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SOILCO PTY LTD

Sydney Clean Energy Compost Manufacturing Facility

Scoping Report
Request for Secretary's Environmental Assessment Requirements

20 May 2022

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Scoping Report – Request for Secretary's Environmental Assessment Requirements

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Project	Clean Energy Compost Manufacturing Facility (CECMF) 30-40 Martin Road Badgerys Creek NSW 2555
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Scope

SOILCO Pty Ltd (the Applicant / SOILCO) proposes to develop and operate a Clean Energy Compost Manufacturing Facility "the Proposal" at 30-40 Martin Rd, Badgerys Creek (the Site). The Site is located south of Elizabeth Drive and, approximately 1.3km west of the eastern boundary of the Western Sydney Airport.

This document has been prepared by the Applicant in support of its request for Secretary's Environmental Assessment Requirements (SEARs) for the Proposal from the Department of Planning and Environment (DPE).

This document introduces the Proposal and provides information on the key environmental issues to be addressed in the design and assessment of the Proposal. The information provided will ultimately be incorporated into a comprehensive Environmental Impact Statement (EIS) to be prepared in accordance with the provisions of Part 4, Division 4.1 of the Environmental Planning and Assessment Act 1979. The design and operational safeguards the Applicant would adopt to avoid or reduce potential impacts within the Site and the surrounding environment will also be provided in the EIS together with a description of the residual impacts and proposed monitoring to assess the ongoing environmental performance of the Proposal.

The Applicant

SOILCO Pty Ltd (SOILCO) is an Illawarra based company established in 1982, with its head office located in Kembla Grange, NSW. SOILCO is a producer of organic soil improvers, manufacturing a range of soil, compost and mulch products. SOILCO specialises in the processing of organic waste and has extensive experience constructing and operating composting facilities and organics processing facilities with four approved and licensed facilities in NSW (Table 1).

Table 1 List of Facilities Operated by SOILCO

State	Site name	Address
NSW	Kembla Grange CMF	3 / 132 West Dapto Road Kembla Grange
NSW	Kembla Grange ORF	61 Reddalls Rd Kembla Grange
NSW	Wogamia CMF	135-137 Wogamia Road Longreach
NSW	Stotts Creek OPF	298 Bartletts Road Stotts Creek

Background to the Proposal

The DPE released the NSW Waste and Sustainable Materials Strategy 2041 (the Strategy) in June 2021. This strategy outlines the priority actions to be achieved in the first phase (first six years) of the Strategy.

The Strategy mandates the separate collection of:

- Food and garden organics from all NSW households by 2030; and
- Food waste from targeted businesses and other entities with floor area >1,000m2 per site, including large supermarkets and hospitality businesses, by 2025.

As a supplement to the Strategy, the NSW Government released the NSW Waste and Sustainable Materials Strategy: A guide to future infrastructure needs in June 2021 (the Guide). The Guide outlines the future infrastructure required for NSW to meet the emerging needs in the waste infrastructure network.

Additional potential recovery is calculated based on what can be achieved through improved capture from residual waste.

The Strategy identifies that NSW requires additional organics processing capacity of more than one million tonnes by 2030 as these policies are implemented. The following facilities will be required to recycle this waste:

- Greater Sydney:
    - 2 medium In Vessel Composting (IVC) facilities (to 70,000tpa)
    - 6 large IVC (to 100,000tpa)
    - 2 medium Anaerobic Digestion (AD) facilities (30,000tpa)
    - 4 large AD (50,000tpa)
- Illawarra – Shoalhaven
    - 1 small AD (10,000tpa)
- Hunter
    - 1 small IVC (20,000tpa)
    - 2 medium IVC (to 70,000tpa)

The Proposal would satisfy the need for two of the required facilities, and, as outlined in this report, the ability to collocate an IVC facility and AD facility on one site reduces the overall footprint of such facilities.

Site Description

The Site is located at 30-40 Martin Road, Badgerys Creek, NSW 2555 (Figure 1) and encompasses Lots 7 and 8 DP 226448 (Figure 2). The Site comprises of two rectangular shaped lots, currently used for residential purposes, located on the eastern side of Martin Road. The majority of the site comprised of pasture with limited vegetation cover. An area at the eastern end of the site is riparian plantings within a flood plain, which is unable to be utilised for the proposed facility.

Topographically, 40 Martin Road has a gentle sloping gradient (<3º) east towards South Creek with an approximate elevation of 56 m Australian Height Datum (m AHD). 30 Martin Road also slopes gently to the east but also dips to the north. Site drainage is considered to consist of surface runoff migrating across the Site following surface contours as overland flow towards South Creek to the east and a local drainage channel just north of site that then flows east to South Creek.

Surrounding land uses are comprised of the following:

- North: SP2 Infrastructure zoned land adjacent with rural land beyond.
- South: Enterprise zoned land and rural / agricultural land.
- East: South Creek adjacent with rural lifestyle land beyond
- West: Martin Road adjacent with a mix of SP2 Infrastructure and ENT Enterprise zoned land beyond.

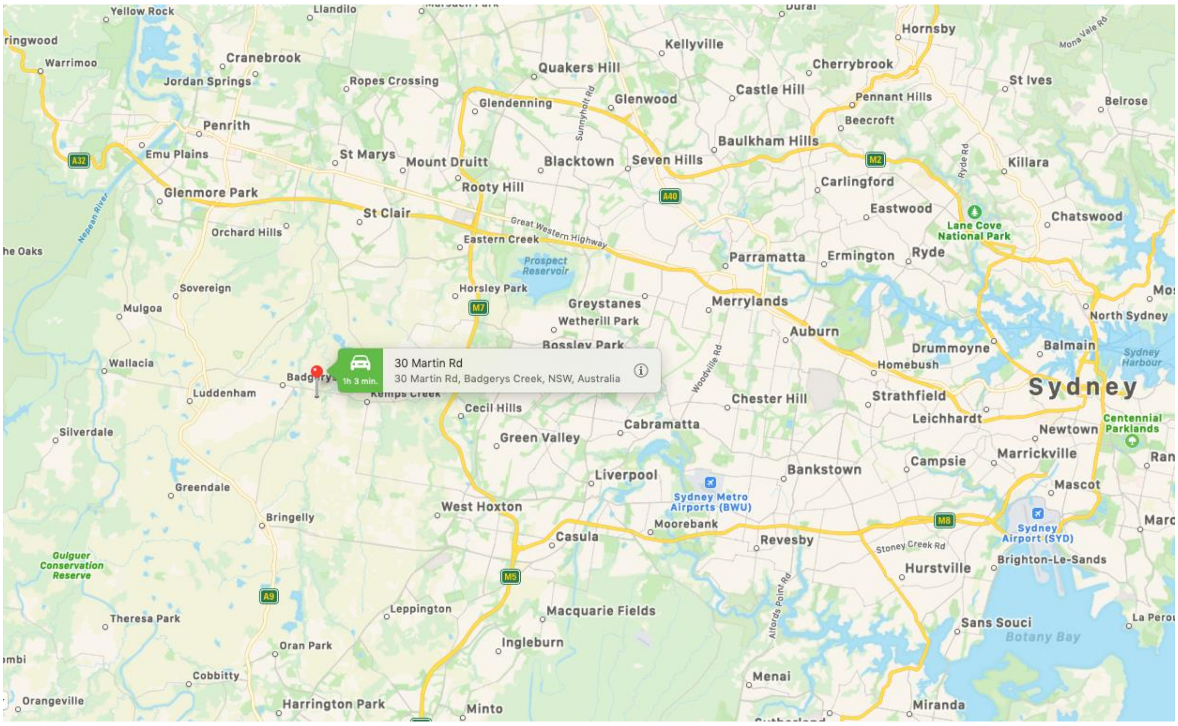

Figure 1 Locality Map (Source: Google Maps)

Figure 2 Approximate Lot Boundary Map (Source: Six Maps)

Approvals Required

The Site is located in the Liverpool City Local Government Area with the applicable planning instrument being the State Environmental Planning Policy (Western Parkland City) 2021. The Site is zoned ENT (Enterprise) (Figure 3) and the Site's use as a Waste or Resource Management Facility is permissible with consent.

