# Port Macquarie Base Hospital (PMBH) Redevelopment

## PRELIMINARY HAZARD ANALYSIS

- 16th January, 2012

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# Contents

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# 1. Introduction

## 1.1. Background

Port Macquarie Base Hospital (PMBH) was constructed in 1994. Until January 2005, PMBH was a private hospital contracted to provide public services. On 31 January 2005, PMBH was reinstated into the public sector. The restoration of the Port Macquarie Base Hospital (PMBH) to the public sector has provided the opportunity for the North Coast Area Health Service ( NCAHS) to examine the current and future role of the Port Macquarie Base Hospital and its role in the Hastings Macleay Health Network.

In 2010 a Clinical Services Plan (CSP) for PMBH was prepared to determine the service needs and capacity requirements for the hospital over the next 10 – 15 years based on updated population projections and latest activity data. In September 2010 NSW Health commissioned the development of a Service Procurement and Project Definition Plan to support funding applications to NSW Treasury and the Commonwealth Health and Hospitals Fund to enable the prioritised service requirements identified in the CSP to be met. The revised Master Plan was completed in November 2010.

In order to assess the implications of the storage and handling of dangerous goods and hazardous substances the NSW DoPI, as part of the Director Generals requirements for the PMBH expansion, a preliminary hazard analysis (PHA) was prepared as part of the overall environmental assessment for the proposal.

Aurecon on behalf of NSW Health has commissioned Sinclair knight Merz (SKM) to prepare and document the PHA. The PHA was prepared in accordance with SEPP 33 and HIPAP 6.

This PHA report details the objectives, scope of work, methodology and project management for the preliminary risk assessment for the upgrading and expansion of the hospital.
In particular the report covers the risk implications of the storage and handling of dangerous goods, and clinical wastes.

## 1.2. Objectives

To prepare a PHA study of the proposed redevelopment of the PMBH, NSW, in accordance with the requirements of SEPP 33 and the Hazardous Industry Planning Advisory Paper ( HIPAP) No.6, Hazard Analysis Guidelines.

The objectives of the study are to:

- Assess the risks associated with the expansion of the PMBH in respect of dangerous goods and hazardous materials storage and handling
- Determine whether the risks exceed the accepted risk criteria; and
- Report on the findings of the study in respect of any land use safety implications.

## 1.3. Scope of Work

The scope of work is to update the PHA for the proposed redevelopment of the PMBH, NSW, is in accordance with HIPAP No.6 and SEPP 33.

This PHA report covers the risk implications of the storage and handling of dangerous goods, and biological wastes generated by the proposed development.

The scope specifically excludes the bulk medical gases storages (oxygen, carbon dioxide , etc ) and the bulk storage of LP Gases on site. The storage of these, and their safe handling were approved on 2 December 2011 by the Port Macquarie Base Hospital Enabling Works Review of Environmental Facts, dated November 2011.

# 2. Project Description

## 2.1. Site Description

The NSW Health site is located at Port Macquarie, NSW as shown in Figure 1 – NSW HEALTH Proposal - Site Plan. The site is zoned SP2 Infrastructure – Health Services Facility and the proposed facility is permitted in this zone.

Site land area is 9.247 hectares.

The 2010 Master Plan identified a need for the expansion of the hospital. The proposed expansion includes;

- New 26 bed Adult Mental Health Impatient Unit
- New Community Mental Unit
- New 30 Bed Inpatient Unit
- Expanded Emergency Department
- Additional operating theatres
- New Emergency Medical Unit
- New Cardiac Catheter Unit
- New Administration, Education and Library Unit
- New Helipad and direct access to the Emergency Department
- Associated road works and expanded parking facilities
- Associated engineering infrastructure

The surrounding area is characterised by industrial and commercial facilities and residential as follows:

- **West** – strip of bushland separating the site from Oxley Highway;
- **South** – primarily residential development;
- **East** – light industrial development; **and**
- **North** – primarily residential development.

