



**Chemical Waste Storage and Treatment  
Facility, 40 Christie Street, St Marys**

**Proposal for the acceptance and treatment  
of E-waste & Minor Site Works**

**Toxfree Australia Pty Ltd**

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**Environmental Assessment: MP06\_0095 MOD 4**

**May 2017**

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## **Executive Summary**

This Environmental Assessment (EA) has been prepared by Wild Environment Pty Ltd for Toxfree Australia Pty Ltd (Toxfree) to support the modification application (MOD06\_0095 MOD4) to the Department of Planning and Environment (DoPE) for the acceptance and processing of minor amounts of E-waste at Toxfree's existing Chemical Waste Storage and Treatment Facility. The site is located at 40 Christie Street, St Marys 2760 (Lot 431 DP 854814). The EA also sets out and assesses minor changes to access arrangements, parking and the installation of a weighbridge to meet NSW Environmental Protection Authority's (EPA's) requirement for waste tracking in accordance with the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation).

This document assesses the proposed modification and includes detailed environmental impact assessment.

The site currently operates in accordance with an existing Environmental Protection Licence (EPL) (Licence No. 12628) administered by the NSW EPA.

Toxfree's existing Facility is well-established and a critical element of Sydney's waste management system. The site holds approval to accept a wide range of dangerous goods, and its central location is well suited to service the industrial and commercial markets.

In recent years, there has been significant increase in the disposal of E-waste. This has resulted in a need to safely accept and processes E-waste to minimise contamination of landfills, and increase beneficial re-use and recycling of the components of E-waste. The proposed modification was developed in response to the increase in the market. The NSW Government has prioritised the sustainable recycling of E-Waste through a range of programs, as evidenced by the NSW Environment Trust's funding contribution to Toxfree's installation of the process.

Toxfree proposes to install a 'BluBox' processing unit within its existing building to recycle up to 7,200 tonnes per annum (tpa) of E-waste (approximately 600 tonnes per month). This will enable the E-waste to be diverted from landfill, and valuable compenets to be safely recycled.

The BluBox and CIRRUS technology fulfils all requirements of established international and Australian Recycling Standards including E-Stewards and AS5377: Collection, Storage, Transport and Treatment of End-of-Life Electrical and Electronic Equipment, 2013.

Noise, Hazard and Traffic studies have been carried out as part of this EA. The EA has concluded that there will be negligible if any adverse impacts on neighbours, the local area or the environment.

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## **APPENDICES**

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**Appendix C: BluBox and CIRRUS Units Specification**

**Appendix D: Noise Impact Assessment**

**Appendix E: Preliminary Hazard Assessment**

**Appendix F: Site Plan (Parking, Access and Weighbridge)**

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# 1 INTRODUCTION

## 1.1 BACKGROUND AND JUSTIFICATION

This Environmental Assessment (EA) has been prepared by Wild Environment Pty Ltd for Toxfree Australia Pty Ltd (Toxfree) to support the modification application (MOD06\_0095 MOD4) to the Department of Planning and Environment (DoPE) for the acceptance and processing of minor amounts of E-waste at Toxfree's existing Chemical Waste Storage and Treatment Facility. The site is located at 40 Christie Street, St Marys 2760 (Lot 431 DP 854814). The EA also sets out and assesses minor changes to access arrangements, parking and the installation of a weighbridge to meet NSW Environmental Protection Authority's (EPA's) requirement for waste tracking in accordance with the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation).

This document assesses the proposed modification and includes detailed environmental impact assessment.

Toxfree's existing Facility was approved as a Chemical Waste Storage and Treatment Facility by the then Minister for Planning on 22 December 2006 (06\_0095) under Section 75J of the *Environmental Planning and Assessment Act, 1979* (EP&A Act). The Facility was approved to receive, store, treat and transfer a range of dangerous goods and hazardous goods from a variety of industry, domestic and commercial sources. The site has also been approved for gas detection systems and other dangerous goods stored on site. The site is also used for oil filter crushing, aerosol crushing, container cleaning, fluorescent tube crushing and secure product destruction.

**Figure 1.1** shows the location of the site.

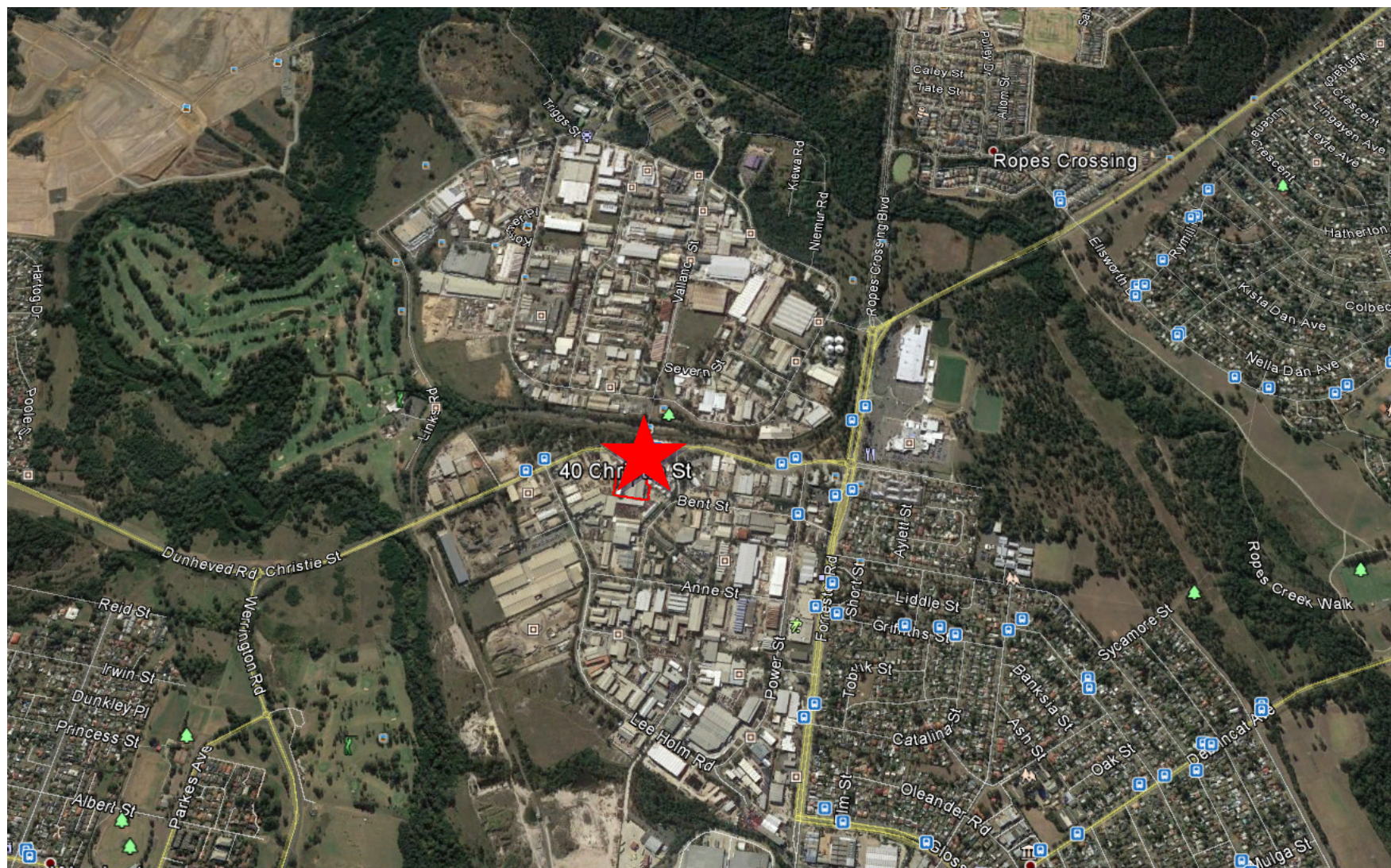
The site currently operates in accordance with an existing Environmental Protection Licence (EPL) (Licence No. 12628) administered by the NSW EPA.

Toxfree's existing Facility is well-established and a critical element of Sydney's waste management system. The site holds approval to accept a wide range of dangerous goods, and its central location is well suited to service the industrial and commercial markets.

In recent years, there has been significant increase in the disposal of E-waste. This has resulted in a need to safely accept and processes E-waste to minimise contamination of landfills, and increase beneficial re-use and recycling of the components of E-waste. The proposed modification was developed in response to the increase in the market. The NSW Government has prioritised the sustainable recycling of E-Waste through a range of programs, as evidenced by the NSW Environment Trust's funding contribution to Toxfree's installation of the process.

The proposed modification is not expected to significantly alter the development from that described in the original Environmental Assessment (Peter J Ramsay & Associates, 2006) and as modified. However, it requires assessment and an application to modify the existing major project approval (06\_0095) pursuant to Section 75W of the EP&A Act. This EA has been prepared to accompany a modification application to meet the requirements of the Secretary's Environmental Assessment Requirements (SEARs, refer Appendix A) provided by DoPE and to facilitate the assessment and approval of an amendment to the existing EPL.

