 2024, 'Residual Waste – Disposal: Augmentation analysis', prepared on behalf of the NSW Environment Protection Authority

[6] Marsden Jacob Associates 2024, 'Greater Sydney – Non-Putrescible Landfill cost impact analysis', prepared on behalf of the NSW Environment Protection Authority

Greater Sydney's waste infrastructure shortfalls



Putrescible waste

This is mostly household waste that contains organic material.

Currently, four landfills accept the putrescible waste from Greater Sydney's red-lid kerbside bins.

Due to the scheduled closure of three of these landfills, including Lucas Heights Landfill, Greater Sydney's putrescible waste capacity will **fall short of demand by 1.1 million tonnes per year by 2030.**

This will increase to a shortfall of 1.4 million tonnes per year by 2040.

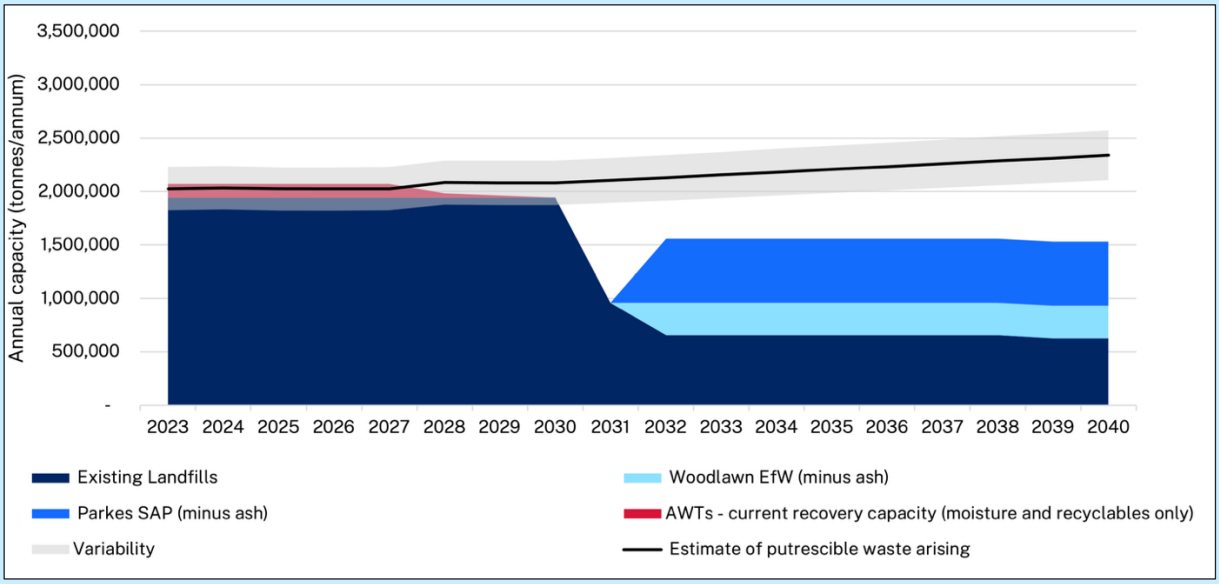


Figure 1: Annual capacity of existing and planned putrescible waste infrastructure servicing Greater Sydney

Non-putrescible waste

This is typically generated by construction and demolition activity.

Currently, 13 landfills accept Greater Sydney's non-putrescible waste.

Elizabeth Drive Landfill and Eastern Creek Landfill are expected to close within the next 5-7 years. This will result in Greater Sydney's non-putrescible waste capacity **falling short of demand by 2 million tonnes per year by 2031.**

This will increase to a shortfall of 2.4 million tonnes per year by 2040.

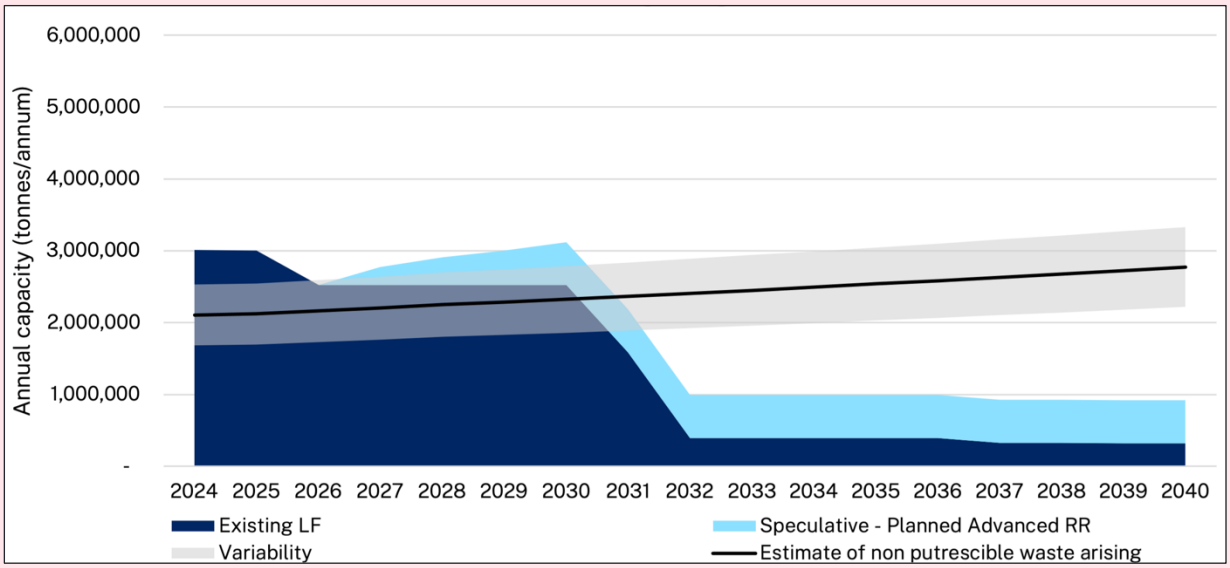


Figure 2: Annual capacity of existing and planned non-putrescible waste infrastructure servicing Greater Sydney

Transfer stations and intermodal facilities are where waste collections are combined, compacted, and loaded onto long-haul road vehicles or freight trains and transported at scale to processing or disposal sites.

There is not enough waste transfer infrastructure in Greater Sydney to meet the demands of a growing population. In addition, low competition in the waste and resource recovery market makes it harder for local councils to negotiate lower costs for waste collection and processing services.

What are the consequences of these infrastructure shortfalls if action is not taken?

