



TEMORA HOSPITAL REDEVELOPMENT

PRELIMINARY WASTE MANAGEMENT PLAN

August 2024

DOCUMENT ADMINISTRATION

Revision History

Version	Date	Issued To	Remarks
01 Draft	14 December 2023	Urbis Pty Ltd	Draft for Review
2.2 Draft	17 February 2024	Urbis	Draft for review
	May 2024	GHD	Draft for review and formal feedback
3.0	17 June 2024	Urbis	Final draft, incorporating feedback from GHD, a suitably qualified entity.
3.1-3.2	20 August 2024	HI	Updated with additional LHD advice; change of planning approval pathway.

Contents

1.0 Introduction.....	5
1.1 Temora Hospital Main Works	5
1.2 Hospital and Site Description	5
1.3 Purpose of this plan	6
2.0 Legislation, policy and guidelines	7
2.1 NSW State Legislation and Policy.....	7
2.1.1 The <i>Protection of the Environment Operations Act 1997</i> (Part 4).....	7
2.1.2 <i>Waste Avoidance and Resource Recovery Act 2001 No 58</i>	7
2.1.3 <i>NSW Waste and Sustainable Materials Strategy 2041</i>	7
2.1.4 Other Relevant Policy Documents.....	8
2.2 Local Government Requirements	8
2.2.1 Temora Shire Council Local Environmental Plan and Development Control Plan.....	8
Temora Shire Development Control Plan 2012	8
2.2.2 Murrumbidgee Local Health District – Environmental Sustainability Strategy 2022-2024.....	9
3.0 Targets, Monitoring and Measurement.....	10
3.1 Waste targets	10
3.2 Monitoring and Measurement	10
3.2.1 Operations.....	10
3.2.2 Contamination Audit.....	10
3.2.3 Reporting.....	10
3.3 Review of WMP	10
4.0 Construction and Demolition Waste	12
4.1 Construction and Demolition Waste Streams.....	12
4.2 Construction and demolition waste generation.....	16
4.3 Construction and demolition waste management	16
5.0 Operational Waste.....	17
5.1 Waste generation	17
5.2 Operational waste streams and labelling	18
5.3 Waste generation estimates	21
6.0 Waste and Materials Reuse Management Plan	22
6.1 Waste Management Principles	22
Waste Avoidance and Reduction	22
Waste Reuse/Recycling.....	23
Waste Handling and Storage.....	23
Waste Tracking and Disposal	23
6.2 Potential Waste Impacts and Management.....	24
6.3 Waste Management Methods	25
6.4 Hazardous Materials Management	26
6.4.1 Hazardous Materials Audit.....	26
6.4.2 Hazardous Materials Management Plan.....	27

7.0 Waste Storage Design and Collection.....	28
7.1 Signage	28
7.2 General waste facilities design	28
7.3 Waste Infrastructure for holding operational waste.....	28
7.4 Amenity	29
7.5 Location and access – construction and demolition	29
7.6 Location and access – operational waste	30
7.7 Frequency of Waste Removal.....	32
8.0 Waste Management Initiatives	34
8.1 Best practice separation	34
8.1.1 Co-mingled & Paper/Cardboard Recycling	34
8.1.2 Food Organic Waste Management.....	34
8.1.3 Bulky and Problem Wastes	34
8.2 Waste Education	35
8.2.1 Roles and Responsibilities	35
8.2.2 Training and Induction.....	35
8.2.3 Implementation of Murrumbidgee Environmental Sustainability - Initiatives and Strategies.....	35
8.4 Workplace Health and Safety	37
Personal Protective Equipment (PPE).....	37
Notifying Incidents	37
Appendix A - Construction Waste Management Tracking Sheet example	38
Appendix B - Murrumbidgee Environmental Sustainability Strategy 2022-2024.....	39

1.0 Introduction

1.1 Temora Hospital Main Works

The proposed development is subject to a Review of Environmental Factors. The redevelopment will deliver a new hospital building, car parking, internal access roads and landscaping.

The project scope includes the following demolition works:

- Demolition of the existing hospital (in 2 stages)
- Demolition of existing outbuildings i.e. day centre, workshop, mortuary
- Demolition of the staff accommodation building (at completion of construction works)

The project scope includes the following construction works:

- A 24-bed inpatient unit (acute medical, surgical, sub-acute, maternity beds)
- Maternity service (delivery suite, special care nursery (2 cots))
- Emergency Department
- Medical imaging (General Xray, Ultrasound, CT)
- Perioperative suite (1 theatre, 1 procedure room)
- Ambulatory care centre
- A reconfigured public and ambulance entry into ED
- On-grade car parking and drop off facilities
- Ambulance and service vehicle access to ED / back of house
- Replacement of IT and engineering services infrastructure
- Key worker accommodation (subject to affordability)

Post construction, the hospital will deliver the following services:

- Inpatient services (24 beds)
- Maternity service
- Emergency Department
- Medical imaging (General Xray, Ultrasound, CT)
- Perioperative suite
- Ambulatory care centre (e.g. outpatients, allied health, community health, community mental health)
- Non-clinical support services (engineering, food services, linen, cleaning)
- Key worker accommodation (to be confirmed)

1.2 Hospital and Site Description

Temora hospital is located within the Murrumbidgee Local Health District (MLHD), which covers 21 Local Government Areas (LGA's) spread across 125,561 square kilometres. Temora is in the Small Community Hospital with Surgery peer group.

The hospital currently provides Role Delineation Level 2-3 clinical services in:

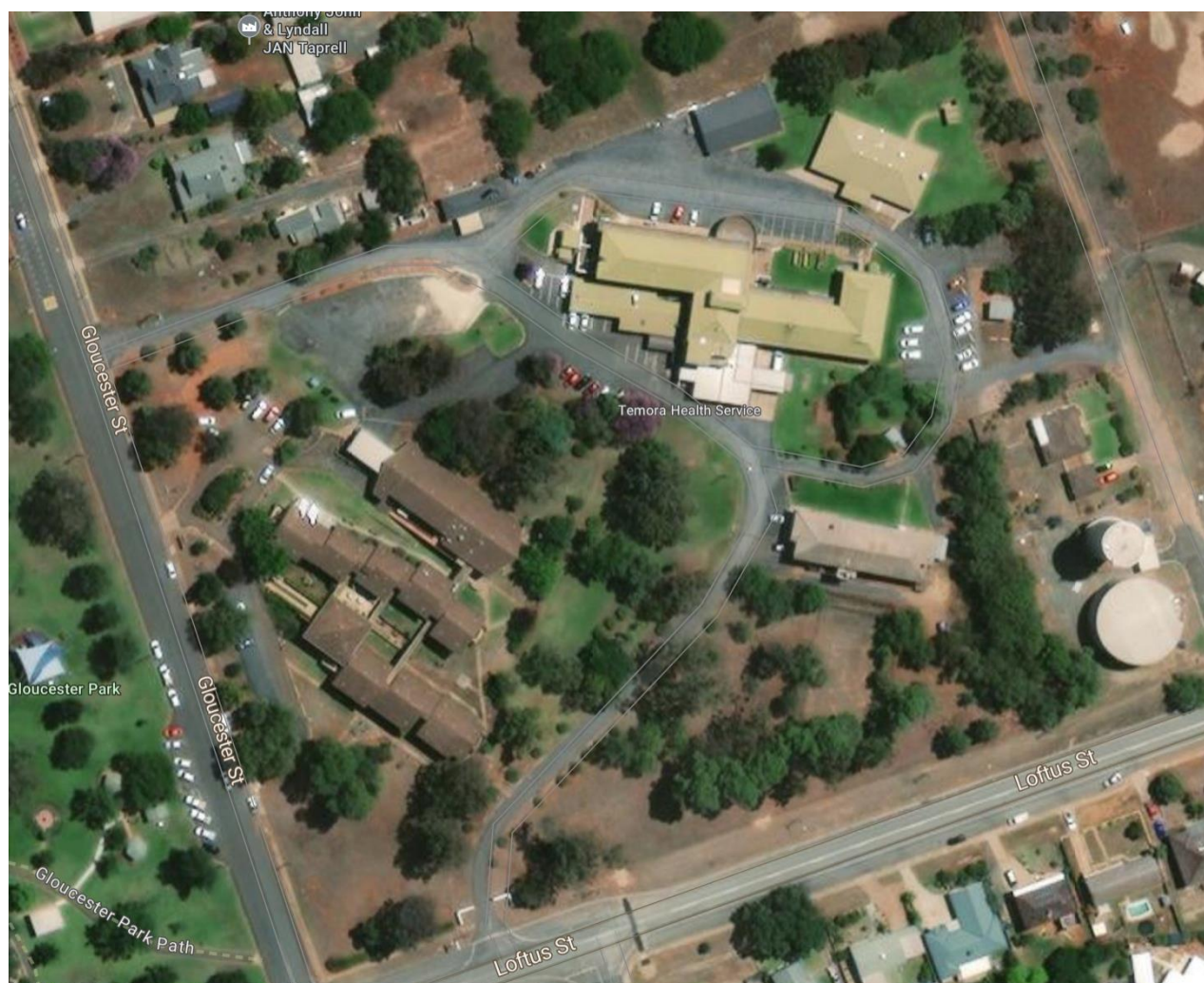
- Emergency Medicine RDL 2
- Acute inpatient services RDL 2-3 for generalist medical and surgical services
- Sub-acute inpatient services (rehabilitation, palliative care, maintenance)
- Maternity services RDL 2-3 and Neonatal Service RDL 2
- Surgical and procedural services RDL 2-3 (caesarean sections, skin flaps, hernias)
- Multidisciplinary Community Health (such as Allied Health, Diabetes educator, Community Health Nursing, Acute, Post-Acute Care, Palliative Care, wound management, transitional aged care etc.)
- Community Mental Health/Drug and Alcohol services
- Needle and Syringe Program
- Health Promotion programs
- Access to Public Health Services (outreach from Albury)
- Aboriginal Health Services (outreach from Tumut)
- Imaging – General Xray
- Pathology collection and

- Pharmacy

The Temora Hospital occupies (3.2 hectares) on the corner of Gloucester and Loftus Streets, Temora. The Hospital is located on the highest point of the site with District views back towards Temora town centre.

