

cranbourne east
precinct structure plan

BUFFER DISTANCE REVIEW REPORT

CEUGP/SR19B

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1 INTRODUCTION

1.1 Project Background and Objectives

Sinclair Knight Merz Pty Ltd (SKM) was commissioned by David Lock Associates (DLA), on behalf of the Growth Areas Authority and the City of Casey Council, to undertake a Buffer Distance Assessment of commercial/industrial properties in the vicinity of the proposed Cranbourne East Study Area B.

This report presents an assessment, based on guidance provided in the Environmental Protection Authority publication – Recommended Buffer Distances for Industrial Residual Air Emissions (1990) as to the minimum separation (or buffer) distance required to protect future sensitive land uses (including land to be zoned residential) which should be considered in the Strategic Plan.

The scope of work involved:

- A site assessment (not including specific access to each of the sites);
- Identifying the existing buffer guidelines for identified commercial/industrial uses;
- Determining whether the buffer guidelines are appropriate for certain site uses; and
- Determining the constraints posed by the buffers which should be taken into account in the Cranbourne East Strategic Plan.

2 EPA BUFFER DISTANCES

2.1 Introduction

Buffer distance guidelines in Victoria are set out by the Environmental Protection Authority Victoria (EPAV) and were revised most recently in 1990. This latest revision sets out the buffer distances for a range of industrial categories and the buffer distances are designed to give separation between industries with emissions (odour and/or dust) and 'sensitive receptors/uses'. The guidance defines sensitive receptors/uses as "Residential areas and zones (whether occupied or not), hospitals, schools, caravan parks and other similar uses involving the presence of individual people for extended periods, except in the course of their employment or for recreation".

Buffer distances are set out based upon industry type, intensity and the potential for site practices to cause odour, dust or noise emissions.

2.2 Site Specific Parameters

For this assessment, the maximum buffer distance applicable to each of the industries listed in Table 1 has been applied as information regarding the sites is limited and no on-site inspections or interviews with site staff have been carried out. However, the EPA guidelines set out criteria that if satisfied allow a variation (either increase or decrease) to the default buffer distance to be considered. These criteria are outlined below:

- (a) The plant has a standard of emission control technology significantly better than the good level of control assumed in the preparation of the guidelines document. Best available technology would normally be necessary.
- (b) An environmental audit of residual emissions has been completed.
- (c) There is no history of complaints arising from residual emissions (in the case of an existing plant).
- (d) The plant is significantly larger or smaller than those on which the recommended distance is based, to an extent that will substantially affect residual emissions performance.
- (e) There are exceptional topographic or meteorological characteristics which will affect dispersion of residual air emissions.

The guidelines state that "*Satisfaction of these criteria will be a prerequisite for considering site-specific variation of the recommended distance; but does not guarantee that a different distance will be determined. Additional information will be required, in most cases including sufficiently detailed data to enable dispersion modelling. Objective procedures for determining site-specific IRAE (industrial residual air emissions) buffer distances for individual operations are being investigated by EPA, and will be made available as soon as possible. The onus will be on the party seeking variation of the recommended distance to demonstrate clearly that that distance is inappropriate for the particular situation.*"

The two main factors that should be taken into account when considering a site-specific buffer distance are site-specific meteorology and evaluation of the throughput of the premises compared to that of larger examples of the same industry.

Site-specific meteorology can be utilised to map the direction of negative or positive impact dispersion. For negative dispersion, the extent of impact will be reduced with the potential to reduce the buffer distance in that direction. Conversely, for positive dispersion the buffer distance may need to be extended.

Where the throughput of an industrial site is assessed to be significantly less than those typical of the industry, the buffer may be reduced. This is done using a simple mathematical process. However, it should be noted that this method of assessment should not be used where there is the potential for expansion of the facility in the future.

If site-specific circumstances seem to indicate a reason for departing from the recommended distance, the advice of the Environment Protection Authority should be obtained.

