

NORTHSHORE HAMILTON DEVELOPMENT

17 Karakul Road, Hamilton

Air Quality Assessment

Silverstone Developments

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1. INTRODUCTION

1.1 Overview

Trinity Consultants Australia was commissioned by Silverstone Developments to provide an air quality impact assessment for the residential unit development proposed at Northshore Hamilton.

The proposed development includes two buildings, both seven stories high, with a total of 166 units. It is situated within the Northshore Hamilton Priority Development Area (PDA) and is close to several major industries, including:

- BCC Eagle Farm Asphalt Plant
- Boral Whinstanes Asphalt Plant
- Boral Whinstanes Concreted Batching Plant

This qualitative air quality assessment report has been carried out to support a development application over the subject site.

The assessment has been undertaken in accordance with the requirements of the Northshore Hamilton PDA Development Scheme (November 2025). The subject site is outside the air quality constraints area defined in the development scheme; however, the scheme also states a maximum building height of 30 metres. Therefore, further assessment is considered necessary.

1.2 Scope

This report describes the assessment of air quality impacts, which is based on the following tasks:

1. Confirm industry sources based on prior site visit and any other available information.
2. Screening assessment:
 - a. Review development details, sensitive use locations and development air intake locations.
 - b. Review Northshore Hamilton Priority Development Area - Development Scheme Amendment no.1. (2025) document.
 - c. Conduct a qualitative assessment of potential air quality impacts from the nearby industry.
 - d. Where relevant, provide recommendations to maintain acceptable air quality at sensitive use locations.

2. STUDY AREA DESCRIPTION

The subject site is located at 17 Karakul Road, Hamilton, on Lot 1 on SP337697. This property is in a Priority Development Area declared under the Economic Development Act 2012 (effective February 2013). The Northshore Hamilton PDA (the PDA) was declared by regulation 4 under the former Urban Land Development Authority Act 2007 (ULDA Act) on 27 March 2008. The regulatory map identifying the boundaries of the PDA is identified in **Figure 2.1**.

The PDA is approximately 304 hectares in area and is bound by the Brisbane River to the south, Kingsford Smith Drive to the north and the Gateway Motorway and Southern Cross Motorway to the east as identified on Map 1a – PDA Location.

Figure 2.1: Northshore Hamilton PDA Boundary (Source: Economic Development Queensland, 2025)

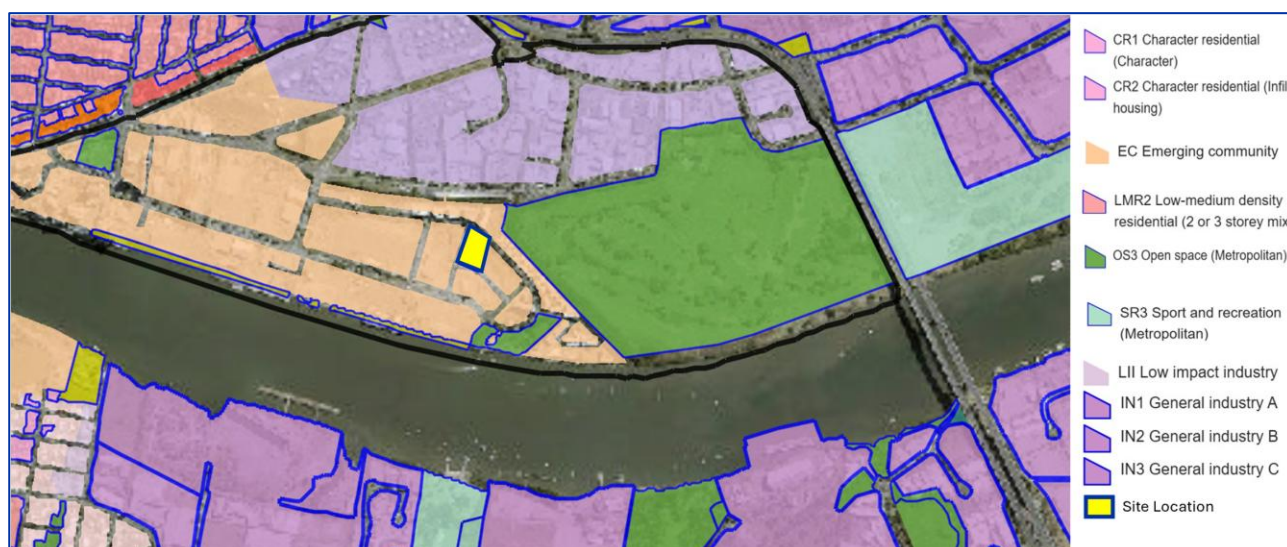


According to Brisbane City Council (BCC) City Plan 2014, the property is designated as Emerging Community. It is surrounded by the following:

- Residential community and an open park in the east.
- A mix of general industries in the north and west.
- Mix of residential community and recreational facility towards south.