Waste is **moved interstate** or to the **regions** at **high expense**

Increased cost of waste disposal for rate payers and businesses

Increased risk of **illegal dumping** and **environmenal harm**

Higher risk to the continuity of **waste services** for NSW in **extreme events**

Why do we need a NSW Waste and Circular Infrastructure Plan?

Our priority is to keep material out of landfill and in use for longer

Landfilling waste should be a last resort. In line with the waste hierarchy (**Figure 3**), disposing of waste to landfill is a resource management option we should take only when all other options to avoid, reuse, recycle, or recover value from materials have been exhausted.

A lot of the waste that is currently landfilled in NSW doesn't need to be. For example, food waste can be recovered, processed, and beneficially used as compost. Yet it still makes up more than one-third of the material in the average NSW household's red-lid kerbside bin.

The NSW Government is working to keep more material out of landfill and in use for longer.

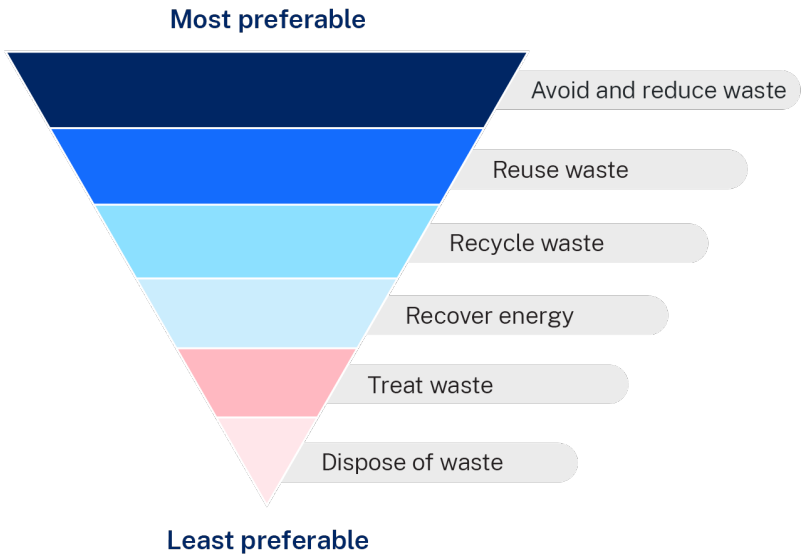


Figure 3: The waste hierarchy, a set of priorities for the efficient use of resources that underpins the objectives of the *Waste Avoidance and Resource Recovery Act 2001*

In March 2025, the NSW Parliament passed legislation requiring food organic and garden organic (FOGO) waste to be separately collected from certain businesses from July 2026 and from households from July 2030. These mandates are expected to divert up to 950,000 tonnes of household FOGO waste from landfill each year.[7]

We are also looking at ways to:

- scale up reuse and repair activity in NSW by developing the first *NSW Reuse and Repair Strategy*
- reduce plastic waste and increase plastic recycling under the *NSW Plastics: The Way Forward* action plan
- strengthen the commercial incentive to recycle waste rather than landfill it, by finalising a review of the NSW waste levy.

As we prioritise effort higher up the waste hierarchy and enable a circular economy, the amount of residual waste we generate will decrease, reducing our reliance on landfill over time. But Greater

[7] Arcadis, 2024. 'NSW Organics Mandates: Research and modelling from the MSW and C&I Organics collection mandates', prepared on behalf of the NSW Environment Protection Authority

Sydney has only six years left to head off the approaching waste crisis. While we increase waste avoidance, reuse, and recycling, we need to keep available ways to safely manage residual waste, so households and businesses can continue to have their red-lid bins collected.

Given the urgency of Greater Sydney's landfill shortfalls, chapter one of this infrastructure plan focuses on meeting the region's immediate residual waste management needs. It also outlines how strategic planning of FOGO transport and processing infrastructure can help local councils to procure waste services that deliver good value for money.

Future chapters of the *NSW Waste and Circular Infrastructure Plan* will look at addressing the unique waste management challenges in regional and remote areas of NSW and increasing investment in reuse and recycling infrastructure.

We have heard your calls for action

In 2021 the NSW Government released the *NSW Waste and Sustainable Materials Strategy 2041* and the *NSW Waste and Sustainable Materials Strategy: A Guide to Infrastructure Needs*. The two documents identified significant gaps in waste processing and disposal infrastructure and signalled where investment by the private sector and local government was needed to meet future demand – including for residual waste capacity in Greater Sydney.

On behalf of the NSW Government, the NSW Environment Protection Authority (EPA) has engaged with the waste and resource recovery sector, local councils, and other NSW Government agencies to understand what is preventing the private sector and local government from investing in critical waste infrastructure.

We heard that the planning process for waste infrastructure is rigorous to ensure all the impacts of a proposal are correctly assessed. But this means the process can be long and complex for proponents to navigate, giving rise to potentially high costs and investment risks. We also heard that a lack of strategic planning for waste infrastructure – planning like that done for electricity and water – has made it **difficult to secure suitably located land and the social licence required for infrastructure development**.

NSW Government agencies need to work together, quickly, to break down these barriers to waste infrastructure investment. This will ensure there is enough capacity in Greater Sydney to safely manage residual waste as NSW transitions to a circular economy.

Collaboration to understand and address our residual waste infrastructure needs

The NSW Government has conducted a comprehensive residual waste infrastructure needs assessment for NSW for 2024 to 2040.

This assessment updates the findings of the *NSW Waste and Sustainable Materials Strategy 2041* and *NSW Waste and Sustainable Materials Strategy: A Guide to Infrastructure Needs* and unpacks the circumstances that are leading to NSW's critical infrastructure shortfalls. It investigates these issues using historical and projected waste generation data, landfill void surveys, development planning proposals, public information and qualitative data from targeted stakeholders.

The EPA also established the NSW Government interagency working group for waste infrastructure, to identify barriers to new infrastructure developments and ways to overcome them. The working group comprises:

- Property Development NSW
- Infrastructure NSW
- Department of Planning, Housing and Infrastructure
- Office of Local Government
- Transport for NSW
- Regional Growth Development Corporation
- Department of Primary Industries and Regional Development.

This working group continues to operate, to ensure whole-of-government alignment with this plan's objectives and actions.

The EPA also:

- ran two targeted workshops with industry, local councils and joint organisations of councils to test the *NSW Waste and Circular Infrastructure Plan's* draft actions and seek feedback on how effective these actions would be in addressing NSW's residual waste management challenges
- met with waste infrastructure operators to better understand their plans for extending or expanding existing landfill sites and the challenges associated with doing this.

