# Waste Management Plan

**Document Administration**

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# 1. Purpose

The Waste Management Plan (WMP) has been prepared to support the Ryde Hospital Redevelopment Project (RHR) Concept and Early Works State Significant Development (SSD) application.

The Works will be undertaken by a Principal Contractor. All statements and proposals documented in this WMP are a guide only. At the time of contract award, the Contractor(s) will formulate their own WMP for the Works and ensure alignment with the legislation, health services requirements and project requirements. This WMP will be replaced by the Contractor's WMP once appointed.

The development application pathway for the RHR Project will consist of a staged State Significant Development Application (SSDA) pursuant to section 4.22 of the EPA Act.

Concept development application for the redevelopment of Ryde Hospital includes:

- A concept proposal for a new hospital building and associated refurbishment works of selected existing hospital facilities, including a maximum building envelope and gross floor area; and
- Stage 1 early works, including demolition, infrastructure and utility services relocation/ upgrades, bulk earthworks, establishment of the internal road network and carparking.

Stage 2 Hospital Delivery Main works and operation. Stage 2 (which will be subject to a separate application) would include the detailed design, construction, and operation of the Ryde Hospital Redevelopment. Stage 2 will be subject to a separate application following Stage 1.

This WMP relates to the Concept Design and Early works for the Ryde Hospital Redevelopment Project. A separate WMP will be prepared for the Stage 2 Main works and Operation. This report will address the SEARs requirements as detailed in Table 1: Project Specific SEARs requirements table below:

Table 1: Project Specific SEARs requirements

| Item | SEARS Requirement | Relevant Section of Report |
|---|---|---|
| **Concept** | | |
| 16(i) | Identify, quantify and classify the likely waste streams to be generated during construction and operation | 4.6 Waste Streaming<br>4.10 Waste Management Methods<br>6.1 WMP – Operation.<br>6.3 Management of clinical waste streams |
| 16(ii) | Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. | 4. WMP - Construction |
| 16(iii) | Identify appropriate servicing arrangements for the site | 4. WMP - Construction |
| **Stage 1** | | |
| 4 | Identify, quantify, and classify the likely waste streams to be generated during construction and operation<br>Provide the measures to be implemented to manage, reuse, recycle and | 4.6 Waste Streaming<br>4.10 Waste Management Methods<br>6.1 WMP – Operation |

| | |
|---|---|
| safely dispose of this waste.<br>Identify appropriate servicing arrangements for the site<br>If buildings are proposed to be demolished or altered, provide a hazardous material survey. | 6.3 management of clinical waste streams |

# 2. Introduction

## 2.1 Overview

An Environmental Impact Statement (EIS) has been prepared to accompany a Stage 1 SSD Application which will be assessed pursuant to section 4.22 of the EPA Act.

This RHR Stage 1 SSDA WMP supports a State Significant Development Application (SSDA) for the proposed Ryde Hospital Redevelopment (Concept & Stage 1 Early Works). The Ryde Hospital Redevelopment is being delivered by Health Infrastructure (HI) and the Northern Sydney Local Health District (NSLHD), on behalf of the NSW Government.

The Ryde Hospital site is located at 1 Denistone Road, Eastwood and comprises Lots 10-11 DP 1183279 and Lots A-B DP 323458. It has an area of approximately 7.69Ha and currently accommodates the existing Ryde Hospital campus.

This report accompanies a SSDA that seeks approval for the establishment of a maximum building envelope and gross floor area for the future new hospital buildings, and physical Stage 1 Early Works to prepare the site for the future development. For a detailed project description refer to the Environmental Impact Statement prepared by Ethos Urban.

## 2.2 Subject Site

The current Ryde Hospital is located on Denistone Road in Eastwood (Sydney), NSW 2122. Located approximately 7km north west of Ryde town centre, the hospital is bound on three sides by suburban streets. The site comprises Lots 10-11 DP 1183279 and Lots A-B DP 323458 and it has an area of approximately 7.69Ha. Access to the hospital occurs on all three streets with the main access for both pedestrian and traffic occurring on Denistone Road on the hospitals eastern side.

Ryde Hospital falls under the City of Ryde council area. Its location within the Eastwood area is of suburban context made up of predominantly single and two storey homes. A protected Blue Gum High Forest (BGHF) over steep terrain is located at the southern end of the campus.