The existing hospital was constructed in 1938, with 3,530sqm of space in the main hospital. The site hosts a large staff accommodation block of 349sqm over two levels, which can only be partially occupied due to poor condition and asbestos issues. An aged care respite day centre was built behind the hospital in the late 1980s. the campus is shown in Figure 1.

Figure 1: Temora Hospital aerial



1.3 Purpose of this plan

This report supports a Review of Environmental Factors (REF) submitted to Health Infrastructure as an authorised review agency.

The purpose of this report is to provide:

- Estimation and details of waste generated throughout the main works package; and
- A preliminary description of measures to be implemented to handle waste.

Details of the amounts, handling methods and destinations of waste generated during construction will be provided by the construction contractor appointed to the project.

2.0 Legislation, policy and guidelines

2.1 NSW State Legislation and Policy

2.1.1 The *Protection of the Environment Operations Act 1997* (Part 4)

The *Protection of the Environment Operations Act 1997* covers the requirements for waste generators in terms of storage and correct disposal of waste. The Act establishes the waste generator as having responsibility for the correct management of waste, including the final deposit.

2.1.2 *Waste Avoidance and Resource Recovery Act 2001 No 58*

Resulting from the concerns raised around waste management practices and increasing volumes of waste, the NSW government introduced the aforementioned Act, superseding the *Waste Minimisation and Management Act 1995*.

The Act aims to encourage the most efficient use of resources and introduce environmental harm in accordance with the principles of ecologically sustainable development. The Act required Resource NSW to develop a waste strategy for the state to assist in achieving those requirements and objectives of the *Protection of the Environment Operations Act 1997*.

The Waste Management Plan is a requirement for a new development in NSW and is written with reference to the *NSW Waste Avoidance and Resource Recovery Strategy 2014-2021*, made under the Act. The Strategy seeks to ensure that resource management options are considered against the following hierarchy:

- i) Avoidance of unnecessary resource consumption
- ii) Resource recovery (including reuse, reprocessing, recycling and energy recovery)
- iii) Disposal.

2.1.3 *NSW Waste and Sustainable Materials Strategy 2041*

The *NSW Waste Avoidance and Resource Recovery Act 2001 No 58* commits the NSW Government to refreshing and updating its waste strategy every five years – to review and continually improve the state's policies and targets for waste reduction and landfill diversion. (This strategy updates the previous *Waste Avoidance and Resource Recovery Strategy 2014-2021*.)

This strategy sets out three focus areas.

1. **Meeting our future infrastructure and service needs** - As waste volumes continue to grow, infrastructure and services will need to keep pace. We need to ensure we have the capacity to meet our critical future needs, such as residual waste capacity, as well as stimulating investment in a pipeline of innovation.
2. **Reducing carbon emissions through better waste and materials management** - Transitioning to a circular economy means increasing our resource efficiency and reducing our carbon footprint. If we can make our materials more productive by improving their durability through design, reusing or repairing them, recycling and remanufacturing them or extracting their embodied energy, we can reduce our reliance on emissions-intensive virgin materials.
3. **Building on our work to protect the environment and human health from waste pollution** - If poorly managed, waste can cause enormous damage to our natural environment and threaten the health and well-being of our community. Pollution from waste can be caused by littering, illegal dumping and mishandling of hazardous wastes, and it costs NSW millions of dollars each year. Maintaining strong regulations will help to stop this waste pollution, while engaging with businesses and consumers will help to drive positive behaviour change.

The strategy sets targets for a range of priority areas:

- Reduce total waste generated by 10% per person by 2030
- 80% average recovery rate from all waste streams by 2030
- Increase the use of recycled content by governments and industry
- Phase out problematic and unnecessary plastics by 2025
- Halve the amount of organic waste sent to landfill by 2030
- An overall litter reduction target of 60% by 2030 and plastic litter reduction target of 30%
- Triple the plastics recycling rate by 2030
- Achieve net zero emissions from organic waste by 2030.

2.1.4 Other Relevant Policy Documents

There are a range of other policy and guideline documents that are applicable:

- The Waste Classification Guidelines, Environmental Protection Agency, 2014
- Clinical and Related Waste Management for Health Services, Policy Directive PD 2020_049, NSW Health
- Safe management of wastes from health-care activities, 2nd edition, World Health Organisation, 2014
- Better Practice Guidelines Waster Management and Recycling in Commercial and Industrial Facilities, NSW EPA, 2012.
- Construction and Demolition Waste A Management Toolkit, NSW EPA, 2020

2.2 Local Government Requirements

2.2.1 Temora Shire Council Local Environmental Plan and Development Control Plan

Section 1.9 of the Temora Shire Council Local Environmental Plan, developed and implemented by the Temora Shire Council Local Government Authority, acknowledges that the Plan is subject to the provisions of the State Environmental Planning Policies (SEPP) as per section 3.28 of the Act. Schedule 9, Part 1.3 of the NSW SEPP requires:

- A waste management plan (WMP) for the work must be submitted to the Principal Certifying Authority (PCA) at least 2 days before commencement of the works on-site
- A WMP must
 - Identify all waste (including excavation, demolition and construction waste materials) generated and resulting from the construction activities;
 - Identify the quantity of waste material in tonnes and cubic metres to be
 - Reused on-site
 - Recycled on-site and off-site
 - Disposed of off-site
 - If waste materials are to be reused or recycled on-site – specify how the waste material will be reused or recycled on-site
 - If waste materials are to be disposed of or recycled off-site – specify the contractor who will be transporting the materials and the waste facility or recycling outlet to which the materials will be taken
- A garbage receptacle must be provided at the work site before works begin and must be maintained until the works are completed
- The garbage receptacle must have a tight-fitting lid and be suitable for the reception of food scraps and papers.

Temora Shire Development Control Plan 2012

Section C – Development Controls of the Temora Shire Development Control Plan 2012 clarifies:

Development consent must not be granted to development unless the applicant has submitted a report with the development application that addresses, to the satisfaction of the consent authority, the following matters:

(b) any potential risk of groundwater, contamination from on-site storage or disposal of solid or liquid waste and chemicals.

This Waste Management Plan advises the contractor of recommended on-site storage and appropriate disposal of waste generated during construction but is subject to change once the contractor's own on-site investigations are conducted.

2.2.2 Murrumbidgee Local Health District – Environmental Sustainability Strategy 2022-2024

MLHD's current status is as follows.

- More than \$600,000 is spent per year on waste within MLHD.
- Almost 6,000kg of clinical waste is produced per month.
- Many clinical waste streams require incineration – further contributing to the carbon footprint.
- Local initiative such as the proceeds of returned plastic bottles collected at Wagga Wagga Base Hospital, are shared with St Vincent De Paul, and used to offset increasing food costs for locals in need.

MLHD seeks to achieve:

- Consistent approach to recycling across the District;
- Consistent processes for collecting data on waste across the District;
- Stabilisation in the generation of the top three waste streams:
 - Clinical Waste
 - General Waste to landfill
 - Comingled recycling.

What are MLHD's targets?

- Reduce general waste going to landfill by 10% by 2024.
- Promote and increase attendance/engagement at sustainability related events by 2024.
- Reduce paper use by 10% by 2024

3.0 Targets, Monitoring and Measurement

Accurate and high-quality waste data is crucial for effective waste management at Temora Hospital. This data enhances accuracy, transparency, and confidence, facilitating meaningful comparisons and benchmarking within and between different portfolios and waste contractors. Strategic resource planning benefits from good waste data, providing insights into the efficiency of equipment and operations, ensuring correct invoicing and fee accuracy, and aiding in achieving greater resource recovery through precise measurement of current and future waste performance.

3.1 Waste targets

Temora Hospital is committed to achieving a high sustainability performance in waste management. For operational waste, MLHD will adopt a landfill diversion target of 70%, aligning with its sustainability strategy. This target will be calculated by subtracting the weight of landfill waste from the total waste and then dividing this figure by the total waste, multiplied by 100%.