This plan sets out how we will break down barriers to waste infrastructure planning

The *NSW Waste and Circular Infrastructure Plan* (this plan) is informed by a robust analysis of our residual waste infrastructure needs and engagement across government and with the private sector. It sets out a whole-of-government approach to reducing the barriers to investing in and planning critical waste infrastructure.

The *NSW Waste and Circular Infrastructure Plan* (this plan) outlines how the Government will:

1. **streamline planning processes to unlock more capacity at existing priority landfills, where it is necessary to avoid imminent landfill shortfalls facing Greater Sydney**
2. **update the energy from waste regulatory framework to better enable energy from waste infrastructure, where doing so will reduce our reliance on landfill and increase the resilience of NSW's waste management system while maintaining strong protections for communities and the environment**
3. **strategically plan for the waste infrastructure needed for essential waste services to be reliably and affordably delivered to Greater Sydney's growing populations and new developments.**

In setting out how and why the NSW energy from waste framework will be updated, this plan also supersedes the *NSW Energy from Waste Infrastructure Plan*.

To support the implementation of this plan, the NSW Government will establish an Advisory Committee for **strategic waste infrastructure.** The committee will be made up of:

- representatives from local councils
- members of the waste and resource recovery sector
- technical experts

Its role will be to:

- share members' local knowledge and perspectives on our waste infrastructure needs
- identify pain points that are preventing planning, investment and development of critical waste and recycling infrastructure
- identify and explore opportunities to accelerate industry investment in waste and recycling infrastructure, prioritising options in line with the waste hierarchy
- identify and provide feedback to the NSW Government on risks facing the implementation of the *NSW Waste and Circular Infrastructure Plan* and its objectives.

Streamlining planning processes to fast-track expansion of existing landfills

The issue

Existing landfills may have enough capacity to offset shortfalls in residual waste capacity for putrescible waste

Our priority is to reduce reliance on landfill and increase waste avoidance, reuse and recycling. Building new landfills to address Greater Sydney's imminent waste crisis is a last resort. However, extending the lifespan or expanding the capacity of currently operating landfills may provide an interim solution for managing our residual waste in the region as we transition to a circular economy.

We have heard from the operators of several strategically important landfills servicing Greater Sydney that these landfills could be extended or expanded to address the expected shortages in landfill capacity for putrescible waste. **Figure 4** shows the possible extra capacity.

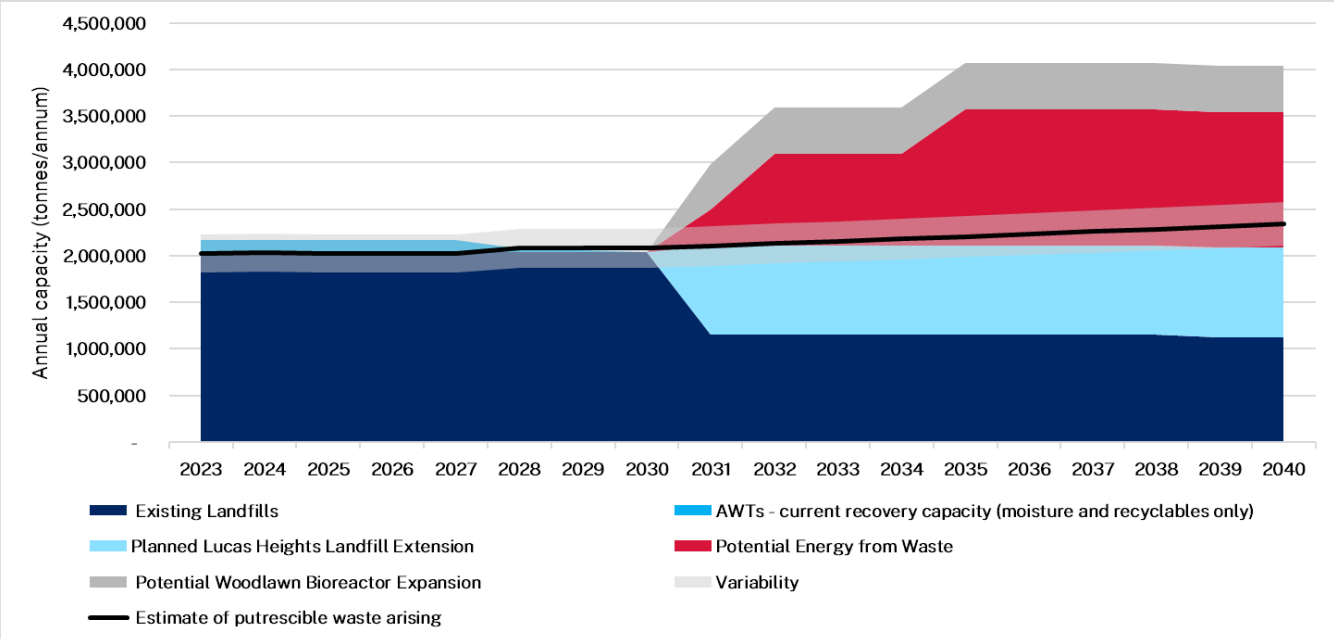


Figure 4: Annual capacity of planned and proposed putrescible waste infrastructure, including possible extensions or expansions of existing landfill infrastructure and new energy from waste facilities

Likewise, we have heard from operators of non-putrescible landfills servicing Greater Sydney about proposals that could extend capacity of Sydney's non-putrescible waste management system through to the middle of the next decade. **Figure 5** shows this additional capacity.