The appropriate regulatory authority is the NSW Environment Protection Authority (EPA) and the facility would require an Environment Protection Licence pursuant to Schedule 1 of the Protection of the Environment Operations Act 1997. As such, the Proposal would be classified as Integrated Development.

The proposal would be classified as State Significant Development pursuant to State Environmental Planning Policy (Planning Systems) 2021. Subsequently the relevant approval authority is the DPE.

SOILCO will also seek an interim approval from Liverpool City Council for the initial site works associated with the Site. The full scope of this is yet to be finalised but is likely to include the following works:

- Clearance of any vegetation required for the facility development; and
- Site works relating to the access roads and establishment of a hardstand.

This interim approval would be classified as local development and would be lodged directly with Liverpool City Council, the full details of which would be included in the EIS. Some associated specialist consultant reports relating to these activities would be submitted as part of the interim approval and these reports would be consistent to those produced as part of the EIS.

Figure 3 Land Zoning Map (Source: NSW Dept. of Planning and Environment)

Consultation

SOILCO has commenced a program of consultation with local landowners, community (including Aboriginal) stakeholders and relevant government agencies. This process will continue throughout the preparation of the EIS and include the distribution of information relating to the proposal to all adjoining landowners, and, where possible, meeting with these landowners to discuss the Proposal.

SOILCO met with Mr David Schwebel, Mr Chris Ritchie and Ms Sheelagh Laguna of the DPE on 23 March 2022. In this meeting, SOILCO representatives presented the proposed facility and provided a brief outline of the technology to be implemented as well as the environmental assessments that were to be undertaken as part of the EIS preparation. The DPE representatives emphasised the importance of an Aviation Impact Assessment given the proximity of the Western Sydney Airport. Other waste facilities in the area were referenced to emphasise the importance of analysing the cumulative impacts of waste facilities.

Consultation was also undertaken with Mr Tim Smith, Mr Kirk Osborne and Ms Deanne Frankel of the Western Sydney Airport Authority on 31 March 2022 to discuss the project. In this meeting, SOILCO provided a presentation outlining the technology and architectural plans included with this report. SOILCO emphasised that all waste handling activities were to be undertaken indoors and outlined the specialist studies that were to be undertaken as part of the EIS presentation. Particular regard was given to the Aviation Impact Assessment, including a reference to existing studies undertaken for the Western Sydney Airport, as well as those that would be commissioned. SOILCO has committed to undertaking a plume model assessment, as well as Wildlife Hazard Assessment. These studies would be used to inform the overarching Aviation Impact Assessment, which would be prepared by a specialist in the field.

SOILCO has committed to undertaking further consultation with Western Sydney Airport Authority and the Civil Aviation Safety Authority as part of the preparation of the EIS. This consultation would be lad by SOILCOs selected specialist Aviatuion Impact Assessment Consultant to ensure that all of the requirement s and concerns of these authorities are adequately addressed.

SOILCO recognises that consultation is an ongoing process, and will continue to liaise with all relevant parties throughout the preparation of the EIS.

Management of investigations

The preparation of this document has involved a study team managed by SOILCO's Planning Manager, Mr David Schumacher, B.Soc.Sc (Hons). Mr Schumacher will also manage the preparation of the EIS for the Proposal.

Strong emphasis will be placed upon a multi-disciplinary team approach to the design of the Proposal, the description of the existing environment, identification of key issues, development of appropriate mitigation measures and management controls and assessment of impacts.

The Proposal

This proposed facility would consist of a new In-Vessel Compost and Manufacturing Facility with an onsite renewable energy (Anaerobic Digestion) plant at the Site. It is proposed to comprise the following activities:

- Receipt, sorting and composting of garden, food and wood wastes up to 160,000 tpa;
- Anaerobic digestion of up to 30,000 tpa of commercial food waste and associated onsite electricity generation;
- Import of sands and soils to supplement composted products (30,000 tpa);
- Manufacturing, storage and distribution of soil, compost and mulch products that would be produced on site; and,
- Office and amenities space for office and operational staff with an educational space, garden and viewing areas.

The definitions of wastes that would be accepted at the facility are set out within the Protection of the Environment Operations Act 1997, whereby Garden, Wood and Food wastes that would be accepted at the CECMF are as follows:

- **Garden Waste** – waste that consists of branches, grass, leaves, plants, loppings, tree trunks, tree stumps and similar materials, and includes any mixture of those materials.
- **Wood Waste** – sawdust, timber offcuts, wooden crates, wooden packaging, wooden pallets, wood shavings and similar materials, and includes any mixture of those materials, but does not include wood treated with chemicals such as copper chrome arsenate (CCA), high temperature creosote (HTC), pigmented emulsified creosote (PEC) and light organic solvent preservative (LOSP).
- **Food Waste** – meaning waste from the manufacture, preparation, sale or consumption of food (does not include grease trap waste).
- **Virgin Excavated Natural Material** or any material that meets the requirement of a **NSW Resource Recovery Order.**

The facility has been designed to maximise the recovery of organic feedstocks and to manufacture compliant products ready for application to land in accordance with the NSW EPA Resource Recovery Order for Compost (2016). Operational knowledge for process design is supported by recent construction of new facilities and infrastructure upgrades at SOILCO's NSW facilities located at Kembla Grange, Nowra and Tweed.

Hours of Operation

Proposed Hours of Operation of the facility would be as follows:

Waste Receipts and Processing

- Monday to Friday 5am to 10pm
- Saturdays, Sundays and Public Holidays 6am to 4pm

Operation of In-Vessel Composting Tunnels and Anaerobic Digestor

- 24 hours per day, seven days per week.

Site Layout

Figure 4 provides a proposed site layout of the Site and Figure 5 provides an artists impression of the CECMF. In developing the layout, SOILCO considered the site conditions, current industry best practice, and SOILCO's experience at its existing facilities. The facility has been designed for all heavy vehicles to access the Site using the northern entry and weighbridge and exit via the southern exit and weighbridge. A key part of the design is to ensure that all activities are undertaken in an enclosed structure under negative pressure.

The site layout also takes into account the required setbacks from the road reserve, as well as the site coverage requirements of the relevant development control plan.