A landfill diversion target of 80% will be adopted for construction and demolition waste in line with the EPA Waste and Sustainable Materials Strategy 2041.

3.2 Monitoring and Measurement

Data on waste generation at Temora Hospital will be systematically collected, collated, and recorded by the waste service provider. This process is essential for monitoring and measuring progress towards waste targets.

3.2.1 Operations

The waste service provider for Temora Hospital must adhere to the Waste Management Plan (WMP) and comply with operational safety standards. They are required to provide accurate measurements for each waste bin collected, per waste stream, ensuring the integrity of measurement scales. Any observed contamination in recycling bins must be reported as an incident and treated as general waste.

The waste service provider will also supply colour-coded equipment, in line with Australian Standard 4123, and maintain a regular collection schedule to keep bins no more than three-quarters full, ensuring hygiene and odour control.

3.2.2 Contamination Audit

An annual contamination audit of each recycling stream is recommended for Temora Hospital. This audit, conducted by an independent expert, will assess the level of non-acceptable items in the waste sample, determining the contamination rate.

3.2.3 Reporting

The waste service provider will issue regular operational waste management reports to Temora Hospital, detailing the types and amounts of waste generated and any contamination incidents.

3.3 Review of WMP

A thorough review of Temora Hospital's Waste Management Plan (WMP) will occur annually to ensure the plan's effectiveness, compliance, and alignment with sustainability goals. This comprehensive review will be conducted collaboratively by the waste service provider and representatives of Temora Hospital.

The annual review will consider, at a minimum:

1. **Performance evaluation:** Assessing waste management effectiveness and performance against reduction and recycling targets.

2. **Operational efficiency check and compliance with regulations:** Reviewing waste collection schedules, segregation practices, and facility effectiveness as well as adhering to local and national waste management standards.
3. **Stakeholder Feedback and Training:** Gathering input from staff for improvements and evaluating training effectiveness.
4. **Exploring Sustainability Opportunities:** Incorporating eco-friendly disposal methods and innovative waste management technologies, as well as re-aligning with the current Council / Local Health District's sustainability approaches.
5. **Financial Assessment:** Analysing costs of waste management to identify potential savings.
6. **Setting Achievable Future Goals:** Establishing realistic targets aligned with sustainability objectives.
7. **Documentation for Record-Keeping:** Recording review outcomes for future reference and compliance

4.0 Construction and Demolition Waste

4.1 Construction and Demolition Waste Streams

Construction and demolition work for this development is to take place with consideration of the Council's development control plan and relevant legislation listed herein this Waste Management Plan, or those implemented by the NSW Government or government bodies.

Waste generated from construction and demolition projects, including soil, contaminated soil and demolition waste, must be re-used or disposed of lawfully. In particular, construction and demolition will occur with stringent consideration and implementation of the methodology for recycled materials and recycling of construction and demolition waste streams as outlined in this plan.

The NSW EPA Waste Classification Guidelines define six classes of waste in line with Clause 49 of Schedule 1 of the Protection of the Environment Operations Act 1997 (POEO Act):

- Special waste
- Liquids waste
- Hazardous waste
- Restricted solid waste
- General solid waste (putrescible)
- General solid waste (non-putrescible)

Materials that are gazetted under of each of the POEO classifications are outlined in Table 1.

Table 1: NSW EPA Waste Classification Guidelines¹

Waste streams	Description
Special Waste	A class of waste that has unique regulatory requirements. The potential environmental impacts of special waste must be managed to minimise the risk of harm to the environment and human health. Special waste includes any of the following: • clinical and related waste • asbestos waste • waste tyres • anything classified as special waste under an EPA gazettal notice
Liquid Waste	Liquid waste means any waste (other than special waste) that: • 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 • is classified as liquid waste under an EPA gazettal notice.
Hazardous Waste	The following waste types (other than special waste or liquid waste) have been pre-classified by the EPA as 'hazardous waste': • containers, having previously contained a substance of Class 1, 3, 4, 5 or 8 within the meaning of the Transport of Dangerous Goods Code, or a substance to which Division 6.1 of the Transport of Dangerous Goods Code applies, from which residues have not been removed by washing or vacuuming

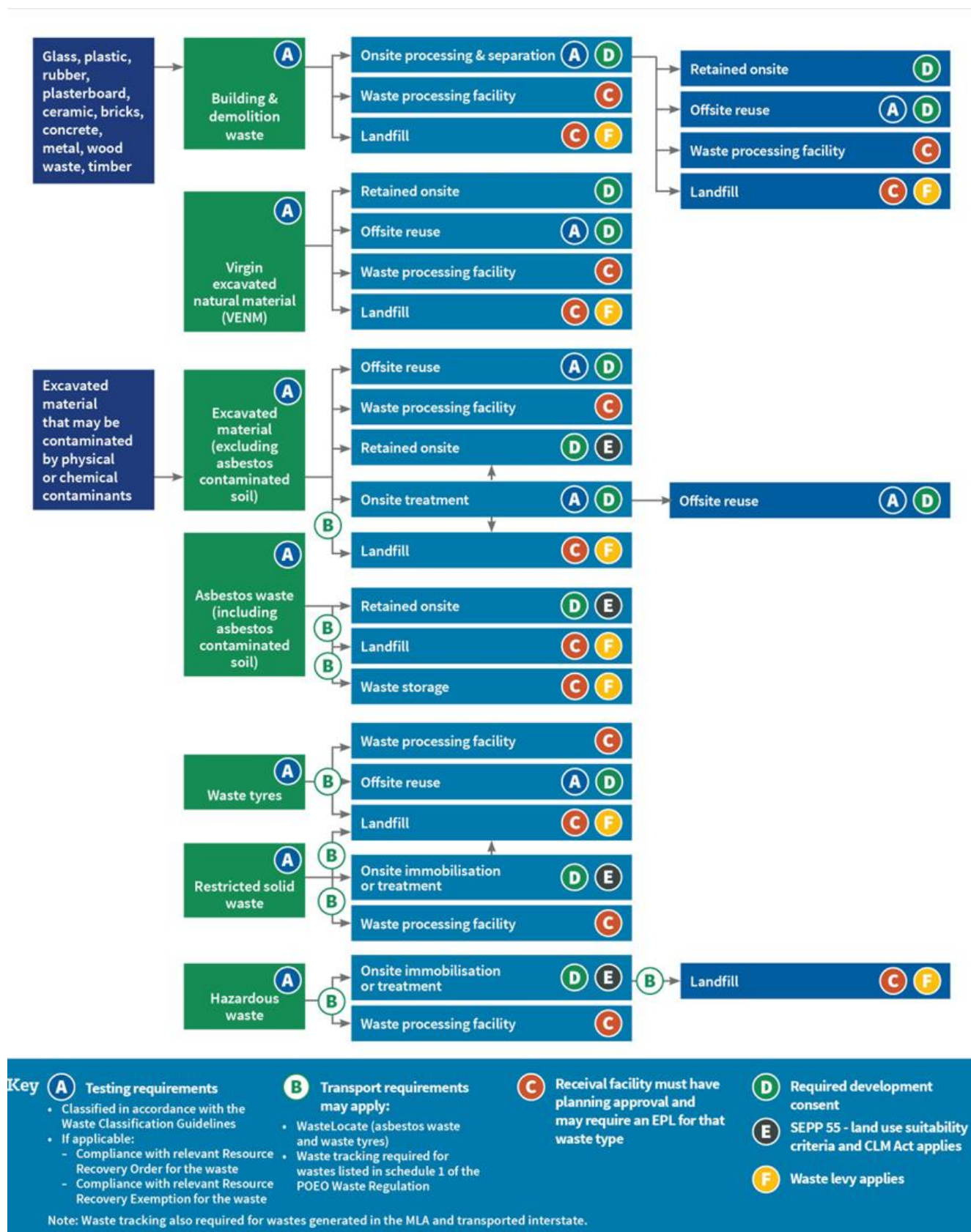
¹ Waste Classification Guidelines – Part 1: Classification of waste; State of NSW, Environment Protection Authority, 2014

	- coal tar or coal tar pitch waste (being the tarry residue from the heating, processing or burning of coal or coke) comprising of more than 1% (by weight) of coal tar or coal tar pitch waste - lead-acid or nickel-cadmium batteries (being waste generated or separately collected by activities carried out for business, commercial or community services purposes) - lead paint waste arising otherwise than from residential premises or educational or child care institutions - any mixture of the wastes referred to above
Restricted Solid Waste	None defined
General Solid Waste (putrescible)	The following wastes (other than special waste, liquid waste, hazardous waste or restricted solid waste) have been pre-classified by the EPA as 'general solid waste (putrescible): - household waste that contains putrescible organics - waste from litter bins collected by or on behalf of local councils - manure and night soil - disposable nappies, incontinence pads or sanitary napkins - food waste - animal waste - grit or screenings from sewage treatment systems that have been dewatered so that the grit or screenings do not contain free liquids any mixture of the wastes referred to above.
General Solid Waste (non-putrescible)	The following wastes (other than special waste, liquid waste, hazardous waste, restricted solid waste or general solid waste (putrescible)) are pre-classified as 'general solid waste (non-putrescible): - glass, plastic, rubber, plasterboard, ceramics, bricks, concrete or metal - paper or cardboard - household waste from municipal clean-up that does not contain food waste - waste collected by, or on behalf of, local councils from street sweepings - grit, sediment, litter and gross pollutants collected in, and removed from, stormwater treatment devices and/or stormwater management systems, that has been dewatered so that they do not contain free liquids - grit and screenings from potable water and water reticulation plants that has been dewatered so that it does not contain free liquids - garden waste (from land clearing and gardening/ landscaping) - wood waste - waste contaminated with lead (including lead paint waste) from residential premises or educational or child care institutions - containers, previously containing dangerous goods, from which residues have been removed by washing or vacuuming - drained oil filters (mechanically crushed), rags and oil-absorbent materials that only contain non-volatile petroleum hydrocarbons and do not contain free liquids - drained motor oil containers that do not contain free liquids - non-putrescible vegetative waste from agriculture, silviculture or horticulture - building cavity dust waste removed from residential premises or educational or child care institutions, being waste that is packaged securely to prevent dust emissions and direct contact