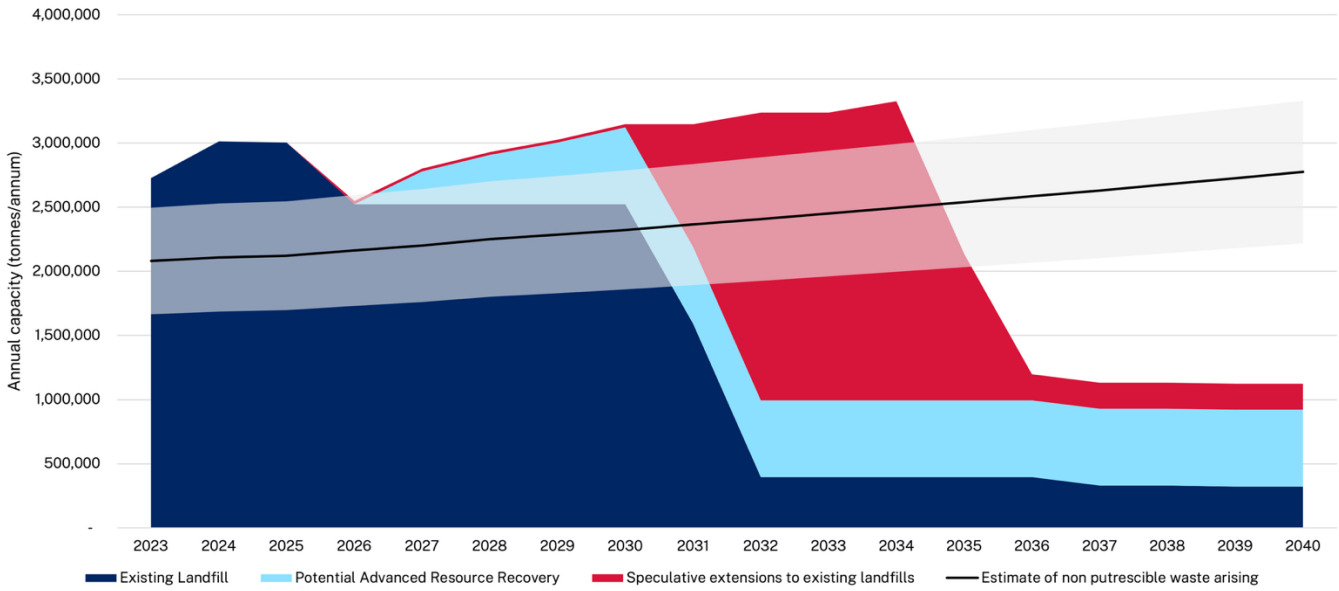


Figure 5: Annual capacity of planned and proposed non-putrescible waste infrastructure, including possible extensions or expansions of existing landfill infrastructure and new advanced resource recovery facilities

But this additional capacity isn't guaranteed; any changes to existing landfills and new facilities will first need planning approval.

Lengthy and complex planning processes are deterring investment in critical waste infrastructure

We've heard from the waste and resource recovery sector that lengthy and complex planning processes are deterring investment in critical waste infrastructure.

Waste infrastructure proposals can fall into one of several different planning approval pathways, each with their own impact assessment requirements, timeframes for public consultation, and development consent authorities.

Within each pathway, proponents need to illustrate that their proposal has assessed and managed all its environmental impacts. But a proposal's assessment requirements can vary from project-to-project and site-to-site depending on the issues identified by NSW Government agencies. As a result, development applications often do not adequately address all the relevant issues raised by agencies and require more work to be done, causing delays.

These issues can create a high degree of uncertainty regarding how long a planning approval process will take and how much it is likely to cost. And if a development application is withdrawn or declined, the proponent can't recover the time and money they have invested in securing land for waste infrastructure development and in preparing feasibility studies, environmental impact assessments, and the development application itself.

We have heard that the complexity around planning approval processes, and the related financial risk, deters investment in both expanding existing waste infrastructure and building new infrastructure.

Our solutions

The NSW Government will take immediate action to help make the most of existing landfill capacity.

We will:

- streamline our assessment of priority applications for existing landfills
- establish an agency liaison group to identify issues raised by Government agencies early
- connect proponents to the correct part of government, to help them navigate their planning pathway.

This will give industry more confidence to invest time in modifying existing development applications to expand or extend the lifetime of currently operating landfills.

If these actions are not sufficient to avoid shortfalls in landfill capacity, the Government will also consider reopening previously closed landfills.

We will also investigate ways to divert reusable Virgin Excavated Natural Material (VENM) and Excavated Natural Material (ENM) from being disposed in landfill.

Table 1 summarises these proposed actions.

Table 1: Proposed actions to make greatest use of existing landfill capacity

Proposed action	Description of action	Timeframe
Establish a streamlined planning process for existing priority landfills	**Department of Planning, Housing and Infrastructure (DPHI)** will establish a streamlined planning assessment process for the assessment of priority applications to extend or expand existing landfills. DPHI will issue the Secretary's Environmental Assessment Requirements (SEARs) in 18 days, if required, and assess applications in 80 days. **DPHI** will establish an agency liaison group to provide a whole-of-government approach to the assessment of individual priority applications for existing landfills. This group will identify early issues with proposals and provide technical feedback on the assessment approach during preparation of the Environmental Impact Statement (EIS) and DPHI's assessment of the application. **The Environment Protection Authority (EPA)** will also streamline its development assessment and licensing processes to ensure it provides consistent and timely review of all waste infrastructure development assessments.	Start from late 2025
Rapidly assess applications for existing priority landfills	The NSW Government will rapidly assess priority applications for existing landfills to avoid critical landfill shortfalls expected from 2030. **DPHI** will rapidly assess priority landfill extension or expansion proposals in line with the new streamlined process, outlined in the action above.	As needed

Proposed action	Description of action	Timeframe
Consider reopening closed landfills to improve resilience in Greater Sydney's waste management network	If extending or expanding currently operating landfills is not sufficient to offset expected shortfalls in putrescible waste capacity, the NSW Government will consider reopening previously closed landfill sites to build additional capacity and resilience in Greater Sydney's waste management system. The NSW Government will also assess opportunities to utilise these sites as transfer stations and organics processing facilities. If necessary, **DPHI** will rapidly assess new proposals for reopening sites in line with the new streamlined process, outlined in the action above.	Consider reopening landfill sites completed by 2028
Establish a waste infrastructure concierge to provide planning advice and support to applicants	The **NSW Government** will establish a waste infrastructure concierge to provide proponents with planning support for their proposed waste infrastructure applications. **Property & Development NSW (PDNSW), DPHI** and the **EPA** will provide expert advisers to provide advice to proponents to support preparation of high quality development applications that meet the required standards.	Start from early 2026
Alleviate pressures on existing landfills	**Waste Asset Management Corporation (WAMC) and the EPA** will investigate opportunities to maximise the reuse of virgin excavated natural material (VENM) and excavated natural material (ENM) produced through construction and demolition activities, including the feasibility of establishing VENM/ENM holding yards.	Investigation completed by end of 2025

Building resilience by enabling energy from waste

The issue

Reliance on landfill has reduced the resilience of our residual waste management system

Currently, most of Greater Sydney's residual waste is disposed of at just four landfills:

- Lucas Heights Landfill in Sutherland
- Woodlawn Eco-Precinct in the Goulburn Mulwaree local government area
- Elizabeth Drive Landfill in Kemps Creek
- Eastern Creek Landfill in Blacktown.

Relying on a handful of landfills creates a significant risk to the ongoing delivery of essential waste services such as the collection of red-lid kerbside bins. If access to these sites were disrupted (for example, by flooding or scheduled closure), the rest of the waste management network servicing Greater Sydney would be unable to make up for the loss in residual waste capacity. This could lead large volumes of residual waste without a safe pathway for disposal.