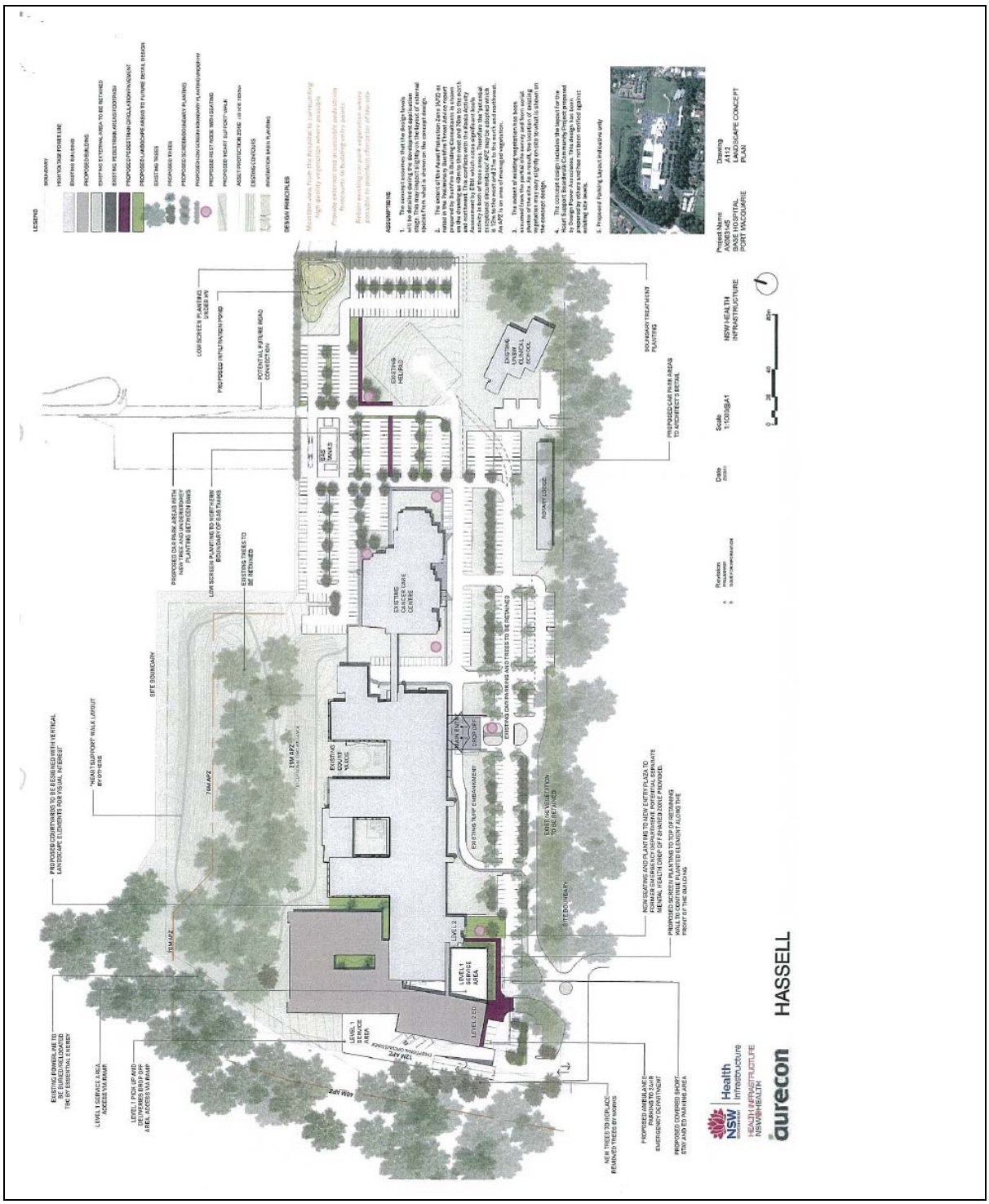


**Figure 1 – Site Layout – PMBH redevelopment**

## 2.2. Clinical & Cytotoxic Waste Stream Definitions and Disposal arrangements

Infectious substances will comprise clinical and related wastes, and General clinical wastes, human tissue as described in the following sections.

### 2.2.1. Definitions

Clinical Waste: is waste which has the potential to cause sharps injury, infection or offence. When packaged and disposed of appropriately, there is virtually no public health significance. Clinical waste contains the following:

- sharps;*
- human tissue (excluding hair, teeth and nails);
- bulk body fluids and blood;**
- visibly blood stained body fluids and visibly blood stained disposable material and equipment;
- laboratory specimens and cultures;
- animal tissues, carcasses or other waste arising from laboratory investigation or for medical or veterinary research

- Unless treated to standards approved by the Director General of NSW Health.