	• synthetic fibre waste (from materials such as fibreglass, polyesters and other plastics) being waste that is packaged securely to prevent dust emissions, but excluding asbestos waste • virgin excavated natural material • building and demolition waste • asphalt waste (including asphalt resulting from road construction and waterproofing works) • biosolids categorised as unrestricted use, or restricted use 1, 2 or 3, in accordance with the criteria set out in the Biosolids Guidelines (EPA 2000) • cured concrete waste from a batch plant • fully cured and set thermosetting polymers and fibre-reinforcing resins • fully cured and dried residues of resins, glues, paints, coatings and inks • any mixture of the wastes referred to above.
--	--

An 80% target for landfill diversion of construction and demolition waste is to enable and ensure the highest proportion of waste is recovered and recycled or reused. An overview of the major waste streams resulting from construction and demolition and their management approach is demonstrated in Figure 2.

Figure 2: Waste flows for common construction and demolition waste



Source: NSW EPA

4.2 Construction and demolition waste generation

The General Solid Waste (non-putrescible) category includes building and demolition waste, which is defined as unsegregated material (other than material containing asbestos waste or liquid waste) that results from the demolition, erection, construction, refurbishment or alteration of buildings other than chemical works, mineral processing works, container reconditioning works, waste treatment facilities. Building and demolition waste includes:

- 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)

NB: this 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).

Table 2 below identifies the estimated volume of waste produced as part of the works associated with redevelopment of Temora Hospital. Estimates for building waste are presently restricted to virgin excavated and excavated natural materials. Estimates of other waste streams are being developed.

Table 2: Anticipated waste produced from construction and demolition activities

Construction and demolition waste streams	Description	Estimated volume of waste
General solid waste (non-putrescible): Building and demolition waste	Glass, plastic, rubber, plaster board, ceramic, bricks, concrete, metal, wood waste, timber	
Virgin excavated and excavated natural material	Excavated materials such as clay, gravel, sand, soil or rock fines	3,500m ³ (assuming reuse)
Hazardous waste	Lead paint	
Special waste: Asbestos waste	Asbestos contaminated building and demolition waste, contaminated soil	
General solid waste (non-putrescible)	Cardboard, garden waste, general waste	

4.3 Construction and demolition waste management

Waste generation and management during construction and demolition is the responsibility of the principal contractor and to be handled in accordance with the approved Construction Waste Management Plan (CWMP). As per section 4.1, waste generated as a result of construction and demolition activities will be reused and recycled as a priority, and only disposed to landfill as a last resort.

During the construction and demolition phase, suitable areas onsite (off site as necessary) will be allocated for waste segregation, stockpiling, and management which provide the required access for:

- separated storage of building materials
- separated storage of construction waste
- separated sorting of construction waste and
- removal of construction waste for recycling, re-use or landfill disposal

Principal contractors and sub-contractors will be required to adhere to the WMP. The details of waste types, volumes and destinations will be recorded by the contractor using the tracking sheets appended to this plan (or similar). Prior to transporting waste materials to offsite facilities, it will be verified that the transporter and facility

is licensed to handle the specific materials. Any waste generated during construction which is unable to be re-used or recycled will be disposed of at an EPA approved waste management facility with evidence provided by contractor to demonstrate that the waste was disposed on lawfully.

5.0 Operational Waste

5.1 Waste generation

The types of operational waste to be generated by the new facility during operation are:

Waste streams	Description
Special Waste	In particular clinical and related waste including: - anatomical waste - cytotoxic waste - pharmaceutical / medicines waste - sharps waste
Liquid Waste	Non-hazardous or food related liquid waste including used water and run-off from cleaning
Hazardous Waste	Expected waste items include: - batteries - gases (incl. use of medical gas cylinders) - flammable liquids (e.g. diesel, synthetic oils), corrosive substances used in maintenance and engineering workshop
General Solid Waste (putrescible)	The following wastes (other than special waste, liquid waste, hazardous waste or restricted solid waste) have been pre-classified by the EPA as 'general solid waste (putrescible)': - food and organic waste - waste from litter bins - disposable nappies, incontinence pads or sanitary napkins
General Solid Waste (non-putrescible)	The following wastes (other than special waste, liquid waste, hazardous waste, restricted solid waste or general solid waste (putrescible)) are pre-classified as 'general solid waste (non-putrescible)': - glass, plastic, rubber, plasterboard, ceramics, bricks, concrete or metal - paper or cardboard - landscaping/ garden waste/ wood waste - containers, previously containing dangerous goods, from which residues have been removed or drained motor oil containers that do not contain free liquids - rags and oil-absorbent materials that only contain non-volatile petroleum hydrocarbons and do not contain free liquids - synthetic fibre waste (that is packaged securely to prevent dust emissions (excluding asbestos waste) - biosolids categorised as unrestricted use, or restricted use 1, 2 or 3, in accordance with the criteria set out in the Biosolids Guidelines (EPA 2000) - fully cured and dried residues of resins, glues, paints, coatings and inks

Estimates of the volume of waste produced have been undertaken in line with the data referenced in the MLHD Environmental Sustainability Strategy 2022-2024, with an approximation that the waste produced in a hospital facility per bed, per day amounts to 0.6kg.

Due to current tracking limitations on the production of waste in the Temora Hospital facility, the above figure has been used to pro-rate and estimate the current operational waste produced by the facility. There is no current data on how this operational waste is split between the different waste streams. The below estimates have not made allowance for Temora's typical 50% bed occupancy to remain consistent with the benchmark figure extracted from the MLHD Environmental Sustainability Strategy, which makes no reference to occupancy percentage.

Table 3: Estimate of operational waste production for Temora Hospital (current)

	Estd. Waste per bed per day (Kg)	Number of current beds	Total annual waste (Kg)
Inpatient beds	0.6 Kg	28	6,132 Kg
Special Care Nursery cots	0.6kg	1	219 Kg
Total			6,351 Kg

5.2 Operational waste streams and labelling

All waste containers and bin liners in healthcare settings must be color-coded and labelled as per the specifications in the below tables, titled 'Waste streams', for easy identification. When dealing with Division 6.2 Infectious Substances, it is crucial to adhere to the Australian Dangerous Goods (ADG) Code, particularly for waste classified under Category A Infectious Substances and Category B Infectious Substances. This includes ensuring that portable and mobile bins are correctly marked, labelled and stored according to Chapters 5.2 and 5.3 of the ADG Code. Health service staff will also consult the SafeWork NSW fact sheet for guidelines on packing and transporting clinical waste, and coordinate with transporters to provide a transport document that accurately describes the contents being moved, ensuring compliance with safety and regulatory requirements

Table 4: Management of clinical waste streams: anatomical, sharps and other clinical waste²