This risk is large, as we can see from the expected impacts on households, businesses, and the NSW economy should the landfill shortfalls that are fast approaching Greater Sydney arise. Extending or expanding the capacity of currently operating landfills in Greater Sydney doesn't remove these risks; it just delays them.

Creating new options for managing NSW's residual waste can reduce our reliance on landfills and make our waste management system more resilient. If access to one landfill site is cut off during emergencies such as fires or floods, or if natural disasters generate extra waste, we can handle residual waste in other ways. Essential waste management services will be able to keep going.

The thermal treatment of waste to recover energy is one option that is used around the world to reduce the volume of waste going to landfill. It can safely manage residual waste in a more useful way than disposing of it in landfill, producing energy in the form of heat, electricity or fuel that can then be used to power a range of activities. Thermally treating waste can also be an important step in resource recovery processes, such as in the production of biochar or biofuels from clean streams of organic waste.

In line with the waste hierarchy, energy from waste is the last opportunity to recover value from waste rather than landfill it. But, like landfill, energy from waste should only be used when there are no other, higher-order, waste management options available, such as reuse or recycling. So while energy from waste can support the transition away from landfill, it is not our end goal.

The EPA has finalised its review of the energy from waste framework following extensive public consultation on the *NSW Energy from Waste: Options Paper*, released in February 2025. Informed by

the feedback received through this process, the EPA will update the energy from waste regulatory framework to build resilience in our residual waste management network while maintaining strict safeguards for human health, the environment, and the circular economy. This includes addressing the below challenges to creating opportunities for safe and beneficial energy from waste activities in NSW.

Appropriate energy from waste precincts are needed to build resilience and enable the transition away from landfill

Under the Protection of the Environment Operations (General) Regulation 2022, large-scale energy from waste activities are restricted to regional precincts defined by maps published in the NSW Government Gazette. While no large-scale energy from waste facilities have been approved for development in NSW to date, two proposals in these precincts are mature and progressing:

- Veolia's Woodlawn Advanced Energy Recovery Centre (ARC) within the Southern Goulburn Mulwaree Precinct
- Tribe Infrastructure Group's proposal for a facility within the Parkes Special Activation Precinct.

However, analysis commissioned by the EPA to assess NSW's residual waste management needs has shown that even if these two proposals are approved, their cumulative capacity would not be sufficient to supplement the imminent shortfalls in landfill capacity facing regions across the state. Two proposals for large-scale energy from waste facilities in NSW have been identified:

- Cleanaway-led consortium proposal at the former Wallerawang power station site in the Lithgow region
- Remondis-led proposal at its Tomago Resource Recovery facility in the Hunter region

But these sites currently sit outside of the four designated energy from waste precincts and are therefore unable to be progressed.

Current exclusions and exceptions from the energy from waste framework are preventing certain low risk, environmentally beneficial activities

The Protection of the Environment Operations (General) Regulation 2022 defines 'thermal treatment' in Chapter 9, Part 4 of the Regulation to identify what activities are subject to the energy from waste regulatory framework and prohibited outside of energy from waste precincts, unless a specific exception applies. Some activities are excluded from this definition, such as anaerobic digestion and composting. This means they can take place anywhere in NSW in accordance with relevant environmental and planning laws and policy. This allows greater value and environmental benefit to be derived from waste materials that would otherwise be landfilled.

But we have heard that current exclusions are too restrictive and don't account for new, safe opportunities to harness thermal treatment to deliver circular outcomes. For example, the thermal treatment of materials such as uncontaminated agricultural waste to produce biochar or biogas, or of end-of-life tyres to recover steel and carbon black, are restricted to energy from waste precincts. The large transport distances between where these wastes are generated and energy from waste precincts makes their thermal treatment unviable and, as a result, significant volumes of potentially valuable material are instead sent to landfill for disposal.

The Protection of the Environment Operations (General) Regulation 2022 also sets out exceptions to the prohibition of energy from waste activities outside of energy from waste precincts. These exceptions enable existing facilities to replace a less environmentally sound fuel, such as coal, with energy from waste to power on site industrial or manufacturing processes in certain circumstances. The use of any fuel, including waste-derived fuels, are regulated under the Protection of the Environment Operations (Clean Air) Regulation 2022, which sets out air emissions standards for NSW to reduce the emission of harmful pollutants and are among the most stringent in Australia.

We have heard advances in waste-derived fuel technology would allow large manufacturing and industrial facilities to move away from using traditional fuels, such as gas, which are financially volatile and can be more carbon intensive. It would also enable energy recovery from waste materials that would otherwise be landfilled. However, the energy from waste framework prohibits these activities outside of energy from waste precincts except in limited circumstances. As most large manufacturing and industrial facilities are located outside of these precincts, in most cases industry is currently unable to use alternative fuel sources that are safely derived from waste even if they deliver better environmental outcomes.

Comparing our energy from waste emissions limits with global best practice

We recognise that one of the community's biggest concerns about energy from waste is the potential risks from pollutants in air emissions. The European Union's 2010 Industrial Emissions Directive (IED), supported by the 2019 Best Available Techniques Reference Document (BREF) for waste incineration sets energy from waste emission limit standards that align with best available practices and technologies in Europe. The EPA has reviewed the EU standards against the NSW Clean Air Regulation Group 6 and is of the view that they are comparable.

PFAS, and the safe management of energy from waste residues

The EPA has also been reviewing the current knowledge in relation to potential PFAS in emissions from energy from waste facilities. This is an emerging area of study internationally, however studies to date show that a large proportion of PFAS is destroyed during thermal treatment, and that risks from PFAS in emissions are low and acceptable. The EPA will continue to require comprehensive human health and environmental risk assessments to be undertaken for PFAS, based on desktop assessment and using the latest information available (and using reference facility data where this can be reasonably obtained).

We are also working with our counterparts in Australian jurisdictions to develop an agreed approach to the regulation of Incinerator Bottom Ash and Air Pollution Control Residue.

Our solutions

This part of the *NSW Waste and Circular Infrastructure Plan* supersedes the *NSW Energy from Waste Infrastructure Plan*. It sets out how the EPA will update the NSW energy from waste regulatory framework, including the Protection of the Environment Operations (General) Regulation 2022 and the NSW Energy from Waste Policy Statement, to:

- enable additional energy from waste opportunities where it is appropriate to do so
- enhance protections for communities and their environments by ensuring NSW emissions standards are aligned with global best practice
- continue to protect and enhance the circular economy, by ensuring only the right wastes are thermally treated, and in the right way.

These updates will be supported by action to ensure the safe management of residues produced by energy from waste activities.