*Sharps: Any object capable of inflicting a penetrating injury, which may or may not be contaminated with blood and/or body substances. This includes needles and any other sharp objects or instruments designed to perform penetrating procedures.

** Bulk: Free flowing liquids normally contained within a disposable vessel or tubing, not capable of being safely drained to the sewer.

Cytotoxic Waste: is material contaminated with residues or preparations containing materials toxic to cells, principally through action on cell reproduction. This includes any residual cytotoxic drug, and any discarded material associated with the preparation or administration of cytotoxic drugs.

### 2.2.2. Disposal Arrangements

Clinical Waste and Cytotoxic Waste are placed in purpose built containers at the point of generation. Containers are held in Disposal Rooms located across all clinical areas of the facility. Disposal Rooms require storage space to accommodate 240 litre capacity bins to facilitate a total waste capacity of up to 1,000 kg or litres (1 m3), and allow for physical separation of different waste streams in accordance with AN/NZS 3816:1998 Management of Clinical and Related Waste.

Waste is handled by trained and experienced waste handlers. Circulation routes between points of generation and the Contaminated Waste Holding Room are as discreet and direct as possible.

Clinical Waste (with the exception of Anatomical Waste*) and Cytotoxic Waste are transported to the on-site Contaminated Waste Holding Room for collection by an external licensed contractor, 2 – 3 times per week, dependent on activity & generation levels). Waste is steam sterilised and disposed of at the external licensed contractor premises, as per the current legislation, policy and Australian Standards.

The on-site Contaminated Waste Holding Room is an air-conditioned, enclosed structure with lockable door and smooth impervious floor. Water supply is available, suitable drainage and adequate lighting is provided. Spill Kits are available in the holding area. Access is restricted to Housekeeping staff and the room is not accessible to the public.

**Anatomical Waste is held in purpose built containers in the body holding area (morgue) until collected by the external contractor for transport & disposal.*

## 2.3. Dangerous Goods Storage and Transport Arrangements

In relation to the SEPP 33 Storage and Transportation Threshold Assessment, the following information has been provided by the Physical Resources Manager (Mr Colin Bisco) and the Hotel Services Manager ( Mr Eldert Overduin ):

- There are 4 X 7500 Litre LPG tanks situated at the South/West corner of the site which are topped up by Elgas approximately once per week.
- 1 X 4000 Litre LPG tank situated to the North/East of the North Coast Cancer Institute Building which is topped up by Elgas approximately every “3” weeks.
- All of these LPG vessels are listed on our current Dangerous Goods licence for the PMBH site.
- Minimal amounts of Methylated Spirits (4 litres) & Mineral Turpentine (4 Litres) are kept in the “Flammable Goods Store” which is situated in the South/West corner of the

site….on the opposite side of the entry road to the LPG Gas compound. 2 X 9kg LPG Gas cylinders for BBQ's are also kept in here. There is restricted access to this store.

- There are 1 X "D" size & 1 X "E" size Acetylene cylinders that are part of oxy/act welding sets located in the Fabrication Workshop/Shed which is located on the South/West boundary of the site. Restricted access. Transported to the site by Local BOC agent in a small utility.
- There are 10 X "G" size, 1 X "E" size, 1 X "D" size & 4 X "C" size Nitrous Oxide cylinders located securely in the Medical Gas Cylinder store which is basically located underneath the existing Ambulance Bay. There is restricted access to this store. Cylinders are transported to site by the local BOC agent (PH Brown P/L) in a small ute.
- Cytotoxic and infectious clinical waste total 4000 kilos per month, with storage collected in 240 litre bins

Table 2 lists the quantities of dangerous goods and clinical wastes which would be generated, stored or transported at PMBH.

