# Waste Management Plan – West Campus Medical Gas Compound

RPAH Redevelopment

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| Revision | C |

**Document Approval**

| Rev. | Date | Prepared by | Reviewed by | Approved by | Remarks |
|---|---|---|---|---|---|
| A | 05/02/2024 | D. Ji | P. Nott | S. Garzo | |
| Signature: | | |  | | |
| B | 15/02/2024 | | P. Nott | S. Garzo | |
| Signature: | | |  | | |
| C | 06/03/2024 | | P. Nott | S. Garzo | |
| Signature: | | |  | | |
| | | | | | |
| Signature: | | | | | |

# Details of Revision Amendments

### Document Control

The Project Manager is responsible for ensuring that this plan is reviewed and approved. The Project Construction Manager is responsible for updating this plan to reflect changes to construction, legal and other requirements, as required.

### Amendments

Any revisions or amendments must be approved by the Project Manager and/or client before being distributed / implemented.

### Revision Details

| Revision | Details |
|---|---|
| A | Drafted for the REF |
| B | Updated following Architectus review |
| C | Updated following TSA review |
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# Contents

# 1. Purpose

The Waste Management Plan (WMP) has been prepared to support a Review of Environmental Factors (REF) on behalf of Health Infrastructure for the package of works outlined in Section 2.1 at Royal Prince Alfred (RPA) Hospital.

This Plan has been drafted to outline preliminary parameters for waste management practices during construction and is intended to provide sufficient information to support the REF, prior to planning approval, design finalisation and engagement of specialised subcontractors.

It is noted that it is the responsibility of the Contractor to prepare detailed Environmental and Site Management Plans in accordance with the REF, for approval and implementation during construction.

# 2. Introduction

## 2.1 Overview and Proposed Works

The proposed activity is part of a suite of campus wide infrastructure upgrades to occur in the near future.

The proposed activity comprises alterations and additions to the Capital Infrastructure and Engineering (CI & E) building loading dock located off Rochester Street in the RPA Hospital West Campus. Specifically, the works are to establish a reconfigured and expanded Medical Gas Compound (MGC) comprising the following works:

- Demolition work, inclusive of removal of existing trees, fences, door, walls, and railings to the extent required for the new works;
- Excavation of landscaped area;
- Removal/relocation of the existing diesel tank;
- Existing road surface to be saw cut and reinstated for new fill point;
- Installation of a new oxygen tank;
- Removal of redundant services;
- New MGC enclosure comprising fire rated walls, security fencing, and doors to house new oxygen tank (30kL) and new vaporisers;
- Upgrade to ramp, landing, walls, and security fencing within the compound;
- New oxygen pipe distribution system infrastructure within confines of MGC area.

## 2.2 Site and Locality Description

The RPA campus is located in Sydney's inner west suburb of Camperdown. It is situated between Sydney University to the east and the residential area of Camperdown to the west. The campus is divided by Missenden Road, which runs north to south dividing the campus into two distinct portions, called East Campus and West Campus. The northern boundary of the campus is defined by the Queen Elizabeth II Rehabilitation Centre and the southern extent of the campus is defined by Carillon Avenue.

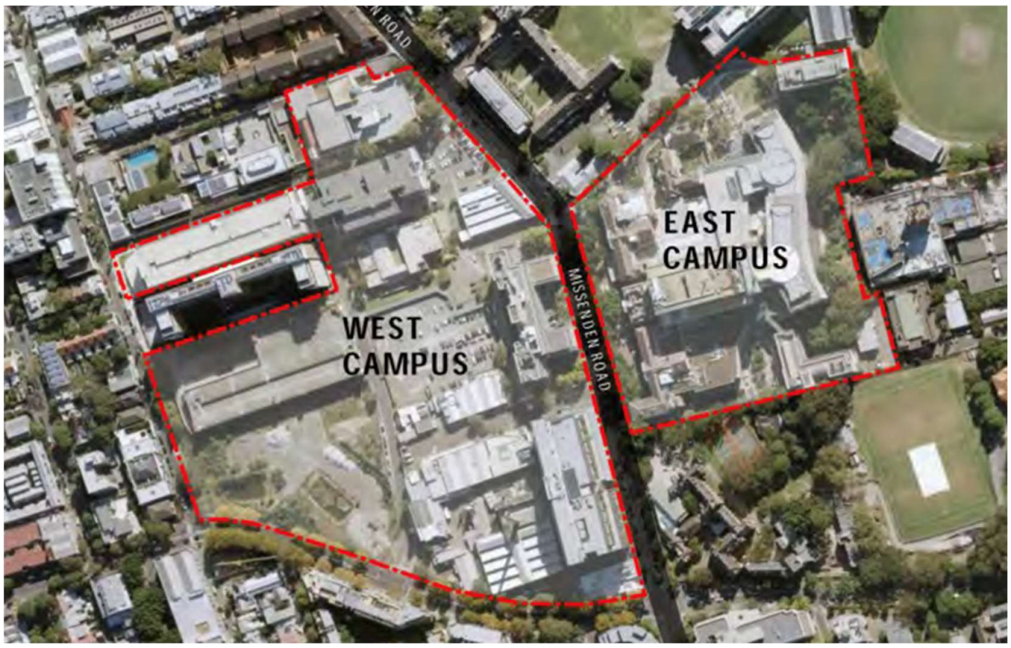



**Figure 1. RPA Hospital Campus**

RPA incorporates a diverse range of operations including research, education, student housing, acute quaternary health services, as well as healthcare in both private and public domains. The larger precinct is defined by the Sydney Innovation Precinct for Health Education Research (SIPfHER) and is identified as an innovation and economic development zone for NSW.