Ensuring standards and controls are aligned with global best practice

We have heard concern from the community about the regulation of energy from waste operations. Like any heavy industrial activity, appropriate controls must be in place to ensure the best outcomes for human health and the environment. In NSW, the EPA ensures these protections are in place through its environment protection licensing framework and relevant environmental legislation. Licence conditions relate to pollution prevention and monitoring.

Setting appropriate licensing controls that are in alignment with global best practice is essential to ensuring ongoing protection of human health and the environment. The European Union's Best Available Techniques (BAT) established under Directive 2010/75/EU of the European Parliament establishes a regulatory framework for continuous monitoring of emissions and facility operations in the European Union. The BAT was adopted in 2019 following a five-year review, with EU member states required to implement controls by 2023.

This framework represents global best practice, and we will seek to implement the requirements of the BAT here in NSW through the EPA's environment protection licensing approach for energy from waste facilities.

Any development proposal to establish an industrial activity, whether it falls under the energy from waste framework in NSW or not, is also required to undergo a comprehensive planning assessment process that involves a rigorous, merit-based assessment process – including comprehensive community consultation – to assess the potential environmental and human health impacts of a proposal before it can be approved. If approved, the activity is then subject to ongoing EPA licensing requirements.

This regulatory and assessment framework is in place for all large-scale industrial processes in NSW and ensures appropriate assessment of proposals and appropriate ongoing regulatory oversight if these proposals are granted consent.

Table 2: Updates to the NSW energy from waste policy framework

Proposed action	Description of action	Timeframe
Refining where large-scale energy from waste facilities can be developed	The **EPA** will: • remove the Richmond Valley Regional Jobs Precinct from the energy from waste framework, as there has been no interest in establishing an energy from waste facility in the Precinct area • redefine the boundaries of the former West Lithgow Precinct to include the site of the former Wallerawang Power Station • create a new energy from waste precinct at Tomago To give effect to these actions, it is intended to seek amendments to the Protection of the Environment Operations (General) Regulation 2022 to remove Richmond Valley and add Tomago and Gazette a new map for the extended West Lithgow Precinct	Amendments sought in **2025**
Adjusting the definition of 'thermal treatment'	The **EPA** will adjust the definition of 'thermal treatment' in the energy from waste framework to permit specific thermal treatment processes outside of an energy from waste precinct that are low risk and provide a clear environmental benefit. This will expand exclusions from the definition to allow for processes that: • thermally treat certain agricultural waste and anaerobic digestion residues to produce biochar, and certain low carbon fuels such as biogas, biomethane or sustainable aviation fuel To give effect to these actions, it is intended to seek amendments to the Protection of the Environment Operations (General) Regulation 2022	Amendments sought in **2025**

Proposed action	Description of action	Timeframe

Adjust exceptions to the energy from waste framework	To permit the use of thermally treated products as replacement fuels in certain industrial processes, where they present low risks and are environmentally sound, the **EPA** will expand exceptions from the energy from waste prohibition to include:
	• the use of certain process engineered fuels that:
	  • are manufactured to a designed specification
	  • are not derived from municipal solid waste streams
	and where this use:
	  • occurs outside the Greater Sydney Region, noting limitations on land availability in the region
	  • is to replace gas at existing industrial or manufacturing facilities.
	The EPA will also expand exceptions from the energy from waste prohibition to include the thermal treatment of end-of-life tyres to produce oil, steel, carbon black and syngas where this occurs outside the Greater Sydney Region.
	To give effect to these actions, it is intended to seek amendments to the Protection of the Environment Operations (General) Regulation 2022.
		Amendments sought in **2025**

Ensure emissions limits and monitoring approaches are consistent with global best practice	EPA will implement European Union's Best Available Techniques (BAT) as the reference for setting Environment Protection Licence conditions for emissions monitoring approaches and facility operations. Then, after completion of proof of performance monitoring, and after 12 months of operation, the EPA will review the air emissions licence limits to ensure they reflect proper and efficient operation of plant and equipment. The outcomes of these reviews will inform any appropriate revision to licence limits.	Implementation in **2025**
PFAS assessment and management for energy from waste	The **EPA** seeks to include an addition to the PFAS National Environmental Management Plan 3.0 on assessment and management of PFAS in energy from waste. In the interim, for relevant energy from waste proposals, the EPA requires comprehensive human health and environmental risk assessments to be undertaken for PFAS, based on desktop assessment and using the latest information available (and using reference facility data where this can be reasonably obtained).	Implementation in **2025**

Proposed action	Description of action	Timeframe
Pursue an agreed approach to regulating the resource recovery of energy from waste residues	The **EPA** will establish an intergovernmental working group to develop a consistent approach to the regulation of Incinerator Bottom Ash and Air Pollution Control Residue.	Implementation in **2025**

Strategic planning to meet the waste management needs of growing populations

The issue

Strategic and whole-of-government direction is needed to plan and invest in waste infrastructure where it is needed most

Waste infrastructure in NSW is owned and operated by the private sector or local government. It is these parties' role to design and deliver waste infrastructure and waste services for the people of NSW. The Government is responsible for ensuring this infrastructure and these waste services are strategically planned to meet the needs of households and businesses across the state, now and in the future.

However, waste infrastructure planning is currently spread across several NSW Government agencies and no government entity has ultimate responsibility for ensuring adequate infrastructure is available to meet the waste management needs of Greater Sydney's growing populations.

Demands for land, housing, and transport are competing with waste management needs.

- Existing waste infrastructure is at risk of urban encroachment.
- Much of the land that is currently zoned for new waste facilities is ear-marked for housing or other infrastructure, or has existing uses that are not compatible with waste facilities.
- Transport links are a 'bottleneck' for waste collection, processing, and disposal. Most putrescible waste sent to the Woodlawn Eco-Precinct from Greater Sydney goes via the main southern railway line. It is first transferred from trucks to rail at Sydney's intermodal freight hubs at Clyde and Banksmeadow. These intermodal terminals are already operating at capacity, but the load on the Greater Sydney freight network is projected to grow further, by about 50% by 2036.[8]

These issues make it difficult for the private sector and local government to secure suitable land and the social licence needed to develop waste-related infrastructure.

The development of new landfills will only be considered once all other options are exhausted

We may be able to delay expected shortfalls in non-putrescible landfill capacity until 2035, by streamlining the assessment of proposals to extend the lifespan of currently operating landfills, (See **Figure 5**.) We are also considering other options for increasing avoidance, reuse and recycling of C&D waste, to prevent it going to landfill.

