

Transport
for NSW

Waste management guideline

May 2023



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Acknowledgment of Country

Transport for NSW acknowledges the traditional custodians of the land on which we work and live.

We pay our respects to Elders' past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of NSW.

Many of the transport routes we use today – from rail lines to roads, to water crossings – follow the traditional Songlines, trade routes, and ceremonial paths in Country that our nation's First Peoples followed for tens of thousands of years.

Transport for NSW is committed to honouring Aboriginal peoples' cultural and spiritual connections to the land, waters and seas and their rich contribution to society.



Document control

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Related policy and supporting information

- [Transport Environment and Sustainability Policy](#)
- [Environment & Sustainability Management Framework](#)

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Table of contents

1.	Introduction	6
1.1	Purpose.....	6
1.2	Objectives.....	6
1.3	Scope.....	6
1.4	What is waste?	7
1.5	Waste management legislation and policy	7
1.6	Waste management principles	9
1.7	Performance targets.....	12
2.	Terminology.....	14
2.1	Waste definitions	14
2.2	Waste classification.....	14
3.	Project planning.....	16
3.1	Strategic / Concept planning stage	16
3.2	Design stage.....	16
3.3	Build stage	17
3.4	Operate / Maintain stage.....	18
4.	Licensing	19
5.	Handling and storage	20
5.1	General requirements.....	20
5.2	Location of waste storage bins	20
5.3	Road corridor stockpile management	21
5.4	Managing wastes on Transport land.....	21
5.5	Liquid wastes.....	22
6.	Resource recovery	24
6.1	Acceptable beneficial re-uses	24
6.2	Resource recovery orders and exemptions	25
6.3	Rail Ballast recycling	26
6.4	Section 143 Notices.....	26
7.	Transporting	28
7.1	General requirements.....	28
7.2	Proximity principle	28
7.3	Waste tracking	28
7.4	Waste transport licence requirements	29

8.	Records and reporting.....	30
8.1	Waste records.....	30
8.2	Waste reporting.....	30
9.	Disposal.....	32
10.	Definitions.....	33
	Appendix A: Waste planning -construction and maintenance projects.....	35
	Appendix B: Waste activity triggers for an EPL.....	37

1. Introduction

Through the [Future Transport Strategy](#) and [Transport Sustainability Plan](#) we are committed to improving environmental outcomes, by:

- enhancing resource efficiency
- reducing the environmental impacts of our projects and operations

These commitments extend to the management of waste and materials.

Transport for NSW (Transport) activities can result in the production of significant quantities of waste and excess materials. Proper waste management practices help minimise environmental and land use impacts whilst reducing project and maintenance costs.

Transport will develop circular economy values for resources by keeping products and materials in use. As we maximise our resource efficiency we can avoid unnecessary material consumption, reduce the embodied energy and carbon in our materials, and design out waste. Doing so will greatly enhance the amenity of the communities we serve.

Future Transport Strategy

1.1 Purpose

The Waste management guideline (EMF-WM-GD-0050) has been developed to assist Transport meet its environment and sustainability policy commitments and legislative obligations related to management of waste and materials.

1.2 Objectives

The objectives of this guideline are to:

- promote circular economy and best practice waste management principles
- assist in the achievement of waste related environment and sustainability targets
- assist compliance with statutory requirements relating to waste management and sustainability
- set minimum standards for waste related reporting and data capture requirements

1.3 Scope

This guideline applies to all Transport activities and its contractors.

The guideline does NOT apply to operating agencies embedded within Transport including Sydney Trains, NSW TrainLink and Sydney Metro.

1.4 What is waste?

In NSW, waste has a very broad definition and includes materials that are intended for disposal, as well as materials that are intended to be re-used or recycled. The NSW *Protection of the Environment Operations Act 1997* (POEO Act) defines waste as:

- a) *Any substance (whether solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment.*
- b) *Any discarded, rejected, unwanted, surplus or abandoned substance.*
- c) *Any otherwise discarded, rejected, unwanted, surplus or abandoned substance intended for sale or for recycling, processing, recovery or purification by a separate operation from that which produced the substance.*
- d) *Any processed, recycled, re-used or recovered substance produced wholly or partly from waste that is applied to land, or used as fuel, but only in the circumstances prescribed by the regulations.*
- e) *Any substance prescribed by the regulations to be waste.*

A substance is not precluded from being a waste for the purposes of the POEO Act, merely because it is or may be processed, recycled, re-used or recovered.

Most commonly, material becomes waste because it meets the definition in (b), above, being material, which is unwanted or surplus to the needs of a project. This is determined at the point of generation. This means that if material is excess or of no further use, it may be considered waste, even if a third party wants that material for beneficial reuse or recycling.

1.5 Waste management legislation and policy

The NSW Environment Protection Authority (EPA) administers the majority of NSW legislation relating to the management of waste. A summary of some of the key waste management legislation and its implications is provided in Table 1. This information is not exhaustive and should not be interpreted as legal advice.

Table 1: Waste-related legislation

Legislation	Description
Protection of Environment Operations Act 1997 (POEO Act)	The POEO Act promotes mechanisms which aim to protect the environment, reduce risks to human health and prevent environmental degradation. Specifies requirements for waste licensing, approvals, notices, tracking, offences and penalties.
Protection of Environment Operations (Waste) Regulation 2014 (POEO (Waste) Regulation)	This Regulation sets out provisions around the way waste is managed in terms of re-use, storage and transportation as well as reporting and record keeping requirements for waste facilities.
Environmental Planning and Assessment Act 1979 (EP&A Act)	This Act requires assessment of activities and has distinct schemes for the assessment and approval of proposals, each with their own specific requirements. Management of wastes arising from projects that require assessment under the EP&A Act should be detailed in the assessment process and form part of the approval for the project.
Waste Avoidance and Resource Recovery Act 2001 (WARR Act)	This Act promotes waste avoidance and efficient resource recovery by developing waste avoidance and resource recovery strategies for industry. Sets the preferred hierarchy for the management of waste and provides for the development of specific targets for materials reuse and recovery.

**Environmentally
Hazardous Chemical
Act 1985**

This Act provides the EPA with the authority to declare chemical substances as chemical wastes and to make chemical control orders. Hazardous wastes arising from Transport activities, such as the disposal of soils containing organochlorine pesticides, must be managed in accordance with the requirements of applicable chemical control orders.

1.5.1 National Policy

The Australian Federal Government released the Australian [National Waste Policy](#) in 2018 to provide a framework for improving waste management, recycling and material recovery activities. The policy identifies the overarching principles underpinning waste management in a circular economy including:

- waste avoidance
- improving resource recovery
- increasing use of recycled material and building demand and markets for recycled products
- better managing material flows to benefit human health, the environment and the economy
- improving information to support innovation, guide investment and enable informed consumer decisions

The [National Waste Policy Action Plan 2019](#) was subsequently produced to create targets and actions to implement the policy. These targets have now been incorporated into the [NSW Waste and Sustainable Materials Strategy 2041](#).

1.5.2 NSW Policy

The [NSW Waste and Sustainable Materials Strategy 2041](#) was developed in 2021 under the WARR Act. The strategy is focused on three areas:

- meeting our future infrastructure and service needs
- reducing carbon emissions through better waste and materials management
- building on our work to protect the environment and human health from waste pollution

Across each focus area, specific strategies are provided to achieve the adopted National Waste Policy Action Plan 2019 targets. These targets also form the basis of Transport's waste and recycling targets for construction, maintenance and operational activities.

The [NSW Government Resource Efficiency Policy](#) (GREP) aims to drive resource efficiency by NSW Government agencies and reduce NSW Government operating costs. The GREP includes a waste measure which requires annual reporting on the top three waste streams related to the [NSW whole of government waste contract \(C9698\)](#).

1.5.3 Transport Policy

Transport's [Environment and Sustainability Policy](#) provides the framework for continually improving our environmental performance. The policy sets out our commitments to undertake our activities in the interest of the greater good, moving beyond compliance, and being a genuine leader in environment and sustainability performance including, but not limited to:

- environment protection - addressing and minimising the environmental impacts of our activities to satisfy the expectations and legislative requirements of the NSW Government and community
- sustainable procurement – procuring and delivering sustainable, efficient and cost-effective transport options, including responsible supply chains
- whole of life – considering whole of life benefits and impacts from our activities across all life stages – demand/need, plan, acquire, operate/maintain and disposal
- communication – communicating openly, responsively and empathetically with our customers, partners and stakeholders on environmental matters and report on our performance

The [Future Transport Strategy](#) sets our direction of continuing to improve every part of our transport system for the benefit of customers, community and the economy. An important part of this vision involves minimising environmental impacts and specifically includes the designing out waste and keeping materials in use. An action from this strategy is to integrate sustainability baseline targets (including diverting waste from landfill) into Transport’s construction, maintenance and operations.

