

16 January 2023

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Goodman Property Services (Australia) Pty Ltd
The Hayesbery
1-11 Hayes Road
Rosebery NSW 2018

Attention: Luke Ridley

Dear Luke

Oakdale West Estate - Lot 4C and 4D Requirement to Update Air Quality Impact Assessment

1 Introduction

SLR has been engaged by Goodman Property Services (Aust) Pty Ltd to provide an air quality assessment to support the Development Application for the proposed industrial buildings 4C & 4D at the Oakdale West Industrial Estate (OWIE).

The Development consists of two (2) new warehouse buildings each with ancillary office facilities, external hardstand spaces, staff carparking, landscaping and solar panels. Approval is requested for the construction, operation and use, and fit-out of the buildings.

Building 4C spans 30,020 sqm of warehouse space and 1,200 sqm of office space. The building has a proposed ridge height of 14.6 m.

Building 4D spans 5,200 sqm of warehouse space and 400 sqm of office space. The building has a proposed ridge height of 14.6 m.

24/7 operations are proposed with a focus on warehouse and industrial use.

The proposed developments comply with MOD 12 of SSD 7348 Concept Plan that is currently with the Department of Planning & Environment for assessment. The applications will be submitted to Penrith City Council as a local council development application.

The proposed buildings form part of the larger OWIE which comprises 154 hectares of land within the Western Sydney Employment Area (WSEA) and is owned by a Joint Venture (JV) between Goodman and Brickworks Limited. The subject sites are benched, serviced and ready for aboveground construction. SSD 7348 approved the infrastructure to these development pads.

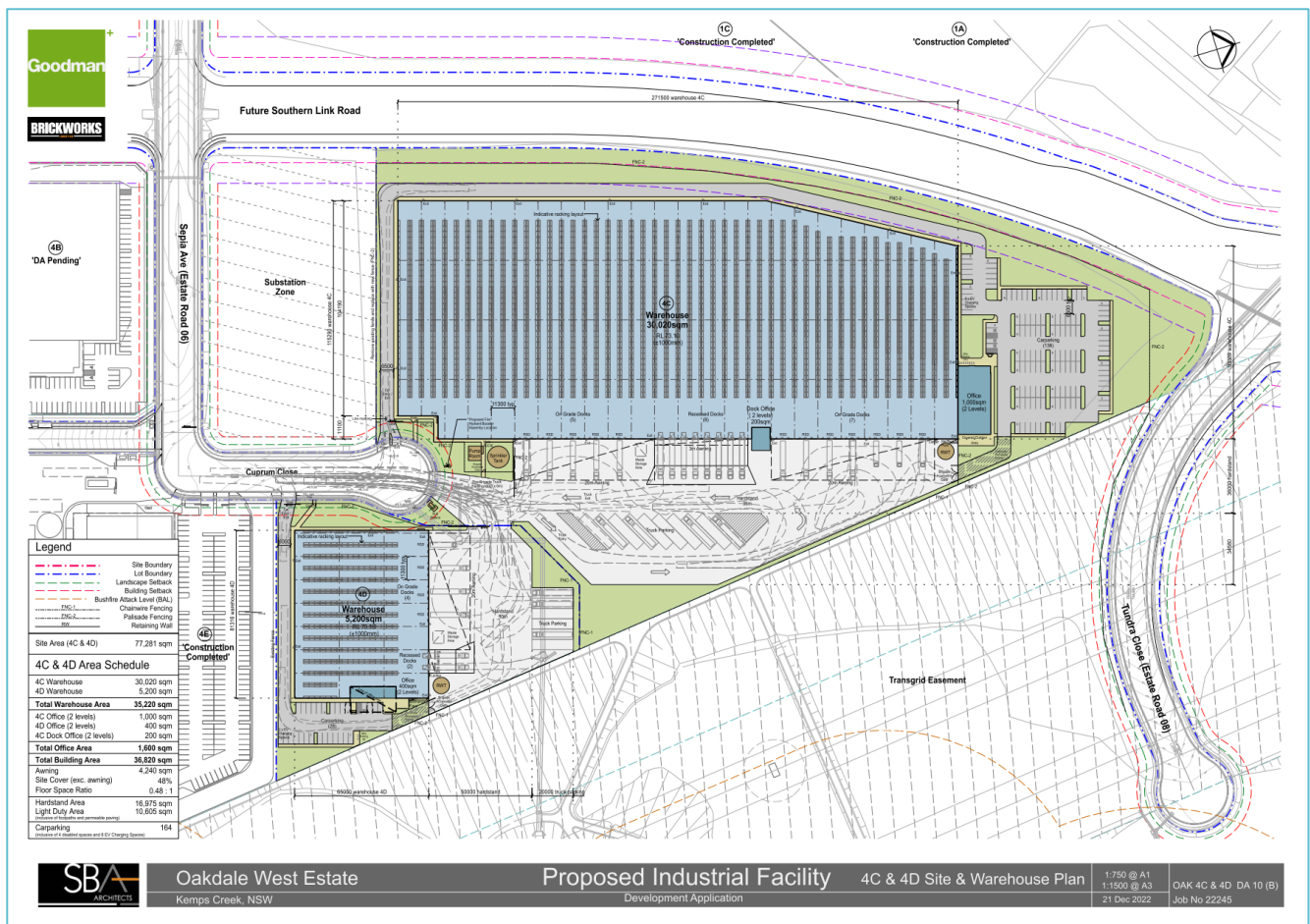
The objective of this letter report is to assess whether a revision of the Air Quality Impact Assessment (AQIA) prepared by SLR Consulting (SLR) in 2017 for the Oakdale West Estate (OWE) is required to address the proposed construction and operation of Lot 4C and 4D.