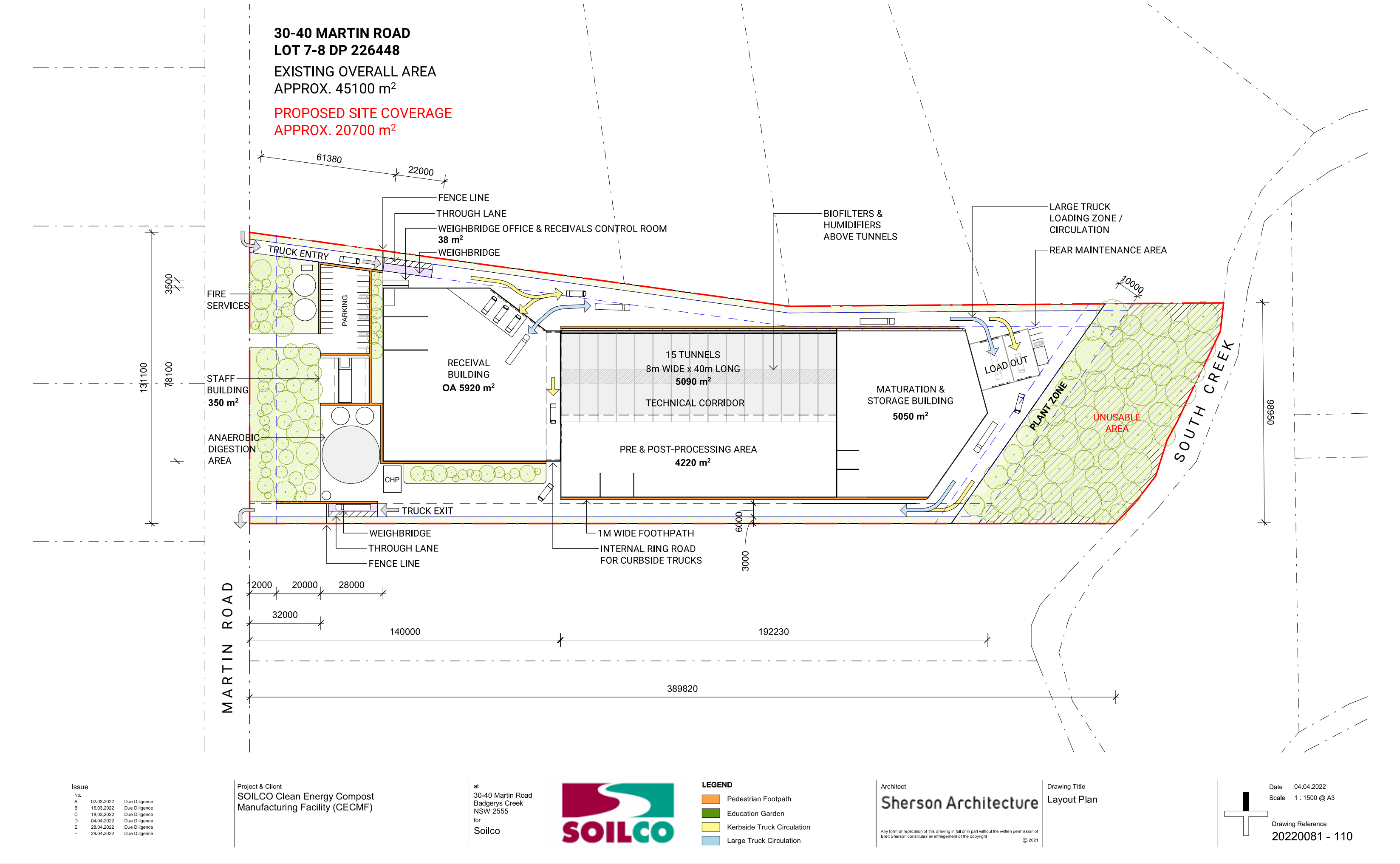

Figure 4 Proposed Site Layout

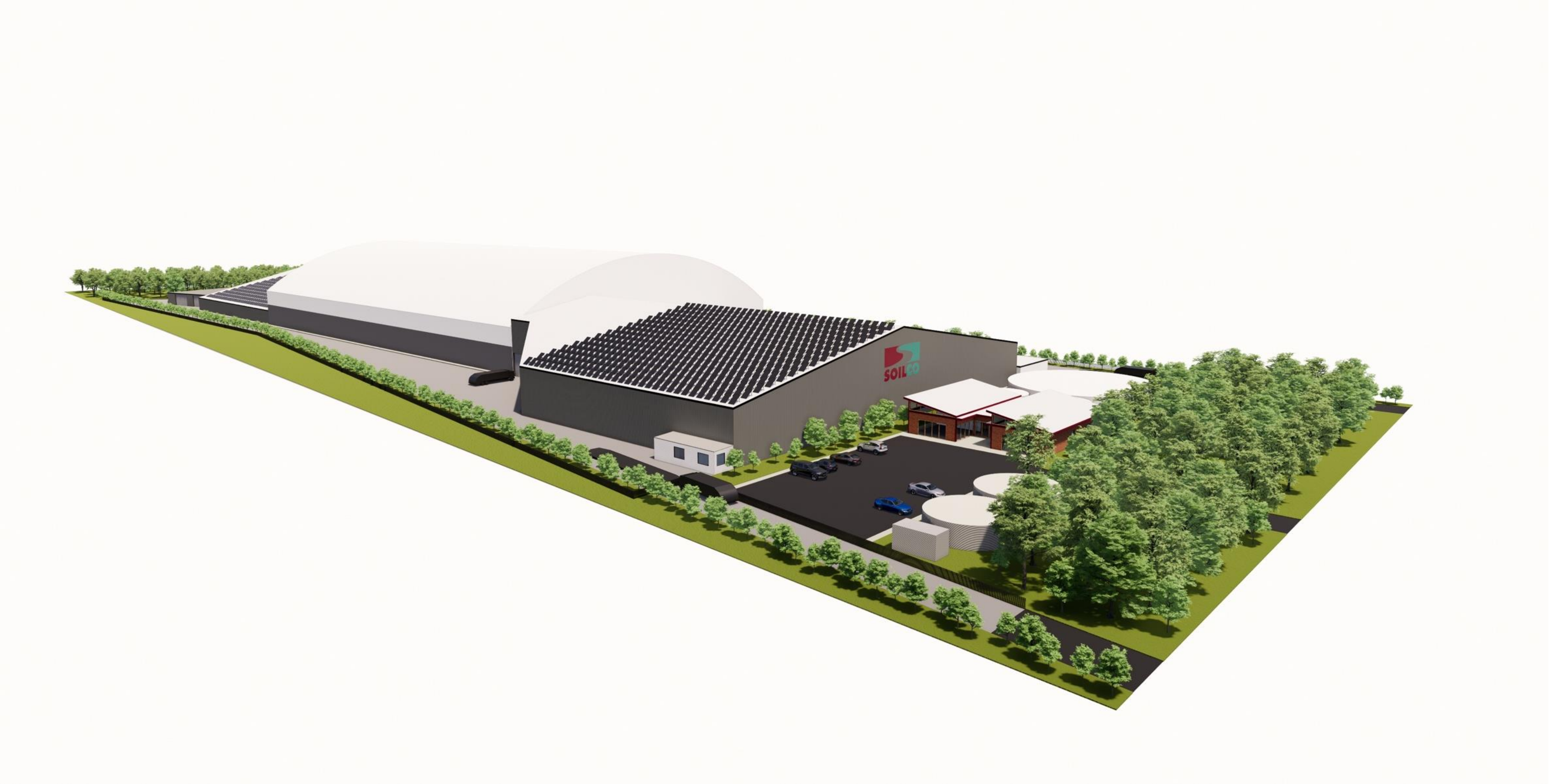

Figure 5 Artists Impression of the Sydney CECMF

Site Infrastructure

The following information provides an overview of the infrastructure to be constructed at the facility, this includes:

- Weighbridges;
- Processing Buildings;
- Composting Tunnels;
- Anaerobic Digestion Infrastructure;
- Office & Amenity; and
- Pavements & Landscaping.