The [TfNSW Sustainability Plan](#) complements the Environment and Sustainability Policy and Future Transport Strategy by outlining eight sustainability focus areas and associated goals. Transport will concentrate attention and resources to these focus areas to ensure sustainability outcomes for infrastructure, services and the communities that we serve.

Improving environmental outcomes is one of the focus areas directly related to waste management. The goals for this focus area relate to developing a circular economy and reducing the environmental impacts of projects and operations. Implementing best practice waste management, designing out waste and keeping resources in use will ensure we can achieve these goals.

A key initiative of the TfNSW Sustainability Plan is the development of Sustainability Baseline Requirements which includes targets for the recovery of specific waste streams (refer to Section 1.7).

1.6 Waste management principles

Using the NSW Waste and Sustainable Materials Strategy 2041 to inform our approach to waste management and circular economy principles will increase our waste management efficiency

Transport Sustainability Report 2020-21

We are committed to managing waste and our use of resources in accordance with the principles and targets set out in the *NSW Waste and Sustainable Materials Strategy 2041* and our *Transport Sustainability Plan*. With NSW running out of space to deal with waste generation, we are transitioning from a linear to a circular economy.

We can reduce our environmental and carbon footprint by designing our buildings, infrastructure, products and precincts so that they:

- rely on fewer raw materials
- are more durable
- can be easily repaired
- use more recycled content and recovered energy

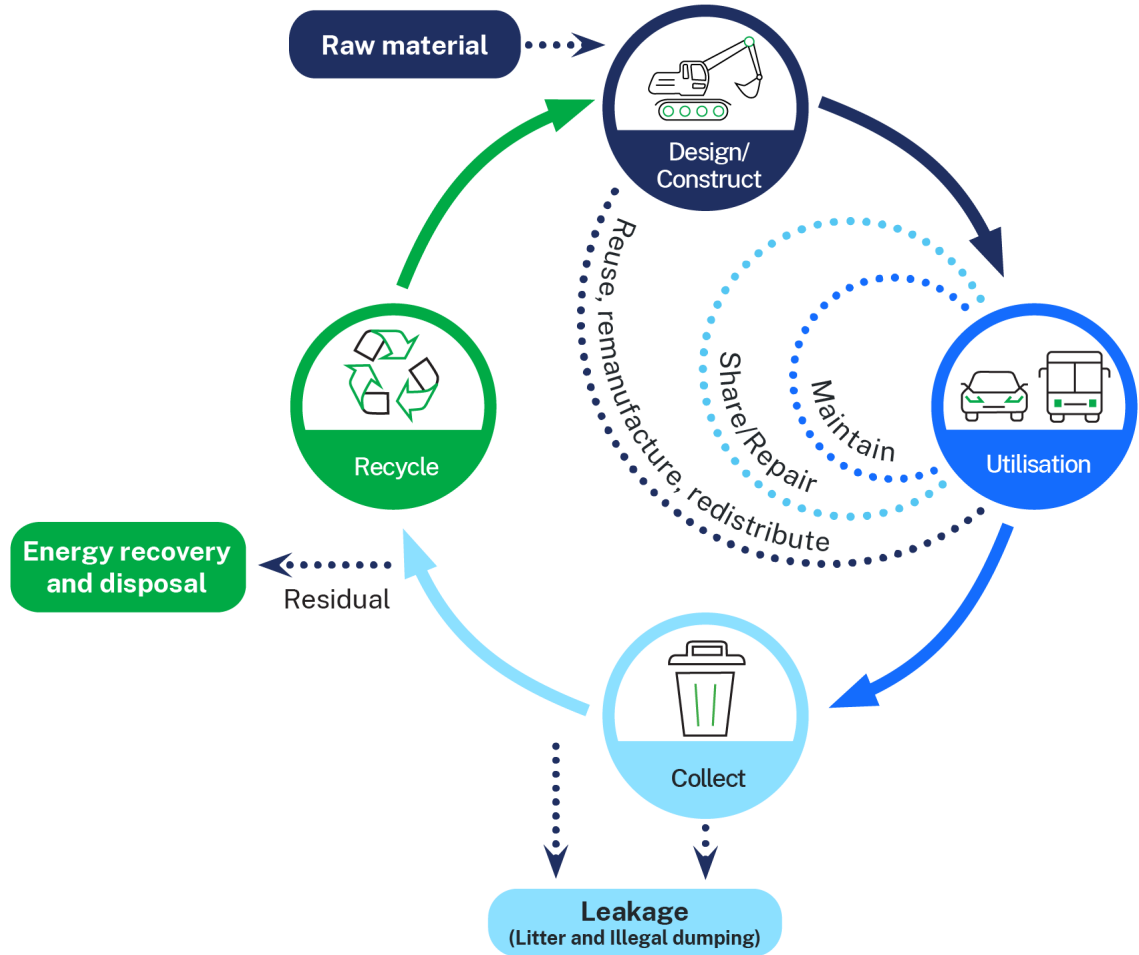
1.6.1 Circular economy

A circular economy values resources by keeping products and materials in use for as long as possible. Maximising the use and value of resources brings major economic, social and environmental benefits. It contributes to innovation, growth and job creation while reducing our impact on the environment.

NSW Circular Economy Policy Statement

At its heart, a circular economy recognises materials and products as resources that never lose their value. As already stated, Transport have adopted the circular economy approach to guide our waste and materials management. Transport can also use its purchasing power to stimulate circular innovation and demand for recycled content and recycling markets. Figure 1 graphically depicts the circular economy model as it applies to Transport activities.

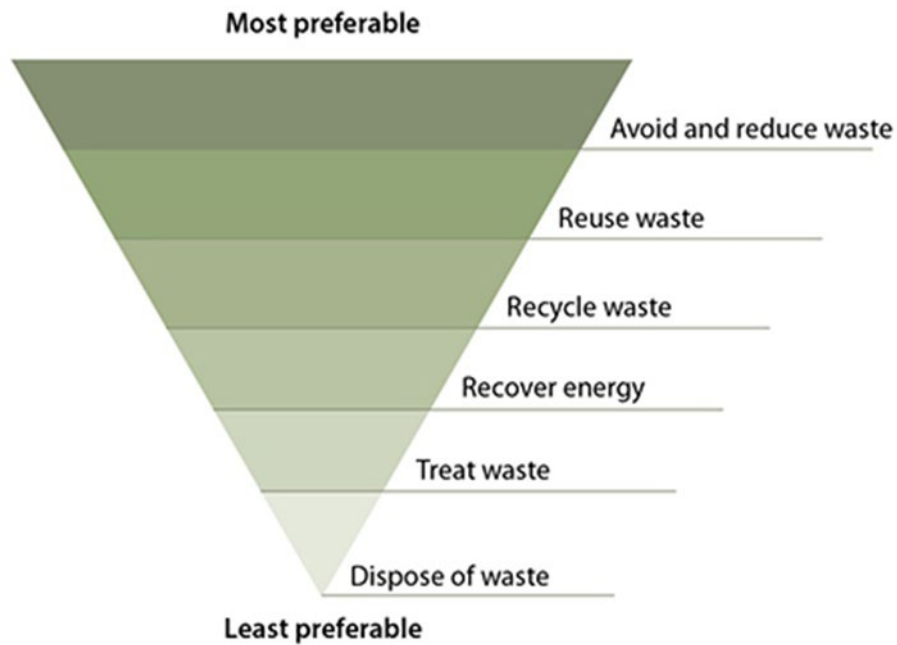
Figure 1 - Circular economy. Source: *Future Transport Strategy TfNSW*



1.6.2 Waste hierarchy

We endeavour to manage waste to conserve resources and reduce impacts associated with waste disposal. In NSW, the WARR Act supports a circular economy through the promotion of the waste hierarchy (Figure 2).

Figure 2 – Waste Hierarchy. Source: NSW EPA



The waste hierarchy prioritises waste management practices. Through the consideration of this hierarchy when undertaking our activities, we can minimise our environmental impact and support NSW's transition to a circular economy.