Figure 1.1: Locality Map



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## 1.2 OUTLINE OF THE PROPOSAL

The proposed modifications include the acceptance and storage of up to 7,200 tonnes per annum (tpa) of E-waste (approximately 600 tonnes per month). The waste would also be processed using the BluBox machine and technology.

The BluBox was developed to recycle flat panel displays and lamps containing mercury. The machine separates the hazardous particles and extracts valuable output fractions for further processing. This fully automated process is packed in a 40ft HC container, which is constantly under negative pressure and therefore meets highest safety standards. Mercury vapour is captured by an active carbon filter and contaminated fluorescent dust is captured by through zig zag and cyclone separators. The remaining product is separated into magnetic materials and mix of plastics, printed circuit boards and copper wire – (non-magnetics) which is then processed by an Optical Sorter—(CIRRUS).

The optical sorter uses flight detection with an illuminated reference as well as over-the-belt detection with reflective reference, to accurately sort materials using advanced identification algorithms and precise air jets. The CIRRUS in combination with an eddy current separator is the final separation process to produce high purity product streams including plastics, printed circuit boards, aluminium and copper wire.

The BluBox and CIRRUS technology fulfils all requirements of established international and Australian Recycling Standards including E-Stewards and AS5377: Collection, Storage, Transport and Treatment of End-of-Life Electrical and Electronic Equipment, 2013.

Following the processing of the E-waste, the BluBox generates the following material streams:

- Non Magnetics
- Magnetics
- End Caps
- Glass
- Fluorescent Powder
- Mercury

For non-magnetics, the propriety CIRRUS sorter would be installed, which uses an Eddy Current and optical sorter to separate output products into recyclable components to be sold to downstream recyclers as commodities.

The BluBox and CIRRUS units would be installed within the existing building at the site. No construction works would be required for the installation.

During the installation process, minor heavy vehicle movements are expected. It is expected that two heavy vehicle movements for delivery of the BluBox are expected. During operational/processing stage of the proposal, up to four (4) additional vehicle movements per day are anticipated at full capacity. This is because E-waste is relatively low-density, enabling the E-waste to be transported to the site from regional waste recycling centres and customer sites in the voids above loads on existing vehicles. (Note that the Noise Impact Statement (Appendix D) assesses up to ten (10) additional loads per day in order that the conclusions are conservative).

The BluBox unit is operated under negative pressure, which contains all vapour and dust that may be created during the processing of the E-waste.

The proposal also includes minor changes to existing access and carparking arrangements, and the installation of an in-ground weighbridge.

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A detailed description of the proposal is set out in **Section 5**. The proposal is also shown in **Figure 1.2**.

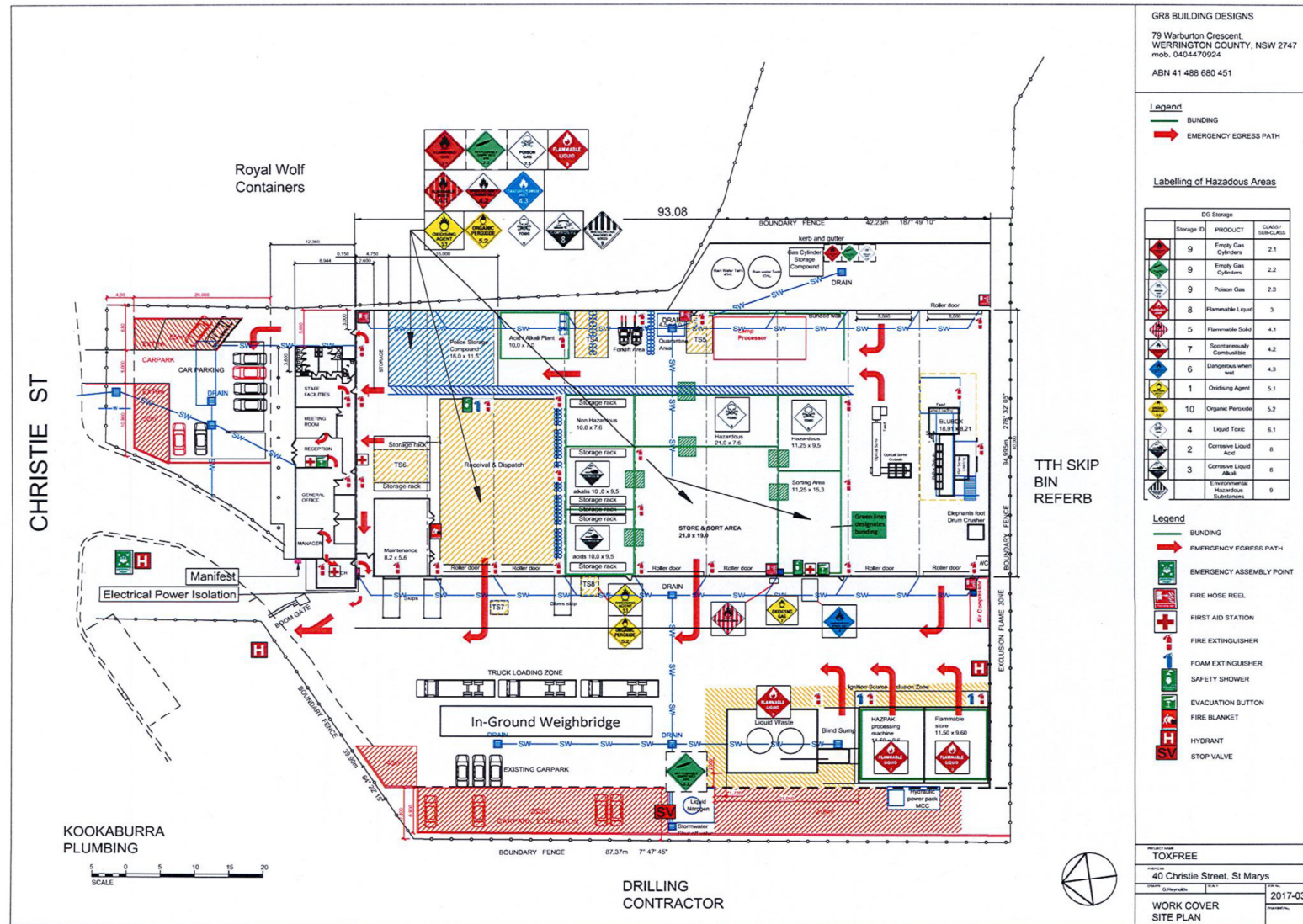
### **1.2.1 The Proponent (Toxfree Australia Pty Ltd)**

The proponent is Toxfree Australia Pty Ltd (Toxfree).

Established and listed on the Australian Securities Exchange (ASX) in 2000, Toxfree has experienced substantial growth during this time, achieved through acquisitions, new green-field developments and the organic growth of our existing businesses. Today Toxfree employs over 1600 people and provides national services from over 80 locations Australia wide.

In 2015 Toxfree acquired PGM Refiners, specialist in e-waste recycling, including CRT units, flat-screen televisions, monitors and laptops. For further information on Toxfree's services refer to the web site [www.toxfree.com.au](http://www.toxfree.com.au).

Figure 1.2: Proposed BluBox -& Weighbridge Location



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## 2 ASSESSMENT & APPROVAL PROCESS

### 2.1 PLANNING APPROVALS FRAMEWORK

#### 2.1.1 Compliance with current approvals; Part 3A

The Toxfree Chemical Waste Storage and Treatment Facility was approved by the then Minister for Planning on 22 December 2006 (06\_0095) under Section 75J of the EP&A Act, 1979. The Facility was approved to receive, store, treat and transfer a range of dangerous and hazardous goods from a variety of industry, domestic and commercial sources. The Facility was considered a Major Project in accordance with Schedule 1, Group 9, Section 27(5) of the then State Environmental Planning Policy (Major Projects) 2005, and was determined by the then Department of Planning on behalf of the Minister under Part 3A of the EP&A Act.

Two modifications have subsequently been approved under Section 75W (Part 3A) of the EP&A Act:

- Changes to site layout, gas detection systems and types of dangerous goods stored on site (MOD\_1, 2007); and
- Use of additional treatment technologies including chemical immobilisation and solidification (CIS), oil filter crushing, aerosol crushing, container cleaning, fluorescent tube crushing and secure product destruction (MOD\_2, 2010).

A third modification (MOD\_3) is currently under assessment and consideration under Part 3A of the EP&A Act:

- Establishment of an Acid/Alkaline Neutralisation treatment system;
- Expand the scope of treatment capability of the existing CIS process to handle a variety of waste streams already approved to process (subject to immobilisation permits);
- Use of a solidification treatment process for selected liquid/sludge/solid, non-dangerous good, hazardous waste streams;
- Extension of operating hours; and
- Increase in storage limits of existing approved wastes.

The proposal to expand to include an additional waste type (this E-waste EA, MOD\_4) is not expected to significantly alter the development from that described in the original EA (Peter J Ramsay & Associates, 2006) and as modified. However, the existing major project approval (06\_0095) requires modification pursuant to Section 75W of the EP&A Act.

#### 2.1.2 Environment Protection Licence

Toxfree's operations are defined as a scheduled activity under Schedule 1 Waste Facilities 1(a) of the *Protection of the Environment Operations Act, 1997* (POEO Act). An Environment Protection Licence (EPL No. 12628) was issued for the Facility by the EPA for 'waste storage' and 'waste processing (non-thermal treatment)'.