The site location and zoning are shown in **Figure 2.2**.

Figure 2.2: Site Location and Zoning



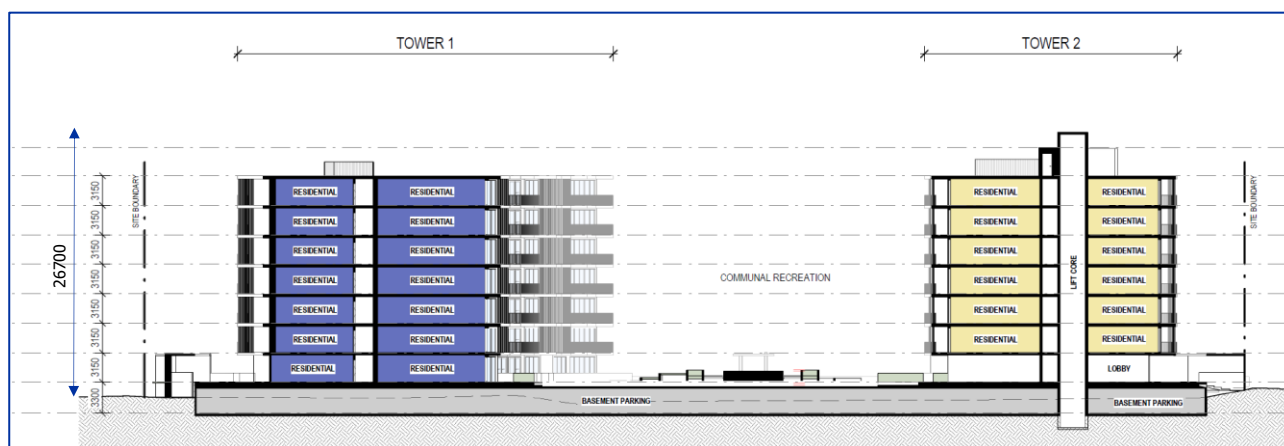
A site visit was conducted for a previous Silverstone development (adjacent to the subject site) in late 2024 to confirm the air-emitting industries in the area that could impact the site. As the previous site is located directly beside the current development site, and Trinity is not aware of any major industry changes in the area, the previous site visit from September 2024 will be referred to for the current development. The review and site visit indicated that the site's surrounding includes industrial uses such as asphalt, concrete, vehicle modification, software, transport, plating, residential and commercial properties. Any potential air emissions from these land uses are described in **Section 5.1**.

Figure 4.2: Northshore Hamilton PDA Building Height Constraint Map (Development, Northshore Hamilton Priority Development Area – Development Scheme Amendment, 2025)



The PDA Development Scheme has specified that the maximum building height in mixed use and medium density zones should be 30 metres. This height limit is based on the assumption that impacts below this level are acceptable. Both the proposed northern and southern building extend to 23.65 metres, as shown in **Figure 4.3**. Nonetheless, a review of impacts has still been undertaken, giving consideration to the air quality modelling report prepared by Advanced Environmental Dynamics (AED, 2020), which was undertaken to inform the development scheme constraints map.