| Material | DG Class | Qty (t) | NSW DoPI Thres Qty | Vehicle Move Per Annum | NSW DoPI Thres Qty | Conclusion |
|---|---|---|---|---|---|---|
| Class 2.1 LP Gas - | 2.1 | 20 | 10 | 64 | 500 | Above threshold - this aspect covered by separate REF and not within the scope of this PRA. |
| Class 2.1 flammable gases - such as acetylene ( 2 cylinders) | 2.1 | 0.1 | 10 | 12 | 500 | Below threshold - proposal is not potentially hazardous |
| Class 2.2 Exempt, hence no storage limits for argon, nitrogen or rare/inert gases - however must consider sub-classes also – hence need to cover compressed Oxygen | 2.2 | | No limit | NA | NA | NA |
| Class 2.3 - minor quantities of NO (10 cylinders) | 2.3 | 0.5 | 5 | 48 | 100 | Below threshold - proposal is not potentially hazardous |
| Class 3 – PG 1 ( BP < 35 o C ) includes MATERAILS WITH UN NO . 1993, and 1263 | 3 PG 1 | 0.1 | 2 | 10 | 500 | Below threshold - proposal is not potentially hazardous |
| Class 3 – PG II includes X55, methanol, kerosene, & turpentine) | 3 PG II | 0.01 | 5 | 24 | 750 | Below threshold - proposal is not potentially hazardous |
| Class 3 – PG III includes mineral turpentine, Shell solvents and Oils | 3 PG III | 0.1 | 5 | 24 | 1000 | Below threshold - proposal is not potentially hazardous |
| Class 6.2 Clinical Wastes | 6.2 | 4 | 0.5 | 200 | Refer to DoPI | Not considered potentially hazardous given controls. |
| Class 7 – Radioactive material | 7 | | | | | NA |
| Class 8 PG II includes mild caustic washes in drums | Class 8 PG II | 0.1 | 25 | NA | | NA |
| Note : The bulk of the truck movements are dedicated to clinical waste removal – which are subject to stringent NSW Health regulations and protocols. | | | | | | |

**Table 1 - Dangerous Goods Storage and Transport quantities proposed at the new PMBH**

## 2.4. SEPP 33 Screening Findings

The Director-General's Requirements for the proposed Port Macquarie Base Hospital Expansion require consideration of SEPP 33 - Hazardous and Offensive Development. In order to address the requirements of SEPP 33, a SEPP 33 screening analysis was undertaken to Confirm whether or not the project falls under the definition of "potentially hazardous industry" under SEPP 33 - Hazardous and Offensive Development, which is as follows:

> *"Potentially hazardous industry" means a development for the purposes of any industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality:*
>
> *(a) to human health, life or property, or*
> *(b) to the biophysical environment,*
>
> *and includes a hazardous industry and a hazardous storage establishment."*

The types, quantities and storage of dangerous goods and wastes provided in table 1 are compared against the General Screening Threshold Quantities provided in Table 2, and 3.
As a result, and earring on the conservative, a PHA is required due to the quantity of Class 6.2 clinical waste stored and transported.

| |
|---|
| The site storage will probably exceed 0.5 tonnes, with up to 200 vehicle movements of clinical waste per annum are envisaged.<br><br>Therefore a PHA (in this case a Preliminary Risk Assessment (PRA) level 1) is required under SEPP 33. Further, Clause 12 of SEPP 33 requires the PHA to be prepared in accordance with the "Hazardous Industry Planning Advisory Paper No. 6 - Hazard Analysis". |

| Class | Screening Threshold | Description |
|---|---|---|
| 1.2 | 5 tonne | or are located within 100 m of a residential area |
| 1.3 | 10 tonne | or are located within 100 m of a residential area |
| 2.1 | (LPG only — not including automotive retail outlets[1]) | |
| | 10 tonne or16 $m^3$ | if stored above ground |
| | 40 tonne or 64 $m^3$ | if stored underground or mounded |
| 2.3 | 5 tonne | anhydrous ammonia, kept in the same manner as for liquefied flammable gases and not kept for sale |
| | 1 tonne | chlorine and sulfur dioxide stored as liquefied gas in containers <100 kg |
| | 2.5 tonne | chlorine and sulphur dioxide stored as liquefied gas in containers >100 kg |
| | 100 kg | liquefied gas kept in or on premises |
| | 100 kg | other poisonous gases |
| 4.1 | 5 tonne | |
| 4.2 | 1 tonne | |
| 4.3 | 1 tonne | |
| 5.1 | 25 tonne | ammonium nitrate — high density fertiliser grade, kept on land zoned rural where rural industry is carried out, if the depot is at least 50 metres from the site boundary |
| | 5 tonne | ammonium nitrate — elsewhere |
| | 2.5 tonne | dry pool chlorine — if at a dedicated |
| | | pool supply shop, in containers <30 kg |
| | 1 tonne | dry pool chlorine — if at a dedicated pool supply shop, in containers >30 kg |
| | 5 tonne | any other class 5.1 |
| 5.2 | 10 tonne | |
| 6.1 | 0.5 tonne | packing group I |
| | 2.5 tonne | packing groups II and III |
| 6.2 | 0.5 tonne | includes clinical waste |
| 7 | all | should demonstrate compliance with Australian codes |
| 8 | 5 tonne | packing group I |
| | 25 tonne | packing group II |
| | 50 tonne | packing group III |