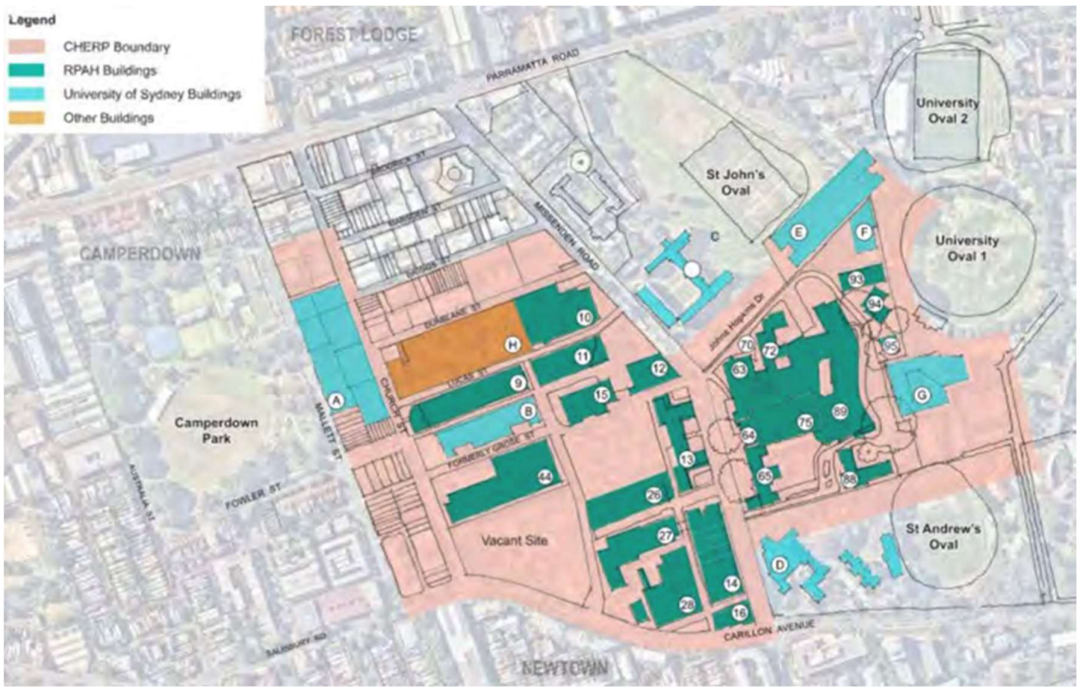



**Figure 2. RPA Hospital Buildings in relation to the SIPfHER**

## 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 1997 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 1991 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 detailed WMP will be developed by the Contractor, 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.

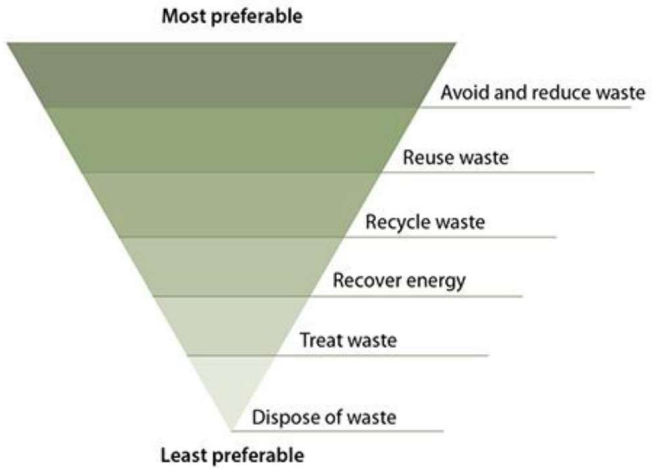



**Figure 3 Waste Hierarchy (NSW, EPA 2017)**

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 CPB as Principal Contractor overseeing numerous specialised subcontractors. All statements and proposals documented in this WMP are a guide only. Following REF approval, design finalisation, and engagement of specialised subcontractors, 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

Indicative quantities of waste likely to be generated during construction have been set out per the below assumptions. This will be developed in further detail by the Contractor. It is expected that actual waste quantities and composition will vary depending on outcomes of detailed design, materials specification and construction planning and methods.

The quantities of waste likely to be generated during demolition have been calculated based on benchmarks provided by the UK Building Research Establishment (BRE) (refer Table 2) and benchmarked data of waste composition developed by Sustainability Victoria (refer Table 3).

For these Medical Gas Compound works, the figures applicable for Industrial Buildings have been used.

**Table 1: Average Volumes of Waste Produced by Different Project Types**

| Project Type | Average volume ($m^3$) of waste per 100$m^2$ |
|---|---|
| Residential | 18.1 |
| Public buildings | 20.9 |
| Leisure | 14.4 |
| Industrial Buildings | 13.0 |
| Healthcare | 19.1 |
| Education | 20.7 |
| Commercial Other | 17.4 |
| Commercial Offices | 19.8 |
| Commercial Retail | 20.9 |

**Source: BRE (2012)**

**Table 2: Guide to Waste Composition and Volumes - Construction**

| Material | *Estimated Waste %* | Conversion Factor (Density) (Tonne per $m^3$) |
|---|---|---|
| Hard material | 32% | 1.2 |
| Timber | 24% | 0.3 |
| Plastics | 15% | 0.13 |
| Cement sheet | 9% | 0.5 |
| Gypsum material | 6% | 0.2 |
| Metals | 6% | 0.9 |
| Paper / card | 4% | 0.1 |
| Soil | 1% | 1.6 |
| Other | 0.3% | 0.3 |