Table 2 provides a summary of the infrastructure proposed to be constructed at the facility.

Table 2 Proposed Facility Infrastructure

Area	Description
Entry and Exit (access)	• Fully fenced and secure site • Two 22m weighbridges for entry and exit traffic • Internal ring road (2 lane, one way roadway for heavy vehicles) • Pedestrian/worker walkways around facility (and for maintenance access to all areas) • Access suitable for kerbside, truck and dog (unhooked) and walking floor (articulated) trucks
Parking	• Parking in accordance with Draft WSA DCP requirements • Heavy vehicle parking spaces allowed throughout site • Office and staff parking at front of site
Receival building	• Accommodate walking floors (semi) and kerbside trucks • Specific receiving bays with automatic high-speed roller doors • Co-located with Anaerobic Digestion pre-processing equipment • Steel clad building, high efficiency lighting • Negative pressure ventilation tied to odour management system
Pre-Composting Area (Shredding, sorting & Screening)	• Split across receival building and tunnel building • Negative pressure ventilation tied to odour management system • Shredder and associated conveyers plus screen and picking station • De-packaging unit and separation mill for Anaerobic Digestion facility
In-Vessel Composting Tunnels	• 15 in-vessel composting (IVC) concrete tunnels • Located adjacent to Pre-processing and post-processing areas
Tunnel Technical Corridors	• Located on top at back end of tunnels with maintenance access to all tunnel aeration equipment • Technical area contained in separate space from tunnel and processing areas
Post Composting Area (Screening, Quality Testing and Release)	• Located adjacent to tunnels • Includes screening and advanced decontamination equipment • Negative pressure ventilation tied to odour management system
Compost Maturation / Finished Goods Storage Building	• Accommodate walking floors (semi) and kerbside trucks • Specific load out bay with automatic high-speed roller doors • Located adjacent to post-processing line • Steel clad building, high efficiency lighting • Negative pressure ventilation tied to odour management system

Load out Area	• Indoor space to accommodate load out of 1x walking floor • Access through automatic high-speed roller doors • Located adjacent to storage areas • Space for queuing of additional walking floors on ring road • Steel clad building, high efficiency lighting • Negative pressure ventilation tied to odour management system
Anaerobic Digestion Area	• External area adjacent to receival building • Digestor, storage tanks, equipment skids and CHP unit
Odour Management Area	• Duplex system (ie two in parallel) including humidifier, biofilter, aeration and pumping equipment • Located on top of IVC tunnels • Biofilters to be covered and ventilated through stacks (min 2x stacks per biofilter)
Water Management Area	• Above and below ground steel and concrete rainwater and leachate tanks including pumping, piping and controls • Underground stormwater detention facilities including oil water separator and stormwater harvesting pumping/piping

Site Office and Amenities	• ~300m^2 (approx.) office to accommodate:
	  • Front office space, meeting rooms, amenities and kitchen
	  • Educational space and garden
	  • Operations amenities including showers, change rooms, kitchen/lunch room
	  • Process control room

Workshop Area	• Onsite maintenance area at the rear of the Site • Drive through internal space to work on heavy equipment • Work bay completely enclosed
Electrical Services	• Primary electrical room near front of site to house SMSB • 1MW Roof top PV system (solar) mounted to receival and storage buildings • Containerised CHP unit for onsite generation from the AD facility
Fire Services Area	• Fire storage tanks and hydrant pump/booster at front entry including hydrant ring main • FIP/sprinkler pump room located near front entry • Fire sprinklers throughout processing areas

Proposed Plant & Equipment

Table 3 provides a summary of the proposed mobile plant to be used at the facility, and table 4 provides a summary of the fixed equipment. This will be further refined during the EIS preparation to ensure that accurate noise and emissions modelling can be undertaken.

Table 3 Proposed Mobile Equipment

Function	Description
Front End Loader (Volvo L150F (or similar))	• Up to Six • Located throughout the site. • Movement ant loading of materials
Materials Handler	• Two used throughout the site

	• Maintenance of equipment and movement of materials.
Telehandler	• Two located in the receival area • Loading of material into processing plant

Table 4 Proposed Fixed Equipment

Fixed Equipment	**Function**
Primary Shredder (Crambo 5200E or similar)	• Located in the pre-composting area. • Size reduction of .
Screen (M2SE Starscreen or similar) x 2	• Located in pre-composting area and post-composting areas. • Screening of raw materials and composted material into required fractions.
Picking Station	• Located in pre-composting area. • Manual removal of contamination from the material..
Feed hopper	• Located in the receival area. • Receipt of food waste for transfer to processing.
Screw Conveyor	• Located in the receival area. • Conveyance of Food waste
Windsifter 1	• Located in post-composting area • Removal of light plastic contamination
Optical Sorters	• Located in post-composting area • Optical removal of contamination from composted material
Secondary Shredder	• Located in post-composting area • Post-composting size reduction of decontaminated compost

Composting Processes

SOILCO would utilise aerobic composting methods that include the following control points:

- Receipt: unloading in nominated area depending on incoming material type.
- Batching: placement within composting tunnels.
- Pasteurisation: controlled microbiological transformation of organic materials under aerobic and thermophilic conditions for a designated number of days, turns and specified temperature (plus 55°C).
- Composting: aerobic conditions continued to be maintained as per pasteurisation for a designated number of days, turns and specified temperature (below 55°C).
- Batch release: removal from composting tunnel and stockpiling for maturation and quality release.
- Maturation: Although the compost temperature is close to ambient during the curing phase, chemical reactions continue to occur that make the remaining organic matter more stable and suitable for use with plants. Drying of material from above 40% during pasteurisation and composting to approximately 25% prior to screening and quality release is also achieved.
- Quality release: screening and stockpiling of finished goods ready distribution.

Composting Tunnels

The composting tunnels consist of a sealed concrete structure with an airtight door equipped with a lifting mechanism to open and close for front end loader access. The slab houses a series of parallel PVC pipes laying lengthwise which are incorporated in the concrete. These pipes have tapered plastic nozzles (spigots) that provide the mechanism for supply of air and collection of leachate and is known as the "aeration floor".