However, proposals to extend non-putrescible landfills may not be successful in the planning process, or they may not be sufficient to offset the expected shortfall in infrastructure capacity

[8] NSW Freight and Ports Plan 2018–2023, Transport for NSW

from 2035. In that case, the NSW Government will act quickly to facilitate the planning and development of new non-putrescible landfill capacity.

As discussed earlier, we've heard that the difficulties in securing suitable sites and navigating rigorous planning processes are major obstacles to investing in new infrastructure. These issues are more challenging for non-putrescible landfills, which have no State Significant Development pathway for planning approvals. This means that a proposal for a landfill that may provide enough non-putrescible waste capacity to service an entire region is currently assessed by a single local council as the development consent authority.

Strategic planning can help councils deliver value-for-money FOGO collection services

There is expected to be enough investment in FOGO processing infrastructure to meet Greater Sydney's demand. This conclusion is based on independent modelling and consultation with waste industry and local councils.

The NSW Government has enacted legislation requiring FOGO waste from households and food organics waste from businesses to be separately collected. We have heard that this has bolstered the private sector's willingness to invest in FOGO processing infrastructure. The FOGO collection mandates will increase the volume of clean FOGO material available for recovery, providing investment certainty to the waste and resource recovery sector.

The willingness to invest in FOGO processing infrastructure could be further increased by local councils contracting for FOGO collection services early i.e. before July 2030, when the new requirements for household FOGO waste collections come into effect. This would make higher volumes of FOGO materials available sooner, providing the private sector with the certainty needed to move quickly to bring FOGO processing infrastructure online.

Improving transfer station coverage will improve resilience in the system

Demands on Greater Sydney's transfer stations will also shift in response to NSW's statewide FOGO collection mandates. Waste transfer stations enable waste collections to be transported long distances cost-effectively and at scale to waste processing facilities. To ensure new collections of FOGO waste can be transported to FOGO processing facilities, existing transfer stations in Greater Sydney that currently only accept mixed putrescible waste will need to be upgraded to also accept FOGO. If this doesn't happen, swathes of Greater Sydney's north and south-west will be too far from a transfer facility, making it prohibitively costly to collect and transport FOGO.

Transfer station operators have proposed to make these upgrades, ensuring there is sufficient coverage of transfer stations in Greater Sydney that can accept FOGO (**Figure 6**). They have also offered to publicly release their prices so that local councils and waste collectors can have certainty regarding the cost of waste transportation when going to market and responding to tenders for FOGO collection services. However, upgrades to transfer stations will need to be assessed and approved through the relevant planning pathway, which – as discussed – can be a lengthy and costly process if the application is not carefully prepared in accordance with its assessment requirements.

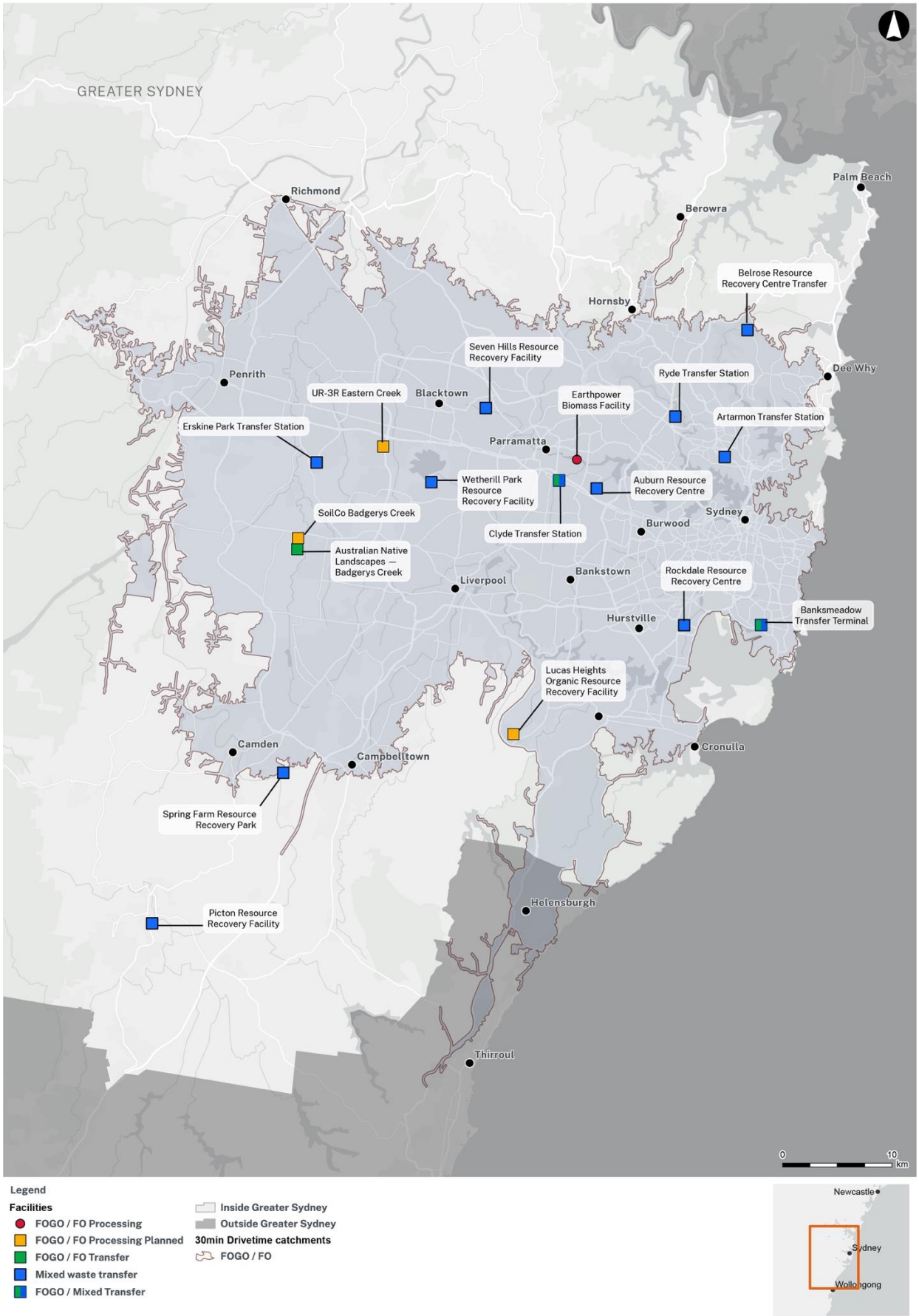


Figure 4: Existing and planned processing and transfer infrastructure that may accept FOGO waste in Greater Sydney

Most transfer stations are privately owned by a small number of large, vertically integrated service providers. As a result, in any one region of Greater Sydney, only one or two service providers operate waste collection services. Some local councils report that this limits their options when they are putting kerbside bin collection and processing services out to tender, forcing them into a 'price-taking' position where they can't negotiate for better prices. This flows through to households in the form of higher waste management charges.