**Source: Sustainability Victoria Waste Wise Tool Kit (2013)**

**Table 3: Likely Waste Quantities During Construction**

**Western Campus Medical Gas Compound**

| Material | Average Volume/ $100m^2$ | Total ($m^3$) * | Total (Tonnes) |
|---|---|---|---|
| Hard material (32%) | 4.3 | 1.8 | 2.2 |
| Timber (24%) | 3.1 | 1.2 | 0.4 |
| Plastics (15%) | 2.0 | 0.8 | 0.1 |

| Western Campus Medical Gas Compound | | | |
|---|---|---|---|
| **Material** | **Average Volume/ 100m$^2$** | **Total (m$^3$) *** | **Total (Tonnes)** |
| Cement sheet (9%) | 1.3 | 0.5 | 0.3 |
| Gypsum material (6%) | 0.8 | 0.3 | 0.1 |
| Metals (6%) | 0.8 | 0.3 | 0.3 |
| Paper / card (4%) | 0.5 | 0.2 | 0.02 |
| Soil (1%) | 0.1 | 0.05 | 0.1 |
| Other (0.3%) | 0.1 | 0.05 | 0.1 |
| **Total** | **13.0** | **5.2** | **3.6** |

*based on a proposed GFA for the Medical Gas Compound of 40m$^2$

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 the construction 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 enable 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
- Waste from piling works, including waste steel and formwork

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.

### 4.6 Waste Streaming

Throughout the construction phase 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.

### 4.7 Hazardous Waste

A Hazardous Building Materials Survey (HBMS) has been undertaken to the areas included within the scope of this REF. This survey comprised a detailed visual inspection and sample collection with the objective to locate and identify areas of suspected hazardous materials.

The outcomes of this survey and measures for dealing with hazardous waste are further noted within the HBMS report by Sydney Environmental Group (SEG). This includes the following measures to be undertaken by the Contractor:

- Development of a Hazardous Building Materials Management Plan to ensure all practicable steps are taken to prevent or minimise the risk of exposure to hazardous materials during works;
- Ensuring a copy of the hazardous building materials register is made readily available to all contractors conducting works on the site;
- Remove all hazardous building materials identified and recorded in the register prior to any demolition works of the structures identified within the site; and
- Should any previously unidentified suspected hazardous building materials be identified during demolition, works should cease, and the materials should be inspected by an experienced occupational hygienist prior to the recommencement of works.

## 4.8 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 2m (subject to Engineering advice).

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.

## 4.9 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. This includes wastewater requiring offsite disposal.

## 4.10 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.

## 4.11 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 RPAH Development.

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.

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

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

**Table 4: Likely Waste Streams**

| Activity | Waste stream | Management |
|---|---|---|
| **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 |

The storage of waste created by the site through demolition, excavation and general construction works will be specified within the site establishment zones in the Contractor's Construction Management Plan.

### 4.12 Hazardous Materials Management

Dangerous goods are to be managed 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. Any hazardous materials discovered during execution of the Works should be dealt with by the Contractor in accordance with the requirements set out in the Contract.

## 5. Responsibilities and Training

### 5.1 Roles and Responsibilities

The 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.

### 5.2 Training and Induction

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

## 6. Waste Management Principles – Operation

Sydney Local Health District (SLHD) have a Waste Management Policy (refer Appendix 1) in place for existing SLHD facilities, including RPA Hospital. As design progresses for the Project, the existing SLHD Waste Management Policy for RPA Hospital 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.

## Appendix 1 – SLHD Waste Management Policy

# Policy Directive

## Waste Management Policy

| | |
|---|---|
| **Document No:** | RPAH_PD2013_022 |
| **Functional Sub-Group:** | Corporate Governance |
| **Summary:** | Effective waste management through implementation and evaluation of an annual waste management plan that reduces the risks associated with waste provides financial gain through waste reduction / recycling and supports a sustainable environment. Ensure improved performance in waste avoidance, reduction, reuse and recycling and compliance with the NSW Waste Reduction and Purchasing Policy (WRAPP). |
| **National Standard:** | Corporate Systems and Safety<br>Preventing and controlling Healthcare Associated Infections |
| **Policy Author:** | Manager Environmental Services |
| **Approved by:** | General Manager |
| **Publication (Issue) Date:** | June 2013 |
| **Next Review Date:** | June 2018 |
| **Replaces Existing Policy:** | RPAH_PD2009_019 |
| **Previous Review Dates:** | 2005, April 2009 |

**Note:** Sydney Local Health District (LHD) and South Western Sydney LHD were established on 1 July 2011, with the dissolution of the former Sydney South West Area Health Service (SSWAHS) in January 2011. The former SSWAHS was established on 1 January 2005 with the amalgamation of the former Central Sydney Area Health Service (CSAHS) and the former South Western Sydney Area Health Service (SWSAHS).

In the interim period between 1 January 2011 and the release of specific LHN policies (dated after 1 January 2011) and SLHD (dated after July 2011), the former SSWAHS, CSAHS and SWSAHS policies are applicable to the LHDs as follows:

Where there is a relevant SSWAHS policy, that policy will apply.

Where there is no relevant SSWAHS policy, relevant CSAHS policies will apply to Sydney LHD; and relevant SWSAHS policies will apply to South Western Sydney LHD.

# Waste Management Policy

## CONTENTS

## 1. Introduction

RPAH is committed to maintaining an efficient and cost effective waste management system that protects the health and safety of all employees, patients and other persons working in or visiting the hospital premises. In accordance with NSW Government policy and International best practice, the hospital takes a "cradle to the grave" approach to waste management which implies responsibility for waste from point of generation to final disposal. As such, all staff as waste generators has an obligation to dispose of waste responsibly.