3 SITE ASSESSMENT

3.1 Sites Requiring Buffers

As part of the Environmental Site Assessment (ESA), a site visit of the Cranbourne East Study Area B land was undertaken to identify areas of the site and surrounding land which are used for commercial/industrial purposes. Of these site areas, those operations that were identified to require buffers are listed in Table 1 and shown on Figure 1. The sites are generally located at the north-western corner of the study area grouped around Thompsons Road. Additional sites requiring buffers are located to the east of the site off Hardys Road and to the south-east of the site off Ballarto Road. Other activities in the study area that do not require buffers include farming, market gardens and occasional light commercial use.

■ **Table 1 – Summary of Operations Requiring Buffers**

Site Address	Name	Type of Operation	EPA Buffer Distance (m)
1580 Thompsons Road Cranbourne East	Spring Meadows (La Ionica facility)	Poultry (meat) Farm	500
1550 Thompsons Road Cranbourne East	TGS Sand & Soil	Sand Quarry (discontinued) Concrete Batching Plant	(200) 100
1545 Thompsons Road Cranbourne North	Dandy Premix	Sand Quarry (discontinued) Concrete Batching Plant	(200) 100
1575 Thompsons Road Cranbourne North	Broadway & Frame Premix	Concrete Batching Plant	100
1500 Thompsons Road Cranbourne East	Waggstaffs (Ralphs Meat Company)	Abattoir	500
1635 South Gippsland Highway	Kennedys	Concrete or Stone Articles Concrete Batching Plant	100
1655 South Gippsland Highway	Unknown	Greenhouses/Hothouses (disused?)	100-300 (depending upon site activities)
1385 Ballarto Road	Unknown	Poultry (meat) Farm	500

Note: The maximum buffer distance applicable to each of the industries listed above has been applied as information regarding the sites is limited and no on-site inspections or interviews with site staff have been carried out.

A summary of the observations of the land parcels containing the site operations requiring buffers listed in Table 1 is provided below.

3.2 Site Descriptions

1580 Thompsons Road – La Ionica Facility

This property occupies the extreme north-west of the study area and covers an area of approximately 32.1ha. The northern boundary of the site is formed by Thompsons Road and the eastern boundary is formed by the Cardinia-Pearcedale Pipeline Reserve. The majority of the site consists of generally level, grassed open fields/paddocks and a farm dam is located in the northern area of this land parcel. Situated on the western boundary of the site is a poultry farm (Spring Meadows) which consists of five large elongated chicken sheds and a number of smaller farm buildings which include water tanks and potential machinery sheds. Associated with each of the chicken sheds are a set of three feed silos. A residential property is located at the northern end of the farm buildings.

1550 Thompsons Road - TGS Sand & Soil Pty Ltd

Located immediately adjacent to the north-west corner of the study area, TGS Sand & Soil is an active distribution centre and depot for the supply of washed sand products in the Melbourne area. Although materials have historically been quarried at this site, sand materials are now transported from the TGS quarry which is located in Nyora approximately 40km to the south-east of Cranbourne. The TGS site covers an area of approximately 36ha and forms approximately 800m of the western boundary of the study area. The south-eastern area of the site is occupied by what appears to be the flooded quarry and the remainder of the site is occupied by storage areas/stockpiles of varying types of sand and areas of woodland. Towards the front of the site, close to Thompsons Road there is a concrete/cement batching plant (including water tanks, material silos and vehicle loading bays), offices/workshops and a car park.

TGS also provide hire service of large mobiles plant in the form of excavators of various sizes, dumper trucks and road scrapers.

1545 Thompsons Road - Dandy Premix Concrete Pty Ltd

Located immediately to the north of TGS Sand & Soil (on the northern side of Thompsons Road), approximately 100m to the north-west of the study site, Dandy Premix Concrete is an active cement and concrete batching plant and distribution centre. The site covers an area of approximately 20ha and is surrounded by woodland. Products manufactured on site are non-metallic mineral products including cement, lime, plaster and concrete. Quarrying is not carried out on site and all raw materials are transported to site from other facilities.