**Table 2 – General Screening Threshold Quantities**

*Note: The classes used in the table are referred to in the Australian dangerous Goods Code.*

| | Vehicle Movements | | Minimum quantity* per load (tonne) | |
|---|---|---|---|---|
| | Cumulative | Peak | | |
| Class | Annual *or* | Weekly | Bulk | Packages |
| 1 | see note | see note | see note | |
| 2.1 | >500 | >30 | 2 | 5 |
| 2.3 | >100 | >6 | 1 | 2 |
| 3PGI | >500 | >30 | 1 | 1 |
| 3PGII | >750 | >45 | 3 | 10 |
| 3PGIII | >1000 | >60 | 10 | no limit |
| 4.1 | >200 | >12 | 1 | 2 |
| 4.2 | >100 | >3 | 2 | 5 |
| 4.3 | >200 | >12 | 5 | 10 |
| 5 | >500 | >30 | 2 | 5 |
| 6.1 | all | all | 1 | 3 |
| 6.2 | see note | see note | see note | |
| 7 | see note | see note | see note | |
| 8 | >500 | >30 | 2 | 5 |
| 9 | >1000 | >60 | no limit | |

**Note:** *Where proposals include materials of class 1, 6.2 or 7, the Department of Planning should be contacted for advice. Classes used are those referred to in the Dangerous Goods Code and are explained in Appendix 7.*

** If quantities are below this level, the potential risk is unlikely to be significant unless the number of traffic movements is high.*

**Table 3 – Transportation Screening Threshold**

# 3. Risk Analysis Methodology

The methodology proposed for assessment of the risks is that prescribed in HIPAP No.6, Guidelines for Hazard Analysis (1992), published by the NSW Department for Planning and Infrastructure (NSW DoPI).

Essentially the study will follow the requirements for a Level 1 Preliminary Risk Assessment, and provide a qualitative assessment of the proposed handling and storage of dangerous goods and hazardous materials. This analysis then only covers the class 6.2 – Clinical and Bio-hazardous wastes generated by PMBH (as determined by the SEPP 33 screening analysis).

For this study SKM's risk based approach was adopted to establish existing risk levels, compare these with relevant risk criteria, and recommend risk reduction measures where risk levels are found to be excessive. SKM utilise a 5x 5 risk matrix to identify and assess risks.

The SKM risk assessment process adopted for this study follows the Australian Standard AS / NZS ISO 31000: 2009 "Risk Management – Principles and Guidelines". The process adopted is depicted in Figure 2– Risk Assessment Methodology.