The construction and maintenance of road rail and related infrastructure drive substantial demand for asphalt aggregates concrete steel and soil Transport can minimise waste significantly by finding suitable uses for the by-products from our projects and by using by-products from other industrial processes to construct infrastructure

(Future Transport Strategy)

1.6.3 Asset life cycle

Asset renewal and disposal should be considered when the asset is in the earliest stages of planning

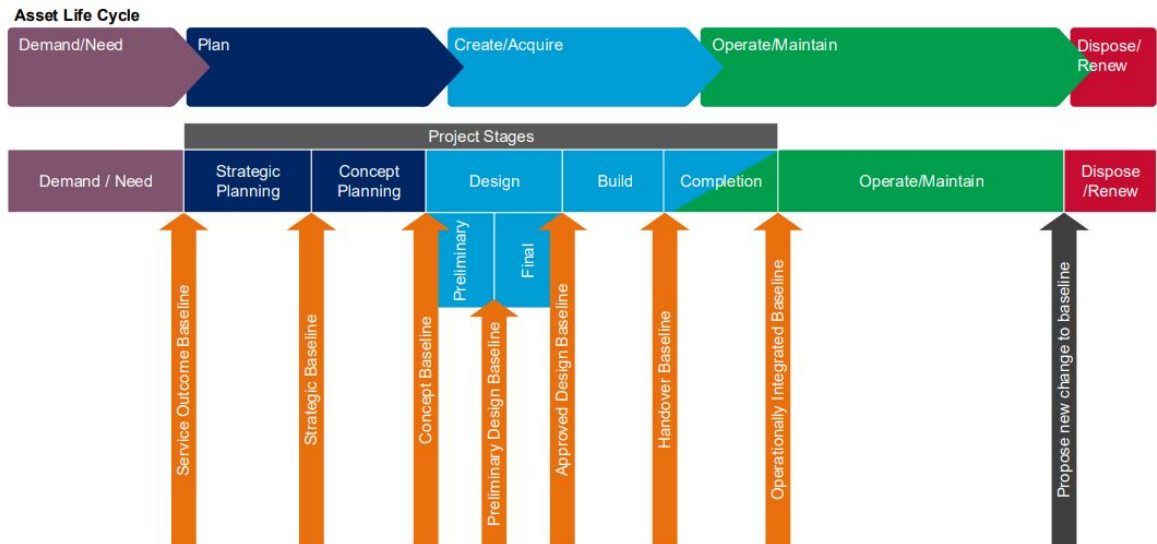
Rather than simply disposing of an asset a review should be undertaken to assess the asset for renewing repurposing or recycling external to TfNSW recycling parts of the asset and only sending assets or parts of assets to landfill as a last resort

(TfNSW: Asset Management Framework)

Circular economy and the waste hierarchy must be applied to how Transport manages its assets throughout their entire life cycle (refer to Figure 3). The earlier waste management is considered in an asset's life cycle the greater the opportunities to minimise waste generation and prevent disposal to landfill.

Section 3 details the application of waste management principles for an asset’s life cycle in relation to the project stages. Through this approach the final phase of an asset, Dispose/Renew, can be effectively managed.

Figure 3 – Asset life cycle. Source *Configuration Management Framework TfNSW*



1.7 Performance targets

Transport has developed a set of Baseline Sustainability Requirements (BSRs) which form the minimum sustainability performance expectations across all modes of transport. These requirements were developed based on Government policy drivers (refer Section 1.5), the [Transport Sustainable Design Guidelines](#) and contractual requirements utilised on road, rail and maritime projects. Table 2 lists Transport’s current baseline waste related performance targets.

Table 2: Transport waste performance targets

Waste	Target
Non-hazardous solid waste	90% of inert and non-hazardous waste generated during demolition and construction is reused, recycled or repurposed
Usable spoil	100% of useable spoil is reused, recycled or repurposed (useable spoil is any uncontaminated spoil such as topsoil, virgin excavated natural material (VENM), excavated natural material (ENM) that is not mixed with other types of waste)
Ballast	100% of uncontaminated ballast is reused, recycled or repurposed
Asphalt	100% of uncontaminated asphalt pavement is reclaimed (RAP)
Concrete	100% clean concrete is reused, recycled or repurposed
Office waste	40% diversion from landfill
Single use plastics	0% single use and/or non-recyclable kitchen items (equipment) supplied to on-site facilities (does not apply to food i.e. single use coffee cups, sugar sticks etc.)

Additional BSR targets requiring the use of various recycled content in materials have also been developed. These targets also support Transport’s commitment to implementing circular economy principles. Refer to the [TfNSW Sustainability Baseline Requirements](#) for the full suite of targets.

Reporting of waste related activities against these targets (refer Section 8.2) will enable overall performance monitoring.

1.7.1 Building to NABERS waste rating standards

In line with the NSW Waste and Sustainable Materials Strategy 2041, all NSW Government owned and leased buildings with a footprint of 1000 m² or greater must obtain and publish a National Australian Built Environment Rating System (NABERS) Waste Rating by 2026. The objective of this requirement is to drive waste avoidance and recycling in government operations and to demonstrate NSW Government's leadership in adopting circular economy practices.

2. Terminology

2.1 Waste definitions

A nationally developed standard was established in 2021 for [data and reporting on waste and resource recovery](#). Transport has adopted the waste definition system described in this guidance. Consistency in the use of waste terms will enable Transport to improve contract development, tendering and management. It will also enable waste reporting at organisational, state and national levels.

Transport has developed a [Waste definitions tool \(EMF-WM-TT-0153\)](#). This tool outlines how Transport defines various wastes, providing examples, common waste terms and the management options available for each. The tool primarily identifies wastes by source stream (origin of activity that generated the waste). This includes Construction and Demolition (C&D), Commercial and Industrial (C&I) and Municipal Solid Waste (MSW). For each source stream, wastes are further defined by category and type.

All waste generated by Transport activities must be defined in accordance with the Waste definitions tool.

2.2 Waste classification

In NSW, waste is classified to determine licensing, transportation, storage and disposal requirements using the EPA's [Waste Classification Guidelines \(2014\)](#). The waste classification system groups together waste that poses similar risks to the environment and human health. There are currently six waste classes as shown in Table 3.

Table 3: NSW waste classes

Waste class	Examples
Special Waste	waste tyres, asbestos waste
Liquid Waste	oily water from sumps, concrete slurry
Hazardous Waste	lead acid batteries, lead paint from lead paint removal activities (includes containers that have housed hazardous waste)
Restricted Solid Waste	currently no wastes have been pre-classified by the EPA in this category
General Solid Waste (putrescible)	waste from litter bins, manure, food waste, household waste
General Solid Waste (non-putrescible)	building and demolition waste (other than asbestos or liquid waste), glass, VENM, plastic, asphalt (including asphalt containing coal tar), lead paint from residential buildings, metals.

Waste must be classified in accordance with the Waste Classification Guidelines 5-step process. Where chemical testing (Step 5) is required to assist with determining the waste classification, guidance on sampling requirements should be obtained from the following:

- [National Environmental Protection \(Assessment of Site Contamination\) Measure](#)
- [NSW EPA Sampling design part 1 - application](#)
- [Vic EPA Soil Sampling Guidelines](#)
- Australian Standard 1141 – Methods for sampling and testing aggregates

Waste definition vs waste classification

Waste definitions are concerned with describing different wastes and the source stream that generated them to allow for consistent identification, reporting and reuse/recovery. Waste classifications are related to the statutory requirements for managing different wastes by grouping them based on the risk they pose to human health and the environment. Waste will have both a definition and classification.

Example: asphalt waste:

Waste definition				Waste Classification
Source Stream	Category	Type	Sub-type	
Construction and demolition waste	Building and demolition materials	Spoil	Asphalt	General solid waste (non-putrescible)

3. Project planning

Careful design planning and procurement decisions can minimise unnecessary material use drive sustainable innovation and help scale up supply chains in the circular economy

(Future Transport Strategy)

Waste and material planning is crucial to minimising environmental, financial, and social impacts associated with Transport activities. It is important to understand the framework for the management of waste and materials in NSW (refer Section 1.6) so that knowledge can be applied throughout all stages of a project.

3.1 Strategic / Concept planning stage

At the initial strategic phase of a project, potential environmental, social, economic, planning and sustainability issues and opportunities should be identified. This includes waste and material management. High level consideration must include (but not limited to):

- types and quantities of significant materials required for the project (inputs)
- types and quantities of significant waste that may be generated by the project (outputs)
- management options for each significant input/output in line with waste policy (Section 1.5), circular waste management principles (Section 1.6) and TfNSW performance targets (Section 1.7)

This information should be captured within the appropriate project documentation such as a project risk register; preliminary environmental, sustainability and planning investigation (PESPI); or other form of preliminary environmental investigation. Refer to [planning and assessment policy](#).

3.2 Design stage

3.2.1 Concept design phase

Consideration for the management of waste is captured by Transport's environmental assessment process. The concept design process for a project should achieve the following:

- Identify waste types to be generated (refer Section 2.1).
- Determine preliminary waste classifications (refer Section 2.2).
- Estimate quantities of each waste type to be generated, including bulk earthworks.
- Assess each waste type against the circular economy and waste hierarchy principles to eliminate waste and increase recycled content where possible. This should include:
 - Avoidance initiatives – balancing cut-fill requirements, designing for adaptability, material optimisation, prefabrication, disassembly
 - Reuse and recycling opportunities – including beneficial reuse of waste and materials onsite and offsite
 - Purchasing recycled content products over raw materials where available
- Consider waste storage and handling requirements (including consideration for residual sites, refer to Section 5.4).
- Contingency plan for unexpected volumes and materials generated. Not identifying contingency management options for unexpected volumes or wastes can result in significant delays and financial burdens.

- Identify potentially contaminated wastes (e.g., illegal dumping history, landfill activities, other historical contaminating activities).

Refer to Appendix A for further information regarding planning for waste management during construction and maintenance projects.