The proposed modification does not alter or affect the classification of the scheduled activity, environmental impact or compliance with conditions of the licence. The proposal requires modification of the existing licence under Section 58 of the POEO Act, to include the acceptance and treatment of additional wastes (i.e. E-waste).

### 2.1.3 Other relevant legislation

Implications of the proposed modification on other relevant legislation are shown in Table 2.1 below.

**Table 2.1: Other relevant legislation**

| <b>Legislation</b>                                                                     | <b>Requirements for the proposal</b>                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Environmental Planning and Assessment Act, 1979</i>                                 | The existing Toxfree Facility was approved as a Major Project under the former Part 3A of the EP&A Act pursuant to Schedule 1 of the <i>Major Development SEPP</i> . The proposed modification will be assessed under Section 75W of the EP&A Act.<br><br>Under Part 3A, environmental planning instruments (other than SEPPs) do not apply to an approved project.                                                                                       |
| <i>Penrith Local Environmental Plan 2010</i>                                           | The Penrith LEP 2010 prohibits offensive or hazardous industries from being developed in areas zone IN1 General Industrial. Previous Preliminary Hazardous Assessments prepared for previous modifications have concluded that the Facility does not qualify as hazardous or offensive and is thus not prohibited development under the LEP. The acceptance and processing of E-waste is not anticipated to trigger a hazardous or offensive development. |
| <i>Protection of the Environment Operations Act, 1997</i>                              | Toxfree's operations are considered to be a scheduled activity under Schedule 1 Waste Facilities 1(a). The proposal requires modification of the existing licence under Section 58 of the POEO Act to include additional wastes: E-waste.                                                                                                                                                                                                                 |
| <i>Heritage Act, 1977</i>                                                              | The proposal to include E-waste for acceptance and processing at the site is not anticipated to impact on any nearby heritage items.                                                                                                                                                                                                                                                                                                                      |
| <i>National Parks and Wildlife Act, 1974</i>                                           | The proposal to include E-waste for acceptance and processing at the site is not anticipated to disturb any Aboriginal objects.                                                                                                                                                                                                                                                                                                                           |
| <i>Threatened Species Conservation Act, 1995</i>                                       | The proposal to include E-waste for acceptance and processing is not likely to impact on any threatened species, populations or communities.                                                                                                                                                                                                                                                                                                              |
| <i>Contaminated Land Management Act, 1997</i>                                          | The proposal to include E-waste for acceptance and processing is not anticipated to disturb contaminated land and pose a significant risk of harm to human health or the environment.                                                                                                                                                                                                                                                                     |
| <i>Roads Act, 1993</i>                                                                 | The proposal to include E-waste for acceptance and processing would not involve any works affecting public roads.                                                                                                                                                                                                                                                                                                                                         |
| <i>Water Management Act, 2000</i>                                                      | The proposal to include E-waste for acceptance and processing would not involve any water use, water management works, drainage or flood works, controlled activities or aquifer interference.                                                                                                                                                                                                                                                            |
| <i>Environmental Protection and Biodiversity Conservation Act, 1999 (Commonwealth)</i> | The proposal to include E-waste for acceptance and processing would not impact on any matters of National Environmental Significance or on Commonwealth land.                                                                                                                                                                                                                                                                                             |

| Legislation                                                                                         | Requirements for the proposal                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Road and Rail Transport (Dangerous Goods) Act, 1997</i>                                          | Toxfree have current and operational procedures for the segregation, packaging, handling and transportation of hazardous wastes and waste classified under the Australian Dangerous Goods Code to ensure compliance with the Act at all times.                                                                                                                                          |
| <i>State Environmental Planning (Major Development) 2005 (Major Development SEPP)</i>               | The existing Facility is an approved Major Project in accordance with repealed Schedule 1, Group 9, Section 27(5) of the SEPP.<br><br>An approval under Part 3A of the EP&A Act has been obtained and requires modification under Section 75W of the EP&A Act to accommodate the proposed changes.                                                                                      |
| <i>State Environmental Planning Policy 33 – Hazardous and Offensive Development (SEPP 33)</i>       | The proposed development is not anticipated to be classified as potentially hazardous or offensive.                                                                                                                                                                                                                                                                                     |
| <i>State Environmental Planning Policy 55 – Remediation of Land (SEPP 55)</i>                       | SEPP 55 states that land must not be developed if it is unsuitable for a proposed use due to contamination. The proposal to include E-waste for storage and processing is not anticipated to interfere or disturb contaminated land.                                                                                                                                                    |
| <i>Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River (No. 2 – 1997) (SREP 20)</i> | The site falls within the boundaries defined in the SREP 20 map. The SREP 20 controls developments in this area that have the potential to impact on the river environment. Given the closest natural water body to the site is South Wianamatta Creek located approximately 650m to the east of the site, the modified development is not expected to impact on the river environment. |

## 2.2 COMPLIANCE WITH SEARS

This EA was developed in accordance with the requirements specified in the SEARs provided by DoPE on 12 December 2016. **Table 2.2** below outlines the requirements of the SEARs and the relevant section of the EA.

**Table 2.2: Compliance with SEARS**

| SEARS                                                                                                                            | Relevant EA section |
|----------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Description of the modification                                                                                                  | Sections 4.2, 4.4   |
| Need and justification of the modification                                                                                       | Section 1.1         |
| Other approvals – identification of any proposed variations to the current Environment Protection Licence and any other licences | Section 2.1         |
| Identification of the environmental impacts of the modification – including a more detailed assessment of the following:         | Refer below         |
| Air quality                                                                                                                      | Section 5.2         |
| Traffic and transport                                                                                                            | Section 5.6         |
| Noise and Vibration                                                                                                              | Section 5.3         |

| SEARs                                                                                                                                                                                                                    | Relevant EA section              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Details about any proposed machinery to be used to process the electronic waste                                                                                                                                          | Section 4.3                      |
| Waste management                                                                                                                                                                                                         | Section 5.5                      |
| Hazard and risks (if any) – including an updated Preliminary Hazard Analysis in accordance with <i>Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis and Multi-Level Risk Assessment</i> | Section 5.9                      |
| Cumulative Impacts; and                                                                                                                                                                                                  | Section 5.10                     |
| Identification of conditions to be modified.                                                                                                                                                                             | N/A (note MOD 3 Operating Hours) |
| The Department also recommends consultation with other relevant public authorities including but not limited to Penrith City Council, Roads and Maritime Services and the NSW Environment Protection Authority.          | Section 3.0                      |

## 2.3 CONCLUSION

All relevant statutory instruments have been considered in the concept development and assessment of this proposed modification. It is considered that all matters have been addressed where applicable, and that the proposal fully complies with the objectives and requirements of all relevant statutory instruments.

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## 3 CONSULTATION

### 3.1 CONSULTATION PROGRAM

Toxfree embraces the principles of sustainable development, and actively seeks input and involvement from the wider community. Toxfree are committed to early engagement of all interested stakeholders and parties potentially affected by the development, and a consultation strategy has been implemented to provide information and gain feedback.

Consultation with government departments and the local community plays an important role in ensuring all environmental impacts are evaluated. The consultation process provides the opportunity to identify and prioritise issues. A list of the organisations contacted and issues raised is provided in **Table 3.1**.

**Table 3.1: Community Consultation Program**

| Organisation Consulted     | Date       | Comments                                                |
|----------------------------|------------|---------------------------------------------------------|
| Penrith City Council (PCC) | 28/12/2016 | Invitation to meet and explain proposal and EA process. |
| DoPE                       | 11/01/2017 | Discussion of SEARs and Early Assessment Findings       |
| DoPE & EPA                 | 23/3/2017  | Presentation of Draft Findings & Preliminary Feedback   |
| Landowner Approval         | 24/2/2017  | Landowner has approved proposed changes.                |

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## **4 DESCRIPTION OF THE PROPOSAL**

### **4.1 SITE LOCATION, LAND OWNERSHIP AND SURROUNDINGS**

The proposed modification is at an existing Facility, currently operated by Toxfree. Toxfree's existing Facility is well-established and a critical element of Sydney's waste management system. The site holds approval to accept a wide range of dangerous goods, and its central location is well suited to service the industrial and commercial and markets.

The existing Facility operates in accordance with an existing EPL (#12628).

### **4.2 EXISTING OPERATIONS**

The Toxfree Chemical Waste Storage and Treatment Facility currently receives, stores, treats and transfers a range of dangerous and hazardous goods from a variety of industry, domestic and commercial sources. The Facility also contains gas detection systems, and treatment technologies including chemical immobilisation and solidification (CIS), oil filter crushing, aerosol crushing, container cleaning, fluorescent tube crushing and secure product destruction.

The Facility is currently (not part of this assessment) under assessment for the following:

- Establishment of an Acid/Alkaline Neutralisation treatment system;
- Expand the scope of treatment capability of the existing CIS process to handle a variety of waste streams already approved to process (subject to immobilisation permits);
- Use of a solidification treatment process for selected liquid/sludge/solid, non-dangerous good, hazardous waste streams;
- Extension of operating hours; and
- Increase in storage limits of existing approved wastes.