Figure 4.3: Proposed Building Plan



5. DESKTOP REVIEW

5.1 Potential Air Emission Sources

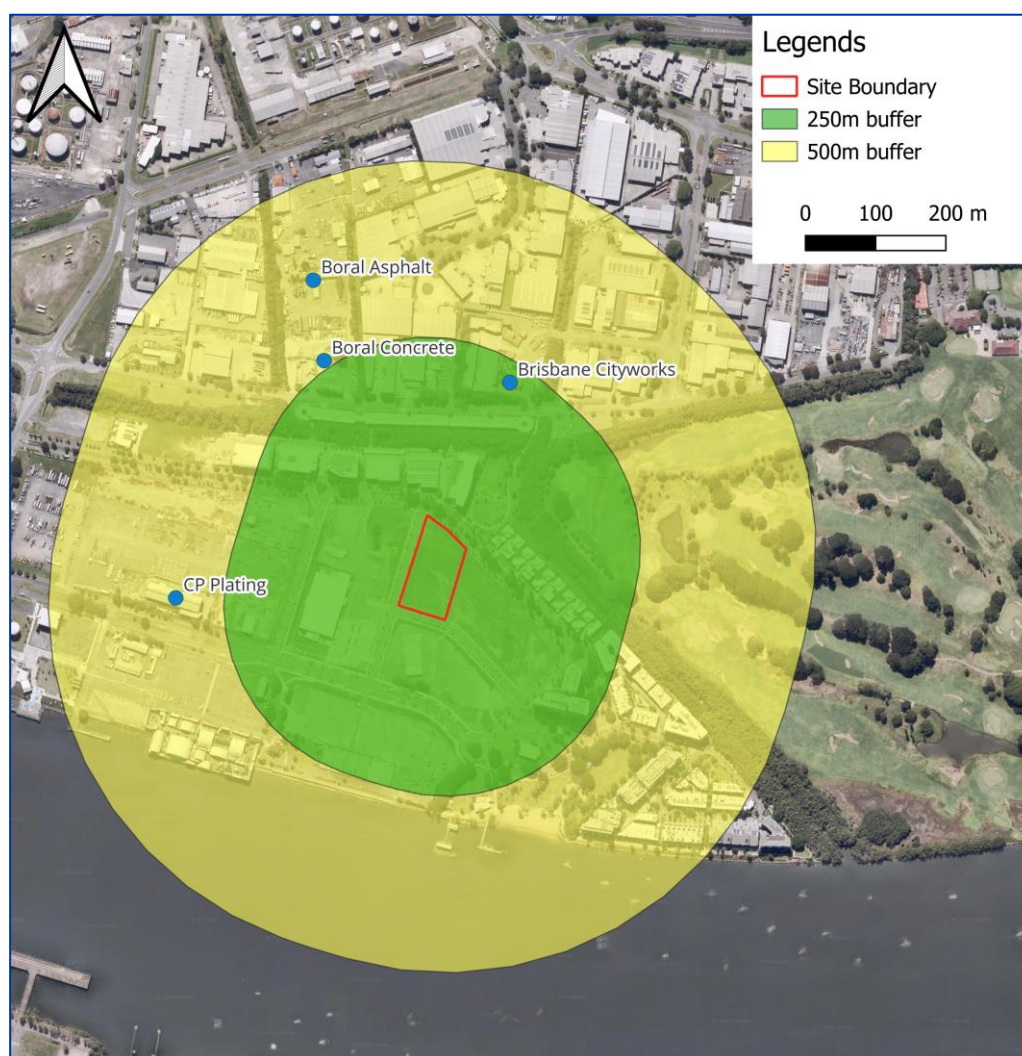
Key air emission sources were identified to assess the impacts from the industrial operations. The potential air quality risks are discussed below. The key emission sources are:

- BCC Eagle Farm Asphalt Plant
- Boral Whinstanes Asphalt Plant
- Boral Whinstanes Concrete Batching Plant

It is noted that the CP Plating surface coating facility, located about 300 metres away, may affect background values and cumulative impacts. There are other industrial uses with potential air emissions in the wider area beyond 300 metres from the site. Other closer land uses are considered to have minimal air quality risk for the subject site.

Figure 5.1 shows the site boundary and buffer zones in site surroundings. It is evident that Boral Asphalt, Boral Concrete and CP Plating are all located on the periphery of the 250 metre buffer. Brisbane Cityworks is located within slightly within the 250 metre buffer. Moreover, the wind rose plot shows that there will be minimum influence of the emissions from the north and west directions.