3.2.2 Detailed design phase

The waste management considerations identified in the concept design environmental assessment is further developed/refined during the detailed design phase, such as:

- determining type, classification and volume of all waste to be generated, excavated and used on site
- interface strategies for cut and fill activities
- waste management strategies in line with the waste hierarchy
- strategies for disposal, including substantial contingencies for excess earthworks quantities above estimates
- specific destinations for each resource/waste type for reuse, recycling or disposal
- identifying and evaluating potential on-site material storage and treatment details
- suitable methods and routes for waste transport

This information should be captured in an appropriate plan and updated as the detailed design progresses through the various stages of design delivery; for example 20%, 50%, 80% and 100%.

For road specific design contracts, this detail is presented in a material re-use and management plan. This plan must include details as required by Section 2.5 of [PS311 Environmental Design and Compliance specification](#).

3.3 Build stage

Under Transport construction and maintenance contracts, contractors are required to prepare a Construction Environmental Management Plan (CEMP). For low complexity or small contracts, waste mitigation strategies can be included within the CEMP. For complex or large contracts, a detailed Waste Management Sub-Plan should be developed.

The objective of CEMP waste management is to ensure that wastes are properly managed during construction in a way that it is compliant with legislation and consistent with circular economy principles and the waste hierarchy. The CEMP should incorporate information captured during the environmental assessment and design process. Additional information that should be considered includes (where applicable):

- details of monitoring of transporters such as GPS trackers, WasteLocate and waste tracking
- allocation of areas for waste and materials segregation, stockpiling and management
- site litter management
- assurance details for monitoring the implementation of the CEMP (e.g., inspections, document reviews)
- plans to achieve NABERs Waste rating for buildings greater than 1000m² (where applicable)
- plans to achieve IS Rating for waste and resource efficiency requirements (where applicable)
- waste activities requiring licensing under the POEO Act (see Section 4)
- compliance requirements of the POEO Act for any non-licensed and licensed waste activities that involve the generation, storage and/or disposal of waste
- compliance requirements with any relevant NSW Resource Recovery Orders and Exemptions when applying waste to land (see Section 6)
- identifying the need or otherwise for Section 143 Notices to be obtained from landowners of sites where waste is to be deposited (see Section 6.4)

- materials tracking system/register (includes information about the location and quantity of all materials both on and offsite from the time of excavation until their re-use/disposal)
- waste data reporting requirements (see Section 8)

NOTE:

Assessing options for reuse on any Transport land that will become residual at the end of a project requires special consideration. The opportunity for beneficial reuse on identified residual land must be considered at all stages of a project. Refer to Section 6.4 and [EMF-WM-PR-0054 Management of waste on Transport residual land](#).

3.4 Operate / Maintain stage

Operational waste management must be considered and detailed in an appropriate plan. Waste generation can be associated with any ongoing asset maintenance and operational activities, including customer waste generation.

The following information must be considered:

- details of any contractors and subcontractors to be used and how they will be managed
- details of monitoring of transporters such as GPS trackers, WasteLocate and waste tracking
- allocation and management of waste segregation and stockpile sites
- litter and illegal dumping management, including details of waste/litter collection regimes
- details for monitoring the implementation of the waste management plan
- determine any waste activities requiring licensing under the POEO Act (see Section 4)
- identify compliance requirements of the POEO Act for any non-licensed as well as licensed waste activities that involve the generation, storage and/or disposal of waste
- identify compliance requirements with any relevant NSW Resource Recovery Orders and Exemptions when applying waste to land (see Section 6)
- identify the need or otherwise for Section 143 Notices to be obtained from landowners of sites where waste is to be deposited (see Section 6.4)
- include a Waste Management Register
- detail waste data reporting requirements (see Section 8)

Management of waste associated with project work and depot maintenance within regional roads maintenance and delivery must be conducted in accordance with the [ROMS Maintenance & Delivery Online Management System](#). This system provides specific waste guidance and templates.

Management of wastes associated with Sydney Trains and NSW Trains maintenance and operations must be conducted in accordance with the [Sydney Trains Environmental Management System](#). This system provides specific waste guidance and templates.

4. Licensing

The [POEO Act](#) includes a schedule that lists the types of activities that require an Environment Protection Licence (EPL). Some waste related activities are required to be licenced depending on:

- The type of activity that is being undertaken.
- The type and quantity of waste being generated/managed/disposed.
- What is being done with the waste.
- Location of waste generation. Sometimes an EPL will be required depending on the whether the activity you are undertaking is located within a waste levy regulated area. Refer to the [EPA website](#) for a list of the local council areas that are included in regulated areas.

To assist in determining if an EPL may be required, refer to Appendix B. For further detail regarding EPLs refer to [EMF-EM-PR-0160 Environmental Protection Licences for TfNSW activities](#).

In addition to an EPL, some waste activities may require other approvals (for example, waste tracking – refer to Section 7.3) or development consent (including if land is being used as a 'waste facility', for storage/temporary storage, or applying waste to land).

5. Handling and storage

5.1 General requirements

All waste must be stored in an environmentally safe manner and in accordance with relevant statutory requirements. At a minimum:

- Where a waste storage licence is required (refer Appendix B), all storage should be in accordance with the conditions attached to the licence.
- Clear, simple and pictorial signage should be provided to indicate where materials can be stored and any specific requirements for their storage.
- Labels and signage must conform to any legal requirements (for example specific labelling requirements apply for dangerous or hazardous materials: [SafeWork Code of Practice – Labelling of workplace hazardous chemicals](#)).
- Waste storage areas must be located away from environmentally sensitive areas (e.g., waterways). Establishment of storage areas within 100m of an identified environmentally sensitive area will require assessment to ensure potential risks are adequately controlled and any applicable approvals obtained.
- Waste must be covered to prevent dust, odours or rainwater contamination.
- Separate wastes where possible to allow for either increased reuse/salvage opportunities and minimise cross contamination.
- Where waste is stored in containers, the containers should be appropriate for the type of waste being stored and the containers correctly labelled.
- The [SafeWork Code of Practice for How to safely remove asbestos](#) must be followed for managing asbestos waste. Ensure asbestos waste has been wetted and sealed in heavy-duty polyethylene (minimum 200um thickness) prior to transportation to a licensed landfill.
- Waste tyres (including tyre pieces) are to be stored to ensure that they are under licencing thresholds and in accordance with the recommendations under the [NSW Fire and Rescue Guideline for bulk storage of rubber tyres](#).
- Storage of dangerous goods should be in accordance with their respective manufacturer, importer or supplier safety data sheet, [SafeWork Code of Practice for Managing the risks of hazardous chemicals in the workplace](#) and [EMF-EM-GD-0137 Chemical storage and spill response guideline](#).
- All incompatible dangerous goods and materials must be segregated¹.

For further details on best practice stockpile management refer to:

- [Managing Urban Stormwater: Soils and Construction](#)
- [IC-QA-G38 – Soil and Water Management](#)

5.2 Location of waste storage bins

Waste storage areas should be located within the site boundaries (e.g. project site, facility, depot) wherever possible and away from environmentally sensitive areas (i.e. waterways, wetlands etc). Waste bins should not be

¹ Incompatible substances are those which may react together to cause, or substantially increase the likelihood of, a serious incident. 'Segregation' means to keep separate from other substances so that a loss of containment cannot cause a serious incident. Examples of goods that should be kept separated include flammable liquids and corrosive materials.

located on footpaths, nature strips, roads or other public places unless there is insufficient space or access to facilitate safe storage within the designated site and where there is no suitable alternative location.

Where the project requires the placement of a waste bin (or bins) on footpaths, nature strips, roads or other public places:

- adequate provision must be made for the safe movement of pedestrians, cyclists, motor vehicles and other users of the area around the bin/s
- bins should be located:
 - such that they do not obstruct the visibility of road users, block access to roads, driveways, laneways, utility service manholes or other access points or present a physical hazard
 - away from high traffic areas
 - in an area where collection vehicles would be legally able to stop to collect the bin/s (for example bins should not be located in ‘No stopping’ areas or in a clearway or loading zone)
- bins should be identified so that they can be seen at all times (e.g. bright colours)
- lockable to discourage illegal dumping and fly tipping

5.3 Road corridor stockpile management

Transport has obtained a [resource recovery exemption](#) from the EPA that permits the temporary storage of excavated road materials within road corridors in permanent or temporary stockpile sites with appropriate planning approvals.

The RMS Stockpile Exemption 2015 defines excavated road material as being:

“uncontaminated waste rock, soil, sand, bitumen and asphalt products, gravel, slag from iron and steel manufacturing, fly and bottom ash and concrete, excavated during the construction and maintenance of roads and road infrastructure facilities. This does not include any waste that contains coal tar or any waste that is classified as hazardous, restricted solid, special or liquid waste as defined in the POEO Act. Transport excavated road material also includes concrete wash out from the cleaning of concrete trucks”.