### **4.3 DESCRIPTION OF PROPOSED MODIFICATION**

The proposed modification includes the acceptance and storage of up to 7,200 tpa of E-waste. The waste would also be processed using the BluBox machine and technology. The BluBox was developed to recycle flat panel displays and lamps containing mercury. The machine separates the hazardous particles and extracts valuable output fractions for further processing.

The BluBox consists of a fully automated process is packed in a 40ft shipping container, which is constantly under negative pressure and therefore meets highest safety standards. Mercury vapour is captured by an active carbon filter and contaminated fluorescent dust is captured by through zig zag and cyclone separators.

The remaining product is separated magnetic materials and mix of plastics, printed circuit boards and copper wire – (non-magnetics) which is then processed by an Optical Sorter – CIRRUS. The optical sorter uses flight detection with an illuminated reference as well as over-the-belt detection with reflective reference, to accurately sort materials using advanced identification algorithms and precise air jets. The CIRRUS in combination with an eddy current separator is the final separation process to produce high purity product streams including plastics, printed circuit boards, aluminium and copper wire.

The BluBox and CIRRUS technology fulfils all requirements of established international and Australian Recycling Standards including E-Stewards and AS5377: Collection, Storage, Transport and Treatment of End-of-Life Electrical and Electronic Equipment, 2013.

Following the processing of the E-waste, the BluBox creates the following outputs:

- Non Magnetics
- Magnetics

- End Caps
- Glass
- Fluorescent Powder
- Mercury

For non-magnetics, an eddy current and optical sorter CIRRUS is used to separate output products into recyclable components to be sold to downstream recyclers as commodities.

The BluBox Treatment Unit and CIRRUS Sorting Unit are shown in **Figures 4.1** and **4.2** below, and would be installed within the existing building at the site

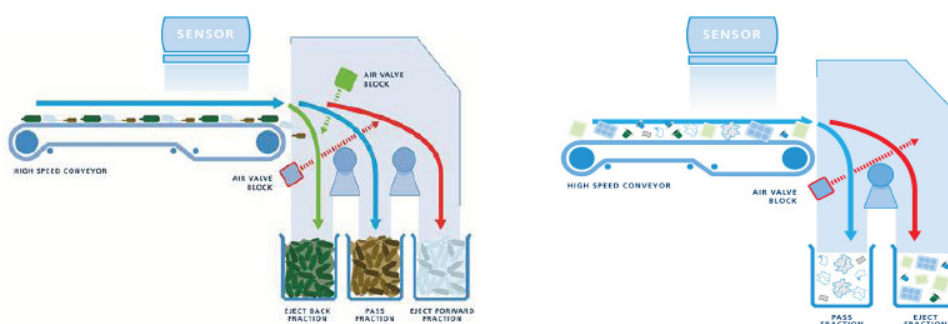
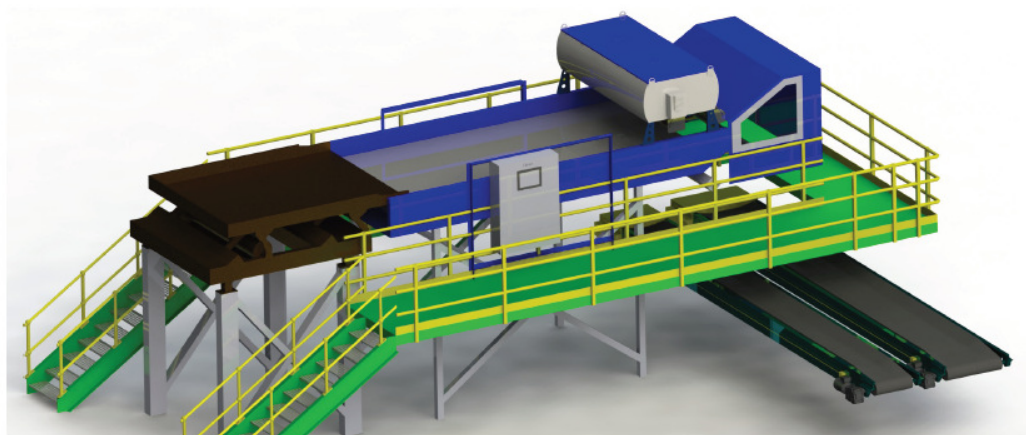
During the installation process, minor heavy vehicle movements are expected. It is expected that two heavy vehicle movements for delivery of the BluBox are expected. During operational/processing stage of the proposal, up to four (4) additional vehicle movements per day are anticipated. The BluBox is operated under negative pressure, which contains all vapour and dust that may be created during the processing of the E-waste.

Construction of the civil works will entail weighbridge installation and some minor works to alter the carpark and access arrangements to facilitate access to the weighbridge.

**Figure 4.1: BluBox Treatment Unit**



**Figure 4.2: CIRRUS Sorting System**



## **4.3.1 Site Operations**

### **4.3.1.1 Traffic and Transport**

Installation of the BluBox and Cirrus units would not materially increase traffic and transport to or from the Facility, as it is anticipated the units would be delivered to site in two (2) semi-trailers.

During the operational stage of the proposed modification, it is expected that up to four (4) heavy vehicle movements would be required for E-waste delivery, and transfer of the processed waste.

### **4.3.1.2 Operating Hours**

The Facility is currently approved to operate 6am to 6pm all days. A request to modify these operational hours to 5am to 10pm; 7 days is currently under consideration. The operational hours of the E-waste acceptance and processing would be during the approved operational hours.

## **4.3.2 Costs, Funding and Staging**

The capital cost for the proposed changes would be approximately \$1.8 million, and take approximately 6 months to fabricate, install, commission and optimise.

## **4.4 CONSTRUCTION OF THE PROPOSED DEVELOPMENT**

The proposed BluBox system will be designed, manufactured and commissioned off-site. Installation will then take place on-site, followed by testing and final commissioning. There will be minimal construction activities or impacts.

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Installation of the weighbridge and amended access and carparking arrangements would take approximately two-weeks, sub-contracted to an experienced civil contractor, and supervised by ToxFree.

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## **5 EXISTING ENVIRONMENT AND IMPACT ASSESSMENT**

### **5.1 LAND USE AND ENVIRONMENTAL SETTING**

#### **5.1.1 Existing land use**

The existing Facility located within the established St Mary's industrial estate at 40 Christie Street (Refer Figure 1.1). The site is approximately 7km east of the Nepean Hospital, 650m east of the Wianamatta Creek, approximately 590m to the nearest residence and surrounded by other industrial facilities.

The site is zoned IN(1) – General Industrial in accordance with *Penrith City Council LEP 2010*.

#### **5.1.2 Construction impacts**

The installation of the BluBox Treatment Unit and Cirrus Sorting Unit would not require any major building works. Works are generally limited to retro-fitting within the existing waste transfer building structure.

Proposed construction works are limited to installation of the units within the building, installation of the weighbridge, and changes to the roads and kerbs to facilitate the revised access and carparking arrangements. As such, impacts associated with construction are not expected.

The proposed changes have been assessed for consistency with the planning objectives for the zone and compatibility with existing land uses and concluded to have negligible impact on current or future land uses.

#### **5.1.3 Operational impacts**

The acceptance and processing of E-waste may have potential impacts relating to the handling of dangerous goods such as mercury, and potential air quality impacts from the mercury vapour. However, the proposed changes have been designed to minimise environmental impact. There are no impacts to water quality or biodiversity associated with the proposal. The BluBox Treatment Unit is a fully enclosed container, which is consistently at negative pressure. Thus, air quality impacts are not expected.

It is therefore concluded that the proposal would not have a significant impact to land use, air, soil or water quality or biodiversity.

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## **5.2 AIR QUALITY IMPACT ASSESSMENT**

### **5.2.1 Background and existing air quality**

The site is located in an established industrial land use area. The surrounding areas are characterised by industrial and commercial facilities. Air quality in the area is representative of industrial land use areas, surrounded by local and state-controlled roads.

Toxfree's existing operations have the potential to generate air emissions including odour as a result of the storage of waste chemicals. Volatile chemicals of Class 3, Class 6 and Class 8 Dangerous Goods are currently captured and treated prior to discharge into the atmosphere.

Toxfree currently processes waste from fluorescent tubes and lamps at the site. The mercury contained within these light fittings generates fines during the crushing process. The fines are retained within the crushing unit which is maintained under vacuum during the processing by an induced draft fan. The fines (including the mercury) are filtered from the air stream and are subsequently collected for disposal in 205 L drums.

Air quality monitoring is carried out in accordance with EPL Conditions, which specifies concentration limits which must not be exceeded, and is measured by annual mercury dust concentration monitoring. Toxfree has consistently achieved compliance with these stringent conditions.

### **5.2.2 Construction Impacts**

Proposed construction works are limited to installation of the units within the building, installation of the weighbridge, and changes to the roads and kerbs to facilitate the revised access and carparking arrangements. Erosion and sediment control measures, including dust suppression if required, would be implemented as set out in Section 5.4. Therefore air quality impacts associated with construction are not expected.

### **5.2.3 Operation Impacts**

The main source of significant air quality impacts are the potential for mercury vapour emissions that would arise from the processing of the E-waste. E-waste material received at the site would be received in a dry and solid state, in a waste bin. E-waste would then be transferred to the BluBox treatment system for processing.