Figure 5.1: Site Location and Nearby Air Emission Sources



5.2 Site Visit

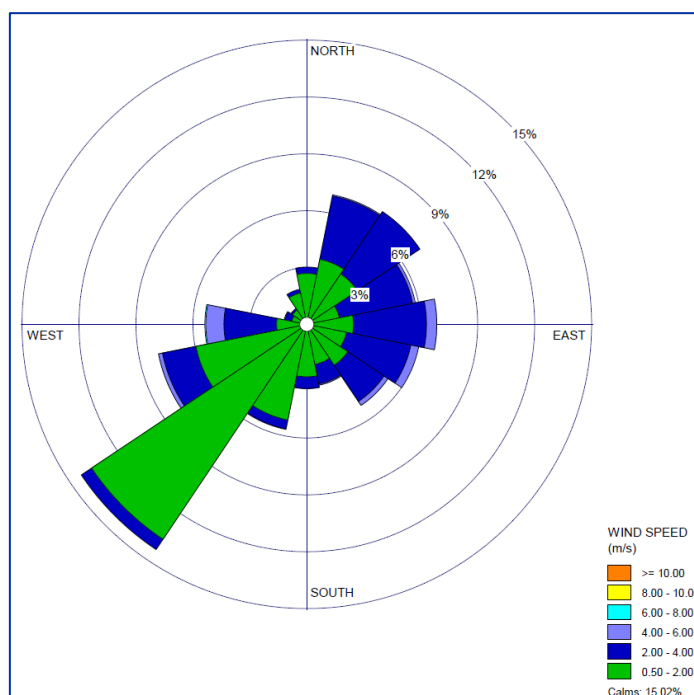
Trinity carried out a site visit late September 2024 for a previous Silverstone development at 340 MacArthur Avenue, Hamilton to confirm the nearby air emission sources. As the previous site is located directly adjacent to the current development site, and Trinity is not aware of any major industry changes in the area since September 2024 are unlikely, the previous site visit is referred to for the current development. The following observations were made:

- The industrial sites with emission sources that are located on Curtin Avenue are Boral Asphalt, Boral Concrete and Brisbane Cityworks. Besides these, there are other commercial spaces including warehouse, vehicle modification and mining equipment maintenance. There is another industry, CP Plating, on MacArthur Avenue. All of which are ongoing and operational.
- Scent of bitumen could be smelt around the entry gate of Brisbane Cityworks which is located towards Curtin Avenue.
- Dust could be seen on the site boundary of Boral concrete on the entry and exit gate towards Curtin Avenue.
- Other areas directly to the north of the developmental site located between Curtin Avenue and MacArthur are now developed and comprised of office buildings and a parking area. The parking area is approximately 340 metres in length, 15 metres in width and 8 metres in height. There is a thick outgrowth of trees behind the parking area and the commercial buildings on MacArthur Avenue.
- A new commercial building was being constructed at 393 MacArthur Avenue which is about 350 metres northwest of the proposed development site.
- This field visit revealed that the odour from the Brisbane Cityworks could not be smelt near the proposed development site even though there was gentle wind blowing from north to south. In addition, there was absence of any further sources of air emissions which could impact the development site.

5.3 Review of Local Meteorology

Historical (2019-2023) winds measured at the nearest BOM Brisbane (Raymond Park) station (approximately 6 kilometres southwest of the site) have been reviewed to gain an understanding of the prevailing winds in the Hamilton region. Based on the wind rose presented in **Figure 5.2**, predominant wind directions are from the southwest and west-southwest. There are also components from the east, west, north-northeast and northeast. The wind rose plot indicates that source-to receiver winds (north-west to northerly) are not a dominant feature of the area (i.e. the nearest air emission sources are located upwind of the subject site the majority of the time).

Figure 5.2: Brisbane BOM Wind Rose (2019 – 2023)



5.4 Northshore Hamilton PDA Air Quality Constraints Modelling

An air quality modelling assessment was previously commissioned by Economic Development Queensland (EDQ) to inform the air quality constraints map of the development scheme. The outcomes of the assessment are presented in a report prepared by Advanced Environmental Dynamics (23 July 2020). Key aspects of the report are listed below:

- Modelling was undertaken for the following facilities:
 - Caltex petrol station
 - Puma Energy bulk fuel storage
 - BP bulk fuel storage
 - BCC Eagle Farm asphalt plant
 - Boral Whinstanes asphalt plant
 - Boral Whinstanes concrete batching plant
 - CP Plating
- Other industries in the area were identified (typically less intensive than the above listed) but were not modelled due to a lack of information. It is noted that these other industries were less intensive than the main air emission sources modelled.
- Modelling was undertaken using TAPM/CALMET for meteorology and CALPUFF for pollutant dispersion.
- Background concentrations from select DESI stations were adopted to account for cumulative impacts.
- Pollutant emission estimates were based on a combination of site license information, NPI, operator information and stack testing results.
- The modelling considers receptor heights of up to 37.5 metres (relative height) and receptors cover the whole of the Northshore Hamilton PDA (refer to Figure 23 of the AED Report).