Waste stream	Anatomical waste	Clinical sharps waste	Clinical waste (Incl. Pathological Waste)
Definition	Identifiable human body parts such as limbs, organs, placenta and recognisable or large pathological specimens resulting from investigation or treatment of a patient It does not include deceased bodies	Any clinical object capable of inflicting a penetrating injury which may or may not be contaminated with blood and or body substance. This includes needles, ampoules and any other sharp objects or instruments designed to perform penetrating procedures[1] May contain clinical material or Genetically Modified Organism (GMO)[2] waste	Clinical waste with the potential to cause injury, infection or offence: - Unrecognisable human tissue (excluding hair, teeth, nails and anatomical waste) - Bulk blood or other body fluids (or body substances) - Material and equipment visibly stained by blood or body fluids (includes incontinence pads and disposable nappies that come from an infectious patient)[3] - Lab specimens, cultures or other waste from lab investigations - Waste from medical or veterinary research - Genetically Modified Organisms (GMOs)
Bin colour	Yellow	Yellow	Yellow
Lid colour of bin	Orange	Yellow	Yellow
Plastic bin liners	Orange	N/A	Yellow
Labelling of bins and if applicable liners	Anatomical waste	Clinical sharps	Clinical waste
Symbol			
Symbol (description)	Black biological hazard	Black biological hazard	Black biological hazard
Label (if containing viable PC1 or PC2 GMOs)		Contains GMOs	Contains GMOs
Specific requirements	For incineration only	For incineration or autoclaving and shredding Sharps containers must be rigid-walled and meet the requirements specified in AS/NZS 4031 and AS/NZS 4261[4,5] Autoclave tape and bag indicators must be used to show autoclaving has been completed	For incineration or autoclaving [6] and shredding. Autoclave tape and bag indicators must be used to show autoclaving has been completed. Fluid may be able to be discharged into sewer depending on Liquid Trade Agreement between the health service and water utility All clinical waste once treated by a process acceptable to NSW Health[7] may be reclassified in accordance with the Waste Classification Guidelines[8] before recycling or disposal. There are special precautions regarding disposal of waste related to cases of viral haemorrhagic fever[9]
Relevant Act/Regulation /Australian Standard	AS/NZS 3816:1998 Management of clinical and related waste AS/NZS 4123:2008 Mobile Waste Containers	AS/NZS 3816:1998 Management of clinical and related waste AS/NZS 4123:2008 Mobile Waste Containers <i>Protection of the Environment Operations Act 1997</i> <i>Protection of the Environment Operations (Waste) Regulation 2014</i>	AS/NZS 3816:1998 Management of clinical and related waste AS/NZS 4123:2008 Mobile Waste Containers <i>Protection of the Environment Operations Act 1997</i> <i>Protection of the Environment Operations (Waste) Regulation 2014</i>
EPA licence requirements	No	No	No

Reference: Clinical and Related Waste Management for Health Services

² NSW Health PD2020_049: Clinical and Related Waste Management for Health Services, December 2020

Table 5: Management of clinical waste streams: cytotoxic, pharmaceutical and radioactive ³

Waste stream	Cytotoxic waste	Pharmaceutical waste	Radioactive waste
Definition	Material contaminated with residues or preparations containing materials toxic or otherwise harmful to cells. This includes any residual cytotoxic drug or laboratory chemical and any discarded material or clinical waste associated with the preparation or administration or excretion of cytotoxic drugs May include Genetically Modified Organisms (GMOs) or tissues containing GMOs	Pharmaceuticals or other chemical substances specified as regulated goods in the Poisons and Therapeutic Goods Act 2008. Includes any substance specified in a Schedule of the Poisons List under the Act, as well as any therapeutic good which is unscheduled Includes expired or discarded pharmaceuticals, filters or other material contaminated by pharmaceutical products	Waste material, including sharps and clinical waste contaminated with a radioisotope which arises from the medical or research use of radionuclides, e.g. during nuclear medicine, radioimmunoassay and bacteriological procedures, and may be in solid, liquid or gaseous form, and which emits a level of radiation above the level set by regulatory authorities
Bin colour	Purple	Yellow	Red[1]
Lid colour of bin	Purple	Orange	Red
Plastic bin liners	Purple	N/A	Red
Labelling of bins and if applicable liners	Cytotoxic waste	Pharmaceutical waste	Radioactive waste plus specific requirements below
Symbol		Nil	
Symbol (description)	White telophase	Nil	Yellow background with distinctive 'trefoil' symbol in black and the lettering 'CAUTION RADIATION' in black
Label (if containing viable PC1 or PC2 GMOs)	Contains GMOs		
Specific requirements	For incineration only Collection, transport and handling only by licensed and registered waste management companies	Storage, destruction and disposal methods must comply with PD2013_043 Medication Handling in NSW Public Health Facilities[2] Pharmaceutical waste must be incinerated at a licensed controlled waste facility. Certain pharmaceuticals may only be destroyed by authorised persons under the <i>Poisons and Therapeutic Goods Act 1966</i> [3] Pharmaceutical waste bins must be lockable	Radioactive material to be stored on-site in appropriate storage area until it decays to below the thresholds of a "radioactive substance" as defined under the Radiation Control Act and Regulation Waste is to be classified with reference to the Safety Guide for the Classification of Radioactive Waste[4] and in accordance with the EPA Waste Classification Guidelines[5] Radioactive waste must be labelled with the substance, activity level and the date at which it is measured Handling and storage to comply with a Radiation Management Plan in accordance with the Code of Practice for Radiation Protection in the Medical Applications of Ionizing Radiation (ARPANSA 2008)[6] Radioactive sharps – see page 9 [7] When radioactive waste is to be transported, health services must comply with the Code of Practice for the Safe Transport of Radioactive Material (ARPANSA 2014)[8]
Relevant Act and Regulation	AS/NZS 4123:2008 Mobile Waste Containers <i>Protection of the Environment Operations Act 1997</i> <i>Protection of the Environment Operations (Waste) Regulation 2014</i>	<i>Poisons and Therapeutic Goods Act 1966</i> <i>Poisons and Therapeutic Goods Regulation 2008</i>	AS/NZS 4123:2008 Mobile Waste Containers <i>Radiation Control Act 1990</i> <i>Radiation Control Regulation 2013</i>
EPA licence requirements	No	No	Yes - Waste Classification Guidelines Part 3: Waste containing radioactive material (EPA, 2014)

³ *ibid*

5.3 Waste generation estimates

Temora is required to comply with the MLHD Waste Management Plan. MLHD is committed to reducing waste. The scope of works that form the Temora Hospital Redevelopment Project and the works captured within the REF will result in fewer inpatient beds, reducing from 28 IPU beds + 1 SCN cot, to 24 IPU beds + 2 SCN cots, together with additional ambulatory care.

The below table shows the volumes of general waste, recyclable waste and clinical waste currently generated by Temora Hospital according to MLHD benchmarks, compared with the capacity following the redevelopment. The estimates for additional waste were generated by utilising the 0.6kg per bed / per day waste produced (obtained from the MLHD Environmental Sustainability Strategy 2022-2024) and prorating the new bed profile to calculate the revised total annual waste produced by the facility. Actual volumes of operational waste (rather than benchmark volumes) have not been made available by MLHD.

Table 6: Current and projected volume of waste generated by the Temora Hospital according to MLHD benchmarks

	Current annual waste (prorate, Kg)	Proposed beds	Revised total annual waste (prorate, Kg)
Inpatient beds	6,132	24	5,256
SCN cots	219	2	438
Total	3,351	26	5,694

The following waste minimisation and reduction strategies are recommended to be adopted by the facility once the development becomes operational:

- Waste minimisation commences with product choice – choosing products with the smallest amount of packaging available, or packaging removed by company
- Purchasing products and equipment made from recycled materials
- Stock that can expire to be kept to a minimum and rotated to ensure oldest stock is used first
- Packaging to be removed and segregated from clinical waste before contamination occurs, further segregation of paper products can occur at this point
- Reduction of size of clinical waste bins in areas outside theatre, labour ward and ED to promote good segregation practices
- Staff education regarding correct segregation at orientation and periodically as needed
- Waste reduction champions in different areas to promote recycling and segregation practices
- Reuse of paper for notes, reducing paper use by less printing of electronic documents
- Staff using their own cups instead of providing polystyrene cups
- Reuse of binders and other equipment, furniture by offering unused material to other departments
- Repairing equipment/furniture instead of replacing items (consider contamination)
- New waste minimisation and recycling opportunities to be explored and implemented where possible and
- Sustainability and energy efficiency to be considered during new development and refurbishing.

6.0 Waste and Materials Reuse Management Plan

6.1 Waste Management Principles

The *Waste Avoidance and Resource Recovery Act 2001* (WARR Act) establishes the waste hierarchy and requires that resource management options are considered against the following priorities:

1. Avoidance – actions to reduce the amount of waste generated and undertaking activities.
2. Resource Recovery – including reuse, reprocessing, recycling and energy recovery, consistent with the most efficient use of the recovered resources.
3. Disposal – an ‘end of pipe’ option that must be undertaken carefully to minimise any negative environmental outcomes.



Figure 3 Waste Hierarchy (NSW. EPA 2015)

In accordance with the WARR Act, Waste Management Principles will be incorporated into a detailed construction waste management plan provided by the head contractor.

These include:

Waste Avoidance and Reduction

The preferred option in the waste hierarchy is to avoid the generation of waste, or reduce the amount or volume that is produced. Waste avoidance will be facilitated through:

- Careful project planning to minimise the amount of material brought to site. Waste will be avoided by specifying the exact project requirements
- Good housekeeping practices including material acquisition and inventory control to avoid waste resulting from out-of-date, off specification or excess to project needs
- Appropriate Storage and Management of materials onsite to limit the potential for damage from weather or plant which will eliminate the need for purchase of replacement products and waste generation

Waste Reuse/Recycling

Re-use and recycling of waste will be encouraged where the generation of waste cannot be avoided. Recycling of waste will be achieved through implementation of the following measures:

- Evaluating waste production processes and identifying potentially recyclable materials
- Identifying and recycling products that can be reintroduced into the construction and operation processes
- Investigating and auditing external markets for recycling by other operations located in the neighbourhood or region of the site
- Waste segregation on site – dedicated bins or areas for collection by a licenced waste contractor
 - General Waste – Glass, Paper & Cardboard and Aluminium
 - Concrete from excavation to be sent to a recycling facility
 - Natural material will be classified as VENM for offsite reuse.