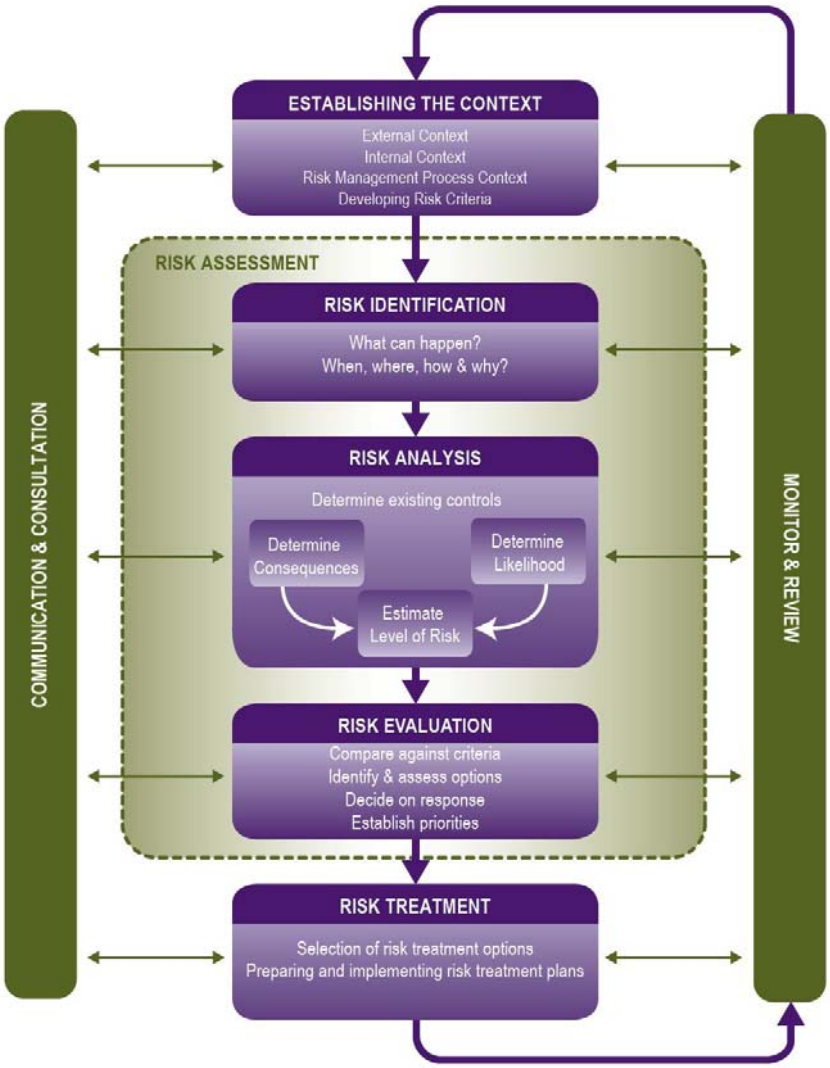


**Figure 2– Risk Assessment Methodology**

The methodology proposed for use is as follows:

- **Establishing the context –** Information was supplied by Aurecon and NSW Health in respect of the nature and quantity of dangerous goods stored and transported to and from PMBH.
- **Risk Identification -** An important stage of any Risk Assessment is to systematically and comprehensively identify potential hazards or risks associated with operation of the facility. This can be done via a range of tools and techniques. For this study a desktop review utilising the brainstorming technique was carried out by a small team of SKM personnel. Discussions included reference to the findings of the site survey and were recorded using a tabular format.
- **Risk Analysis** – The hazards associated with the storage and handling of dangerous goods and hazardous materials ( mainly biological wastes ) will be identified and qualitatively assessed using SKM's Risk Analysis Procedure [Ref. 11] using ( an initial list as prepared by HI is provided in Table 1 ). The SKM procedure provides a method for assigning relative risk ranking for Risk Issues (sometimes referred to as hazards, losses or loss scenarios). The ranking of risk requires the determination of consequences and then the likelihood of both the risk occurring and then resulting in the stated consequence. These two parameters are then combined in a risk analysis matrix to produce a risk rating or risk ranking.

Where available, the Clients' risk analysis criteria are applied to projects. SKM's own risk criteria have been used in the absence of a client standard. It is noted that in the absence of a client risk analysis criteria, the procedure may be applied however it is recommended that the consequence, likelihood and risk criteria are reviewed and agreed by the client to ensure they are applicable to the context of this study.

The SKM procedure is consistent with AS/NZS 4360:2004 Risk Management and ISO31000 Risk Management.

The following paragraphs describe the procedure used in this study.

- **Consequence Assessment and Ranking** – the consequences of selected events will then be assessed, excluding LP Gas storage failure events (as these are covered in a separate REF). Impacts to the personnel will then be assessed based on the movement / transport of cytotoxic and clinical wastes.

For a given risk scenario select the consequence rank that best fits the most likely level of impact, taking into account the existing controls that are in place and their potential effectiveness. Control measures are rarely 100% effective hence there will typically be a level of residual risk.