The functional description for the tunnel operation is as follows:

- The front doors are shut and provide a seal. Water is introduced at high level from sprinkler pipe work running along the walls.
- Air is introduced from the rear of the aerated floor via the spigot pipe system.
- Leachate derived from the decomposing waste that drains into the spigot floor pipe system and is collected at the front of the tunnels for treatment by the water management system.
- The tunnels are operated as individual units with separate process controls.

The design of the "spigot floor" in each tunnel provides air through to the material and accepts leachate for transfer away.

Tunnel Air Management

Each tunnel has its own centrifugal fan that blows a mixture of fresh air and process air through an air plenum via the spigot pipes to the composting material. Pressurised air flows through the material mixture from the spigots ensuring intensive contact between the air and the mixture. In this way, the composting process can be controlled properly and aerobic conditions can be maintained in the complete batch of material being processed. The mixture of fresh air and process air is set using the computer controlled, electrically actuated valves.

The re-circulation air supply valve is mechanically linked to the fresh air supply valve and its operation is exactly opposite to the fresh air-supplying valve. If less re-circulation air is supplied, more fresh air is automatically blown through the material.

Each composting tunnel has its own aeration system and is connected to two central air ductworks: the central fresh air supply ductwork and the central process air discharge ductwork for the warm and humid air released during the composting process going to the biofilter. The discharge air connection to the tunnels is equipped with a motorised air valve, which ensures that a separate negative pressure is kept inside each tunnel. Negative pressure is maintained throughout the process in order to prevent polluted and odorous air being released inside the processing building.

Anaerobic Digestion

SOILCO proposes to install an anaerobic digestor and electricity generation infrastructure as part of the Proposal. The proposed system would utilise wet anaerobic digestion, which is the most tried and tested (and therefore the most common) process whereby biogas is generated in large-scale biogas plants.

The facility would comprise of:

- Tipping floor for the receipt and inspection of wastes.
- A de-packaging unit (bag opener and separation mill) to separate organics from inorganics. Any contamination fraction would be stored in appropriate bins for disposal at an appropriately licenced facility.
- A buffer tank for the storage of the shredded food waste prior to anaerobic digestion.
- Anaerobic Digestion tank comprising a double membrane foil roof and mixers for efficient mixing.
- A biogas conditioning system that the biogas is directed to before being sent to a Combined Heat and Power (CHP) unit. Heat from the CHP would be recovered to be used for tank heating.

- A dewatering system that the digestate from the digestor would be directed to. The system would produce filtrate which would be utilised as irrigation within the IVC system, and cake which will be sent directly to composting in the IVC system.

SOILCO will partner with a technology provider and refine the Anaerobic Digestion design and layout throughout the development of the EIS. As such, a more detailed design would be submitted as part of the EIS.

Building Air Management

Air is continuously drawn from the buildings in order to maintain negative pressure at all times. The air from the processing building is discharged using axial flow fans and a central duct located in the ridge of the building. Air flow is measured on the suction side of the fans and this data is displayed on the visualisation computer.

The air flow rate can be adjusted by setting the fan's capacity as the fan is equipped with a frequency transformer. A temperature control for the biofilter air supply is built into the control software. The minimum and maximum values are entered and adjusted using the computer. When the minimum temperature is reached, the fans’ capacity drops. When the maximum temperature is reached, the fans’ capacity increases.

Some of the air evacuated from the areas is used as fresh air for the tunnels. A constant air supply pressure is required in the tunnels fresh air supply duct to adequately control the process. A by-pass connection to the biofilter fans is built-in as the volume of air required by the tunnel varies. Based on the pressure measurement feedback, the by-pass valve is activated. The pressure can be set using the computer.

Humidification of Process Air

A humidifier is installed prior to the biofilter. The humidifier unit removes (scrubs) dust particles and ensures the air flowing to the biofilter has a stable temperature and moisture level. This is essential for maintaining optimum conditions within the substrate of the biofilter. After the air humidifying process, the air flows to the biofilters. Droplet dischargers are mounted on the output side to prevent too much water being transported to the biofilters.

Biofilter

After humidification, the process air is delivered to a plenum underneath the biofilter. The biofilter consists of a concrete basin divided into different distribution fields. The biofilter floor consists of perforated concrete slabs supported by walls which allow the air to flow evenly under the complete distribution field. The process air is blown into an air plenum, flows under the biofilter floor and from here through the biofilter substrate which consists of a mixture of very coarse hardwood timber mixed with coarse softwood bark. The biofilter material is specified and inspected prior to delivery and installation in order to verify compliance, optimise air flow capacity and life, limit pressure loss and provide good moisture holding capacity.

The proposed biofilter would be covered and vented via an exhaust stack. Covered biofilters maintain a steady and controlled humidity and temperature within whilst also allowing for installation of a stack with optional fans to provide for better dispersion of the exhaust air. Stacks are typically used in more intensive industrial or urban areas.

Process Control

The control system consists of a process computer that takes care of visualisation. The computer interprets the data and provides a schematic of the complete composting process. The operator can see the status of the installation, then evaluate and adjust process parameters if needed. The process computer is connected to a Programmable Logic Computer (PLC) that automates the preferred operating conditions. The control parameters for the PLC are entered via the process computer.

The software in the PLC operates the process air and process water of all tunnels. The control software sets temperature, moisture level and oxygen level of the composting material to optimum conditions.

Sand and Soil Importation

The Applicant proposes to import up to 30,000 tpa of Sand and Soil for use in soil blends. Where possible, this would be imported in heavy vehicles travelling to the Site to collect SOILCO products. The practice of backloading would therefore minimise additional truck movements for the Proposal.

Vehicle Workshop and Garaging

Front end loaders and forklifts are the only heavy vehicles that would remain on the Site in a permanent capacity. Waste trucks would only be on site for a short period of time in order to drop off waste or pick up finished products.

It is proposed that the Site would operate seven days a week. Plant vehicles would only be 'garaged' and out of use for a short period of time each week.

Some parking for heavy vehicles would be made available along the exterior ringroad, with any vehicles parked outside required to be empty and covered at all times.

Office and Other Buildings

As part of the development, a new office would be constructed at the front of the Site. Whilst the design is yet to be finalised, it would provide for a designated point of entry for drivers to receive further delivery (unload) or pickup (load) instructions, an education centre, amenities for staff, a training/meeting room, and sales and reception.

Weighbridges

All heavy vehicles entering the Site would do so via the northern weighbridge prior to being directed to the appropriate area on site. All loading and unloading of heavy vehicles would take place within the building, and vehicles would exit the facility via the southern weighbridge.

All materials received at the facility would need to be verified at the point of entry as part of the SOILCO quality control system. The weighbridge would be used to capture the following data:

- Date and Time of Delivery;
- Category of Organics (Green Waste, Wood Waste, Food Waste, Food and Green Waste) or Feedstock;
- Source of Qaste Material/Feedstock;
- Customer Name;
- Vehicle Registration and Owner;
- Purchase Order or Contract Identifier;
- Source Docket (if applicable);
- Gross, Tare and Net Weight (tonnes); and
- Any other information required under legislation.

All commercial vehicle registration and owner details would be provided prior to entry to ensure the job number and vehicle are identified in the weighbridge system.

Legislative Requirements

The following sections outline the planning assessment process that is applicable to the Proposal and summarise environmental planning legislation that would be taken into consideration during preparation of the required approval documentation.