The BluBox unit is capable of processing lamps and other non-hazardous post-consumer goods in a safe manner at a greater rate, to meet the market and community demands for sustainable reuse and waste avoidance of E-waste.

The BluBox treatment system is a fully enclosed system that operates under a negative pressure at all times, including during standby mode. The system also contains a carbon filter system which adequately captures any mercury vapour released during the processing of the E-waste and treats the exhaust air. The air treatment system incorporates mercury monitoring which notifies the employees should ambient air contaminants exceed health regulations. The air treatment system also continues to operate during emergency shutdowns of the BluBox treatment system (refer Appendix C).

The active carbon filter ensures that no vaporized mercury can be discharged to the environment. This includes:

- All E-waste would only be processed within the BluBox treatment unit under negative pressure. Waste would be processed only when the door is closed.
- Comprehensive training and accreditation program would be carried out for the BluBox treatment unit for all operational staff.
- The carbon filter system would be serviced in accordance with manufacturer's

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specifications.

- Standard Operating Procedures for the BluBox treatment unit would incorporate a comprehensive daily checklist that must be satisfactorily completed and signed-off by the Site Supervisor prior to commencement of operations
- Dust-filter, pre-filter, and HEPA filters in series before air reaches the activated carbon filtration unit
- All air within the BluBox unit would pass through the dust-filter, pre-filter, and HEPA filters in series before air reaches the final activated carbon filtration unit. Alarm activation would shut-down the BluBox processing unit should trigger points be exceeded. During shut-down, the air filtration system would continue to operate.
- The filtered air will be subject to the site's comprehensive monitoring and compliance system.

Fines would continue to be contained within 205L drums. The concentration of mercury measured in the fines (largely composed of phosphor powder) is approximately 15 ppm. At this concentration each 205 L drum of fines would contain approximately 3 grams of elemental mercury.

If a drum of this material was spilt on a windy day a relatively thick dust cloud may contain up to 1,000 mg/m<sup>3</sup> of dust. A person would be required to breathe this dust (without wearing personal protective equipment) for over 60 minutes before the mercury dose from the dust exceeded the World Health Organisation's (WHO) recommended maximum provisional tolerable weekly intake (PTWI) of 1.6 Wg/kg body weight (Refer Section 2, Reference 13 of the PHA, Appendix E).

Although any spillage of this material would be considered as serious, it is not likely this scenario would result in off-site or on-site fatality or injury. Therefore, this scenario would not be further considered in this analysis.

The air quality treatment system is fully integrated into the BluBox unit, and is sufficient to accommodate additional dangerous goods storage volumes, should the in-built treatment system fail. The BluBox process unit has been proven to operate in many countries and jurisdictions over many years, with no adverse air quality impacts. Specifically, the BluBox unit has been developed and manufactured in Switzerland to meet the most stringent European air quality standards.

#### **5.2.4 Conclusion**

It is therefore concluded that the proposed acceptance and processing of E-waste would not impact on air quality.

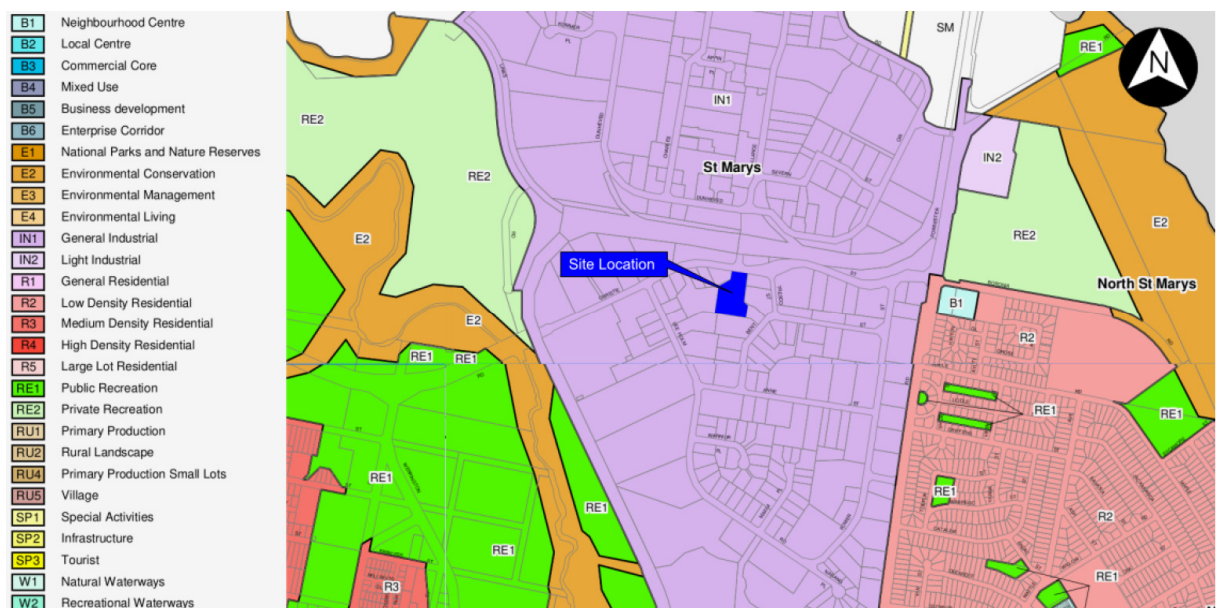
## 5.3 NOISE & VIBRATION

### 5.3.1 Existing Acoustic Environment

The site is situated in an established industrial area. Existing industrial premises bound the site along the western, eastern and southern boundary. The nearest residential receptors are located 590 metres to the east. Dunheved Golf Club is also located approximately 650m metres to the south-west. Background noise in the area is associated with traffic, including existing heavy vehicle movements, and surrounding industrial operations.



Figure 5.3.1: Site Location



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Figure 5.3.2: Surrounding Landuses

### 5.3.2 Construction Impacts

Installation noise impacts for the recycling plant would be minor and temporary over a period of 1 week. Works inside the building are not anticipated to be audible outside the site. Works within the existing building would be carried during the approved operational hours.

Installation of the weighbridge, carparking and access works would be typical of civil road and utility works, carried out over 2-3 weeks during approved operational hours. No rock-breaking is anticipated, hence there are unlikely to be any vibration or regenerated noise impacts. Due to the high-level of background traffic noise on Christie Street and short term duration of the works, there is anticipated to be negligible adverse noise amenity impacts.

### 5.3.3 Operation Impacts

The proposed upgrade would allow for the acceptance and storage of up to 7,200 tonnes of E-waste per year. The upgrade would result in additional noise sources at the site, which could impact on adjacent industrial premises and residential areas.

The main noise sources for the existing Facility include truck movements and forklift activity. Based on site visits, approximately 5 trucks arrive on site each hour and up to 10 forklifts operate at any one time to unload/load waste to/from trucks, and to move waste material into the main building.

The site also operates a cardboard compressor within the main building.

The proposed upgrade is expected to introduce additional noise sources. These noise sources include the BluBox machine, Cirrus Optical Sorter and additional truck movements (up to 10 per week or 2 per day). The BluBox includes an initial shredding process at the entry point of the equipment and this represents the noisiest additional process. Noise from the Cirrus Optical Sorter is primarily associated with conveyors and the rattling of plastics and metallic material, mainly at transfer points.

The units would operate within the currently approved hours of Monday to Friday, 6 am to 6 pm. A request to modify these operational hours to 5am to 10pm; 7 days is currently under consideration (MOD\_3).

To quantify the potential for noise impacts, Air Noise Environment P/L was commissioned to undertake a noise assessment of the proposed upgrade (Appendix D). The assessment was carried out using computational modelling and noise monitoring in accordance with the requirements of the NSW Industrial Noise Policy (INP, 2001).

Unattended ambient background noise monitoring was undertaken from the 20 February to 27 February 2017 at one location representative of the nearest sensitive receptors. The noise monitor was located at the front yard of 193 Forrester Road. Existing activities from the Toxfree site were inaudible at the monitoring location due to intervening buildings shielding the site from the position and the large volumes of traffic along Forrester Road.

In addition to the continuous background monitoring, three attended noise measurements (15-minute periods) were undertaken at the existing site during normal operations. These noise measurements were completed to identify existing industrial noise levels around the site.