The table below provides a definition of consequence ratings for Health & Safety Risks for Personnel.

| Consequence Rank | Category | Definition of Ranking |
|---|---|---|
| 1 | Severe | Single fatality or permanent disability |
| 2 | Major | Extensive injuries or chronic health issues including disease pandemic |
| 3 | Moderate | Lost Time Injury (off work recovery required) or short / medium term health issues |
| 4 | Minor | Medical treatment required or short term acute health effects. |
| 5 | Insignificant | Local treatment with short recovery - minor short term health effects. |

**Likelihood Assessment** – Those impacts identified to have fatality consequences will be assessed for frequency, including likelihood of failure as a result of each identified failure mode. With reference to the likelihood table below choose a description that best fits the likelihood of the risk issue or hazardous scenario occurring and resulting in the consequence defined in the previous stage.

Select from only one column that provides the best description of the likelihood given the data and information that is available.

Note that the frequency is **not** the frequency of the risk only. It is the frequency of the risk occurring and the probability of the controls failing to work and resulting in the selected consequence.

The following table provides the definition of likelihood ratings for Health & Safety Risks for Personnel.

| Likelihood Rank | Category | Project Frequency | Frequency | Probability |
|---|---|---|---|---|
| A | Almost certain | More than once during the project. | More than once per year. | >0.5 |
| B | Probable | Once during the project. | Once every one to 10 years. | 0.1 - 0.5 |
| C | Possible | Could happen during the project life. | Once every 10 to 100 years. | 0.01 - 0.1 |
| D | Unlikely | Unlikely to occur during project life. | Once every 100 to 1000 years. | 0.001 - 0.01 |
| E | Very unlikely | Very unlikely to occur during the project life. | Less than once every 1,000 years. | <0.001 |

**Risk Assessment and Ranking** – The consequence and frequency results will be qualitatively combined to determine the acceptability of the risk. Risk analysis is the process of combining the consequence and likelihood ranks to determine a level of risk; this can be done using the following risk matrix. The acceptability of this risk level and the required action statements are then applied.

| LIKELIHOOD \ CONSEQUENCE | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|
| A | Medium | High | Very High | Very High | Very High |
| B | Medium | Medium | High | Very High | Very High |
| C | Low | Medium | Medium | High | Very High |
| D | Low | Low | Medium | Medium | High |
| E | Low | Low | Low | Medium | Medium |

The criteria for acceptability of risks are defined as follows:

- **Very High** risks are intolerable for EH&S. Do not commence or continue at this risk level for EH&S risks. Implement control measures to ensure the risk level is reduced. Communicate and consult thoroughly on non-EH&S risks to ensure the positive benefits out-weigh the negative impacts.
- **High** risk is undesirable and represents a band where the failure of any likelihood or consequence controls will place the risk into the "very high" category. Verify, and where possible quantify, the accuracy and certainty for the existing risk level. Implement control measures to ensure the risk level is reduced or is confirmed to be ALARP.
- **Medium** risks are only tolerable if examination proves them to be ALARP. Implement controls to prevent and/or mitigate the risk and monitor for change. Reduce to Low Risk if the benefits outweigh the cost of the additional controls.
- **Low** risks are acceptable. These are managed by normal business processes. Review at next review interval.

**Risk Review and Reduction** – the assessed risks will then be compared to the risk criteria to determine whether the risks posed by the PBBH redevelopment will result in an excessive risk profile to the surrounding land uses. Where the risk is identified to exceed the criteria, the major risk contributors will be identified and risk reduction measures will be developed. The effectiveness of the proposed risk reduction measures will then be assessed to ensure risks are reduced to below the acceptable risk criteria nominated by the NSW DoPI.

# 4. Preliminary Risk Analysis

## 4.1 Clinical Storage and Transport Risks

A qualitative risk review workshop was undertaken with Senior PMBH staff on Friday 13th January, 2012.

The team comprised;

- Ms Maureen O'Neill ( Quality Manager PMBH)
- Mr Eldert Overduin (Hotel Services Manager PMBH)
- Mr Leonard Gawecki ( SKM) – Risk Consultant

The team reviewed the;

- Infection and Prevention Control measures
- Waste Storage and fire prevention/protection
- Transportation risks
- Security

The causes and consequences of each incident and the existing controls in place were reviewed and assessed by the team. The Detailed findings are provided in Appendix A – Preliminary Risk Analysis Findings. Essentially, given the controls in place the inherent risk to the community is regarded as low for the incidents considered.

The only recommendation made was to advise NSW DoPI of the Class 6.2 waste storage arrangements and waste vehicle movements in line with the requirements of SEPP33.