Environmental Planning and Assessment Act 1979 & Environmental Planning and Assessment Regulation 2000

The Environmental Planning and Assessment Act 1979 (EP&A Act) and the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) provide the framework for the assessment of the environmental impact of proposed development in NSW.

The objectives of the EP&A Act include:

(a) The encouragement of:

  (i) The proper management, development and conservation of natural and artificial resources;

  (ii) The promotion and co-ordination of the orderly and economic use and development of land;

  (iii) The protection, provision and co-ordination of communication and utility services;

  (iv) The provision of land for public purposes;

  (v) The provision and co-ordination of community services and facilities;

  (vi) The protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats;

  (vii) Ecologically sustainable development; and

  (viii) The provision and maintenance of affordable housing.

(b) To promote the sharing of the responsibility for environmental planning between the different levels of government in the State; and

(c) To provide increased opportunity for public involvement and participation in environmental planning and assessment.

Part 3 of the EP&A Act provides for the formation of environmental planning instruments (EPIs), which can take the form of Local Environmental Plans (LEPs) or State Environmental Planning Policies (SEPPs). EPIs contain provisions that control the permissibility of development and identify when development approval is required. EPIs that are applicable to the Proposal are:

- State Environmental Planning Policy (State and Regional Development) 2011;
- State Environmental Planning Policy (Western Sydney Aerotropolis) 2020;
- State Environmental Planning Policy (Infrastructure) 2007;
- State Environmental Planning Policy No 33 – Hazardous and Offensive Development; and
- Liverpool Local Environmental Plan 2008.

As required by Schedule 2 of the EP&A Regulation, the development of the proposed facility would require an Environmental Impact Statement.

State Environmental Planning Policy (Planning Systems) 2021

This State Environmental Planning Policy (SEPP) commenced on 1 March 2022 and applies to all projects satisfying nominated criteria made following that date. One of the purposes of this SEPP is to define those developments of State significance and therefore requiring Ministerial approval under the provisions of the EP&A Act. This SEPP, and Part 4, Division 4.7 of the EP&A Act, is a system introduced to specifically deal with State significant projects.

Schedule 1 of the SEPP sets out the criteria of projects that would be classified as State Significant Development. In particular, clauses 3 and 23 of Schedule 1 are of relevance to the proposal and are set out below.

> *Clause 3*
> *Development that has a capital investment value of more than $30 million for any of the following purposes—*
>
> *(c) organic fertiliser plants or composting facilities or works*
>
> *Clause 23*
> *(3) Development for the purpose of resource recovery or recycling facilities that handle more than 100,000 tonnes per year of waste.*

Given the proposed capacity of the facility, being in excess of 100,000 tonnes per annum of waste received and with a capital investment value greater than $30 million, the proposal would be classified as State Significant Development pursuant to State Environmental Planning Policy (Planning Systems) 2021.

As such Part 4, Division 4.7 of the EP&A Act applies and the development requires approval from the Minister for Planning or his/her delegate or the Independent Planning Commission.

State Environmental Planning Policy (Transport and Infrastructure) 2021

State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP) assists the NSW Government, local councils and the communities they support by simplifying the approvals process for providing infrastructure in vital areas such as education, hospitals, roads, railways, emergency services, and utilities.

The Transport and Infrastructure SEPP outlines the planning rules for these works and facilities, including:

- Where such development can be undertaken;
- What type of infrastructure development can be approved by a public authority under Part 5 of the EP&A Act following an environmental assessment (known as 'development without consent');
- What type of development can be approved by the relevant local council, Minister for Planning or Department of Planning under Part 4 of the EP&A Act (known as 'development with consent');
- What type of development is exempt or complying development; and
- The relationship of other statutory planning instruments to the Transport and Infrastructure SEPP.

Under Division 17 section 2.121 of the Transport and Infrastructure SEPP, traffic generating developments, including waste resource recovery facilities, must be referred to Transport for NSW (TfNSW). The consent authority must take into consideration any submission that TfNSW provides in response to the application, the accessibility of the Site, including:

- Division 4, section 2.36 states that where development for the purposes of a waste or resource management facility is permitted with consent under any environmental planning instrument, development for the purpose of electricity generating works that generate energy from gas generated by waste may be carried out with consent.

As such, the Proposal is permitted with consent within the provision of the Transport and Infrastructure SEPP.

State Environmental Planning Policy (Western Parkland City) 2021

The State Environmental Planning Policy (Western Parkland City) 2021 (SEPP WPC) commenced on 1 March 2022 and sets out the land use and planning controls for the 11,200 hectare area surrounding the Airport, known as the 'Western Sydney Aerotropolis'. The SEPP is complemented by the Draft Western Sydney Aerotropolis Development Control Plan (DCP) which identifies the precinct planning principles, objectives and performance outcomes to allow precinct planning in the Aerotropolis to progress.

The Site contains land zoned as 'ENT – Enterprise' and 'ENZ – Environment and Recreation' under the SEPP WPC. The following sets out the objectives and land use tables for these respective zones.

ENT - Enterprise Zone

1. Objectives of zone

- To encourage employment and businesses related to professional services, high technology, aviation, logistics, food production and processing, health, education and creative industries.
- To provide a range of employment uses (including aerospace and defence industries) that are
- compatible with future technology and work arrangements.
- To encourage development that promotes the efficient use of resources, through waste minimisation, recycling and re-use.
- To ensure an appropriate transition from non-urban land uses and environmental conservation areas in surrounding areas to employment uses in the zone.
- To prevent development that is not compatible with or that may detract from the future commercial uses of the land.
- To provide facilities and services to meet the needs of businesses and workers.

2. Permitted without consent

- Nil

3. Permitted with consent

- Any development not specified in item 2 or 4

4. Prohibited

- Air transport facilities; Airstrips; Camping grounds; Caravan parks; Crematoria; Exhibition homes; Exhibition villages; Forestry; Heavy industrial storage establishments; Heavy industries; Helipads; Intensive livestock agriculture; Mortuaries; Open cut mining; Residential accommodation; Rural industries; Turf farming

ENZ - Environment and Recreation Zone

1. Objectives of zone

- To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.
- To protect the ecological, scenic and recreation values of waterways, including Wianamatta–South Creek and its tributaries.
- To provide a range of recreational settings and activities and compatible land uses.
- To protect and conserve the environment, including threatened and other species of native fauna and
- flora and their habitats, areas of high biodiversity significance and ecological communities.

2. Permitted without consent

- Nil

3. Permitted with consent

- Any development not specified in item 2 or 4

4. Prohibited

- Air transport facilities; Airstrips; Amusement centres; Backpackers' accommodation; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Caravan parks; Centre-based child care facilities; Charter and tourism boating facilities; Correctional centres; Depots; Educational establishments; Electricity generating works; Entertainment facilities; Exhibition homes; Exhibition villages; Extractive industries; Forestry; Freight transport facilities; Hardware and building supplies; Heavy industrial storage establishments; Helipads; Highway service centres; Hospitals; Hotel or motel accommodation; Industrial retail outlets; Industrial training facilities; Industries; Intensive livestock agriculture; Jetties; Medical centres; Mooring pens; Moorings; Mortuaries; Office premises; Open cut mining; Port facilities; Public administration buildings; Residential accommodation; Respite day care centres; Restricted premises; Rural industries; Service stations; Serviced apartments; Sex services premises; Specialised retail premises; Storage premises; Timber yards; Transport depots; Truck depots; Turf farming; Vehicle body repair workshops; Vehicle repair stations; Vehicle sales or hire premises; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water treatment facilities; Wholesale supplies

Given the above, the proposed development would be permitted with consent within the ENT zone. Development of the riparian zone is heavily restricted. The proposed development will not encroach upon the ENZ zoned land and, as such, this zone would not apply to the Proposal.