The NSW Government will look for ways to help local councils procure waste services that deliver good value for money. We will also reduce barriers to entry for new market participants by streamlining waste infrastructure planning, facilitating investment in strategic waste infrastructure such as new transfer stations.

Our solutions

The NSW Government will establish Property and Development NSW (PDNSW) and the NSW Environment Protection Authority (EPA) as lead agencies responsible for strategic waste infrastructure planning and coordination over the next 50 years. These lead agencies will work with the Department of Planning, Housing and Infrastructure (DPHI), Infrastructure NSW (INSW) and other agencies to:

- strategically plan new infrastructure and
- protect existing waste infrastructure from in-fill developments on the expanding urban fringe.

These actions will include considering ways to designate waste collection services as an essential service when releasing or rezoning land for housing. This means considering access to waste services, such as the collection of kerbside bins, at each stage of the planning process for new residential developments, much as we plan for the provision of water and electricity.

If new landfills are necessary to avoid capacity shortfalls for non-putrescible waste in Greater Sydney from 2035, we will work with industry to conduct a land audit and seek expressions of interest for possible new non-putrescible waste infrastructure.

We will streamline the assessments of critically important waste infrastructure and provide better guidance on what applicants need to provide. We will also review the provisions for State Significant Development (SSD) to consider including non-putrescible waste landfills to ensure appropriate strategic decision making for new infrastructure. This will give industry more confidence to invest time and money in new waste infrastructure projects.

We will also streamline the assessment of proposals to upgrade existing, critically important transfer stations and build new, priority transfer stations in a timely manner to support the NSW Government's FOGO mandates.

Table 3 summarises our proposed actions.

Table 3: Strategic waste infrastructure planning and coordination – proposed actions

Proposed action	Description of action	Timeframe
Establish lead NSW Government agencies for strategic waste planning	**PDNSW and EPA** will be the lead NSW Government agencies responsible for strategic waste infrastructure planning and coordination. These agencies will advocate for strategically significant waste infrastructure projects, including defining what projects are priority projects, and liaise directly with industry and local councils to address issues with waste infrastructure. The role of the EPA as an independent environmental regulator will continue alongside this strategic leadership role. The **EPA** will also review the *NSW Waste and Circular Infrastructure Plan* (this plan) in 2 years, to ensure the actions under the plan are effectively breaking down the barriers to planning and leading to investment in critical waste infrastructure.	Start from early 2026
Establish a streamlined planning process for new priority waste infrastructure	**Department of Planning, Housing and Infrastructure (DPHI)** will establish a streamlined planning assessment process for the assessment of new priority waste infrastructure proposals to avoid residual waste capacity shortfalls for Greater Sydney. DPHI will issue the Secretary's Environmental Assessment Requirements (SEARs) in 18 days and assess applications in 80 days. DPHI will establish an agency liaison group to provide a whole-of-government approach to the assessment of individual priority projects. The liaison groups will identify issues early and provide technical feedback on the assessment approach when the proponent is preparing the Environmental Impact Statement (EIS) and when DPHI is assessing the application.	Start from late **2025**

Proposed action	Description of action	Timeframe
Plan for long-term waste infrastructure needs	The NSW Government will strategically plan for future waste infrastructure in Greater Sydney for the long term. This action will initially focus on new infrastructure that may be needed urgently, such as new non-putrescible landfill capacity and new transfer stations. **PDNSW** and **EPA,** in partnership with DPHI, local government and the waste industry, will undertake a lands audit to identify and designate potential sites for new waste infrastructure. These sites will include ones for: • new non-putrescible landfills where they are urgently needed • transfer stations in Greater Sydney • intermodal terminals to service Greater Sydney. As the plan is delivered, **PDNSW** will invite expressions of interest to design, construct and operate new waste infrastructure in areas with identified need.	Start in 2025
Facilitate transfer station upgrades	**PDNSW** and **EPA** will invite expressions of interest to upgrade the capability and capacity of existing transfer stations to ensure that they are appropriately designed to manage the FOGO mandates and future population growth.	Start in early 2026
Clarify planning assessment requirements and update the assessment pathways for waste infrastructure	**DPHI and EPA** will develop and publish *Waste and Resource Recovery Infrastructure Planning Assessment Guidelines*, to better articulate the assessment requirements for large-scale waste infrastructure proposals. **DPHI** will review the *State Environmental Planning Policy (Planning Systems) 2021* to consider providing large non-putrescible landfills with a State Significant Development assessment pathway. This will ensure the appropriate planning pathway for regionally significant infrastructure such as landfills.	Completed by mid-2026

Proposed action	Description of action	Timeframe
Enhance the strategic protection of new and existing waste infrastructure assets	The **NSW Government** will protect existing waste infrastructure assets from incompatible land uses, such as urban fringe expansion, and plan for new waste infrastructure needs as Sydney continues to grow. **EPA will work with DPHI** to identify existing, regionally significant waste infrastructure to be protected from land-use conflicts, such as residential development encroachment, through the implementation of the Industrial Lands Action Plan. **EPA and DPHI** will also ensure waste management needs are accounted for in new urban developments by outlining waste infrastructure needs in the Greater Sydney Region Plan. This will guide local and regional land-use planning decisions for new waste infrastructure.	Start in 2025
Enable local government's strategic planning	The **Office of Local Government (OLG)** will review and update local government procurement regulations and develop guidance materials. This will help councils achieve better outcomes from its waste management tendering, including using a wider range of suppliers.	Completed in 2026

Our next steps

The initiatives set out in chapter one of the *NSW Waste and Circular Infrastructure Plan* (this document) will help to address the imminent landfill shortfalls facing Greater Sydney. This means they will ensure that all households and businesses in the region continue to have their bins collected as we transition away from landfill and towards a circular economy.

The NSW Government will establish an Advisory Committee for strategic waste infrastructure to support the implementation of this Plan.

To make sure we are on track to achieve our objectives, we will also review our progress on the actions set out in this plan in two years.

We will also release the next chapters of the *NSW Waste and Circular Infrastructure Plan* in late 2025. These chapters will look to:

- address the unique waste management challenges facing regional and remote areas of NSW
- increase investment in reuse and recycling infrastructure to reduce landfilling of recoverable and valuable material.

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NSW GOVERNMENT