2 Proposed Development

The proposed development comprises the construction of Warehouses 4C and 4D within Lot 4C and Lot 4D respectively of the OWIE and it's fit out and use as a warehouse and distribution centre. The proposal includes ancillary office space, car and truck parking, and landscaping. The proposed development will facilitate warehouse and distribution uses consistent with the IN1 General Industrial zone under the State Environmental Planning Policy (Western Sydney Employment Area) 2009.

The proposal does not require clearing or supporting infrastructure, as all necessary vegetation removal, infrastructure installation and other investigations were approved and have been undertaken in accordance with SSD 7348. The proposed site plan is shown in **Figure 1**.

Figure 1 Site Plan – Lots 4C and 4D



3 Background

The AQIA prepared by SLR for the OWE, dated 23 March 2017 (610.15617-R01-v1.1), assessed the potential air quality impacts associated with the construction and operational phases of all five precincts within the OWE.

Air quality impacts associated with the proposed construction activities were assessed using a qualitative risk-based approach. It was concluded that air quality impacts during construction of the OWE Project could be adequately managed using best practice mitigation and management measures. The risk of any residual impacts after the implementation of mitigation measures was concluded to be low.

For the operational phase, atmospheric dispersion modelling was used to assess potential air quality impacts at the nearest sensitive receptors due to air emissions from vehicular traffic associated with each of the precincts within the OWE. The results of the modelling were presented as:

- the incremental impacts associated with traffic emissions from all five precincts; and
- cumulative impacts of emissions from the OWE and background concentrations.

It was concluded from the modelling results that air emissions from the proposed operational activities (vehicle movements) at the OWE would comply with all relevant ambient air quality criteria at all representative surrounding sensitive receptors. A summary of the pollutant concentrations predicted at the most impacted sensitive receptor due to emissions from the OWE (taken from the 2017 AQIA) is provided in **Table 1**. The road network included in the modelling presented in the AQIA is shown in **Figure 2**.

The criteria for NO₂ was updated in August 2022 (*Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* 2022). It is noted that the predicted concentrations for NO₂ also meet the updated ambient criteria of 164 µg/m³ (1-hour average) and 31 µg/m³ (annual average).

Table 1 Summary of Dispersion Modelling Results for OWE at Most Impacted Sensitive Receptor

| Pollutant | Averaging Period [Criteria] (µg/m ³) | Incremental Impact of Emissions from OWE (µg/m ³) | Cumulative Impact of Emissions from OWE and Regional Background Concentrations (µg/m ³) | Contribution of OWE to total Predicted Cumulative Concentrations |
|------------------------------|--|---|---|--|
| TSP | Annual [90] | 13.8 | 44.2 | 31% |
| PM ₁₀ | 24-hour [50] | 22.9 | 38.9 | 59% |
| | Annual [25] | 4.6 | 19.8 | 23% |
| PM _{2.5} | 24-hour [25] | 6.0 | NA ^a | NA ^a |
| | Annual [8] | 1.2 | NA ^a | NA ^a |
| NO ₂ ^c | 1-hour [164] | 158.8 ^b | 91.6 | NA ^b |
| | Annual [31] | 6.1 ^b | 12.7 | NA ^b |