RPAH waste management strategies focus on waste minimisation principles of avoidance, reduction and correct segregation of waste and the promotion of reuse and recycling practices where feasible. Waste management is legislated under the Waste Avoidance and Resource Recovery Act 2001 repealed and replaced the **Waste Minimisation and Management Act 1995 and Waste Regulation (1996)** which is administered by the NSW Environmental Protection Authority. The implementation of the RPAH Sustainability Committee and Management Plan in conjunction with this Policy aims to ensure compliance with all relevant legislative and regulatory requirements as set out in Section 7 of this policy

### The risks addressed by this policy:

| |
|---|
| Corporate Risk |

### The aims / expected outcome of this policy

| |
|---|
| To provide a framework that ensures all waste at RPAH is managed safely and efficiently with consideration to environmental issues. This policy outlines the overall objectives of the RPAH waste management program and the responsibilities of staff in relation to waste management. To improve our waste segregation by labelling clearly and colour coding our waste streams. Operational details of the RPAH waste management system can be found in the RPAH Waste Minimisation and Management Plan. |

## 2. Policy Statement.

All staff and volunteers are to ensure that all activities pertaining to the management of waste reflect Royal Prince Alfred Hospitals' commitment to the safe, efficient and environmentally sound and ecologically appropriate practices, in the segregation, handling, disposal, recycling, reuse and minimisation of waste products.

Environmental Services are responsible for waste management across the hospital and facilities and are to be contacted for additional or revised services or other waste problems or issues.

All staff are to receive education at Royal Prince Alfred Hospital Facility Orientation.

Some waste streams have tracking mechanisms in place for costing the waste to the user.

## 3. Specific Responsibility.

**Executive Director.**

- Ensure implementation of this policy.

**General Manager.**

- Ensure implementation of this policy.
- Support the Executive Director in the implementation of this policy.

**Director of Finance and Corporate Services.**

- Support the General Manager in the implementation of this policy.
- Ensure that compliance with the NSW and relevant national standards are monitored and evaluated.
- Ensure their healthcare facility is well maintained free of waste products and clean.
- Monitor compliance with the Waste Management policy standards.

**Environmental Services Manager**

- Provide advice to staff of RPAH on waste management services through the Waste Management Coordinator.

- Ensure all department staff have access to task specific training and education.
- Ensure all department staff are competent in performing waste orientation tasks.
- Ensure waste management procedures are documented, available and relevant to staff.
- Monitor and audit waste collection performance and ensure required levels of compliance.

**Managers, Coordinators and Department Heads.**

- Ensure department staff complies with infection prevention and control national standards.
- Ensure there are appropriate resources to meet the national standards.
- Ensure the Waste Management standards are met in their jurisdiction.
- Ensure all department staff complies with the standards.
- Ensure the patient environment is well maintained, clean and free of waste through relevant waste streams.
- Monitor compliance with the Waste Management Policy.

**Infection Control Consultant.**

- Provide advice on infection prevention and control aspects of environmental cleaning and waste standards.
- Provide advice on cleaning and disinfection requirements for all risk categories, during outbreaks of communicable disease and during refurbishment, renovations and construction.
- Provide advice for minimising risks.

**Infection Prevention & Control Committee.**

- Review the results of the waste audits and recommend action to Sustainability Committee.

**Cleaning Staff.**

- Undertake environmental cleaning and waste management training in accordance with this policy, the Environmental Cleaning Policy and Environmental Cleaning Standard Operating Procedures, with the advice of their Coordination Supervisors, Leading Hands and the advice of relevant ward/unit staff or Infection Control Consultant.
- Are responsible for ensuring a safe environment including all environmental hygiene concerns.
- Comply with this policy in undertaking the requirements of waste management, recycling and waste minimisation requirements.
- Are expected to escalate risks (i.e. identified environmental waste management, hygiene or maintenance deficiencies) through line management and call upon the relevant experts to develop risk management strategies to manage risks.

## 4. Principles / Guidelines.

### 4.1 Waste Segregation.

- Waste is managed throughout the hospital via waste streams that are classified in accordance with the NSW MoH Policy Guidelines.
- The hospital provides facilities for the following waste streams: general, clinical, genetically modified organism (GMO's), cytotoxic, recyclable, chemical, pharmaceutical, radioactive and hazardous liquid waste.
- It is the responsibility of all employees to dispose of waste into the appropriate waste stream at the point of generation.
- Refer to Section 8. Waste Disposal Procedures for further information.

### 4.2 RPAH Sustainability Committee.

- It is purpose of the RPAH Sustainability Committee to assist in the implementation and monitoring of waste management activities across the hospital.
- The committee has a membership which is representative of all key areas and departments of the hospital.

### 4.3 Education and Training.

- Waste Management training is provided to all new employees through the Royal Prince Alfred Hospital Orientation Program, Intern and RMO Orientation programs.
- Waste management information is also provided to agency nursing and sessional medical staff in their orientation handbooks.
- Annual waste management training is available to all hospital departments via the Intranet.
- Training is also available on request for specific waste management issues and can be arrange through the Environmental Services Department.

### 4.4 Waste Management Strategies.

- KPI's for waste management are monitored by the Environmental Services Department and the RPAH Sustainability Committee and used to target waste management and minimisation activities.
- Regular waste segregation audits are carried out on Clinical & Sharps waste streams and the results of these audits fed back to the appropriate departments for review and action.
- All new equipment should be purchased in accordance with the District Waste Reduction and Purchasing Plan.
- Disposal of furniture and equipment is managed by the Director of Finance and Corporate Services. Disposal of property should first consider the potential for revenue raising within the guidelines provided in the NSW Health Purchasing and Supply Manual.

### 4.5 Waste Handling Containment and Transport.

- Waste is separated into the appropriate waste stream at the point of generation by the provision of waste bags and bins appropriate to the types of waste generated.
- Waste is stored in mobile garbage bins which are kept in designated waste rooms located on each floor.
- Waste is collected by Environmental Services Staff and transported on foot by motor tug or by truck to the waste storage area.
- General waste is then emptied into the compactor bin by hydraulic lifter.

- Clinical, GMO's, Cytotoxic, Sharps and Confidential Paper waste are kept in a secure area in locked bins until collection by the appropriate contractor.