Draft Western Sydney Aerotropolis Development Control Plan 2021

The Western Sydney Aerotropolis Development Control Plan 2021 (WSA DCP) provides development controls for the Site. The DCP has been prepared to provide objectives, controls and guidance to applicants proposing to undertake development in the areas identified within the SEPP WSA and for reference in the assessment of development applications.

The following table sets out the relevant controls of the DCP.

Table 5 Relevant DCP Controls and Proposal Conformance

Restriction	Comment
Object Limitation Surface (OLS) Relative to Ground Level – 58.7m	This provision requires any proponent to take into account the OLS given the sites location in proximity of air traffic. Whilst the proposed facility would be significantly below the OLS, plume modelling would be required to be undertaken to ensure that the exhaust from the biofilter stack would not impact the OLS.
Wildlife Hazard Zone – 0-3km	Given the location of the Site, the any proposal would require that all material be handled and stored within an enclosed facility. A fauna assessment would accompany any EIS to ensure that the facility would be designed to ensure that wildlife is not attracted as part of the operations.
ANEC Noise Contour – 30-35	Given the facility would not be considered to be sensitive to airport noise, this development control is not considered applicable.
Lighting Buffer Area: Within 6km Lighting Buffer Area	Any external lighting would need to be developed in consultation with CASA to ensure that no impact is caused to air traffic.
Road Setback – 20m	Given the future status of Martin Road as the Eastern Ring Road (Classified Road), any buildings would be required to be set back no less than 20m from the front boundary.
Flood Risk Management	The rear of the Site is located within the 1% AEP flood plain. Given this, and this areas ENZ zoning, no development would take place in the rear strip of the property as shown on the preliminary drawings.
Biodiversity	The DCP requires that 15% of the Site be retained as deep soil with a minimum target of 25% of the Site having tree canopy cover. This would include the ENZ zone area as well as landscaping of the site and would be attainable as part of the SOILCO design.

Approvals Required

The Site is located in the Liverpool City Local Government Area with the applicable planning instrument being the State Environmental Planning Policy (Western Parkland City) 2020. The Site is zoned ENT (Enterprise) and the Sites use as a Waste or Resource Management Facility is permissible with consent.

The appropriate regulatory authority is the NSW Environment Protection Authority (EPA) and the Facility would require an Environment Protection Licence pursuant to Schedule 1 of the Protection of the Environment Operations Act 1997. As such, the Proposal would be classified as Integrated Development.

Should the proposed capacity of the facility, be in excess of 100,000 tonnes per annum of waste received, the proposal would be classified as State Significant Development pursuant to State Environmental Planning Policy (State and Regional Development) 2011. Subsequently the relevant approval authority is the DPE.

Table 6 provides a summary of the approvals that would be required for the Proposal.

Table 6 Licensing and Permit Requirements

Legislation	Approval Activities	Approval Required	Approval Body
EP&A Act	Construction and Operation of a new Compost manufacturing Facility	Development consent	NSW Department of Planning and Environment
PoEO Act	Composting, Resource recovery, and Waste Storage	Environment Protection Licence	NSW Environment Protection Authority

Key Considerations

At this stage in the design process, the key areas to be considered by the Environmental Impact Statement would include:

- Aviation Safeguarding;
- Air Quality (Dust, Odour);
- Noise;
- Traffic;
- Stormwater and Leachate Management;
- Flooding;
- Heritage;
- Flora and Fauna;
- Amenity;
- Site Management;
- Hazards and Risks;
- Socio-Economic;
- Waste Management; and
- Fire Management.

An overview of several key considerations is provided below.

Aviation Safeguarding

An Aviation Impact Assessment report would be commissioned as part of the EIS, to determine the likely impact of the development on aviation associated with the Western Sydney Airport. The report would consider the relevant state and federal requirements and include an appropriated plan of management to ensure that the construction and operation of the facility does not adversely impact airport operations. The report would be prepared in consultation with the Western Sydney Airport Authority.

Air Quality

Zephyr Environmental Pty Ltd (Zephyr) has undertaken a preliminary assessment to evaluate the key risks and constraints with respect to air quality / odour associated with the construction and operation of the proposed facility.

Zephyr has recommended the following mitigation measures be employed as part of the design of the facility:

- Entirely enclose the facility, with all loading and unloading of materials, as well as processing being undertaken indoors;
- Employ an air management system with associated humidifier and biofilter;
- use odour control (carbon filtration or equivalent) on any leachate tank head-space outlets; and
- Consider any additional odour control measures that may be feasible during the project's detailed design stage.

It is assessed at this preliminary stage that the mitigation measures envisaged would be sufficient to ensure that the relevant air quality and odour criteria at the nearest sensitive receptors would be satisfied.

SOILCO has engaged Zephyr to prepare a comprehensive air quality and odour model as part of the Environmental Impact Assessment process, SOILCO would refine and implement the above mitigation measures in its detailed design process as the development of the EIS progresses.

Noise

Noise is required to be assessed at any nearby sensitive receptors to ensure that the intrusiveness of any industrial noise does not have any adverse impacts on residences, as set out in the NSW Environment Protection Authorities Noise Policy for Industry (NPI).

The principal noise sources would be heavy vehicles travelling to and from the facility, fan units associated with the IVC tunnels and air management system, processing equipment, and loader movements within the buildings.

Particular emphasis will be placed upon ensuring appropriate noise controls and procedures are developed and implemented to ensure both the night-time LAeq criteria and sleep arousal criteria are satisfied.

The closest receptors are located to the rear of the proposed facility on Overett Avenue. Spectrum Acoustics Pty Ltd will be engaged to prepare a Noise Impact Assessment, including a model of all noise sources, to ensure that the proposed facility would meet the NPI.

Traffic

Transport and Urban Planning Pty Ltd has undertaken a review of the risks associated with the development of the Site with regard to traffic. Of particular interest regarding the Site, Martin Road will be upgraded and become the Eastern Ring Road with a wider road reserve connecting Elizabeth Drive to The Northern Road. There is no date for when this might occur and the proposal, including the road reserve width is at draft stage only. The existing road reserve for Martin Road is approximately 20m wide, this change could lead to the loss of a small strip of land at the front of the Site.

SOILCO would undertake consultation with Transport for NSW to establish the size of any setback that would be required in addition to that required by the DCP as well as any other requirements that Transport for NSW may have. SOILCO has allowed for an additional 12m of setback based on initial consultation with other landowners along Martin Road.

Parking requirements would be provided in accordance with the DCP as part of the detailed design of the facility.