The TfNSW Stockpile Exemption requires all stockpile sites to be managed in accordance with the [Transport Stockpile Site Management Guideline](#). Additional requirements regarding stockpile management can be found in the following Transport standards:

- [IC-QA-G38 – Soil and Water Management](#)
- [IC-QA-R44 – Earthworks](#)
- [IC-QA-R178 - Vegetation](#)

5.4 Managing wastes on Transport land

The construction of transport infrastructure often requires the use of Transport land for ancillary construction activities such as the temporary stockpiling of soils, concrete batching and locating of site sheds. Transport land adjacent to transport corridors may also be used to construct permanent structures such as visual and noise mounds. This Transport land generally becomes residual post construction and is either maintained for future development or divested.

Transport has developed an environmental procedure to minimise the risks of unauthorised construction wastes remaining on this residual land following the completion of construction activities.

The [EMF-WM-PR-0054 Management of wastes on Residual land](#) procedure details:

- Transport approval processes, including a suitability assessment for reuse of wastes

- template pre-construction benchmark site assessments to establish the condition of Transport land prior to hand over to a construction contractor
- template post-construction site condition assessments to verify that no unauthorised wastes remain post construction

5.5 Liquid wastes

Liquid wastes are defined in the POEO Act as any waste (other than special waste) that includes any of the following:

- has an angle of repose of less than 5 degrees above horizontal
- becomes free-flowing at or below 60 degrees Celsius or when it is transported
- is generally not capable of being picked up by a spade or shovel or
- is classified as liquid waste under an EPA Gazettal notice

Typical Transport liquid wastes that may be generated or used onsite during construction and maintenance projects include:

- chemical solutions such as solvents or pesticides
- waste oil
- effluent disposal (septic tanks)
- drilling slurries and drilling fluids
- wastewater from site and vehicle wash-down (including concrete waste washout)
- stormwater and groundwater
- dredging waste

General requirements for management of liquid waste are outlined below. It is beyond the scope of this Guideline to provide specific management requirements for the many different types of liquid wastes. Detailed management requirements should be confirmed with your Environment and Sustainability representative.

Similarly, this Guideline does not include information on sediment and erosion control requirements from construction and maintenance sites. For detailed guidance information on sediment and erosion control refer in the first instance to the [Erosion and Sedimentation Management Procedure](#).

All liquid waste must be managed in an environmentally safe manner and in accordance with relevant statutory requirements. At a minimum:

- Containers of liquid waste should be adequately labelled so contents are known in case of a spill to ensure appropriate response and control of WHS risks.
- No liquid waste should enter or be placed in a position where it could enter a stormwater drain or directly into a waterway, without the appropriate licences and/or approvals required by law.
- A trade waste agreement or other liquid waste management arrangement with the local water authority may be required if liquid wastes are to be discharged to a sewer system.
- All employees and subcontractors involved in using liquids or that are involved in liquid waste generating activities should be educated on liquid waste storage and disposal procedures.
- Liquid wastes should be contained in a controlled area such as an impermeable holding pit, or portable tank prior to treatment and/or disposal.
- Containment devices must be structurally sound and leak free.
- Containment devices must be of sufficient quantity or volume to completely contain the liquid wastes generated.

- Containment devices should be located in an impervious bunded area which is ideally protected by an overhead shelter. The bund volume must be:
 - For liquids stored in tanks: at least 110% of the largest tank; or
 - For liquids stored in drums or small containers: at least 25% of the total volume of liquid stored
- Liquid wastes should be disposed of in accordance with the requirements of the POEO Act and local authority discharge requirements (if applicable). These requirements must be described in the environmental management plan and/or environmental approvals.
- Where the composition of the liquid waste is uncertain, undertake testing and determine whether the liquid waste is hazardous and if further treatment is required prior to disposal.
- Inspect containment devices regularly to identify potential for leakage or need for maintenance.
- Classify and manage any solids formed from the deposition of liquids onto the surface of the containment area or receptacle in accordance with the [EPA's Waste Classification Guidelines \(2014\)](#).
- Ensure spill kits are available adjacent to liquid waste storage areas. The spill kits should be appropriate for cleaning up the specific type of liquid waste that is stored.

For further information refer to the [EPA website for managing liquid waste](#).

For management of road construction site dewatering (stormwater & groundwater ingress) refer to [EMS-TG-011 Environmental Management of Construction Site Dewatering](#).

6. Resource recovery

Once waste is generated, disposal of waste to landfill should only be pursued for materials that cannot be recovered (either through reuse, reprocessing, recycling or energy recovery) and for which landfill is the most feasible disposal option.

Many of the wastes that are generated by Transport's activities can be beneficially recovered. Factors that may impact on the recovery of materials include:

- quantity of materials available for recovery
- the quality of material and material composition
- transport distance to recovery facility versus landfill (if applicable)
- beneficial reuse options for the recovered material
- cost of recovery versus landfill disposal
- requirements of the applicable resource recovery order and exemption
- appropriate management of materials to prevent cross contamination

The recovery and disposal of waste materials must be undertaken in accordance with statutory requirements including that:

- waste only be sent to facilities for reuse/recycle/disposal that may legally receive that class of waste
- any on-site recovery activities be undertaken with the required approvals and licences

6.1 Acceptable beneficial re-uses

In assessing re-use options, the concept of beneficial re-use is to be applied. Beneficial re-use is where the land application of the material is a genuine, fit for purpose re-use of the waste rather than another path to waste disposal.

Acceptable beneficial re-uses on Transport projects typically include:

- construction of acoustic and visual mounds where there is a benefit to residents and other sensitive receivers
- flattening of road batters
- rehabilitation of borrow pits
- engineered fill (placed on land to meet specific engineering requirements (e.g., placed beneath load bearing structures such as buildings, utilities, pavements)
- approved improvements to flood prone land
- landscaping and wildlife habitat materials such as mulch and hollow logs

Refer to Section 3.4 for further details about re-use of wastes and materials on Transport land.

If material is waste and is intended to be beneficially re-used off site, it can only be re-used if it complies with a resource recovery order and exemption (Section 6.2), or if the receiving site has an environment protection licence to accept the subject waste for the proposed re-use activity.

Note:

On-site beneficial re-use must be considered in the planning approvals. Where opportunities are identified post project approval a consistency assessment/review must be completed to determine if a modification to the Project Approval/REF is required. Refer to [planning and assessment policy](#).

6.2 Resource recovery orders and exemptions

The NSW EPA has developed a resource recovery framework to enable waste to be re-used/recycled without the need to hold a licence. This framework is enabled through the development of [resource recovery orders \(RRO\) and exemptions \(RRE\)](#). These RRO and RRE are granted by the EPA where the use of a waste material is a genuine, fit for purpose, reuse of the waste rather than another path to waste disposal. An RRO and RRE facilitates the use of these waste materials outside of certain requirements of the waste regulatory framework.

The EPA will issue a RRO and RRE only where the intended use:

- will be beneficial
- will cause no harm to the environment or human health

There are conditions attached to RRO and RRE that must be complied with. These conditions include, but are not limited to, sampling and testing requirements, chemical contaminant thresholds, use restrictions and record-keeping requirements.

The EPA issues both general and specific RRO and RRE. A general RRO and RRE can be issued for commonly recovered, high-volume and well-characterised waste materials. These RRO and RRE may be used by anyone, without seeking approval from EPA, provided the conditions they impose are fully complied with.

The following general RRO and RRE are of most relevance to Transport:

- excavated natural material
- excavated public road material
- recovered railway ballast
- reclaimed asphalt pavement
- recovered aggregate

[Summary fact sheets](#) about each of these RRO and RRE are available on the ESMF. A [full list of current RROs and RREs can be viewed on the EPA website](#).

Deciding which RRO and RRE to use is dependent on the type of material to be re-used, where the material was excavated from and the location of the receivable site.

Table 5 provides a quick reference on road related RRO and RRE and which one to use. Note that these RRO and RRE are to be used for the re-use of waste materials and are not relevant for disposal of materials to a licensed waste facility such as a tip. Refer to [TfNSW fact sheets](#) for each of the below RRO and RRE.

Table 5: Resource Recovery Orders & Exemptions

Exemption and Order	Source of material and location of receiving site			
	Road corridor to road corridor	Road corridor to non-road site	Non-road site to road corridor	Non-road site to non-road site
Excavated Public Road Materials (EPRM)	✓	✗	✗	✗
Excavated Natural Material (ENM)	More appropriate to use EPRM Exemption & Order	✓ (Testing required)	✓ (Testing required)	✓ (Testing required)
Recovered Aggregates	More appropriate to use EPRM Exemption & Order	✓ (Testing required)	✓ (Testing required)	✓ (Testing required)
Reclaimed Asphalt Pavement (RAP)	✓ (can also use EPRM Exemption & Order)	✓ (Limitations apply)	✓ (Limitations apply)	✓ (Limitations apply)

Where no RRO and RRE exists for a specific waste stream or intended use, an application can be made to the EPA for a specific RRO and RRE, which would then be issued by the agency, if appropriate. Contact your local environmental officer in the first instance if the need for a specific RRO and RRE is identified. For details regarding the application process for a specific RRO and RRE refer to the [NSW EPA](#). It is noted that the application process can take anywhere from 1 month to 2 years depending on the waste characteristics, proposed reuse and completeness of application.