Figure 1: Ryde Hospital - Existing Site Plan & Boundary lines

## 2.3 Concept Proposal and Stage 1 Early Works

This component (and EIS) seeks approval for a Concept Proposal and Stage 1 Development Application for site establishment and clearing works for the Ryde Hospital Redevelopment.

The Concept Proposal includes a new hospital building and associated refurbishment works of selected existing hospitals facilities, including a maximum building envelope and gross floor area. Stage 1 preliminary enabling works, including demolition, infrastructure and utility services relocation/upgrades, bulk earthworks, establishment of the internal road network and car parking.

Early works included in this development application include:

- Site clearance;
- Demolition of a number of buildings, internal roads and of carpark P5;
- Decommissioning and diversions of minor services to facilitate earthworks;
- Site preparation earthworks to Stage 1


Figure 2: Existing Site Plan - Early Works Area

### 2.4 Stage 2 SSDA

Stage 2 (which will be subject to a separate application following Concept and Stage 1 works), will seek for approval for:

- the detailed design, construction, and operation of the new Hospital building
- connections to the existing Hospital
- public domain improvements
- refurbishment of existing hospital facilities
- Multi-deck and on-grade carpark.

# 3. Legislative Requirements

The Works will be undertaken in accordance with the following legislative requirements relevant to the management of waste in New South Wales, and any others that must be complied with in carrying out the works as required:

- NSW Health – Waste Reduction and Purchasing Policy 2011-2014
- Waste Management Guidelines for Health Care Facilities
- NSW Occupational Health and Safety Act (2000)
- NSW OH&S Regulation (2001)
- Protection of the Environment Operations Act and Regulation
- Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA)
- Waste Avoidance and Resource Recovery Act
- Contaminated Land Management Act
- NSW EPA, 2014 – Waste Classification Guidelines
- NSW EPA, 2014 – The Excavated Natural Material Order
- NSW EPA, 2014 – The Excavated Public Road Material Order and The Reclaimed Asphalt Pavement Order
- NSW WorkCover, 2011 – How to Safely Remove Asbestos Code of Practice
- Australian Code for the Transport of Dangerous Goods by Road and Rail
- AS/NZS 4031:1992 (Non-reusable containers for the collection of sharp medical items used in health care areas)
- AS/NZS 4261:1994 (Reusable containers for the collection of sharp items used in human and animal medical applications)
- AS/NZS 3816:1998 (Management of clinical and related waste)
- AS/NZS 2161.10 Parts 1-3:2005 (Occupational protective gloves)
- AS/NZS 4123 Parts 1-7:2008 (Mobile waste containers)
- AS/NZS 2243 Part 3:2010 (Safety in Laboratories)
- RPS No.20 Safety Guide for Classification of Radioactive Waste (ARPANSA, 2010)
- Code for the Safe Transport of Radioactive Material (ARPANSA, 2014)

- Code of Practice for Radiation Protection in the Medical Applications of Ionizing Radiation (RPS14) (ARPANSA, 2008)
- Industry Code of Practice for the Management of Biohazardous Waste (including Clinical & Related Wastes) (WMAA, 2014)
- The Australian Council on Healthcare Standards (ACHS) EQuIPNational Guidelines Standard 15 (ACHS, 2012)
- Labelling of workplace hazardous chemicals Code of Practice (SafeWork NSW, 2016)
- Code of Practice: Hazardous manual tasks (SafeWork NSW, 2016)
- PD2008_004 Community Sharps Disposal by Area Health Services
- PD2013_043 Medication Handling in NSW Public Health Facilities
- Guideline for Approval of Method to Treat Clinical Waste
- PD2017_013 Infection Prevention and Control Policy
- PD2017_010 HIV, Hepatitis B and Hepatitis C - Management of Health Care Workers Potentially Exposed
- PD2007_052 Sharps Injuries - Prevention in the NSW Public Health System
- PD2012_061 Environmental Cleaning Policy
- Infection prevention and control practice handbook. Principles for NSW public health organisations (CEC, 2016)
- Environmental Cleaning Standard Operating Procedures. Module 3.4 Environment (CEC-HAI, 2012)
- Environmental Cleaning Standard Operating Procedures. Module 6 Cleaning Agents (CEC-HAI, 2012)
- Environmentally Hazardous Chemicals Act 1985
- Environmentally Hazardous Chemicals Regulation 2017
- Protection of the Environment Administration Act and Regulations
- Code of Practice for the Safe Removal of Asbestos (NOHSC:2002 (2005))
- Guide to the Control of Asbestos Hazards in Buildings and Structures (NOHSC:3002 (1998))
- Resource and Recovery Act 2001
- Environmental Planning and Assessment Act 1979
- Local Government Act 1993
- Soil Conservation Act 1938