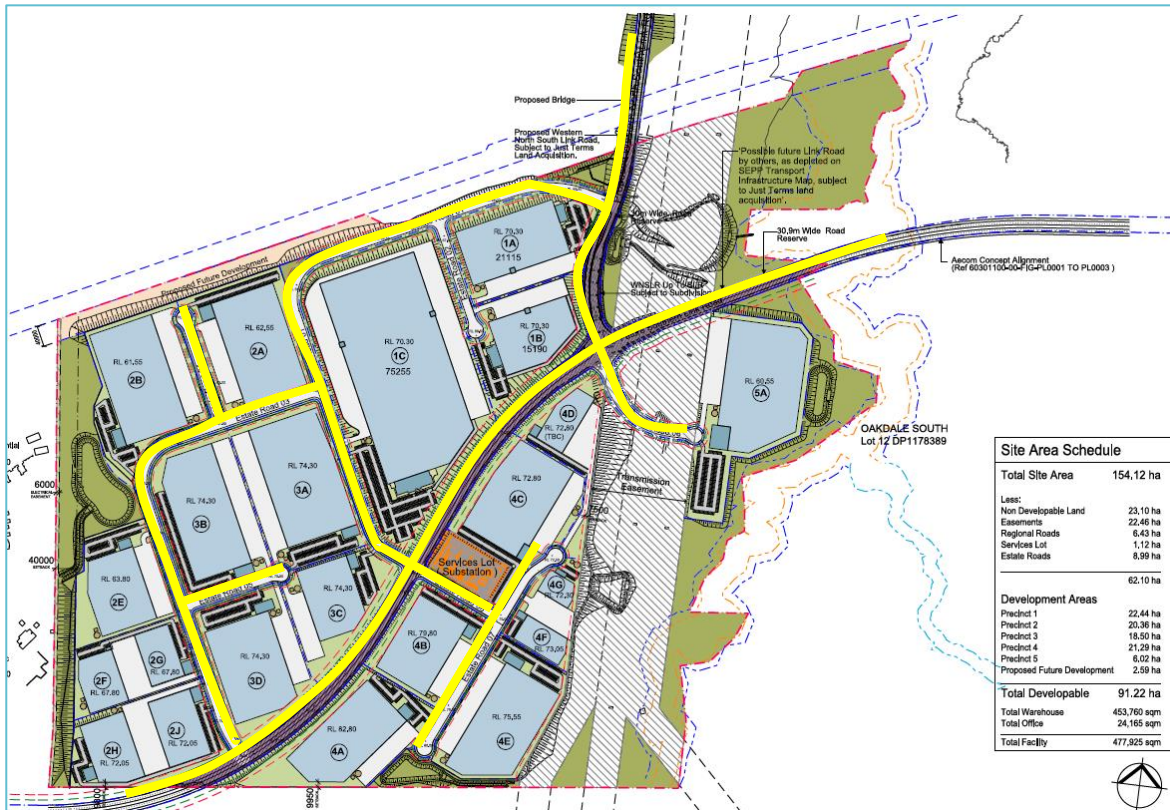
SOURCE: SLR Report 610.15617-R01-v1.1, 23 March 2017

^a No background data from the St Marys Air Quality Monitoring Station.

^b The incremental concentrations represent the predicted NO_x concentrations, while the cumulative concentrations represent the NO₂ concentrations, calculated using the Ozone Limiting Method (OLM).

^c The Approved Methods (2022) has been updated with the latest NO₂ criteria of 164 µg/m³ (1-hour average) and 31 µg/m³ (annual average).