**4.6 Waste Disposal.**

- Contracts with the various waste transporters and waste treatment disposal contractor are documented and are consistent with the relevant regulations.
- Disposal of general waste generated by RPA is tracked via weighbridge docket records. Copies of these records are kept and monitored by the Environmental Services Department.
- Disposal of clinical waste generated by RPAH is tracked via a bar coding system and barcode records supplied by the clinical waste contractor are kept and monitored by the Environmental Services Department.

**4.7 Work Health & Safety.**

- The RPAH waste management system is designed to minimise the potential hazards to employees in managing waste. Employees have an obligation to follow instructions regarding safe work practices.
- All staff involved in the handling of waste, are trained in safe work practices that minimise manual handling and infection control risks and are provided with Personal Protective Equipment appropriate to the waste handling task.
- All staff is instructed in correct sharps injury protocols.
- Staff are advise to follow the Hand Hygiene policy after handling waste of any sort.

Infection Control Policy: Hand Hygiene. RPAH_PD2013_011

**4.8 Spill Management.**

- All staff should manage waste spills in accordance with the RPAH spill management policy and relevant spill management procedure.

RPAH Spill Management Policy RPAH_PD2010_058

In most cases, concerns about pollution should be referred to the source or person causing the problem. The contact telephone numbers on this page should be used when an approach to the person causing the problem has not been or is unlikely to be successful.

**Duty to report incidents that cause or threaten material harm to the environment as per the New South Wales Environment Protection Authority (EPA).**

Pollution incidents that cause or threaten material harm to the environment first call

- 2222 and ask for the RPA Fire Department.

They will advise the appropriate authorities as per below:

- The Appropriate Regulatory Authority (ARA).
- The NSW Environment Protection Authority (EPA) or if they are not the ARA the Ministry of Health.
- The WorkCover Authority.
- The local authority, e.g. the local council, if this is not the ARA.

### 4.9 Cleaning & Maintenance.

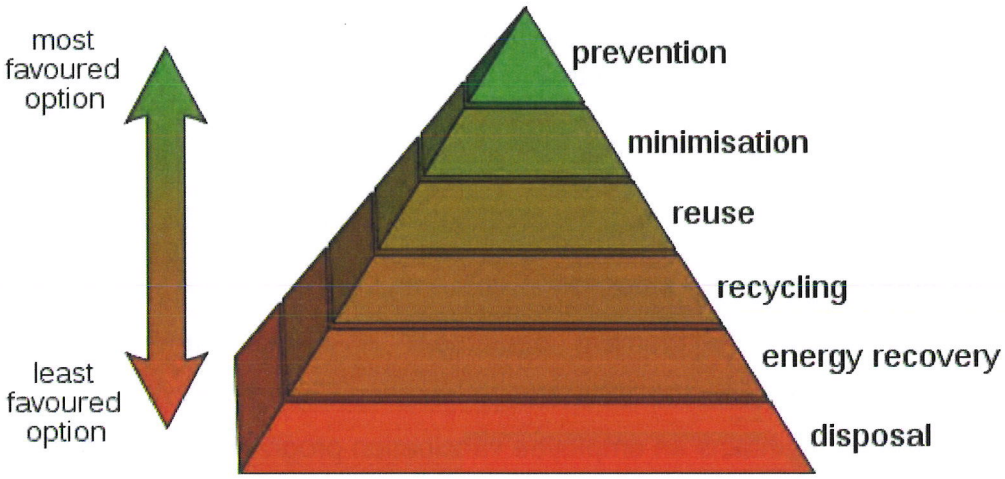
- All waste management equipment is washed and maintained in accordance with the NSW Health Infection Control Policy.
- RPAH maintains an employee vaccination program for all staff involved in the handling of potentially infectious waste.
- Statistics on manual handling and sharps injuries related to waste handling activities are reported and monitored by the RPAH Peak WH&S Committee and the RPAH Sustainability Committee. Targeted strategies are implemented as necessary to reduce the incidence and severity of these injuries.

## 5. Performance Measures.

- Key Performance Indicators are used by the RPAH Sustainability Committee, RPAH WH&S Peak Committee and the RPAH Environmental Services Department to monitor compliance to Waste Management policy and Guidelines, ensure cost efficiency, identify and develop targeted waste management strategies performance with other health care facilities. These include:
- Cost and tonnage trends over time.
- Cost and tonnage trends over time by unit or department.

- Clinical waste trends vs. hospital activity (tonnes/1000 occupied bed days).
- General waste trends vs. hospital activity (tonnes/1000 occupied bed days).
- Sharps waste trends vs. hospital activity (litres/ 1000 occupied bed days).
- Recycling rates (kilograms per 100 DOHRS FTE).

**WASTE HIERACHY**




- The waste hierarchy refers to the "3 Rs" reduce, reuse and recycle, which classify waste management strategies according to their desirability. The 3 Rs are meant to be a hierarchy, in order of importance.

**Reports.**

- Reports are produced on a monthly basis from contractor with information regarding the diversion.

## 6. Definitions.

- NIL

## 7. References and links.

- Work Health and Safety Regulation 2011.
- Waste Avoidance and Resource Recovery Act 2001.
- Protection of the Environment Operations (Waste) Regulation 2005.
- NSW Health Waste Management Guidelines for Health Care Facilities

August 1998 PD 2005_132.

- NSW Health Infection Control Policy PD2007_036.
- Australian / New Zealand Standard AS/NZS 4478/1997.
- Australian / New Zealand Standard AS/NZS 3816/1998.
- Gene Technology Act 2000.
- Gene Technology Regulation 2001.
- NSW MoH Hand Hygiene Policy PD2010_058.
- NSW Health Infection Control Policy PD2007_036.