# 4. Waste Management Principles - Construction

## 4.1 Waste Management Principles

In accordance with NSW Health requirements for health care facilities, a WMP will be prepared for the site providing detailed information regarding the nature and volume of waste generated by the development and the means of storage and disposal of waste from the site. Waste management practices will adopt the waste hierarchy established by the Waste Avoidance and Resource Recovery Act 2001 (WARR Act) of reduce, reuse, recycle, treat and dispose.


The major components of the waste management system will include:

- Avoidance and Reduction of Waste
- Recycling and Reuse
- Segregation at the source
- Waste streams
- Handling and Storage
- Waste treatment
- Waste disposal

The Works will be undertaken by a Principal Contractor. All statements and proposals documented in this WMP are a guide only. At the time of contract award, the Contractor(s) will formulate their own WMP for the Works and ensure alignment with the legislation, health services requirements and project requirements. This WMP will be replaced by the Contractor's WMP once appointed.

## 4.2 Waste Estimation

The bulk excavation results in a maximum cut of approx. 2.4m in the south-east corner of the Stage 1 – Early Works development area and a fill of approx. 0.6m in the north-west corner. Temporary shoring will likely be required as the proposed excavation will be adjacent to existing operational buildings. The shoring system is proposed to be a concrete contiguous or secant piling wall.

Strategies will be implemented to minimise waste generation and maximise reuse and recycling.

## 4.3 Waste Avoidance and Reduction

The most effective strategy in the waste hierarchy is to avoid the generation of waste. Throughout both the construction and operational phase of the Project, the avoidance of waste can be achieved through a number of strategies, including but not limited to:

- Reducing materials brought to site through a thorough understanding of the design, operational requirements, required quantities and detailed project planning; and
- Inventory control, proper storage and management of materials to avoid waste from materials that are out of date or off specification and reducing the need to reorder supplies.
- 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.

## 4.4 Waste Recycling and Reuse

Where the generation of waste cannot be avoided, it is encouraged to promote the reuse and recycling of waste materials. This can be achieved through a variety of strategies, including but not limited to:

- Evaluating waste production processes and identifying potentially recyclable materials
- Identifying and recycling products that can be reintroduced into the construction and operation processes.
- Separating and segregating waste, particularly recyclable material from non-recyclable
- Proper disposal of recyclable waste such as glass, paper and aluminium; and
- Where possible, reusing materials and equipment in later stages of the construction phase and/or in different projects. For example, classifying excavated material as Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM) to allow potential reuse off-site

The contractor's WMP will address recycling targets and monitoring strategies to early monthly reporting on the recycling outputs.

## 4.5 Waste Segregation

Segregation of various streams of waste is an important part of efficient waste management.

Where possible, waste such as excavated material will be separated on-site into dedicated bins and areas for reuse and/or collection by a licensed contractor:

- General Waste – Glass, Paper & Cardboard and Aluminium
- Natural material will be classified as VENM for reuse onsite where possible or for offsite reuse.
- Excavated material (unable to be used onsite) to be sent to a recycling facility where appropriate
- Waste from piling works , including waste steel and formwork
- Recycling Strategies

If separation is not possible on-site, the Contractor(s) shall organise the separation of waste off-site. Waste will be classified in accordance with the requirements of the NSW EPA (2014) Waste Classification Guidelines.

Noting the above is subject to the appointed contractor.

## 4.6 Waste Streaming

Throughout the construction phases of the Project, organic waste that is biodegradable will be recycled where possible. Uses of organic waste include, but are not limited to, mulch or garden compost to enhance lawns and gardens. Where reuse is not possible, organic waste will be placed in mobile bins for regular collection by a licensed contractor.
Domestic wastes such as non-biodegradable food scraps, bottles, cans and packaging – will be segregated into recyclables and non-recyclables at point of generation and collected by a licensed contractor.

It is envisaged that this Waste Management Plan will evolve and be further developed by all relevant parties in consultation with the contractor once appointed, relevant design consultants, HI & NSLHD.

## 4.7 Waste Handling and Storage

The Contractors WMP will identify storage and collection areas including loading zones and stockpile locations. Storage locations of waste will be planned to consider the changing nature of the site and construction phases. Clear signage will be provided to mark the location of different types of waste and materials.