6.3 Rail Ballast recycling

Ballast spoil generated within the rail corridor is a valuable resource that can be easily re-used/recycled dependent on the level of contamination. In line with the waste hierarchy, the following options are available:

- re-using the ballast spoil directly within the rail corridor (low levels of contamination)
- re-using the ballast spoil outside of the rail corridor in compliance with a Resource Recovery Order/Exemption (low levels of contamination)
- recycling the ballast spoil at the [Chullora Ballast Recycling Centre](#) (low levels of contamination)
- remediation or disposal (high levels of contamination)

It is noted that any activities managed by Sydney Trains, in accordance with the Sydney Trains operational EPL (12208), can re-use ballast spoil directly in the rail corridor. EPL 12208 states that:

‘excavated material (including ballast) suitable for lawful re-use within the Sydney Trains Network, may be transported to the Sydney Trains Network from another part of the Sydney Trains Network...by road.’

Refer to the [Sydney Trains EMS](#) for detailed guidance on the assessment and re-use of ballast spoil in the rail corridor.

6.4 Section 143 Notices

Under Section 143 of the POEO Act it is an offence if waste is transported to a place that cannot lawfully be used as a waste facility for that waste. This includes waste transported for temporary or permanent storage (including stockpiling), even where the landowner of the property has given their consent for the waste storage. Both the transporter of the waste and the owner of the waste can be prosecuted for this offence. It is the responsibility of the waste transporter and waste owner to ensure that a place can lawfully receive that waste.

To ensure compliance with Section 143 and create a legal defence for Transport, a duly completed and signed [notice under section 143\(3A\) of the POEO Act \(known as a “Section 143 Notice”\)](#) is required. A Section 143 Notice, once completed and signed, is a declaration from the landowner/occupier (“landholder”) that waste of a certain type and quantity may be legally accepted for a certain use on their land. The completed Section 143 Notice must be received prior to transporting wastes generated by or for Transport to a place that is not owned by Transport and is not a licensed landfill or resource recovery facility.

Waste must not be transported to a site unless:

- the landholder has been provided with a letter highlighting the role of the Section 143 Notice, the responsibilities of the landholder and the role of Transport and its contractors. Transport and its contractors must utilise [EMF-WM-TT-0127 Receiving Transport for NSW Waste](#) (letter template) for this purpose
- the landholder completes and signs the [NSW EPA Section 143 Notice](#) and returns a copy
- the landholder provides written evidence that development consent from the local council or planning consent authority has been granted allowing the specific type of waste to be placed on the site or can provide evidence that consent is not required
- a copy of the Section 143 Notice is provided to the transporter of the waste, who must be advised of the classification of the waste to be transported (refer Section 2.2 and the [Waste Definitions EMF-WM-TT-0153](#)).

The waste must be accurately described (including its waste classification) on the Section 143 Notice. Waste delivery arrangements must be confirmed with the landholder prior to transporting materials to their land. An off-site reuse checklist ([EMF-WM-TT-0098 Checklist for S143 Notice for off-site re-use of waste](#)) is available to assist in determining the status of a site to legally receive Transport waste.

Landholders will require time to assess their responsibilities and seek approvals, where required. Transport may assist by liaising directly with the local council and helping the landholder to complete the Section 143 Notice.

A copy of all Section 143 Notices should be kept at the project site (if there is a site-office) and a copy lodged with the Transport project manager/works supervisor.

Note:

There is no legal obligation for the landholder of the receiving waste site to complete a Section 143 Notice. However, it is Transport policy that waste will not be sent offsite unless the receiving landholder completes and signs a Section 143 Notice before receiving the waste. The Section 143 Notice provides Transport with legal protection against prosecution when landholders falsely accept waste on their land.

Transport projects should also ensure that a Section 143 Notice is duly completed and supplied when receiving material onto site from another Transport project/owned site or 3rd party site.

For road projects, the [G36 Specification](#) requires Section 143 Notices to be submitted as a Scheduled Hold Point prior to the transport of waste offsite.

7. Transporting

7.1 General requirements

The following general requirements are applicable for the transport of all waste irrespective of whether a licence is required.

- Any vehicle used to transport waste must:
 - be kept in a clean condition
 - be constructed and maintained to prevent spillage of waste
- Any container used to transport waste must be safely secured on the vehicle carrying the container.
- Any vehicle used to transport waste must be covered when loaded to prevent spillage and loss of waste and the emission of odours.
- Incompatible wastes must not be mixed or transported together on any vehicle used to transport waste. For guidance refer to the [Australian Code for the Transport of Dangerous Goods by Road and Rail](#).
- Any material segregated for recycling must not be mixed with any other type of waste or with any other material during transport.
- Maintain records of all offsite movements of waste (classification, volume, destination).

7.2 Proximity principle

The POEO (Waste) Regulation makes it an offence to transport waste generated in NSW by motor vehicle for disposal more than 150 kilometres from the place of generation (within or outside NSW). If no waste facility exists within 150 kilometres, the waste can still be legally transported to one of the two nearest lawful disposal facilities from the place of generation (even if that facility is located more than 150 kilometres from its place of generation, within or outside NSW). The proximity rule does not apply to wastes transported by rail.

For the transport of restricted solid waste for disposal, it is an offence to transport waste by motor vehicle to a place that is not the closest lawful disposal facility for that waste.

It is not an offence if it can be established that the waste was transported:

- for lawful and genuine recycling, resource recovery, energy recovery, processing or re-use, noting that simply storing or sorting waste does not constitute any of these
- in an emergency to protect human health, the environment or property
- as part of an approved mandatory product recall

The transport of waste within NSW that requires tracking, other than contaminated soils, is exempt from the proximity principle provided it is not mixed or transported with other waste types and applicable tracking requirements are fulfilled.

7.3 Waste tracking

The transport of some wastes presents a high risk to the environment. These wastes must be tracked when transported into, within or out of NSW. The waste consignor, transporter and receiving facility all have obligations to ensure that the waste is properly tracked.

[Schedule 1 of the POEO \(Waste\) Regulation](#) provides a list of wastes that require tracking. This list can also be found on the [NSW EPA website](#).

The generator of the waste must ensure the following steps are applied for waste tracking:

1. Determine if the waste to be transported requires tracking (see the [NSW EPA Waste Tracking website](#)).
2. Obtain prior approval to transport the waste in the form of a consignment authorisation (CA) issued by a person authorised to do so (the NSW EPA or receiving waste facility).
3. Create a transport certificate (TC) which must accompany the waste while it is being transported.
4. Complete the TC when the waste has arrived and been processed by the receiving facility.
5. Report any non-compliances to the Environment Protection Authority (EPA).

The Protection of the Environment Operations (Waste) Regulation 2014 also imposes waste tracking requirements if more than 10 tonnes of any waste is generated from the metropolitan levy area (MLA) and it is transported outside of NSW.

Waste consignors and transporters will be required to use the existing [EPA online waste tracking system](#) to lodge details about the consignment, including details of the interstate facility receiving the waste (where applicable). Limited exceptions apply.

The online system creates CAs and TCs. Where the online system is not able to be used, printed TCs can be ordered from the [NSW EPA](#).

7.3.1 Asbestos & tyre waste tracking

The Protection of the Environment Operations (Waste) Regulation 2014 requires waste transporters to record the movement of:

- tyres with a total weight of more than 200 kilograms, or 20 or more tyres, in any single load
- more than 100 kilograms of asbestos waste, or more than 10 square metres of waste asbestos sheeting, in any single load

Loads of asbestos and tyre waste are assigned a unique consignment code to allow the EPA to monitor their movement from site of generation to disposal. To assist the process, the EPA developed an online tracking system known as “WasteLocate” and can be found on the [NSW EPA website](#). All waste loads of asbestos and tyres that exceed these thresholds must utilise the WasteLocate system.

Refer to the [Asbestos and Waste Tyres Guidelines](#) for additional information.

7.4 Waste transport licence requirements

An Environment Protection Licence is required for transporting more than 200 kilograms of the following wastes in any load:

The [Waste Definitions \(EMF-WM-TT-0153\)](#) also includes information on whether a licence is required for the transport of typical wastes generated from Transport construction and maintenance projects.

An Environmental Protection Licence is not required for the transport of waste:

- in an emergency to protect human health, the environment or property
- for the purposes of analysis related to waste categorization
- via a pipeline
- any residue of a substance in a container if the container is to be refilled with the same type of substance
- from a farm resulting from the operation of the farm of unwanted chemicals

8. Records and reporting

8.1 Waste records

For both licensed and non-licensed waste activities (including contractor Transport related activities), written records of waste management must be maintained. Typical waste records include:

- waste classification reports
- waste sampling laboratory reports
- waste tracking records (e.g., consignment authorities, transport certificates, landfill dockets)
- resource recovery certification statements
- Section 143 Notices
- waste management sub-plans
- waste registers
- waste sampling plans

All waste related records must be kept for a minimum retention period of six years. This will assist Transport to:

- meets its statutory obligations
- maintain records in the event of an incident
- collect comprehensive data for reporting, identifying opportunities for waste reduction and recycling and managing performance

All waste records must be provided by contractors to Transport at project completion.