# 5. Summary Conclusions and Recommendations

In summary, there were no postulated incidents identified that posed unacceptable community risks, given the strict NSW Health controls in place at PMBH.

## 5.1. Contact NSW DoPI

The SEPP 33 guidelines require that PMBH and/or the proponent contact the NSW DoPI for advice on the frequency of transport movements, and the quantity of wastes stored as a result of the expansion of Port Macquarie Base Hospital (PMBH). In this context waste refers to Class 6.2 – Infectious waste substances – i.e. substances containing micro-organisms, bacteria, and viruses etc that are believed to cause disease in humans or animals.

*Note .1 Class 6.2 - Infectious Substances also includes Clinical Wastes, cytotoxic and bio hazardous wastes.*

*Note 2 . Estimates for Class 6.2 waste storage requirements and transport movements are estimated in this report. In summary up to 4000 kg of Class 6.2 infectious wastes are to be stored in the dedicated store, involving approximately 200 waste vehicle movements per annum.*

# 6. References

1. Hazardous Industry Planning Advisory Paper No.6 – Guidelines for Hazard Analysis, Department of Planning, NSW, 1992.
2. State Environmental Planning Policy No.33 – Hazardous and Offensive Development Application Guidelines (1994), "Applying SEPP 33", Department of Planning NSW.
3. Multi-Level Risk Assessment, Department of Infrastructure, Planning and Natural Resources – 1997.
4. The Australian Code for the Transport of Dangerous Goods by Road and Rail (known as the Australian Dangerous Goods Code or ADG 7), Federal office of Road Safety, Canberra.
5. AS1596-2000, "The Storage and Handling of LP Gas", Standards Association of Australia, Sydney
6. AS1940-2004, "The Storage and Handling of Flammable and Combustible Liquids", Standards Association of Australia, Sydney
7. AS2444-2000, "Fire Extinguishers and Fire Blankets – Selection and Location", Standards Association of Australia, Sydney.
8. Occupational Health and Safety Act 2000 and Regulations (Dangerous Goods Amendment)– 2005, WorkCover, NSW
9. AS4332 - The Storage and Handling of Gases in Cylinders, Standards Association of Australia,
10. Hazardous Industry Planning Advisory paper No.4, "Risk Criteria for Land Use Safety Planning", NSW Department of Infrastructure, Planning and Natural Resources (1992)
11. SKM Risk Analysis Procedure, Chris Beale, PMSTDDS-GLOB-MR-PE-0003, Rev 0

## Appendix A – Preliminary Risk Analysis Findings

| Ref. No: | Risk Area | Risk Issue | Causes | Consequences | Existing Controls | Control Effectiveness | Risk Analysis with controls | | | | Recommendations |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Type | C | L | Risk Level | |
| 1.10 | **Infection Prevention and Control** | Waste spreads bacteria / disease if not treated and people come into contact with untreated waste. | people come into contact with untreated waste | spread of disease or contaminated waste | Waste is segregated into waste streams. Waste is held in secured containers in a dedicated fire rated and secure store. Handled by professional waste contractors and staff with correct PPE. Waste audits are conducted twice annually by Infection Control Officer. All staff are covered by mandatory staff immunisation program. Waste is then transported to Steri-Health where it is steam sterilised and disposed of in accordance with NSW Health requirements. | Adequate | H&S | 5 | C | Low | Aurecon/ HI to contact NSW DOPI to confirm procedures / waste vehicle movements represent a low risk to the community. |
| 1.20 | **Waste storage fire** | toxic smoke / runoff | people come into contact with untreated waste | fire , fire spread , toxic smoke | Waste held in secured containers. Fire detection / protection systems to BCA standards. All waste contained in fire rated and secure room. | Adequate | H&S | 5 | C | Low | Aurecon/ HI to contact NSW DOPI to confirm procedures / waste vehicle movements represent a low risk to the community. |
| 1.30 | **Transport Accident** | Waste spreads bacteria / disease if not treated and | people come into contact with untreated waste | spread of disease or contaminated waste | Waste held in secured containers. Handled by professional waste contractors and staff with correct PPE. OH&S consultant undertakes a annual transport and site inspection audit of external licensed contractor (SteriHealth). | Adequate | H&S | 5 | C | Low | Aurecon/ HI to contact NSW DOPI to confirm procedures / waste vehicle movements represent a low risk to the community. |