Waste Handling and Storage

Storage and segregation of waste and waste servicing arrangements will be carefully planned as the public will still be accessing the Hospital during the works. Planning for waste storage areas will be considered throughout the project as there are changing locations of construction areas during the various project phases.

The following measures will be required to apply where onsite waste handling and storage is required:

- Provision of clear signage to mark the location and storage of different types of waste.
- Stockpile Management
 - Within designated areas away from drainage lines
 - Limited to 2m height
 - Covered stockpiles
 - Storage on Hard Stand or Plastic sheeting
 - Stockpile concrete, bricks and scrap metal separately.
- Clearly marked waste containers with information such as name of waste, composition (solid/liquid), restricted properties of the waste (corrosive, ignitable) and date of the first waste deposited into the container.
- All servicing arrangements will need to consider the safety of site users.

Waste Tracking and Disposal

Waste generated by the project that cannot be either recycled or reused onsite will be disposed of by a licenced waste contractor to an appropriately licenced landfill or recycling facility. All vehicles conveying waste soils will have covered loads when leaving site.

Prior to disposal, waste will be classified in accordance with the requirements of the NSW EPA Waste Classification Guidelines.

A waste inventory will be maintained.

A tracking system will be used to track the waste quantities and types disposed. Documentation will track wastes, including the handling steps and servicing arrangements followed to manage the wastes from the point of generation through to collection, storage, treatment and final disposal.

On and Offsite waste tracking will record for each waste generated:

- Waste generator facility and address
- Type and identity of transport vehicles associated with the collection and final disposal of waste
- Date for recycling, treatment and disposal
- Type of Waste
- Quantity of waste
- Method of recycling, treatment or disposal
- Description of waste, including restricted characteristics (i.e. what makes it a restricted or non-restricted waste).

Waste tracking forms will be used for all wastes moved off-site. The tracking form will record appropriate information about each waste stream and enable control of the waste disposition by confirming receipt by the designated recipient. Evidence proving the lawful disposal of waste will be required from contractors and subcontractors as relevant.

6.2 Potential Waste Impacts and Management

Potential impacts associated with poor or inadequate management of wastes generated during the construction and operation of Temora Hospital are outlined in Table 7.

Table 7: Summary of aspects of waste management and potential impacts

Aspect of waste management	Potential impacts
Generation of waste (usage of resources)	• Extraction of resources. • Energy and water consumption associated with processing.
On-site storage of waste in an urban setting	• Increased dust. • Visual impact. • Increased littering. • Sediment laden runoff. • Odours. • Increased pest animals. • Restricted space/site access. • Health and safety of site users and workers.
On-site storage and segregation of waste	• Reduction in reuse of materials. • Cross-contamination of waste. • Contamination of recycling centres.
On-site storage of liquid and/or contaminated waste	• Contamination of surface soils, groundwater, and surface waters. • Odours.
Clinical waste	• Risk to human health.
Waste transportation	• Noise and dust impacts to surrounding sensitive receptors. • Odours. • Mud tracking on roads during construction.
Non-classified or incorrectly classified waste disposal/transport	• Regulatory non-compliance and associated penalties. • Contamination of landfill/recycling centres.
Unlicensed waste transporters removing waste off-site	• Regulatory non-compliance and associated penalties. • Illegal dumping of waste.

6.3 Waste Management Methods

A detailed construction waste management plan will be developed by the Contractor as part of the Construction Environmental Management Plan. The plan will provide further details of the management required for the waste types generated under the works associated with the Temora Hospital Redevelopment. As the design progresses, accurate estimates of quantities of building materials prior to construction will ensure that a minimum of waste is generated. Records of waste and recycling collected and disposed of will be collated throughout the construction phase by the Contractor. Un-used materials in a good condition will often be collected by suppliers, facilitating the reduction of the amount of material sent to recyclers or landfill.

The Contractor will be required to achieve compliance with the EPA guidelines.

Following removal of all hazardous materials such as asbestos, lead-based paints, phenols and polychlorinated biphenyls (PCB), where possible, any waste material generated from the Works will be recycled apart from selected soft demolition materials.

A summary of likely waste streams to be generated through construction are identified in Table 8 below, a proposed method for handling, storage and reuse/disposal of each type of waste are also presented.

Table 8: Waste streams and management during construction

Activity	Waste stream	Management
Main Works Package	Structural steel	- Segregation on site (Compound A or B) - Transport or collection to a recycling facility.
	Steel reinforcement	- Segregation on site. (Compound A or B) - Transport or collection to a recycling facility.
	Concrete	- Segregation on-site. (Compound A or B) - Transport to a recycler or use on-site/off-site in road making activities, building, landscaping and construction works in accordance with the requirements of the Recovered Aggregate Resource Recovery Exemption 2014. - Where reuse is not practical concrete has been pre-classified by the EPA as General Solid Waste (non-putrescible) and can be disposed to an appropriately licensed facility by a licensed contractor.
	Plasterboard	Landfill
	Metals	- Segregation on-site. (Compound A or B) - Transport or collection to a recycling facility.
	Asphalt (for roads and car parks)	Landfill
	Mechanical - ductwork	- Segregation on-site. (Compound A or B) - Transport or collection to a recycling facility.
	Electrical - metal cable trays, electrical cables, fibre optic cables	- Segregation on site. (Compound A or B) - Transport or collection to a recycling facility.
	Hydraulics – UPVC Piper, Copper pipe, HDPE pipe	- Segregation on site. (Compound A or B) - Transport or collection to a recycling facility

Site Office and Worksites	General Office Waste – paper, printer cartridges	• Segregation of recyclable wastes and storage on-site • Collection and transport to a recycler
	Domestic Wastes – food scraps, glass bottles, cans, packaging.	• Segregation of recyclable wastes and storage onsite
	Septic and Sanitary systems waste	• Sewerage treatment plant
Plant Maintenance and Chemicals Management	Drums and Containers	• Segregation of recyclable wastes and storage onsite (Compound A or B) • Collection and transport to a recycling facility
	Waste Oil, great, lubricants, oily rags and filters	• Segregation of recyclable wastes and storage onsite (Compound A or B) • Collection and transport to a recycling facility

The storage of waste created by the site through demolition, excavation and general construction works will be specified within the site establishment zones.

6.4 Hazardous Materials Management

Dangerous goods (such as petrol, diesel, oxy-acetylene, oils, glues etc) will be stored in a lockable compound with sufficient ventilation in accordance with relevant codes of practice and standards. Material safety data sheets on all of these flammable and potentially harmful liquids will be provided by the Contractor undertaking the Works.

A separate report has been commissioned to cover the requirements under SEPP 33 – Hazardous and Offensive Development. This assessment has concluded that the quantities of Dangerous Goods to be stored at the proposed facility and the associated vehicle movements do not exceed the thresholds required to classify the facility as hazardous. Therefore, no further assessment is required.

6.4.1 Hazardous Materials Audit

A licensed demolition contractor and/ or the Contractor are to inspect the site to determine the presence of any hazardous materials in accordance with the requirements of AS2601.

A hazardous materials survey undertaken by JKEnvironments (2023) confirms the following hazardous materials on site. Buildings on the site include has friable and bonded asbestos, Synthetic Mineral Fibre (SMF), lead based pain and Polychlorinated Biphenyls (PCB).

Table 9: Hazardous materials survey summary, conducted by JKENvironments, 2023

Building No. and reference	Friable asbestos	Bonded asbestos	SMF materials	Lead based paint	Lead in dust	PCB cont. electrical equipment
1. Main Hospital	Yes	Yes	Yes	Yes	No	Yes
2. Day Care	No	Yes	Yes	No	No	Yes
3. Boiler Room	No	Yes	Yes	No	No	Yes
4. Staff Accommodation	Yes	Yes	Yes	No	No	Yes
5. Workshop	No	Yes	Yes	No	No	Yes
6. Plant Room	No	Yes	Yes	No	No	No

6.4.2 Hazardous Materials Management Plan

The hazardous materials survey has informed the identification of key demolition waste streams, their likely classifications and quantities, as well as handling, management, recycling and disposal measures.

- A Hazardous Materials Management Plan will be prepared in accordance with the requirements of AS2601 prior to the commencement of any demolition works;
- The removal, handling and disposal of asbestos materials are to be undertaken only by an appropriately licensed contractor and in accordance with the requirements of the NSW WorkCover Authority and the NSW Office of Environment and Heritage (NSW OEH);
- All asbestos and other hazardous materials are to be appropriately contained and disposed of at a facility holding the appropriate licence issued by the NSW OEH; and
- A sign displaying the words 'DANGER ASBESTOS REMOVAL IN PROGRESS' is to be displayed on sites where buildings to be demolished contain asbestos materials.

7.0 Waste Storage Design and Collection

7.1 Signage

In areas designated for waste disposal, storage, and collection, signage explaining the use of the waste management system will be installed. These signs will indicate the appropriate materials for each recycling bin. Bins will be distinctly marked with labels and colour coding to prevent the accidental mixing of different waste streams. Standardised bin lid colouring will be implemented as required by the council to identify the storage of general waste (red lid), co-mingled recycling (yellow lid), paper/card recycling (compacted), food organics (burgundy lid), garden organics (lime green lid), clinical waste (yellow bin), cytotoxic waste (purple bin). These steps are implemented to promote the correct segregation of waste materials and facilitate resource recovery.