The key input that may have changed since the time of the assessment is the pollutant emission rates, which is subject to the scale of operations (e.g. material throughputs, equipment capacity). For the BCC asphalt plant, it is noted that the environmental authority for this site (EPPR00463513), which specifies stack emission

limits for pollutants that has not changed since 2009. Operational information for the Boral sites is not publicly available (e.g. NPI, environmental authorities), nonetheless, review of Google Earth aerial photography indicates no major changes in on-site infrastructure, which suggests the Boral site operation have not changes.

It is concluded that the air modelling undertaken is considered applicable for this assessment. Furthermore, it is noted that the modelling outcome covers both the location and elevation of the development site.

With respect to location, the subject site is outside the air quality constraints map developed by AED based on the modelling and subsequently incorporated into Map 6 of the Northshore Hamilton PDA. With respect to height, as noted above, modelling considers receptor heights of up to 37.5 metres (relative height) and receptors cover the whole of the Northshore Hamilton PDA (refer to Figure 23 of the AED Report). The proposed building extends to 23.65 metres. The AED report states that "no additional air quality constraints were identified" based on the investigation in constraints for different receptor heights. This indicates that there is no additional air quality risk associated with the building height.

The AED report discusses risks associated with odour from the asphalt facilities. It identifies that odour can still be detectable outside the air quality constraints area. The risk of impacts can be minimised by restricting window openings on the side of the buildings facing the asphalt plants (northern) and located ventilation intakes away from the asphalt plants.

6. CONCLUSIONS

Trinity Consultants Australia was commissioned by Silverstone Developments to provide an air quality impact assessment for the unit development proposed for Northshore Hamilton. The proposed development site is situated within the Northshore Hamilton Priority Development Area, close to several major industries including two asphalt plants and a concrete batching plant.

To evaluate the effects of emissions from nearby industries, the following methodology was used:

- Review of the relevant documents including:
 - Northshore Hamilton Priority Development Area – Development Scheme Amendment, Economic Development Queensland, 2025
 - Northshore Hamilton Priority Development Area Air Quality Constraints Assessment
- Desktop / qualitative review and reliance on 2024 site visit.

The proposed development site is outside of the PDA air quality investigative areas and based on this, air quality is compatible for the development of this site for sensitive uses. It is noted that the proposed building height is below the maximum development scheme heights of 30 metres. Furthermore, the air dispersion modelling prepared by AED on behalf of EDQ, which was used to develop the air quality constraints map in the development scheme, takes into consideration the subject site location and proposed building height (with the modelling covering receptor heights up to 37.5 metres).

All three major industries with air emission sources are located on the periphery of a 250 m buffer of the development site, to the north and north-west of the site. The wind rose plot shows that the predominant wind directions are from the southwest and west-southwest direction indicating that there will be a low risk of emissions from the north and north-west direction.

A desktop review and site visit (conducted in late 2024 as part of a previous study in the area) was carried out to determine the establishment of new industries in the surrounding area and additional emission sources. There were no additional air emission sources identified (compared to those already considered in the AED air quality constraints report) and an online review suggests these industries have not changed in capacity.

The AED report discusses risks associated with odour from the nearby asphalt facilities. It identifies that odour can still be detected outside the air quality constraint area. The risk of impacts can be minimised by restricting window openings on the side of the buildings facing the asphalt plants (northern) and locate ventilation intakes away from the asphalt plants.

Therefore, it is concluded that the impacts of air pollution from the nearby emission sources are expected to be within acceptable limits, thus meeting the requirements of the Northshore Hamilton Priority Development Area Development Scheme.

REFERENCES

- Advanced Environmental Dynamics. (2020). *Northsore Hamilton PDA Air Quality Constraint Assessment Report*. Brisbane: Economic Development Queensland.
- Council, B. C. (2023). *Brisbane City Plan*. Brisbane: Brisbane City Council.
- Development, D. o. (2025). *Northshore Hamilton Priority Development Area - Development Scheme Amendment no.1*. Hamilton: Economic Development Queensland.



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