What appears to be a flooded quarry is located close to the southern boundary of the site adjacent to Thompsons Road and between the two entrances to the site. The majority of the western half of the site is formed by open space with a number of tracks and areas of dense woodland on the boundaries. The remainder of the site is occupied by open space and storage areas/stockpiles of varying types of sand and other raw materials. The concrete/cement batching plant (including water tanks, material silos and vehicle loading bays), offices/workshops and a car park is located in the eastern half of the site. A 300m² production building and a large dam (possibly another area of flooded quarry workings) are also located in the eastern half of the site.

1575 Thompsons Road - Broadway & Frame Premix Concrete Pty Ltd

Located immediately to the east of Dandy Premix and to the north-west of the study site, Broadway & Frame Premix Concrete is an active cement and concrete batching plant and distribution centre. The site covers an area of approximately 2.1ha and is surrounded by woodland. The northern half of the site is formed by open space. The southern half of the site includes the concrete/cement batching plant (including water tanks, material silos and vehicle loading bays), offices/workshops and a car park.

1500 Thompsons Road – Waggstaffs (Ralphs Meat Company Pty Ltd)

Located immediately to the east of TGS Sand and Soil and approximately 500m to the west of the study site, Waggstaffs (Ralphs Meat Company) is an active livestock abattoir producing beef, lamb, mutton, veal and offal products. The site covers an area of approximately 20ha and is surrounded by woodland. A large farm dam and two smaller dams (potentially for abattoir effluent) are located in the southern half of the site. The northern half of the site contains the main abattoir buildings, offices/workshops, car parks and areas of open space.

1635 South Gippsland Highway - Kennedys

This land parcel is located in the southern part of the study area and is bounded to the south-west by the South Gippsland Highway. The site covers an area of approximately 2ha and is occupied by Kennedy's Cranbourne Mini-Mix Concrete and Garden Supplies. The parcel is roughly rectangular in shape and the south-eastern third of the site is occupied by a large detached residential property with associated garden areas, out-buildings and a fenced tennis court. The remainder of the site is occupied by storage areas for hard landscaping materials including gravel, sand and mulch, an area utilised for concrete batching including water tanks, cement silos and vehicle loading areas and a large workshop/office building on the north-western boundary.

1385 Ballarto Road

Activities carried out at 1385 Ballarto Road were not observed during the ESA site investigation. However, it is understood that the northern half of the site is occupied by a poultry farm consisting of a pair of elongated rectangular chicken sheds with associated feed silos.

1655 South Gippsland Highway

This land parcel is located in the southern part of the study area and is accessed by a short track from the South Gippsland highway. The site covers an area of approximately 1.8ha and is occupied by what appears to be a disused nursery. The south-western area of the site is occupied by a number of large 'Colourbond' sheds and detached glazed greenhouses. Some areas of scrap material including old drums and vehicle/machinery parts were noted amongst the disused buildings. One of the more central buildings appeared to have vents/chimneys possibly for heating. It should be noted that the site appears un-used, however there is some possibility that the site is active. As such the site has been included as part of the buffer assessment and is included in Figure 1.

Hardys Road - Boatrans Pty Ltd

Situated immediately to the east of the study area, beyond the Berwick-Cranbourne Road located on Hardys Road, Boatrans is a specialist boat transporter occupying a detached large workshop/storage building with surrounding open space storage areas. Our current understanding is that the site is not used for metal fabrication (required buffer of 500m) and therefore has not been included in the buffer assessment

4 SUMMARY OF FINDINGS

This report has assessed the buffer distances, with respect to EPA guidelines, associated with a number of industries either located within the study area or within the immediate surrounding area. These industries include poultry farms, concrete batching plants, an abattoir, metal products fabrication and green housing.

It is important to note that for this assessment, the default EPA buffer distances for each of the industries encountered have been utilised as accurate information regarding the site activities and level of activity was not available. Access to the sites was limited to inspection from off-site and no on-site inspections or interviews with site staff were carried out.

It should be noted that for this study, no air quality modelling was carried out. Modelling using more precise data regarding each site (not made available for this study) and meteorological data would give a more detailed indication of risks to air quality from each facility and could provide more accurate buffers. However, the buffers could be reduced or increased depending upon the modelling results.