Furthermore, clear Work Health and Safety (WHS) signs will be provided where necessary, especially in areas dedicated to waste and recycling, to ensure a safe and compliant environment.

7.2 General waste facilities design

The Waste Management Plan for the Temora Hospital redevelopment outlines the safest and most hygienic design aspects to be considered for waste storage rooms. The plan covers several key areas of facility design and requires the following.

Bin Storage Area: This area must be spacious enough to comfortably house the required bins, with each bin requiring a space of at least 700mm by 750mm. Bins will be easily accessible and removable for servicing, necessitating unobstructed access and a minimum passageway width of 1 meter. The area will feature a concrete floor and brickwork walls at least 1100mm high to screen bins from the street. There are no gates at the entry, and landscaping is required to minimise streetscape impact.

Waste and Recycling Storage Rooms: These rooms must also be adequately sized to fit the necessary bins. The layout will facilitate easy access to all bins, with garbage bins placed closest to the access door to reduce recycling contamination. The room requires a smooth, coved concrete floor, graded to a floor waste connected to the sewerage system if storing putrescible waste. A tap with hose connection for cleaning, brickwork or concrete block walls with cement-rendered surfaces, and a rigid, non-absorbent ceiling are also necessary. The walls and ceiling are to be painted with light-colored washable paint. The room needs a self-closing door, accessible from inside without a key, and finished with a smooth, impervious material. Ventilation is required, either naturally or mechanically, along with controllable artificial lighting. Clear signage for correct waste facility use is also mandated.

7.3 Waste Infrastructure for holding operational waste

The central waste holding area located in the facility's back of house will have capacity for the following bins:

Waste stream	Size of bin	Colour	Number
General waste	240L	Red lid	4
Food waste	240L	Burgundy lid	2
Co-mingle	240L	Yellow lid	2
Green waste	240l	Lime green lid	2
PVC	240L	Yellow lid	1
Clinical waste	240L	Yellow bin	5
Cytotoxic waste	240L	Purple bin	1
Cytotoxic waste	120L	Purple bin	1
Bulky waste	Waste compound		

Problem wastes	Waste compound		
Compactor	Waste compound		

Dirty utilities located in the inpatient unit, perioperative suite and emergency department make provision for 120L and 240L bins for holding general waste and clinical waste, prior to being removed to the central waste holding area.

7.4 Amenity

The design and implementation of waste management systems and structural elements will be focused on additional building amenities. The key considerations throughout the design stages are as follows:

Visual Impact: Visible components of the waste management system must align with the overall design aesthetic of the development.

Noise Control: Measures will be taken to significantly reduce noise, eschewing the use of loud waste management equipment.

Odour Management: Efforts to minimise odour include using refrigeration (e.g. clinical waste), waste containers with tightly fitting lids and smooth, washable interiors. Additionally, all waste storage areas will be equipped with mechanical ventilation systems. Combined with adequate ventilation and regular waste collection, these measures will effectively eliminate odour risks.

This approach ensures a harmonious integration of waste management within the redevelopment project. The approach has been considered by the consultants to current design stages, and will continue to be considered by the consultants and contractor (when engaged) during design finalisation and implementation.

7.5 Location and access – construction and demolition

The following figures show the construction zone, service vehicle routes for waste collection and removal, and the proposed skip bin location during construction, noting that the arrangement will differ in stage 1 and stage 2. During construction the skip will be located within the confines of the site, and site compound. The final location will be proposed by the contractor and agreed by the principal. The proposed location is within the proposed site boundary, away from clinically sensitive areas. The positioning below considers the possible generation of odours from the skip, and the noise disturbance resulting from the collection process. This will not inhibit the flow of traffic through to the main hospital as it is off the main egress route. There is room for an additional skip to allow the contractor to sort between recyclables, reusables and disposables.

[illegible][illegible]

The following figure shows the location of waste collection areas at the conclusion of the redevelopment. There are three dirty utilities within the hospital, together with a central general waste holding area and a secure clinical waste holding area in the back of house.

Figure 5: Waste collection points and service vehicle access for management of operational waste

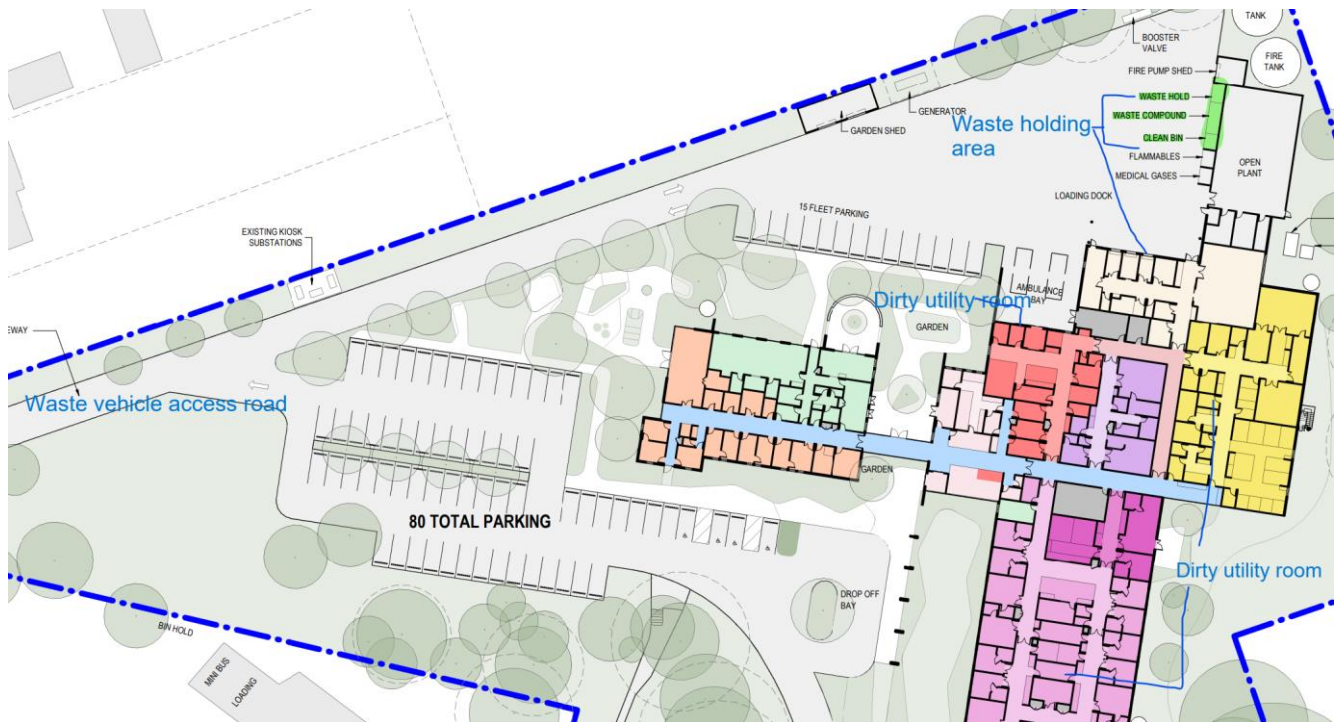
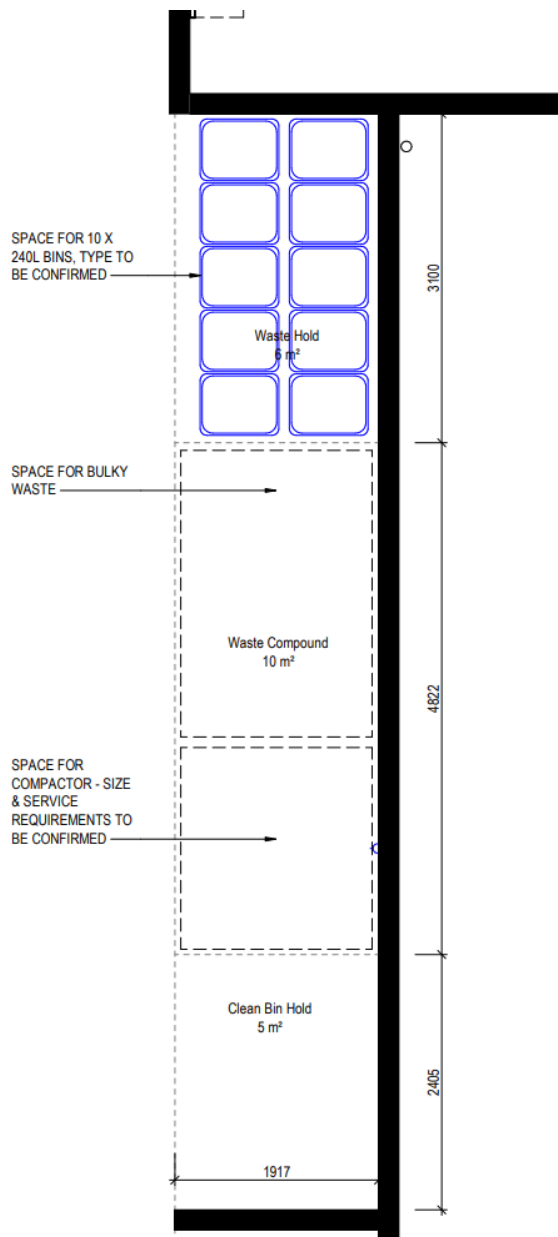


Figure 6: Waste holding in the central waste holding zone



7.7 Frequency of Waste Removal

It is mandatory that written proof of the contractor's valid and current license for the collection and disposal of waste and recycling be provided and available on site at all times.