Stockpile management strategies include, but are not limited to:

- Locating stockpiles in designated, marked areas and away from drainage lines and up-slope of sediment barriers;
- Locating stockpiles on hardstand surfaces or on plastic sheeting, and covering stockpiles or stabilising surfaces to reduce erosion; and
- Maximum stockpile height of 2 m.

Where applicable, liquid wastes will be stored in bunded areas protected from the weather. Containers will be labelled with name of the waste stream, composition and physical state, restricted properties and date of storage to ensure safe handling and management procedures are met.

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.

The Contractor shall ensure that the supply chain is responsible and accountable for maintaining a clean, clear and safe working environment. Rubbish bins should be provided to all work areas and be regularly removed to the central skip bin location for collection and transport from site to a waste recycle facility.

## 4.8 Waste Treatment

It is intended that no waste is treated on-site. Treatment of construction and general waste will be performed by a licensed contractor after proper removal of waste off the project site.

## 4.9 Waste Disposal and Transport

Waste that cannot be recycled and/or reused will be disposed off-site by a licensed contractor to a licensed landfill or recycling facility.

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

All vehicles transporting waste off-site will have covered loads. A waste tracking record will be maintained of all disposals that records the waste facility name and address, type and identity of disposal vehicle, date of disposal, type and quantity of waste and method of treatment (where applicable). Contractor(s) will keep evidence of the proper disposal of waste to licensed facilities.

All vegetation and topsoil will be assessed for site suitability. All nominated weeds must be cleared from site, or topsoil likely to contain weed material must be disposed of to an appropriately licensed off-site waste facility, and must not be reused on-site for any purpose (e.g. as compost, fill material, etc.)

## 4.10 Waste Management Methods

A detailed construction waste management plan will be developed by the Contractor. The plan will provide further details of the management required for the waste types generated under the works associated with the RHR.

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. Unused materials in a good condition will often be collected by suppliers, facilitating the reduction of the amount of material sent to recyclers or landfill.

All waste will be disposed of in strict compliance with the applicable Waste Management Guidelines for Health Facilities.

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

A summary of likely waste streams to be generated through early Works construction are identified in Table 2: Likely Waste Streams below, a proposed method for handling, storage and reuse/disposal of each type of waste are also presented.

Table 2: Likely Waste Streams

| Activity | Waste stream | Management |
|---|---|---|
| **Site Clearing - Green Waste** | Trees, shrubs, groundcover and weeds | • Reuse suitable material for mulch if it is weed free and complies with the EPA mulch exemption<br>• Potential for offsite reuse or disposal to a green waste facility |
| **Construction Waste** | Concrete, metal, steel, timber, fittings, plastic, electrical and plumbing | • Segregation of recyclable wastes and storage onsite (within construction compounds)<br>• Collection and transport to appropriate recycling facility |
| **Site Office and Worksites** | General Office Waste – paper, printer cartridges | • Segregation of recyclable wastes and storage on-site<br>• 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 (within construction compounds)<br>• Collection and transport to a recycling facility |
| | Waste Oil, great, lubricants, oily rags and filters | • Segregation of recyclable wastes and storage onsite (within construction compounds)<br>• 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.

Removal of existing building materials on the site will occur prior to works commencing. 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.

The Construction Environmental Management Plan will be further developed during design to inform the Stage 2 SSDA application.

### 4.11 Responsibilities and Training

#### 4.11.1 Roles and Responsibilities

The Principal 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.

#### 4.11.2 Training and Induction

During construction, all site personnel and subcontractors will be inducted into the requirements of this plan 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.

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.

# 5. Waste Management Principles – Operation

### 5.1 Waste Management plan – Operation

As design progresses for the Stage 2 Main Works, the existing Ryde Hospital Waste Management Plan will be updated to ensure ongoing improvements and compliance with policy and legislation in all aspects of waste management, including generation, handling, storage and disposal of all forms of waste.

Relevant State and National Legislation and policy relevant to clinical and related waste will be followed in the development of the Waste Management Plan.

In line with NSW Health PD2017_026 Clinical and Related Waste Management for Health Services, the Waste Management Plan will address:

- Governance, including oversight by a Waste Management Committee and clear responsibilities
- Strategies for complying with PD2017_026, waste minimisation, training, workplace health and safety, auditing, incident management, procedures for specific waste stream management and contract management.