Default EPA buffers ranging from 100 to 500 metres have been allocated to the industries encountered. The main areas of land affected by the buffers included within the Cranbourne East Study Area B are in the north-west corner of the study area (La Ionica poultry farm), and on the southern boundary (green housing located at 1655 South Gippsland Highway).

It is understood that the area of the site affected by the buffer associated with the La Ionica poultry farm, in the north-western corner of the study area, is proposed to remain undeveloped and will form part of a parks and recreation area.

The buffer associated with the concrete batching activities located at 1575 Thompsons Road (Broadway & Frame Premix) encroaches on the extreme northern boundary of the site. However, it is understood that this activity is soon to be discontinued.

It is understood that boat transport business Boatrans, located on Hardys Road on the eastern boundary of the study area will not require a buffer as based on our current understanding of the site no metal fabrication takes place at the facility. If metal fabrication is undertaken at the site a default buffer of 500m would be required, which would impact on the development area. It is recommended that further investigation into site practices should be carried out to determine if a buffer is required, further investigation should also enable a significant reduction of the EPA default buffer presently allocated, given the size of the facility.

The buffer associated with the green houses located at 1655 South Gippsland Highway, affects a significant area of the southern portion of the study area, of which much is already sub-divided and occupied by residential properties. Inspection of this site (from the perimeter) indicated that the site is no longer in operation and maybe precluded from requiring a buffer. It should also be noted that existing residential development is located adjacent to the property. This, however, does not necessarily preclude the requirement for a buffer and it is recommended that further investigation would be required to confirm this.

5 LIMITATIONS OF REPORT

This Report has been prepared by Sinclair Knight Merz Pty Limited ("SKM") for the sole use of David Lock Associates ("the Client") and in accordance with the scope of services defined at the request of the Client.

Undertaking an assessment or study of the on-site conditions may reduce the potential for exposure to the presence of contaminated or inadequate bearing ground and/or groundwater. All reports and conclusions that deal with sub-surface conditions are based on interpretation and judgement and as a result have uncertainty attached to them. You should be aware that this report contains interpretations and conclusions which are uncertain, due to the nature of the investigations. No study can completely eliminate risk, and even a rigorous assessment and/or sampling program may not detect all problem areas within a site. The following information sets out the limitations of the Report.

This Report should only be presented in full and should not be used to support any objective other than those detailed within the Agreement. In particular, the Report does not contain sufficient information to enable it to be used for any use other than the project specific requirements for which the Report was carried out, which are detailed in our Agreement. SKM accepts no liability to the Client for any loss and/or damage incurred as a result of changes to the usage, size, design, layout, location or any other material change to the intended purpose contemplated under this Agreement.

It is imperative to note that the Report only considers the site conditions current at the time of investigation, and to be aware that conditions may have changed due to natural forces and/or operations on or near the site. Any decisions based on the findings of the Report must take into account any subsequent changes in site conditions and/or developments in legislative and regulatory requirements. SKM accepts no liability to the Client for any loss and/or damage incurred as a result of a change in the site conditions and/or regulatory/legislative framework since the date of the Report.

The Report is based on an interpretation of factual information available and the professional opinion and judgement of SKM. Unless stated to the contrary, SKM has not verified the accuracy or completeness of any information received from the Client or a third party during the performance of the services under the Agreement, and SKM accepts no liability to the Client for any loss and/or damage incurred as a result of any inaccurate or incomplete information.

The Report is based on assumptions that the site conditions as revealed through selective sampling are indicative of conditions throughout the site. The findings are the result of standard assessment techniques used in accordance with normal practices and standards, and (to the best of our knowledge) they represent a reasonable interpretation of the current conditions on the site. However, these interpretations and assumptions cannot be substantiated until specifically tested and the Report should be regarded as preliminary advice only.