## 8. Procedure – Waste Disposal Guidelines.

### 8.1 The Clinical Waste Stream (colour code yellow).

Definition: Clinical waste means any waste resulting from medical, nursing, dental, pharmaceutical, skin penetration or other related clinical activity, being waste that has the potential to cause injury, infection or offence, and includes waste containing any of the following:

(a) Human tissue (other than hair, teeth and nails),
(b) Bulk body fluids or blood,
(c) Visibly blood-stained body fluids, materials or equipment,
(d) Laboratory specimens or cultures,
(e) Animal tissue, carcasses or other waste from animals used for medical research.

- The disposal of clinical waste is separated and disposed of in two categories, non sharps and sharps.

### 8.1.1 Non Sharp Clinical Waste.

- Non sharp clinical waste should be placed into yellow bags with the black clinical waste (biohazard) signage printed on them. Environmental services staff will then place these bags into yellow mobile garbage bins. When these bins are full they will be locked prior to transport to the holding area on level 2 building 89.
- Non sharps clinical waste includes:
- any waste **visibly** stained with blood or visibly stained body fluids (incontinence pads or disposable sheets not completely soaked in urine and without faeces may go into general waste).
- bulk body fluids and blood.
- human tissue (excludes hair, teeth and nails).

- Laboratory specimens and cultures.
- Animal tissues and carcasses.

**Examples of waste commonly found in non sharps clinical waste that should not be there:**

- waste from VRE or MRSA patients that are not visibly stained with blood or body fluids. This waste is disposed of into general waste.
- sharps of any description.
- gowns and gloves not visibly soiled with blood (including those from VRE and MRSA patients).
- polystyrene and paper cups.
- reusable linen and towels contaminated with blood and body fluids.
- paper.

NB: If you are uncertain please contact the Infection Control Unit for clarification.

### 8.1.2 Sharps Clinical Waste

- Sharps clinical waste should be placed into the sharps containers provided. Most of these containers are reusable and not disposable (therefore do not write or stick anything onto these containers). Dispose of sharps into the sharp container until it is full to the line or until the tray tips and displays the full sign at the back of the tray. When the tray has tipped into the full position do not attempt to pull the tray back to place another sharp in, as this may propel a contaminated sharp out and cause injury. Once full the sharp container must be locked and placed in the dirty utility room for collection by Environmental Services staff. Do not close these containers off if they are not full as the disposal charge on these bins is per container and so half filled bins incur the same price as full containers.
- sharps clinical waste includes:
- needles.
- small glass ampoules.
- scalpel blades.
- stitch cutters.

- auto lancets.
- trocars.
- Wires.
- metal cannula inserts.

**Examples of waste commonly found in sharps containers that should not be there:**

- polystyrene cups.
- gloves.
- glass bottles.
- paper towels.
- plastic ampoules.
- IV administration sets.
- syringes (without needles attached).

### 8.2 Cytotoxic Waste Stream (colour code purple).

- Definition: Material contaminated with residues or preparations containing materials toxic to cells.
- The disposal of cytotoxic waste is separated into two categories non sharps and sharps.

#### 8.2.1 Non Sharp Cytotoxic Waste.

- Non sharp cytotoxic waste should be double bagged and placed into clearly labelled purple mobile garbage bins.
- Only staff who have received prior cytotoxic drug/waste handling training should be depositing waste into these bins or transporting these bins.
- These bins should remain locked at all times when not in use. Only when these bins are secured/locked and authority given, are Environmental services staff to remove them from the area.
- Environmental services staff will replace the mobile garbage bins on request or by prior arrangement. The used bin will be locked then transported and stored in a holding bay on level 2 building 89 for collection by the licensed contractor.
- Non sharps cytotoxic waste includes;

- leftover or unused cytotoxic drugs
- IV infusion sets and containers associated with the preparation or administration of cytotoxic drugs.
- glass/plastic vials associated with the preparation or administration of cytotoxic
- drugs.
- gowns, caps, gloves and swabs associated with the preparation or administration of cytotoxic drugs.
- material used to clean or contain cytotoxic spills.

### 8.2.2 Sharps Cytotoxic Waste.

- Sharps cytotoxic waste should be placed into the purple cytotoxic sharps containers provided. These are disposable containers. Once full or no longer needed the lid should be screwed on and taped down. The container should be placed in the dirty utility for collection by Environmental Services Staff.
- Sharps cytotoxic waste includes;
- needles that have contained cytotoxic drugs.
- small glass ampoules that have contained or still contain cytotoxic drugs.
- any glass containers that have contained cytotoxic drugs.

## 8.3 Hazardous Chemicals, Hazardous Substances & Dangerous Goods Waste.

### 8.3.1 The hazardous and dangerous goods colour coding is defined by Chemalert. Red – High risk - Amber – Medium risk – Green – Low risk.

Definition: **Hazardous chemical waste** is a substance that to be disposed of and is listed in a document entitled "List of Designated Hazardous Substance" [NOHSC: 10005 (1999)] published by the National Occupational Health and Safety Commission.

Definition: **Hazardous Substances & Dangerous Goods Waste** are substances which have the potential to cause a severe single exposure risk such as explosion, fire, poisoning or corrosion. They are classified by the Australian Code for the Transport of Dangerous Goods.

- This waste should be stored in the correct containers. A file containing the MSDS sheets should be stored next to this waste.
- This waste is collected from the area it is generated in on a weekly basis.
- A request form needs to be filled in and emailed to the Supply & Waste Management Coordinator before 12 pm on a Wednesday for collection by licensed contractor on Thursday afternoon.

See policy **RPAH_PD2012_037** for full details.

### 8.3.2 All Relevant Waste Streams are secured from public access.

- Genetically Modified Organisms, confidential paper, clinical waste, sharp waste & cytotoxic waste must be secured from public access at all times. If removing the bin from an area then it should be locked and removed in a safe and orderly manner.
- NB. GMO waste should be only transported in a secondary container that has been appropriately labelled and approved by the Institutional Biosafety Committee (IBC).

Refer to the Environmental Services Guidelines for the transporting, storage and disposal of GMO's.