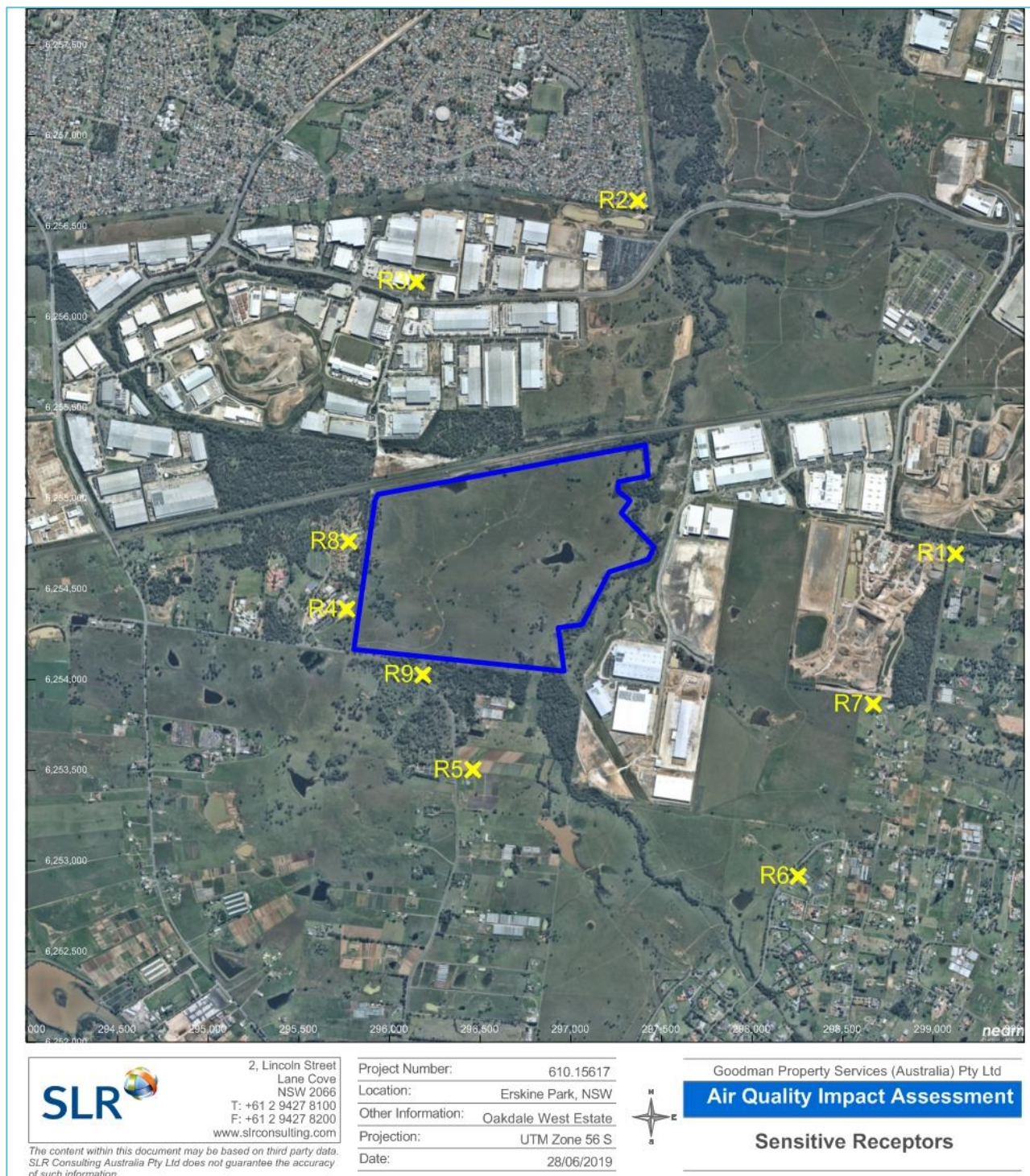
Figure 2 Oakdale West Estate – Roads Modelled in the AQIA (610.15617-R01-v1.1)



Source: Source: SBA Architects, SSDA Estate Masterplan, 18 April 2018 (yellow marked line indicates modelled roads and red box indicates 40 m freight line offset).

The maximum impacts due to air emissions from the OWE were predicted to occur at receptors R8 and R9, which are located towards the west and south of the OWE respectively, as shown in **Figure 3**.