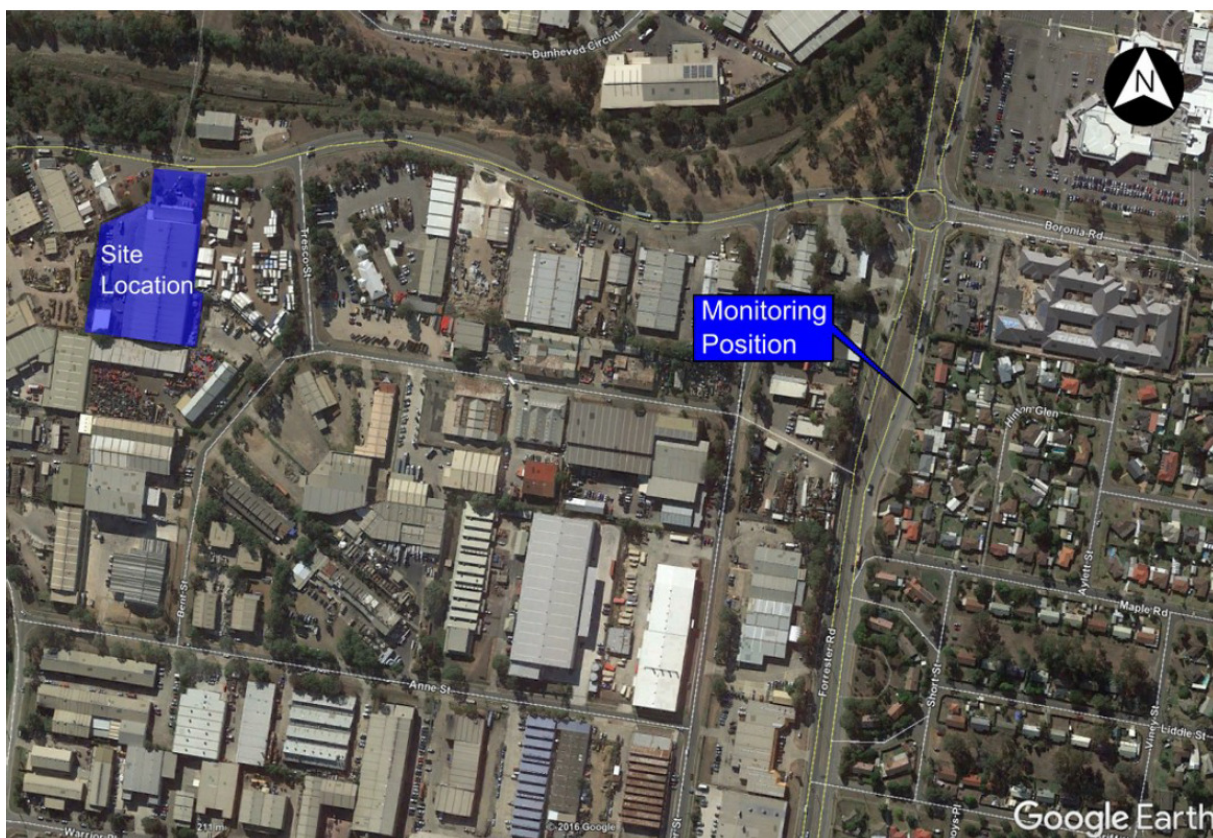


Figure 5.3.3: Continuous Noise Monitoring Location

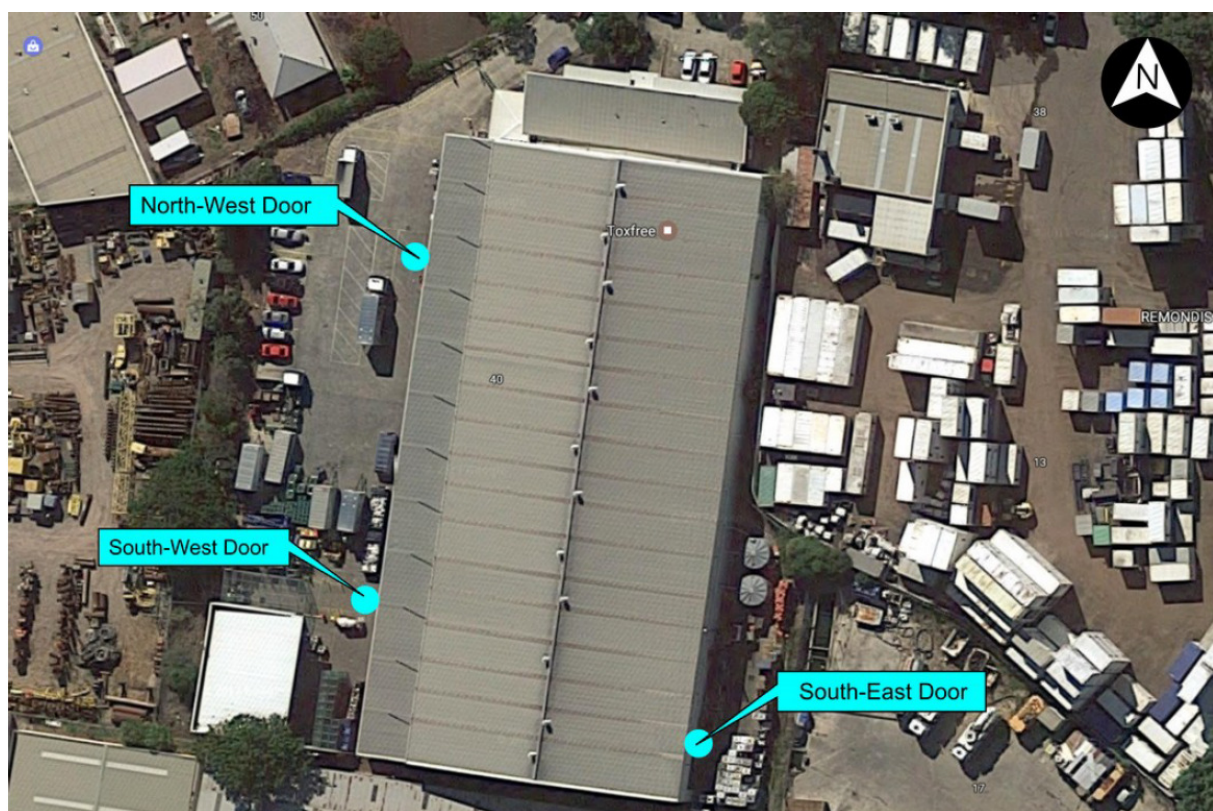


Figure 5.3.4: On-site Noise Monitoring Locations

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Background noise monitoring was undertaken at one location representative of the nearest residential receptors, but unaffected by existing activities at the site. Based on the derivation of noise criteria using the background data and the methodology outlined in the NSW INP, noise criteria of 57 dB(A), 52 dB(A) and 42 dB(A) for the day, evening and night period are applicable at the nearest eastern residential houses. The site currently operates from 7 am to 4 pm only, hence only the day time criteria is relevant. Attended noise monitoring was also carried at the existing site to establish industrial noise levels. Based on this monitoring, the adopted criteria at the adjacent industrial premises was 70 dB(A).

The NSW INP requires an assessment of cumulative impacts where existing sites undergo expansion or redevelopment. As the proposed E-waste treatment process would operate in conjunction with the existing waste management activities, cumulative impacts have been considered using computational noise modelling (ISO 9613 calculation procedure). Noise source data was obtained from source measurements of existing equipment and other relevant noise databases. For the BluBox equipment, reference has been made to noise measurements completed at a facility in Victoria operating the machine and supplier information.

The results of the modelling indicate compliance with the noise criteria at residential and industrial premises for both the existing and proposed activities. Compliance is predicted to be achieved at the nearest residential houses by a significant margin, due to the large separation distance (590 metres) and shielding provided by intervening industrial buildings.

Overall, the noise assessment indicates that noise levels as a result of the upgrade are likely to be within acceptable limits therefore, no acoustic mitigation or treatments to the existing building are required.

#### **5.3.4 Conclusions**

The following conclusions can be drawn from the noise assessment for the proposed upgrade to the Toxfree Facility at St Marys:

- The nearest residential receptors to the site are located to the east at a separation distance of approximately 590 metres. Noise from the existing operations were not audible at the nearest houses due to the significant amount of road traffic in the area. Industrial receptors are located along the southern, western and eastern boundary of the site;
- Existing noise from the site is primarily defined by forklift and truck movements. Expected noise sources for the upgrade include the BluBox machine, Cirrus Optical Sorter and an additional 10 truck movements per week. With the exception of truck movements, all new sources are continuous in nature. The site operates from 6 am to 6 pm (Monday to Friday) only and this is expected to continue with the proposed upgrade, pending consideration and approval of the MOD\_3 Application;
- The results of the computational modelling taking into account source-to-receiver winds indicates that compliance is predicted at the nearest industrial and residential receptors with both the existing and proposed activities operating simultaneously.

Overall, the noise assessment indicates that noise levels as a result of the upgrade are likely to be within acceptable limits therefore, no acoustic mitigation or treatments to the existing building are required. It is therefore concluded that the proposed modifications would not have an adverse noise impact on adjoining neighbours or the nearest residences.

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## **5.4 WATER QUALITY, DRAINAGE AND SOILS**

### **5.4.1 Existing Environment**

The proposed site is within an existing industrial estate, within an existing and operational chemical waste storage and treatment Facility. Wianamatta Creek is located 650m east of the site. Existing wastewater on the site is subject to rigorous water quality containment and treatment prior to discharge into trade waste. The quality of water within the stormwater system would be consistent with an industrial area.

### **5.4.2 Construction impacts**

Major construction works are not expected, therefore impacts associated with the installation of the BluBox treatment unit and CIRRU sorting unit are not anticipated.

Proposed construction works are limited to installation of the units within the building, installation of the weighbridge, and changes to the roads and kerbs to facilitate the revised access and carparking arrangements. Erosion and sediment controls would be implemented during construction in accordance with Guidelines for Managing Urban Stormwater: Soils and Construction (NSW LandCom 2004, Blue Book).