The proposed schedule for waste collection is as follows:

- **Regular Waste Streams:** The collection of standard waste streams, including general waste, co-mingled recycling, paper/cardboard recycling, and food and garden organics, is scheduled to occur weekly, aligning with standard working days.
- **Other Waste Streams:** The collection of other categories of waste, such as hard/bulky waste, electronic waste (e-waste), cooking oil, and similar items, will be conducted less frequently. These collections will be organised on an as-needed basis, ensuring efficient and timely disposal.

- **Clinical and Sanitary Waste:** The collection frequency for clinical and sanitary waste is to be determined by the respective specialised waste removal service providers. These collections will be coordinated in consultation with facilities management, tailored to the specific requirements of these waste types. Clinical waste can be stored for up to four weeks.

It is important to note that these waste collection frequencies are initial estimates and are subject to adjustment both during construction and post-occupancy. Once the building is operational and actual waste generation rates are assessed, the collection schedule can be fine-tuned to better align with the observed needs and efficiencies. This adaptive approach ensures that waste management remains responsive to the actual usage patterns of the building, promoting environmental sustainability and operational effectiveness.

8.0 Waste Management Initiatives

8.1 Best practice separation

Segregation of various streams of waste is an important part of efficient waste management. Effective segregation will be achieved through:

- education and training to all personnel who generate waste
- reviewing of material composition (Safety Data Sheet) for waste classified as hazardous (e.g. hazardous chemicals and dangerous goods) to ensure that waste components are handled safely, including storage and disposal
- ensuring identifiable colour coding and labelling for waste streams in line with policy
- providing suitable containers and bags in appropriate locations
- incorporating quick and efficient waste disposal methods into patient care procedures
- ensuring all waste can be easily, safely and correctly segregated at the point of generation.

8.1.1 Co-mingled & Paper/Cardboard Recycling

Co-mingled and paper/cardboard recycling bins aim to substantially increase the segregation and diversion of recyclable materials from landfill.

It is suggested that the implementation of clear, color-coded signage on these bins to aid in proper waste segregation. Furthermore, prominent and educational posters in key areas will be installed to vividly demonstrate proper recycling methods. Balers will be used to keep cardboard compacted. This approach is expected to significantly boost the volume of recyclables being correctly sorted and diverted from general waste streams.

8.1.2 Food Organic Waste Management

The food service will seek to minimise the volume of food waste by minimising waste in the ordering process, providing patients with their food preferences and monitoring portion size. At this time the project scope does not include inclusion of food waste management technologies. Organic waste is anticipated to go to landfill.

8.1.3 Bulky and Problem Wastes

The facility's central waste holding area is adequate to support separate storage locations for bulky and problematic waste streams such as:

- Clinical Equipment - methods of disposal may include redeploying, trade-in, selling, or donating. As per the NSW Health Procurement Policy Directive, asset disposal will be managed to achieve value for money and meet transparency and probity requirements.
- E-waste – MLHD will comply with NSW government guidelines for the disposal of e-waste and utilise established mobile phone and printer cartridges recycling programs. A range of commercial recycling services are available for collection and/or processing of other e-waste items such as computers, monitors, and printers.
- Wood waste: items such as pallets, crates, and wooden packaging will be stored and collected for wood recycling through accredited organisations
- Batteries – batteries are toxic to the environment and will be managed in line with hazardous waste directives
- Cooking oils – and substances associated with grease traps will be collected by a licensed service provider on a scheduled basis
- Soft plastics: recycling of soft plastics remains a challenge in Australia and generally disposal will be via the general solid (non-putrescible) waste stream until a viable recycling alternative arises

Collection will be arranged on an as needed basis.

8.2 Waste Education

8.2.1 Roles and Responsibilities

The Head Contractor will be responsible for developing a detailed waste management plan prior to commencement of the construction works. That plan must be consistent with the approach, principles and management methods outlined in this plan.

The Contractor will also be responsible for:

- Inducting all contractors and visitors about the relevant aspects of this plan.
- Ensuring all waste management contractors have the necessary qualifications and licenses to remove waste from the site.
- Carrying out periodic audits to check compliance with the waste management plan.

8.2.2 Training and Induction

During construction and demolition, all site personnel and subcontractors will be inducted into the requirements of this plan to in accordance to their level of responsibility. As such, the induction is expected to include the following components:

- The waste hierarchy and associated waste management principles (avoid, reuse, and recycle).
- NSW EPA Waste Classification Guidelines.
- Procedures for handling and storage of wastes.
- Location of waste disposal and storage facilities.
- Actions to be undertaken in the event of a hazardous material spill.

Once construction is complete and the hospital is commissioned, all staff, volunteers and hospital contractors will, as part of their induction, be briefed on the following aspects of waste management:

- The waste hierarchy and associated waste management principles (avoid, reuse, and recycle).
- Location of waste disposal and storage facilities.
- Actions to be undertaken in the event of a hazardous material spill.

Staff and contractors with specific responsibilities for waste management including for the handling and disposal of hazardous waste will be given additional training as required.

8.2.3 Implementation of Murrumbidgee Environmental Sustainability - Initiatives and Strategies

Table 10: Environmental sustainability initiatives and strategies

Objective	Target (KPI/Smart Goals)	Key Initiatives and Strategies	Responsibility/Accountability	Governance/Reporting
-----------	--------------------------	--------------------------------	-------------------------------	----------------------

Change our behaviour (Waste)	Resource efficiency and waste Reduce general waste going to landfill by 10% by 2024.	1. Develop and implement a communication plan for staff to improve sorting of clinical and non-clinical waste. 2. Increase awareness of recycling, reducing single-use plastics, and promoting responsible disposal of e-waste and soft plastics. 3. Enhance the measurement and reporting of landfill diversion and recycling. 4. Implement food organic systems in facility kitchens and cafes.	Sustainability Committee with Kurrajong and Operational Managers, District Managers, HealthShare, and District Leaders.	Monitored via Cluster/facilities and services Waste Management Plans and Waste Audit Results.
	Active Participation Promote and increase attendance/engagement at sustainability-related events by 2024.	1. Encourage staff and consumers to participate in events like Ride2Work, Earth Hour, or tree planting. 2. Identify and celebrate sustainability champions in each facility. 3. Boost completion rates of the 'Sustainability in Healthcare' online module.	Sustainability Committee and District Leaders.	My Health Learning compliance reports.

	Procurement Reduce paper use by 10% by 2024.	1. Explore enhancements to Electronic Medical Records. 2. Set printers to default double-sided and black and white printing. 3. Promote the use of electronic systems like Microsoft Teams/SharePoint for information sharing.	All Staff and Information Services.	N/A
--	--	--	-------------------------------------	-----

8.4 Workplace Health and Safety

The safety of workers, visitors, patients and staff is paramount. Several initiatives will be adopted to ensure a safe workplace in line with the Work Health and Safety Act 2011 and Work Health and Safety Regulation 2017.

Personal Protective Equipment (PPE)

The MLHD/ HI/ principal contractor must ensure that all contractors on site comply with appropriate PPE. All staff must use appropriate PPE when necessary and the health service must have a range of PPE, suitable to the nature and degree of identified hazard.

The PPE for hazardous chemicals must be in accord with that recommended in the Safety Data Sheet (SDS). Staff must be trained in the proper selection, fitting (donning/doffing, or putting on/removing), storage and maintenance of PPE.

Notifying Incidents

An Injury Incident Register is to be maintained by the contractor and any incidents on site are also to be logged via the electronic incident management system (IMS+). All waste handling injuries and incidents are to be reported and investigated by the relevant authorised persons as soon as possible following notification.

If a serious illness, a death, or a dangerous incident occurs, immediate notification to the Executive On-Call and SafeWork NSW is required as well as to workers compensation within 48 hours as part of the MLHD Work Health and Safety policy.

Appendix A - Construction Waste Management Tracking Sheet example

Waste Tracking - Construction					
Materials on-site			Destination		
			Reuse and Recycling		Disposal
Type of Materials	Estd. Vol (m3)	Estd. Wst (t)	ON-SITE - specify proposed reuse or on-site recycling method	OFF-SITE - specify contractor and recycling outlet	- specify contractor and landfill site
Estimated Materials					
Garden Organics					
Bricks					
Tiles					
Concrete					
Timber					
Plasterboard					
Metals					
Other waste eg. Ceramic tiles, paints, PVC tubing, cardboard, fittings					

Appendix B - Murrumbidgee Environmental Sustainability Strategy 2022-2024