8.2 Waste reporting

Transport has minimum waste and resource use reporting requirements to meet the commitments outlined in Section 1. These reporting requirements are summarised in Table 7.

Table 7: Waste reporting requirements

Reporting level	Waste and resource use reporting requirements
Project	<p><u>QA Specification G36 Environment Protection</u> – Specific requirements for applicable TfNSW road projects. Monthly waste and resource use reporting includes:</p> <ul style="list-style-type: none"> • total quantity generated for individual waste types • total quantity reused/recycled for individual waste types <p>total quantity disposed for individual waste types</p>
	<p><u>TfNSW Standard Requirements – Works Contract</u> – Specific requirements for applicable TfNSW heavy rail, light rail, fleet and systems projects. Monthly waste and resource use reporting includes:</p> <ul style="list-style-type: none"> • total quantity generated for individual waste types • total quantity reused/recycled for individual waste types <p>total quantity disposed for individual waste types</p>
Maintenance	<p>M&D Project Management Plan and associated Project Specific Plans – Specific requirements for regional and outer metropolitan road & bridge maintenance projects. Monthly waste performance reporting includes:</p> <ul style="list-style-type: none"> • total quantity generated for individual waste types • total quantity reused/recycled/stockpiled for individual waste types

	<ul style="list-style-type: none"> total quantity disposed for individual waste types
	<p><u>Environmental Management Specification for Contractors</u> – Specific requirements for Sydney Trains managed projects. Annual waste and resource use reporting includes:</p> <ul style="list-style-type: none"> total quantity generated total quantity recycled
	<p><u>Environmental Management Specification for Contractors</u> – Specific requirements for NSW Trains managed projects. Annual waste and resource use reporting includes:</p> <ul style="list-style-type: none"> total quantity generated total quantity recycled
Organisational	<p>TfNSW Quarterly Business Review (QBR) – Corporate SER reporting. Quarterly waste reporting includes:</p> <ul style="list-style-type: none"> total quantity solid waste diverted from landfill (top five waste streams) <p>TfNSW Annual Sustainability Report includes:</p> <ul style="list-style-type: none"> total quantity solid waste diverted from landfill
State	<p><u>NSW Government Resource Efficiency Policy (GREP)</u> – NSW Government reporting. Transport is required to reporting annually:</p> <ul style="list-style-type: none"> top three waste streams by total volume and by total cost

NOTE:

The Waste Data Capture Tool (EMF-WM-TT-0074) has been developed to assist Transport projects with reporting appropriate waste data. All applicable Transport projects (ie projects referencing the G36 or TSR specification) must use this tool to report their waste management activities.

9. Disposal

In line with circular economy principles and the waste hierarchy, disposal of waste to landfill should only be pursued for materials that cannot be recovered (either through reuse, reprocessing, recycling, or energy recovery) and for which landfill is the most feasible disposal option.

The disposal of waste materials must be undertaken in accordance with statutory requirements including that waste only be sent to facilities for disposal that may legally receive that class of waste. To confirm if a waste facility is licenced to receive a particular waste, check the licence via the [EPA licence register search](#).

Opportunities for materials reuse and recycling and their feasibility should be assessed in comparison to landfill disposal.

Prior to waste disposal, a waste classification assessment must be completed in line with Section 2.2.

10. Definitions

Term	Definition
Building and demolition waste	<p>means unsegregated material (other than material containing asbestos waste or liquid waste) that results from:</p> <ul style="list-style-type: none"> • the demolition, erection, construction, refurbishment or alteration of buildings other than <ul style="list-style-type: none"> – chemical works – mineral processing works – container reconditioning works – waste treatment facilities • the construction, replacement, repair or alteration of infrastructure development such as roads, tunnels, sewage, water, electricity, telecommunications and airports <p>and includes materials such as:</p> <ul style="list-style-type: none"> • bricks, concrete, paper, plastics, glass and metal • timber, including unsegregated timber, that may contain timber treated with chemicals such as copper chrome arsenate (CCA), high temperature creosote (HTC), pigmented emulsified creosote (PEC) and light organic solvent preservative (LOSP) <p>but does not include excavated soil (for example, soil excavated to level off a site prior to construction or to enable foundations to be laid or infrastructure to be constructed).</p>
Clean concrete	<p>Concrete that is not overly impacted by contaminants such as lead paint and hydrocarbons. Clean concrete also excludes concrete which contains excessive steel reinforcing that is rejected by a recycling facility.</p>
Consignment authorization (CA)	<p>An approval given by a receiving facility or the EPA to waste producers or their agents to transport a specific type of waste for a period of up to one year. It is a legal requirement that a consignment authorisation be issued before waste which must be tracked can be transported.</p>
Consignor	<p>The sender of the waste to a receiving facility. The consignor can be the producer of the waste or an agent consigning the waste on behalf of the waste producer.</p>
Energy recovery	<p>Processes through which wastes are collected, sorted and processed to recover energy in usable form, for example process heat, steam or in electricity generation. For data reporting purposes, the quantity of waste allocated to the fate 'energy recovery':</p> <ul style="list-style-type: none"> • excludes residuals from energy from waste facilities that are recycled or sent to landfill or otherwise disposed of • may include (and does include in national reporting) landfill waste that produces methane gas used for energy recovery estimated based on standard formulas used in greenhouse gas reporting • is reported as wet weight.
IS Rating	<p>A rating system which evaluates sustainability performance across the planning, design and construction, and operational phases of infrastructure assets administered by the Infrastructure Sustainability Council</p>
NABERS	<p>National Australian Built Environment Rating System</p>
Recycle	<p>Activities through which wastes are collected, sorted, reprocessed (including through composting), and/or converted into raw materials for use in a production system, excluding for energy. For data reporting purposes, the mass of material allocated to the fate 'recycling':</p>

	<ul style="list-style-type: none"> • includes all materials received by a reprocessing facility that are processed to the point of being suitable for remanufacturing or return to productive use, whether immediately used or stored for later sale or use • includes weight losses to the atmosphere during the processing of wastes (for example, moisture, carbon dioxide from organics degradation) • excludes residuals that are sent to landfill or otherwise disposed of • excludes materials received at a recycling facility but not yet processed • is reported as wet weight.
Resource Recovery	Activities through which wastes are collected, sorted, processed (including through composting), and/or converted into raw materials for use in a production system. For data reporting purposes, the quantity of waste allocated to the fate 'resource recovery' is the sum of the quantities allocated to waste reuse, recycling and energy recovery.
Resource Recovery Exemptions (RRE)	Are granted by the EPA where the land application or use as fuel of a waste material is a genuine, fit for purpose, reuse of the waste rather than another path to waste disposal. An exemption applies to the user of the material and facilitates the use of these waste materials outside of certain requirements of the waste regulatory framework.
Resource Recovery Orders (RRO)	Are granted by the EPA where the land application or use as fuel of a waste material is a genuine, fit for purpose, reuse of the waste rather than another path to waste disposal. Resource recovery orders apply to the generators of materials and include conditions which generators and processors of waste must meet to supply the waste for land application, use as fuel or in connection with a process of thermal treatment. They may include specifications, record-keeping, reporting and other requirements.
Reuse	Reallocation of products or materials to a new owner or purpose without reprocessing or remanufacture, but potentially with some repair (for example, repair of pallets for resale, tyre re-treading, excavated soil for beneficial sound mounds).
Source Stream	Either municipal solid waste (MSW), commercial and industrial (C&I) waste or construction and demolition (C&D) waste. Used for defining a waste and the general source of its generation.
Trackable waste	The Protection of the Environment Operations (Waste) Regulation 2014 identifies certain wastes that must be tracked from the point of origin to the point of disposal using the EPA's online waste tracking system. Trackable waste is listed in Schedule 1 of the Regulation .
Transport certificate (TC)	The document used to record a waste movement.
Waste Category	A primary classification of wastes and recovered materials used for defining a waste.
Waste Classification	Classification system for waste based on risk posed to human health and the environment. Used to determine statutory handling, transport and disposal requirements.
Waste definition	Classification system for waste used to describe waste for identification and reporting purposes.
Waste facility	Any premises used for the storage, treatment, processing, sorting or disposal of waste.
Waste Type	A secondary classification of wastes and recovered materials used for defining a waste.

Appendix A: Waste planning - construction and maintenance projects

Listed below are suggestions of how the principles of waste avoidance, reuse and recycling can be better adopted during procurement, design and implementation.

Waste avoidance

Waste avoidance is a priority. Planning for how to avoid waste should form part of early project planning and should involve stakeholders such as designers, project managers, contractors, sub-contractors and suppliers in the discussions wherever possible. This can result in greater stakeholder buy-in, clarification of responsibilities and identification of innovative ways to avoid generation of wastes.