As such, impacts associated with construction are not expected.

### **5.4.3 Operation impacts**

The processing of the E-waste using the BluBox treatment unit would be carried out in a dry environment. The proposed modification does not require the use of water for operation. Thus the proposed modification would not increase the usage or wastage of water on the site.

### **5.4.4 Conclusion**

It is therefore concluded that there would be no adverse impacts on water quality from the proposed changes.

## **5.5 WASTE MANAGEMENT**

### **5.5.1 Construction impacts**

A search of the EPA Contaminated Land Record database did not identify any contamination records within close proximity to the site. Nevertheless, as the works would be carried out within an existing industrial site, there is a risk that contamination may be present e.g. asbestos, hydrocarbons, etc.

Proposed construction works are limited to installation of the units within the building, installation of the weighbridge, and changes to the roads and kerbs to facilitate the revised access and carparking arrangements. This would entail minor civil works. Therefore the following management measures would be implemented:

- Soil would be kept in plastic lined covered skip bins until classified for appropriate disposal.
- All excavated material, waste and spoil would be classified in accordance with EPA Waste Classification Guidelines prior to transportation off-site.
- All waste and spoil would only be disposed at EPA licensed sites or Council approved premises, which would be nominated in the CEMP.
- A waste disposal register (waste log) would be available on site where waste is temporarily stockpiled prior to disposal. All waste and spoil material leaving the site and/or

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compound would be recorded on the waste log.

- Soil would be inspected during excavation, and if found to be; odorous, discoloured or containing visible waste (e.g. asbestos fragments), would be stabilised and contained until appropriate waste classification has been carried out to determine the correct handling and disposal requirements.

### **5.5.2 Operation impacts**

The proposed modification consists of the processing of E-waste into products that can be safely disposed of or sent for beneficial reuse. The BluBox system processes E-waste to the following outputs:

- Non Magnetics
- Magnetics
- End Caps
- Glass
- Fluorescent Powder
- Mercury

Currently, there is a growing volume of E-waste, including flat panel displays and lamps containing mercury. E-waste can be inappropriately disposed of, or illegally dumped. By accepting and processing the materials, it enables E-waste to be safely recycled without endangering human health or contaminating the environment. The NSW Government has prioritised the sustainable recycling of E-Waste through a range of programs, as evidenced by the NSW Environment Trust's funding contribution to Toxfree's installation of the process.

Thus, the proposed modification is expected to have a positive impact on the environment due to the removal of hazardous wastes, and increasing the recycling and reuse of materials.

### **5.5.3 Conclusion**

It is therefore concluded that there would be no adverse resource impacts during construction or operation, with the proposed safeguards, resulting from the proposed changes.

## **5.6 TRAFFIC, ACCESS & PARKING**

### **5.6.1 Existing traffic and road network**

All trucks and staff enter the site from Christie Street through the existing driveways. The site is well serviced by arterial and sub-arterial roads. The existing parking at the site would be utilised for staff, installation subcontractors and maintenance subcontractors.

Christie Street is a busy and significant regional road providing ready access from the industrial estate to the major road network. Pursuant to the NSW *Roads Act 1993*, Christie Street is classified as a Regional Road, with RMS contributing a portion of funding for maintenance and upgrades where required, but under the care and control of Penrith City Council.

### **5.6.2 Construction Impacts**

Transport of the BluBox and CIRRUS units, weighbridge components, and materials for alterations to the access and carparking arrangements are anticipated to comprise 1-2 trucks per day over several weeks. There are no proposed changes to staff numbers, on-site carparking capacity or access/agrees arrangements to Christie Street. Therefore there anticipated to be negligible, if any, adverse traffic impacts during the installation and

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construction period.

### **5.6.3 Operation Impacts**

During operation, E-waste would primarily be transported to the Facility in the voids above loads on existing vehicles, because E-Waste is relatively low-density and low-weight. E-waste would be transported regularly in small quantities from existing and new markets such as regional Council recycling hubs, accompanying other waste materials such as chemicals and paints.

Up to four (4) additional vehicle movements per day would be required to transport recycled material for further processing or beneficial reuse. These are likely to be Heavy Rigid vehicles (HRV) or semi-trailers. No off-site queuing would be permitted. Existing access/egress points to Christie Street would be used to gain access to the arterial road network.

The proposed traffic flows within the site are shown in Figure 5.6.1 below. This sets out the new weighbridge, loading and unloading operations, and the new access/carparking arrangements.

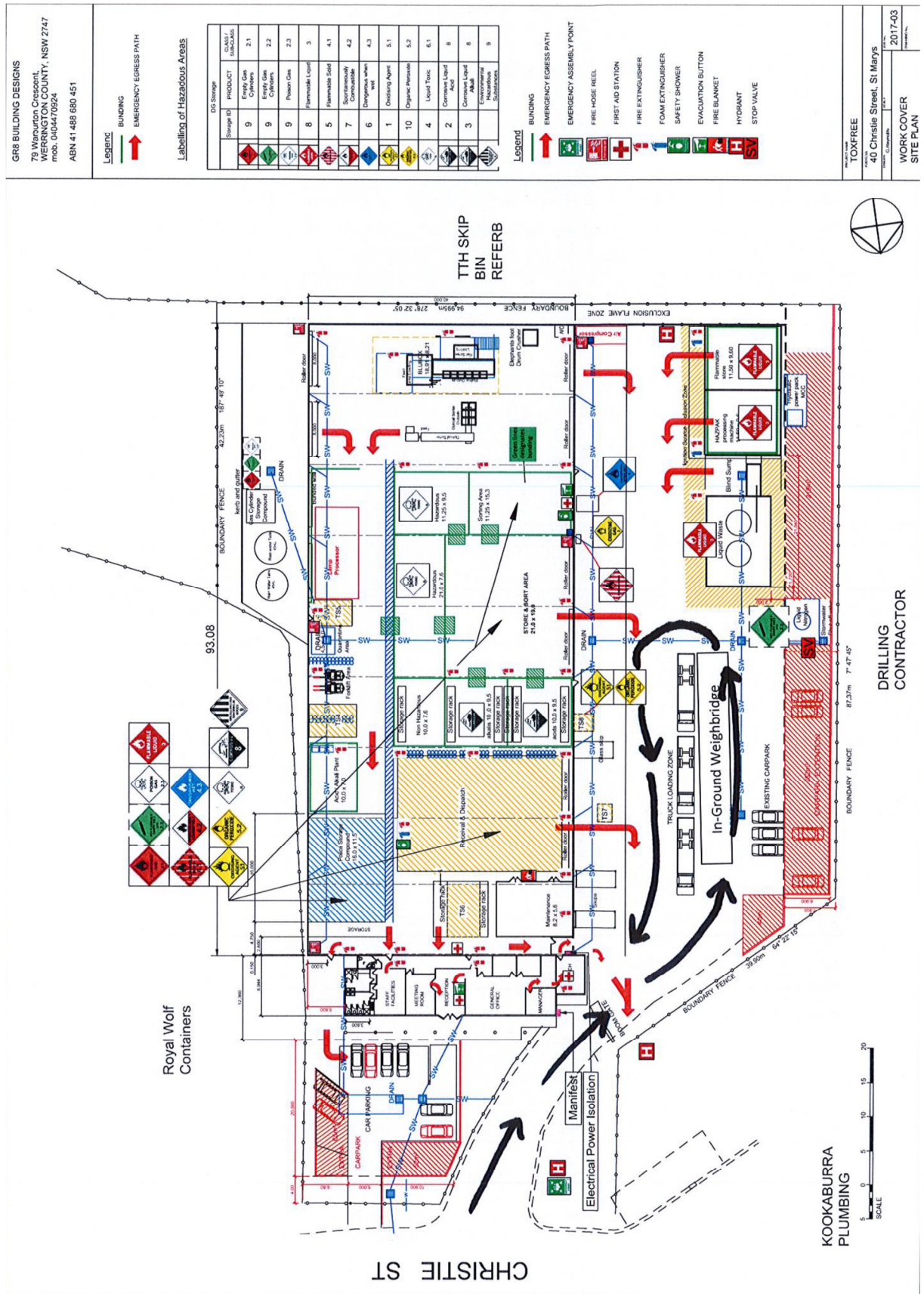


Figure 5.6.1; Proposed Weighbridge, loading and unloading operations & internal traffic flows.

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#### **5.6.4 Conclusion**

As only minor increases to existing traffic movements are anticipated, there would be negligible, if any, impacts on existing traffic.

### **5.7 BIODIVERSITY**

#### **5.7.1 Existing flora and fauna**

The site has been heavily modified by industrial use. Few trees or shrubs are present and the majority of the site consists of hardstand areas. There are limited flora and fauna resources on the site and its immediate surroundings, with very little potential habitat. Several small (2-3 metres high) bottlebrush (*Callistemon*) are located on the western boundary of the site. These appear to be approximately ten years old, and planted to provide a limited screening to the adjacent property. The trees do not form part of any Endangered Ecological Community.

#### **5.7.2 Construction Impacts**

The proposed site consists of highly modified industrial habitat which is of limited value to any flora or fauna species. Existing parking arrangements on the western boundary would be shifted approximately 3 metres towards the boundary fence to provide greater space for truck turning circles and unloading. Should relocation of the staff parking adversely impact the critical root zones of the bottlebrush, replanting of similar natives would be carried out. Construction works are not anticipated, and as such, impacts associated with construction are not expected.