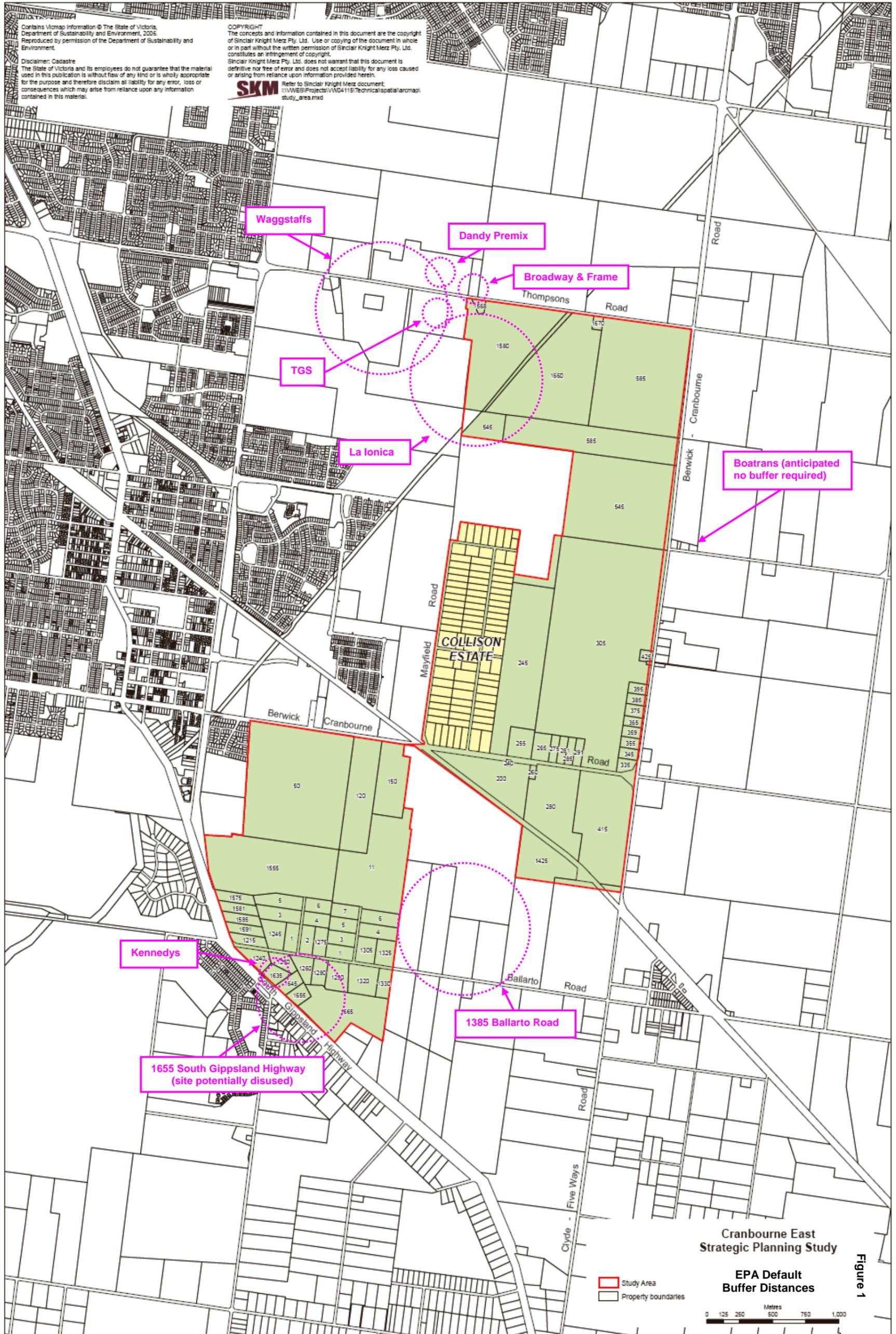
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Figure 1: EPA Default Buffer Distances

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SKM
Refer to Sinclair Knight Merz document: \\VWES\Projects\WV04115\Technical\spatial\arcmap\study_area.mxd



Cranbourne East Strategic Planning Study

EPA Default Buffer Distances

- Study Area
- Property boundaries

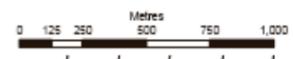


Figure 1