### 8.4 Confidential Paper Recycling- colour code blue (with lockable lid).

Definition: **Confidential paper recycling** is paper that has any identifying personal information.

- Confidential paper must be disposed of directly into secure locked bins in order to comply with the Privacy & Personal Information Act 1998. It should not be placed into general paper recycling.
- The confidential paper recycling bins are blue 240 litres mobile garbage bins with lockable lids (a few different colour lids are around mainly blue, red and yellow) that have slits in the top for disposal.

These bins are available on request from Environmental services Department.

- The request form is available on the intranet and needs to be faxed to the number given on the form. These bins should only be filled to ¾ full. Once ¾ full a new request form will need to be faxed through to the Environmental Services Department. **http:/intranet.sswahs.nsw.gov.au/RPA/forms/ConfBinRequest.pdf**
- On receipt of the form the full bin will be exchanged for an empty bin. If you do not need another bin then the rapid response team may be paged on #80031 for its removal. In the event that large amounts of confidential waste are being disposed of the bins can be supplied unlocked but will need to be locked immediately after disposal ceases and prior to transport.
- Confidential Waste Paper includes;
  - Patient Health Information.
  - Patient Labels.
  - Medication Labels.
  - Personal Staff Information.

NB: Confidential documents that have been shredded may be placed directly into general paper recycling, provided they are emptied out of the plastic bag.

### 8.5 General Paper Recycling- colour code blue.

Definition: **General paper recycling** is any waste paper that does not contain confidential information, wax or food scraps.

- General paper waste should be placed into the blue cardboard boxes that are labelled "paper only". These cardboard boxes are emptied by the Environmental Services staff into the blue unlocked mobile garbage bins.
- General Paper Recycling includes;
- Office paper (non-confidential).
- Cardboard (small amounts e.g. empty glove boxes).
- Magazines.

- Glossy brochures.
- Envelopes.
- Notepaper.
- Newspapers.

NB: Staples and paperclips do not need to be removed.

### 8.6 Mixed/Co-mingled Recycling- colour code Red.

Definition: **Materials mixed together**, such as plastic bottles with glass and metal containers. Commingled recyclable materials require sorting after collection before they can be recycled.

- Mixed/Co-mingled waste should be placed into the red cardboard boxes that are labelled "mixed recycling". These cardboard boxes are emptied by Environmental Services staff into the red mobile garbage bins.
- Mixed Recycling includes;
- Unbroken Glass Bottles (No Pyrex or Winchester bottles).
- Aluminium Cans.
- Steel Cans.
- Plastic Bottles with recycling sign 1-7.
- Milk Cartons (empty).
- Plastic with recycling sign 1-7.

**Waste that should not be in mixed recycling bins.**

- pyrex glass.
- broken glass.
- paper.
- paper cups.
- gloves.
- pizza boxes.
- steel cans containing food scraps.
- milk container partially filled with milk.

### 8.7 Single use Surgical Equipment Recycling- no colour code.

- Theatres and TSSU will recycle single use surgical equipment and bins will be placed in the each of the Theatre areas which will be clearly marked for "Single Use Surgical Equipment Recycling".

**8.8 Cardboard Recycling- no colour code.**

- All cardboard boxes should be flattened by the person who emptied them. The flattened cardboard boxes should then be placed in trolleys provided or in the waste rooms near the general waste bins. These flattened cardboard boxes will be removed by Environmental services staff.

**8.9 Battery Recycling- no colour code.**

- Rechargeable batteries can be recycled. These batteries should be placed in the collection bins inside Biomedical Engineering on Level 2 Building 89 or Engineering Services on Level 5 Building 28 (Environmental services do not collect these batteries it is up to individual wards/areas to place these batteries in the receptacles provided inside Biomedical Engineering or Engineering Services).
- Battery Recycling includes;
  - lead acid
  - nickel cadmium
- Non recyclable batteries (i.e. alkaline) should be placed in general waste bins (there is currently no recycling facility available for these in Australia.)

**8.10 Print Cartridge and Toner Recycling- no colour code**

- Print cartridge recycling boxes are available on request from Environmental Services. These boxes are lined with plastic bags with special prepaid post address labels. Used print cartridges or photocopy toner cartridges should be placed in these bags. When approximately ½ full the bags should be tied off with cable ties provided. The bags should then be placed outside the mail room level 5 KGV for collection by Australia Post. For departments that do not need their own print

cartridge recycling box the cartridges can still be recycled by depositing them in the box outside the mail room level 5, KGV.

Print Cartridge Recycling includes;

- Inkjet cartridges.
- Toner bottles.
- Laser cartridges.
- Fuser Kits.
- Drum kits.
- Fax, photocopier and printer cartridges.
- It is the department/ward responsibility to take the ½ filled bags to the mail room in KGV.

**8.11 Pink Plastic Patient Bag Recycling- no colour code.**

- Pink plastic patient bag recycling can be arranged on request from the Environmental Services Department.
- Pink plastic patient bags should be placed in plastic bags in receptacle provided. When full, the plastic bag should be tied off and replaced and the full bag placed in waste room. The Environmental services staff will remove the tied off bag ready for recycling.

**8.12 Pallet Wrap Recycling- no colour code.**

- Pallet wrap recycling can be arranged on request from the Environmental Services Department. Pallet wrap should be placed in plastic bags in receptacle provided. When full the plastic bag should be tied off and replaced and the full bag placed in waste room. Environmental services staff will remove the tied off bag ready for recycling.

**8.13 Broken Glass.**

- Broken glass should not be placed in the glass recycling bins this will result in Environmental services staff receiving sharps injuries. Broken glass should be swept up and placed into a small cardboard box and then taped shut, "broken glass" should then be written on the outside

of the box and the box placed directly into a general waste mobile garbage bin. Pyrex glass should be disposed of in the same manner.