#### **5.7.3 Operation Impacts**

There would be no additional impacts during the operational phase.

#### **5.7.4 Conclusion**

It is therefore concluded that impacts to biodiversity associated with the proposed modification are anticipated to be negligible.

### **5.8 HERITAGE**

#### **5.8.1 Existing setting**

A search of the relevant registers and visual inspection of the site and immediate surrounds indicates that there are no heritage items of conservation value.

As the site has been highly modified by past and current use, it is considered unlikely that any items of Indigenous heritage would be present.

#### **5.8.2 Construction and Operation Impacts**

Proposed construction works are limited to installation of the units within the building, installation of the weighbridge, and changes to the roads and kerbs to facilitate the revised access and carparking arrangements. Should unexpected finds be encountered during excavation, a Chance Finds Management Procedure would be implemented, including ceasing work and securing the site until investigations are carried out. As such, impacts associated with construction are not expected.

The operational phase of the proposed modification would have no impact on heritage items or

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places in the vicinity of the site.

### 5.8.3 Conclusion

Due to the highly modified nature of the site, it is considered unlikely that any items of Indigenous or non-Indigenous heritage would be impacted by the proposed modification.

## 5.9 HAZARDS AND RISKS

### 5.9.1 Existing setting

The Toxfree site is located in an established industrial area with a wide range of industrial landuses in close proximity. Changes to the operation of the Facility require that consideration be given to the hazards and risks of these changes upon adjacent landuses.

### 5.9.2 Construction and Operation Impacts

The Secretary's Environmental Assessment Requirements (MP06\_0095 MOD 4) require that that the hazards and risks (if any) of the proposed operation of the BluBox and CIRRUS units are subject to an Preliminary Hazard Analysis (PHA) in accordance with the *Hazardous Industry Planning Advisory Paper No 6 – Guidelines for Hazard Analysis and Multi-Level Risk Assessment* (NSW Dept. of Planning, 2011). These Guidelines set out an agreed process for qualitatively and quantitatively assessing the cumulative risks of an activity.

The PHA was carried out by Advitech P/L, and included in the PHA for MOD 3 (analysis of the acid-alkali neutralisation (AAN) process, in particular, chemical reaction and chemical products (including any intermediates) and the probability of formation of toxic gases) to enable the cumulative outcomes of MOD 3 and MOD 4 to be considered.

Construction of the weighbridge and carparking alterations are considered to pose negligible hazards or risks, and would be comprehensively managed by established environmental systems. Similarly, installation of the BluBox and CIRRUS units would be straightforward and pose no risks to adjacent landuses or the Facility.

Operation of the BluBox and CIRRUS units, in conjunction with the proposed MOD 3 changes above, were considered in the PHA. The BluBox would be located along the southern wall of the main building and does not constitute the introduction of additional hazards to the site as it would replace the existing fluorescent tube destruction operation. Importantly, the BluBox would also operate under vacuum to ensure there are no emissions of mercury bearing phosphor dusts or other dusts. The issue of the potential hazard associated with the inadvertent spillage of phosphor powder from a 205 L is assessed in Section 7.2.3 of the PHA (Appendix E).

The BluBox is also capable of processing flat screen television sets and other non-hazardous post-consumer goods, and separating the plastics from the metals for downstream recycling. It is important to note the BluBox process is not suitable for the processing of cathode ray tube (CRT) screens. This means the site would not be generating lead bearing glass fines or dusts with the suite of processes or the equipment available.

The PHA considered the site location, surrounding landuses, sources and consequences of hazards, likelihood of risks, analysed the likely consequences, and then considered the risks against the specified outcomes and recommended guideline thresholds published within NSW Department of Planning's (2011) *Hazardous Industry Planning Advisory Paper No.4 – Risk Criteria for Land Use Planning*.

### 5.9.3 Conclusion

The PHA concluded that the BluBox and accompanying CIRRUS sorting units would not exceed the overall risks of the operation of the Facility, or exceed the recommended Guideline thresholds of HIPAP No. 4.

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Further, the operation of the BluBox and accompanying CIRRUS sorting units would not result in the Facility being considered or defined as potentially hazardous or offensive.

## **5.10 CUMULATIVE IMPACTS**

Previous sections have assessed the key aspects and impacts of the proposed modifications. It is also considered that the cumulative impacts of the proposed works associated acceptance, processing and transport to recycling markets of E-waste would be negligible, as described below;

- Construction works would be short term and would not cause adverse impacts with the implementation of appropriate controls
- Operation of the BluBox and CIRRUS processing units would not cause adverse air quality, noise or traffic impacts, and not increase overall risks or hazards from the sites operation, with the management measures and monitoring outlined within this assessment
- That increased acceptance of E-waste for beneficial processing and recycling would reduce the impact of E-waste on the environment.

Based on the assessment of temporary and ongoing impacts of the proposal, it is concluded that, with the implementation of appropriate management controls, there will be no cumulative impact on the community or environment from the proposed works.

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## **6 ENVIRONMENTAL AND OPERATIONAL MANAGEMENT SYSTEMS AND PLANS**

### **6.1 MANAGEMENT SYSTEMS**

Toxfree's environmental and occupational health and safety management systems keep abreast of legislative changes, governmental regulations and the rules of the Toxfree group. Risk prevention remains a priority, with an internal audit system used to check the reliability of the facilities.

Toxfree's environmental management system is in accordance with ISO-14001 and ISO-9001 Series requirements. Toxfree also has AS-4801 accreditation for their occupational health and safety system.

This section describes the environmental and operational management systems and plans for the proposed changes, including outline the environmental management plan (EMP) for the operation of the proposed changes; training, monitoring, auditing and reporting requirements; outline plans for incident management; and a summary of mitigation measures during all phases of the proposed development.

### **6.2 ENVIRONMENTAL MANAGEMENT PLANS**

#### **6.2.1 Construction environmental management plan**

No major construction works are required for the installation of the BlueBox and CIRRUS units. A Construction Environmental Management Plan (CEMP) will be implemented for the civil works, encompassing the weighbridge, carparking and access arrangements. The CEMP will operate within ToxFree's ISO 14000 Series EMS, and set out requirements and mitigation measures detailed in this assessment, including waste management, sediment control, Chance Finds, waste classification, dust and construction hours.

#### **6.2.2 Operational environmental management**

Toxfree would integrate management plans for the proposed changes for the operational phase into their existing site management system and procedures, which are in accordance with ISO-14001 and AS-4801. This would include control measures described previously.

Any requirements arising from the EPA review of this proposal or amendments to the Environmental Protection Licence would also be incorporated into the site management system.

## 7 STATEMENT OF COMMITMENTS

The proposed modification to accept and process E-waste would adopt all environmental management measures associated with the approved project as detailed in the:

- Project Application 06-0095
- *Environmental Assessment for a Major Project Proposed Resource Recovery Facility 40 Christie Street, St Marys, New South Wales* (Peter J Ramsay and Associates, 2006)
- Final Statement of Commitments in the Submission Report
- Modification application titled *Request of Modification for Chemsal Pty Ltd's Chemical Waste Storage and Treatment Facility* (Peter J Ramsay and Associates, 2007)
- Conditions of approval 06-0095 MOD1 dated 22 December 2006;
- Modification application titled *Environmental Assessment Chemical Immobilisation and Solidification Process Part 3A Modification Request (Project Application: 06\_0095)* (Entech Industries, 2009); and
- Conditions of approval 06-0095 MOD2 dated 3 March 2010.

The environmental management measures provided in Table 7.1 are proposed in addition to the above.

**Table 7.1: Proposed Mitigation Measures**

| No. | Mitigation Measure                                                                                                                                                                                                                                                                                                                             |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | All E-waste would be processed within the BluBox treatment unit under negative pressure. Waste would be processed only when the door is closed.                                                                                                                                                                                                |
| 2   | The carbon filter system would be serviced in accordance with manufacturer's specifications.                                                                                                                                                                                                                                                   |
| 3   | Comprehensive training and accreditation program would be carried out for the BluBox treatment unit for all operational staff.                                                                                                                                                                                                                 |
| 4   | Standard Operating Procedures for the BluBox treatment unit would incorporate a comprehensive daily checklist that must be satisfactorily completed and signed-off by the Site Supervisor prior to commencement of operations                                                                                                                  |
| 5   | All air within the BluBox unit would pass through the dust-filter, pre-filter, and HEPA filters in series before air reaches the final activated carbon filtration unit. Alarm activation would shut-down the BluBox processing unit should trigger points be exceeded. During shut-down, the air filtration system would continue to operate. |

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## **8 SUMMARY AND CONCLUSION**

This EA has been prepared to support the modification application to allow the acceptance, storage and processing of E-waste at Toxfree's existing Chemical Waste Storage and Treatment Facility at 40 Christie Street, St Marys.

The EA concludes that the proposal would be consistent with NSW EPA, Penrith City Council and community expectations for management of the site. The proposed modification would also benefit the environment by ensuring that E-waste is appropriately handled and treated.

The overall benefits of the proposal are considered to be positive.