Some examples of how waste can be avoided include:

- balancing cut-fill requirements through design refinements and regular review throughout the design process
- designing for adaptability, material optimisation, prefabrication, disassembly
- using higher quality more durable materials that require less maintenance
- being mindful of not over-estimating or rounding up of purchasing requirements
- setting up appropriate storage arrangements for materials to guard against product degradation or damage from weathering or moisture
- requesting that suppliers don't provide any unnecessary packaging or take back packaging
- considering existing site conditions (such as site slope and cleared areas) to minimise excavation and reduce unnecessary removal of existing vegetation
- using standard sized products (where possible) and encouraging their use to avoid wastage from excess trimming of materials or the need to develop custom products
- separating and retaining excavated topsoil to be re-used back on-site after construction where possible (not only does this reduce waste but also allows for natural soils and nutrients to be returned to the site and re-establishment of local vegetation)
- purchasing materials in bulk where possible to reduce packaging and transport requirements but do be mindful of possible over-ordering

Resource recovery

Suggestions of how to allow for recovery of materials and/or reuse of recovered materials include:

- Recovering construction and demolition materials for use as alternatives to virgin products in transport construction projects.
- Using demolition and construction techniques that allow for easy separation of reusable and recyclable materials such that they may be salvaged and reused (if not on the project site, then potentially at another site).
- Utilise environmentally improved materials (for example, those made with recycled content or with energy conserving features) where possible.
- Use mulches and composts made from recycled materials for site rehabilitation and landscaping works where they are available, in accordance with specification requirements and are cost competitive. Effort should be made to collect, mulch and reuse any cleared native vegetation back on the project site.
- Make arrangements with recycling contractors to provide clearly marked bins or designate stockpile areas for material separation. Make sure that sub-contractors are aware of the placement of the bins and

their responsibility to separate materials. If there is insufficient space to separate materials on site, explore arrangements for mixed loads to be sent to a sorter for recycling.

- Protect and stockpile soils for reuse or divert soils and excavated material to suitable alternative sites if it can't be reused on-site.
- Proactive engagements with supply chains and the market to communicate resource efficiency targets, resource recovery requirements and potential resource sharing or recycling opportunities (e.g. with other infrastructure projects, circular economy businesses or industry groups, community groups).

Disposal

Disposal of unavoidable waste material generated during construction (i.e., waste that cannot be recovered, reused or recycled and requires landfilling or other disposal) must be done in a safe manner and in accordance with all legislative requirements.

Reviewing performance

Regular review of waste management systems should be undertaken to confirm the effective implementation of the Waste Management Sub-Plan and to identify potential management and disposal issues as soon as possible. Monitoring and reporting mechanisms should also be in place to track performance.

On regional Maintenance and Delivery (M&D) projects, monthly waste management records should be collated in accordance with the [M&D waste management reporting](#) requirements. These records should be reviewed to identify opportunities for performance improvement.

Information and communication

Successful implementation of a waste management system is strongly linked to people's understanding of the objectives and reasons for waste management, their ownership of the management process and responsibility for system implementation and achieving specific outcomes. Best practice waste management site procedures should therefore be included in site induction sessions.

Waste planning should include identifying how information can be effectively communicated to staff and contractors, in addition to feedback being collected from them. Without understanding the need for minimising and reusing waste and its safe handling and disposal, staff cannot confidently promote the waste minimisation message.

Information and training should be provided to all members of the project team and should incorporate a combination of both theoretical information and hands on practical demonstration where suitable.

Appendix B: Waste activity triggers for an EPL

Note: This table summarises the requirements for an EPL. Refer to [Schedule 1 of the POEO Act](#), for the full criteria and definitions for each activity listed below.

Activity	Licence trigger
Chemical storage - Hazardous waste, restricted solid waste or liquid waste (or combination of these)	<ul style="list-style-type: none"> Having on site at any time more than 5 tonnes of hazardous waste, restricted solid waste or liquid waste, or a combination of them. <p>Note: this only relates to wastes generated from activities involved with the on-site commercial production of a chemical substance.</p>
Contaminated soil treatment	<ul style="list-style-type: none"> Capacity to treat more than 1,000m³ per year of contaminated soil received from off-site; or Treatment of contaminated soil originating exclusively on-site with capacity: <ul style="list-style-type: none"> greater than 1000m³ per year for incineration storage and treatment of greater than 30,000m³ per year where treatment is other than incineration to disturb more than an aggregate area of 3 hectares of contaminated soil
Contaminated groundwater treatment	<ul style="list-style-type: none"> Capacity to treat more than 100 megalitres per year of contaminated groundwater.
Resource recovery	<ul style="list-style-type: none"> Receiving waste from off site and its processing, other than for recovery of energy, where the following criteria are met: <ul style="list-style-type: none"> If the site is within the regulated waste area – having on site more than 1,000 m³ or tonnes of general solid waste at any time, or, the site processes more than 6,000 tonnes of general solid waste per year If the site is outside the regulated waste area – having on site more than 2,500 m³ or tonnes of general solid waste at any time, or, the site processes more than 12,000 tonnes of general solid waste per year having on site more than 200 kilograms of hazardous waste at any time having on site more than 2,000 litres of waste oil at any time or involves processing of more than 20 tonnes per year having on site more than 5 tonnes of waste tyres or 500 waste tyres at any time or processing 5,000 tonnes of waste tyres per year. <p>Note: VENM, firewood, landscaping material are excluded.</p>
Waste disposal – application to land Includes application of waste for the filling, reclaiming or contouring of land. (e.g., re-using excavated road materials)	<ul style="list-style-type: none"> The application to land of any waste received from off site, including (but not limited to) application by any of the following methods: <ul style="list-style-type: none"> spraying, spreading or depositing on the land, ploughing, injecting or mixing into the land, filling, raising, reclaiming or contouring the land. No licence is required if: <ul style="list-style-type: none"> the material is virgin excavated natural material (VENM) covered by a “resource recovery exemption” (see Section 4.2). Such as: <ul style="list-style-type: none"> excavated public road materials – if applied within road corridors excavated natural material - applied off-site recovered asphalt pavement – if re-applied for road making activities

Activity	Licence trigger
	<ul style="list-style-type: none"> • No licence is required for: <ul style="list-style-type: none"> – Sites that receive over any period of time, less than 200 tonnes of building and demolition waste or building and demolition waste mixed with VENM, if that waste was generated inside the waste regulated areas of NSW; and/or the site is within the regulated waste area of NSW; OR – Sites in the non-regulated areas of NSW that receive, over any period of time, less than 20,000 tonnes of building and demolition waste or demolition waste mixed with VENM which was generated outside the waste regulated area of NSW.
<p>Waste processing – non thermal treatment (e.g., concrete crushing)</p>	<ul style="list-style-type: none"> • Receiving waste from off site and where the following criteria are met: <ul style="list-style-type: none"> – <u>If the site is within the regulated waste area</u> – having on site more than 1,000 m³ or tonnes of general solid waste at any time, or, the site processes more than 6,000 tonnes of general solid waste per year – <u>If the site is outside the regulated waste area</u> – having on site more than 2,500 m³ or tonnes of general solid waste at any time, or, the site processes more than 12,000 tonnes of general solid waste per year – having on site more than 200 kilograms of hazardous waste at any time – having on site more than 200 kilograms of liquid waste at any time – having on site more than 2,000 litres of waste oil at any time or involves processing of more than 20 tonnes per year – having on site more than 5 tonnes of waste tyres or 500 waste tyres at any time or processing 5,000 tonnes of waste tyres per year. <p>Note: Crushing, grinding or separating materials such as sand, gravel, rock or minerals, requires a licence if the plant or equipment has a capacity to process more than 150 tonnes of materials per day or 30,000 tonnes of materials per year.</p>
<p>Waste storage (storage of waste received from off-site, including storage for transfer of waste) (e.g., Stockpiles)</p>	<ol style="list-style-type: none"> a) Greater than 5 tonnes of hazardous waste, restricted solid waste, liquid waste, clinical or related waste or asbestos waste is stored on the premises at any time, OR b) Greater than 5 tonnes of waste tyres or 500 waste tyres is stored on the premises at any time, OR c) More than the following amounts of waste (other than waste referred to in paragraph (a) or (b)) are stored on the premises at any time: <ul style="list-style-type: none"> – in the regulated area – more than 1,000 tonnes or 1,000 m³, OR – outside the regulated area – more than 2,500 tonnes or 2,500 m³, OR – more than the following amounts of waste (other than waste referred to in paragraph (a) or (b)) is received per year from off site: <ul style="list-style-type: none"> ○ in the case of premises in the regulated area – 6,000 tonnes ○ in the case of premises outside the regulated area – 12,000 tonnes. <p>Note: No licence is required for stockpiling excavated road materials within road corridors if it is done in accordance with the RMS resource recovery exemption for stockpiles.</p>



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