### 8.14 E-Waste / Obsolete Equipment.

- E-Waste / Obsolete Equipment should be removed from the asset register using the intranet form:

http://intranet.sswahs.nsw.gov.au/Csahs/Finance/TransferAsset.pdf

- Once removed from the asset register removal will then need to be arranged through the relocation team by faxing them on 57418.
- E-Waste / Obsolete Equipment which includes: -
- Computers.
- Fax machines.
- Ward equipment.

### 8.15 Furniture.

- Furniture can be discarded through the relocation team by faxing a request through to them on 57418.

### 8.16 Mattresses.

- Old mattresses can be discarded by faxing the request through to the relocation team on 57418.

### 8.17 General Waste Stream- colour code green.

**General waste includes:**

- food scraps.
- paper towel.
- outer plastic packaging (that does not have a recycling sign 1-7).
- non soiled alcohol wipes.
- disposable gowns not visibly stained with blood (paper & plastic).
- paper masks, disposable (theatre) caps.
- gloves not visibly stained with blood.
- polystyrene cups.

- dead flowers.
- plastic sheeting off beds not visibly stained with blood.
- Incontinence pads or disposable sheets that are not visibly stained with blood or completely soaked in body fluids and/or faeces.

**Waste that should not be put into general waste bins.**

- office paper.
- confidential paper.
- clinical waste.
- GMO's.
- cytotoxic waste.
- computers and furniture.
- cardboard boxes.

**Waste Licensing.**

- All contractors are to have the appropriate licenses for the removal and disposal of waste under the Environment Protection and Regulation Division of New South Wales. A copy of the contractor/s current licence will be kept by the Environmental Service Department.
- It is a requirement that all contractors coming onto the facility/site must be inducted.

This induction course is to be completed online using the Engineering link.

https://www.inductee.com.au/sswahs/

**8.18 Certificate of Destruction**

- A certificate of destruction for single use surgical equipment, confidential, cytotoxic, chemical liquid, clinical and printer cartridges should be obtained from the waste contractor/s to ensure the waste has been disposed of correctly.

## 9. Waste Management Policy – Display Version

**See on next page**

## RPAH WASTE MANAGEMENT POLICY – DISPLAY VERSION

**1. Aim / Expected outcome of this policy**: To provide a framework that ensures all waste at RPAH is managed safely and efficiently with consideration to environmental issues. This policy outlines the overall objectives of the RPAH waste management program and the responsibilities of staff in relation to waste management. To improve our waste segregation by labelling clearly and colour coding our waste streams. Operational details of the RPAH waste management system can be found in the RPAH Waste Minimisation and Management Plan.

**2. Policy Statement/ Principles /Guidelines:** RPAH is committed to maintaining an efficient and cost effective waste management system that protects the health and safety of all employees, patients and other persons working in or visiting the hospital premises. In accordance with NSW government policy and international best practice, the hospital takes a "cradle to the grave" approach to waste management which implies responsibility for waste from point of generation to final disposal. As such, all staff as waste generators has an obligation to dispose of waste responsibly. RPAH Waste management strategies focus on waste minimisation principles of avoidance, reduction and correct segregation of waste and the promotion of re-use and recycling practices where feasible. Waste management is legislated under the Waste Act (1995) and Waste Regulation (1996) which is administered by the NSW Environmental Protection Authority. The implementation of the RPAH Waste Minimisation and Management Plan in conjunction with this Policy aims to ensure compliance with all relevant legislative and regulatory requirements as set out in Section 8 of this policy.

**3. Scope:** All employees and contractors working in the hospital or at other premises controlled by the hospital.

**4. Exceptions**: No exceptions.

**5. Policy principles**: The RPAH Waste Management Policy in conjunction with the RPAH Waste Minimisation and Management Plan has been implemented with the following objectives:

**Waste segregation**

To ensure waste is managed throughout the hospital via the appropriate waste streams that are classified in accordance with the NSW Health Policy Guidelines

**RPAH Sustainability Committee**

To monitor and report on the efficiency and effectiveness of the waste management system via the RPAH Waste Management Plan.

**Education and Training**

To promote good waste management practice via ongoing waste management education and training programmes.

**Waste management Strategies**

RPAH Waste management strategies focus on waste minimisation principles of avoidance, reduction and correct segregation of waste and the promotion of re-use and recycling practices where feasible.

**Waste Handling Containment and Transport**

To ensure segregated waste is stored and transported appropriately

**Waste Disposal**

To ensure waste management contracts are consistent with relevant regulations as well as track and record various waste streams

**Work Health and Safety**

To minimise the incidence of injuries related to waste generation and handling, through safe work practices, staff training and the provision of Personal Protective Equipment.

**6. Cognizant Office / Getting Help**: Environmental Services Department, RPAH Supply and Waste Management Coordinator.

**7. References**

Work Health and Safety Regulation 2011

Waste Avoidance and Resource Recovery Act 2001

Protection of the Environment Operations (Waste) Regulation 2005

NSW Health Waste Management Guidelines for Health Care Facilities August 1998 PD 2005_132

NSW Health Infection Control Policy PD2007_036

Australian / New Zealand Standard AS/NZS 4478/1997 and AS/NZS 3816/1998

Gene Technology Act 2000 and Gene Technology Regulation 2001

NSW MoH Hand Hygiene Policy PD2010_058

NSW Health Infection Control Policy PD2007_036

**8. Note**: This is a display version of the Waste Management Policy. Further details should be obtained from the comprehensive version of the Waste Management Policy (RPAH_PD2013_ ).

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|---|---|---|
| **POLICY APPROVAL AUTHORITY:** | **Ms. Deborah Willcox** | **Policy Reference No.** |
| **Review Date:** | | |
| | **General Manager** | **RPAH_PD2013_** |
| **APRIL 2017** | | |