Surface Water and Leachate Management

The proposed layout includes all processing, composting and storage works occurring indoors. The mass balance for water ensures all leachate generated within the facility is reused as process water.

The proposed layout ensures all clean stormwater is collected and diverted to storage tanks.

SOILCO will engage a suitably qualified surface water consultant to assist with the design of the on-site water management system.

Leachate and condensation containing a high organic load would be collected and treated for recirculation to the composting process, thereby avoiding disposal. A water balance would be prepared for the facility to determine the quantity of additional make up water required to operate the facility, as such, the facility would never produce excess leachate compared to its water demands.

All operations would be conducted on sealed surfaces with all operational areas covered in concrete or asphalt and maintained in good condition. All leachate would be collected and recycled back into the composting process via irrigation within the composting tunnels.

The system would result in zero release of leachate to groundwater, stormwater or drainage lines. The indicated storage areas would be covered and located on concrete or asphalt hardstand. It is, therefore, anticipated that the management of generated leachate and minimisation of any migration of leachate to groundwater or surface water would be achievable.

As described above, the leachate system has been designed to ensure that there is zero discharge from the Site, and all leachate would be used as process water in the composting process.

Visual Amenity

The closest residences are located approximately 350m to the west of the Site and 600m to the south of the Site. The Site would be largely screened from the road frontage with Martin Road by landscaping, with a minimum 20m buffer between the road frontage and the proposed facility. Landscaping around the perimeter of the facility would also reduce the impact of the proposed facility.

External security lighting would be installed on the proposed building illuminate the Site during operating hours outside of daylight hours. External lighting would be designed to be shielded from any receptors, and all lighting would be directed so as not to impact airport operations, consistent with the requirements of Section 10.1 of the Draft WSA DCP.

Flora and Fauna

Land Eco Pty Ltd (Land Eco) has undertaken a Constraints Assessment regarding the proposed facility. Land Eco noted that all of the land that would be impacted by the proposed facility is Biodiversity Certified which means no further offsets are required pursuant to the Biodiversity Conservation Act 2016. The Commonwealth Government has also endorsed the Biodiversity Certification.

As part of the constraints assessment, Land Eco undertook a vegetation survey of the Site, this survey found that the vegetation on the Site is not likely to support any significant populations or habitat for Commonwealth listed migratory species.

As part of the assessment for the EIS, Land Eco will investigate the wildlife and bird strike risk assessment, which would also be used to guide the Aviation Impact Assessment outlined above.

The following management requirements would be implemented for the development of the Subject Land to proceed:

- Prepare and implement a Vegetation Management Plan (VMP) to meet the requirements of the SEPP WSA and the DCP.
- Survey the Subject Land for breeding flying-foxes and raptorial birds during the appropriate breeding seasons, prior to development application lodgement.
- Manage all Priority Weeds identified on the Subject Property in accordance with the VMP.
- The Site contains some potential forage, roost and breeding habitat for locally common threatened fauna species, particularly the presence of native canopy trees. A portion of this threatened fauna habitat will be affected by the proposed development of the Subject Property.The following requirements of the DCP would also be addressed as part of the EIS:
- Sustainable management of the health of the Wianamatta-South Creek waterway and riparian corridor in accordance with a VMP.
- A minimum tree canopy of 25% of the site area and a minimum deep soil area of 15%; For every 400m2 of site area or part thereof, at least two medium trees or one large tree is to be planted in the deep soil area.
- Protection of biodiversity including weed removal, pest management, maintenance of biodiversity corridors and avoiding the disturbance of threatened flora and fauna.
- Protection of trees and vegetation by limiting native vegetation removal across the Subject Property to the minimum required and that where unavoidable.

Heritage

SOILCO would engage a suitably qualified heritage consultant to undertake a Heritage Assessment of the Proposal. The specific objectives of the cultural heritage assessment would be to:

- Consult the local Aboriginal community to identify any concerns they may have;
- Conduct a desktop assessment to delineate areas of known and predicted cultural heritage within the Site;
- Undertake a stratified archaeological survey of known and predicted cultural heritage identified in the desktop assessment with representatives of the local Aboriginal community;
- Record any cultural heritage sites within the Site and assess their significance;

- Identify the nature and extent of potential impacts of the Proposal on cultural heritage; and
- Identify options in consultation with the community to avoid or mitigate potential impacts of the Proposal on cultural heritage places and items.

A search of statutory heritage database and listings has been completed as part of the preliminary investigations into the Site. The following databases were included.

- NSW State Heritage Register
- NSW State Heritage Inventory
- Australian Heritage Database
- Liverpool City Local Environmental Plan – Heritage Schedule

There are currently no listed heritage items within or near the Site.

Socio-economic Impacts

The specific social and economic related impacts that may result as a consequence of the Proposal (without the implementation of appropriate safeguards, controls and mitigation measures) and therefore require assessment, are as follows.

- Increase in local employment.
- Perceived minor loss of local amenity at local and neighbouring properties causing:
  - Changes to local social activities;
  - Potential impacts to ongoing existing business viability;
  - Decreasing land values of neighbouring properties; and/or
  - iImpacts to community feelings of well-being derived from perceived inability to influence changes to their residence or local surroundings.

The Proposal would contribute to the regional economy through spending on employment, local purchases, local contractors and suppliers. In addition, the Proposal would provide a further strategically important organic waste processing facility for the Sydney region.

The social consequences of the environmental impacts would be further addressed it the EIS for issues relating to:

- Vegetation clearing;
- Odour and air quality;
- Water management and impacts;
- Traffic impacts; and
- Noise impacts.

Hazards and Risks

A preliminary risk screening will be completed during the development of the EIS in accordance with SEPP 33. An assessment of the risk of bushfire addressing the requirements of the NSW Rural Fire Service Planning for Bush Fire Protection 2018 will also be prepared as part of the EIS.

Cumulative Impacts

The main potential for cumulative impacts is attributable to the increase in heavy vehicle traffic on Martin Rd and its intersection with Elizabeth Drive. Cumulative impacts of other traffic utilising Martin Road are also relevant as this traffic would access Elizabeth Drive using the same intersection as traffic associated with the Proposal.

Cumulative impacts would also arise from the proximity of the nearby Australian Native Landscapes Composting Facility located to the south on Martin Road, and Cleanaway's Kemps Creek Waste Facility. These facilities are approved to receive and process organic wastes, and the cumulative impact of the sites would be addressed as part of the EIS, with particular regard given to odour.

Site Management

A Site Specific Management Plan (SSMP) would be prepared for the facility, this would form part of SOILCO's Integrated Management System (IMS). The IMS is certified to ISO 9001 (Quality), AS/NZS 4801 (Safety) and ISO 14001 (Environment) systems and has been aligned with relevant requirements of appropriate regulatory departments such as the NSW EPA (Environment Protection License and Resource Recovery Orders) and NSW Department of Primary Industries (CA05). The IMS also incorporates product specific quality standards such as AS4419 (soils) and AS4454 (compost and mulch).

Project Value

The total estimated cost of the proposed facility is currently estimated to be $60 million (excluding GST). A report from a qualified surveyor providing a detailed calculation of the Capital Investment Value (as defined in Clause 3 of the Environmental Planning and Assessment Regulation 2000) will accompany the Environmental Impact Statement.