All staff and volunteers will be required to comply with the Waste Management Plan including waste reduction practices.

Principles within Ryde Hospital's Waste Management Plan will include:

- Waste will be handled safely using appropriate PPE throughout its journey through Ryde Hospital from creation at ward/individual level to removal off site by waste companies
- Waste transport routes will avoid food preparation and heavily used areas where possible
- Waste will be appropriately minimised, segregated and recycled
- Storage areas will be cleaned regularly, separated from food and clean storage areas and be inaccessible to the public
- All staff are to receive education on Ryde Hospital waste practices and Workplace Health and Safety at orientation and other appropriate/required situations
- Spill management will be conducted in accordance with the Waste Management Plan. and
- Waste cost statistics are to be compiled, waste audits to be conducted and both to be reviewed periodically to ensure optimum waste management is occurring.

The following waste minimisation and reduction strategies will be considered within Ryde Hospital's Waste Management Plan:

- 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;
- Staff education regarding correct segregation at orientation and periodically as needed;
- Waste reduction champions to promote recycling and segregation practices;
- Reviewing of material composition (Safety data sheet) for waste classified as hazardous to ensure waste components are handled safely, including storage and disposal
- 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.

These principles and strategies including sustainability initiatives will be further developed during the design for Stage 2 Main Works

## 5.2 Licensing Requirements

These Ryde Hospital Waste Management licensing requirements will be reviewed during the design process for SSDA 2 Main works and appropriate licenses will be obtained.

## 5.3 Management of Clinical Waste Streams

Management of Clinical Waste Streams will be in compliance with NSW Health PD2017_026 Clinical and Related Waste Management for Health Services. Refer to Figures 1 and 2 presented below.

| 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<br>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]<br><br>May contain clinical material or Genetically Modified Organism (GMO)[2] waste | Clinical waste with the potential to cause injury, infection or offence:<br>• Unrecognisable human tissue (excluding hair, teeth, nails and anatomical waste)<br>• Bulk blood or other body fluids (or body substances)<br>• Material and equipment visibly stained by blood or body fluids (includes incontinence pads and disposable nappies that come from an infectious patient)[3]<br>• Lab specimens, cultures or other waste from lab investigations<br>• Waste from medical or veterinary research<br>• 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<br>Sharps containers must be rigid-walled and meet the requirements specified in AS/NZS 4031 and AS/NZS 4261[4,5]<br>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<br>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<br>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<br>AS/NZS 4123:2008 Mobile Waste Containers | AS/NZS 3816:1998 Management of clinical and related waste<br>AS/NZS 4123:2008 Mobile Waste Containers<br>*Protection of the Environment Operations Act 1997*<br>*Protection of the Environment Operations (Waste) Regulation 2014* | AS/NZS 3816:1998 Management of clinical and related waste<br>AS/NZS 4123:2008 Mobile Waste Containers<br>*Protection of the Environment Operations Act 1997*<br>*Protection of the Environment Operations (Waste) Regulation 2014* |
| **EPA licence requirements** | No | No | No |

Figure 3: Management of clinical waste streams: anatomical, sharps and other clinical waste

| 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<br>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<br>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 | Red | Red[1] |
| **Lid colour of bin** | Purple | Red | Red |
| **Plastic bin liners** | Purple | N/A | Red |
| **Labelling of bins and if applicable liners** | Cytotoxic waste | Pharmaceutical waste | Radioactive waste plus<br>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<br>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]<br>Pharmaceutical waste must be incinerated at a licensed controlled waste facility. Certain pharmaceuticals may only be destroyed by authorised persons under the *Poisons and Therapeutic Goods Act 1966* [3]<br>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<br>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]<br>Radioactive waste must be labelled with the substance, activity level and the date at which it is measured<br>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]<br>Radioactive sharps – see page 9 [7]<br>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<br>*Protection of the Environment Operations Act 1997*<br>*Protection of the Environment Operations (Waste) Regulation 2014* | *Poisons and Therapeutic Goods Act 1966*<br>*Poisons and Therapeutic Goods Regulation 2008* | AS/NZS 4123:2008 Mobile Waste Containers<br>*Radiation Control Act 1990*<br>*Radiation Control Regulation 2013* |
| **EPA licence requirements** | No | No | Yes - Waste Classification Guidelines Part 3: Waste containing radioactive material (EPA, 2014) |

Figure 4: Management of Clinical waste streams: cytotoxic and pharmaceutical

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