Figure 3 Locations of Identified Sensitive Receptors



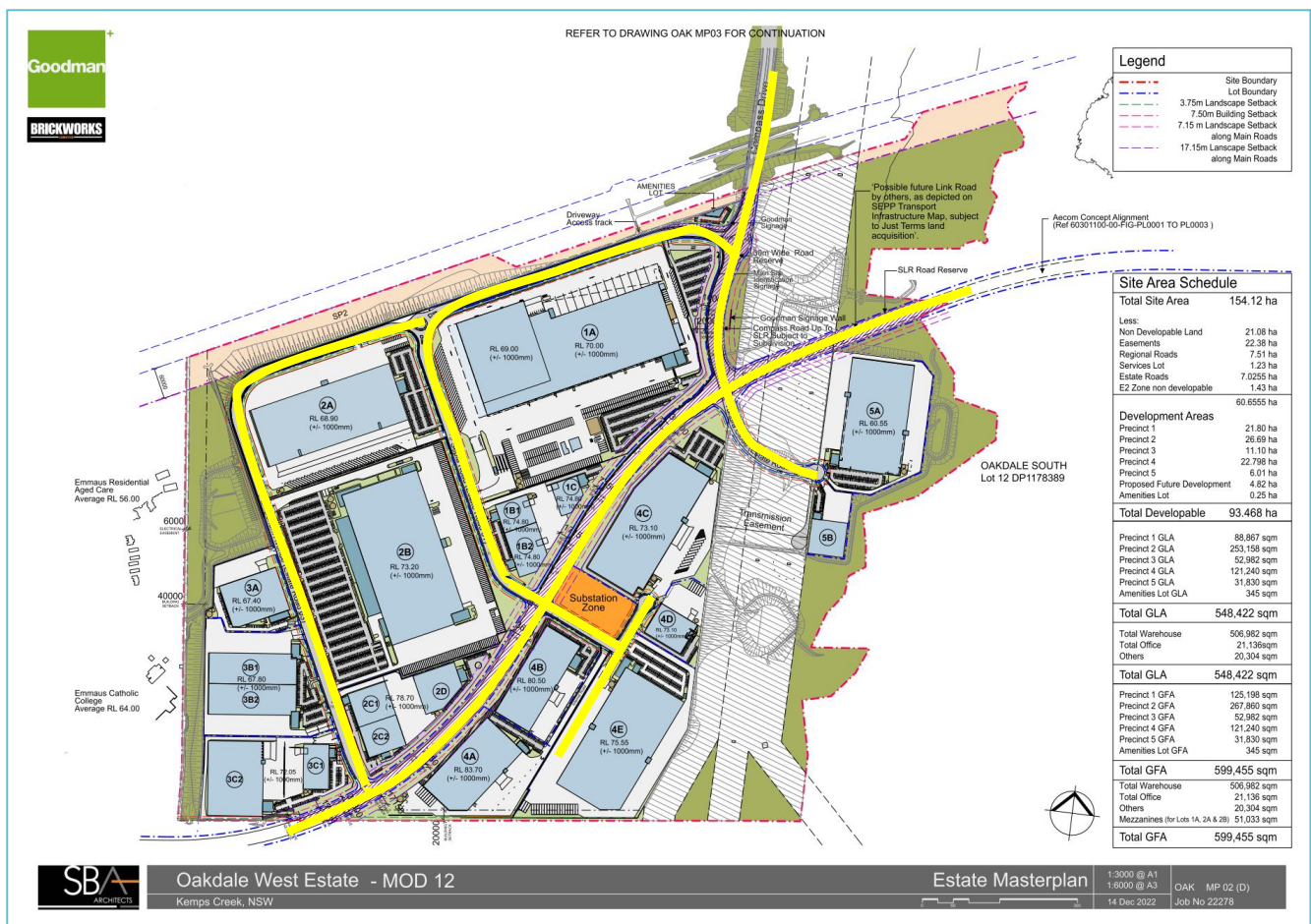
4 Modifications to the OWE Masterplan

Since the completion of AQIA in March 2017, minor modifications to the OWE Masterplan have been proposed and approved (up to MOD 11). The latest proposed OWE Masterplan (under MOD 12) is shown in **Figure 4**.

A comparison of **Figure 2** and **Figure 4** shows that the revisions to the Masterplan have slightly modified the road networks considered in the AQIA modelling study. The changes to the road network are located towards the western boundary and include a slightly longer Estate Road 3, and removal of part Estate Road 6 and Estate Road 7.

It is noted however, that these changes are being sought as MOD 12 approval (separate application), and are not relevant under the Lots 4C and 4D Development Application.

Figure 4 Oakdale West Estate – Updated Masterplan



Source: SBA Architects, SSDA Estate Masterplan, 23 June 2022, OAK MP02 (P2)

5 Warehouses 4C and 4D - Construction

The AQIA concluded that air quality impacts during construction of the OWE could be adequately managed using best practice mitigation and management measures. The risk of any residual impacts after the implementation of mitigation measures was concluded to be *low*.

As a result of the proposed modifications, it is concluded that the magnitude of construction impacts is unlikely to change, and hence the residual risk of dust emissions during construction of warehouses 4C and 4D remains *low*. The recommended mitigation measures during construction of warehouses 4C and 4D are reproduced in **Table 2**.

Table 2 Site-Specific Management Measures – OWE (610.15617-R01-v1.1)

| | | |
|----------|--|---|
| 1 | Communications | |
| 1.1 | Develop and implement a stakeholder communications plan that includes community engagement before work commences on site. | H |
| 1.2 | Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager. | H |
| 1.3 | Display the head or regional office contact information. | H |
| 1.4 | Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. | H |
| 2 | Site Management | |
| 2.1 | Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken. | H |
| 2.2 | Make the complaints log available to the Local Authority when requested. | H |
| 2.3 | Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book. | H |
| 3 | Monitoring | |
| 3.1 | Perform daily on-site and off-site inspections where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the Local Authority when requested. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of the site boundary. | D |
| 3.2 | Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the Local Authority when requested. | H |
| 3.3 | Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. | H |
| 3.4 | Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction. | H |
| 4 | Preparing and Maintaining the Site | |
| 4.1 | Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. | H |
| 4.2 | Erect solid screens or barriers around dusty activities or the site boundary that they are at least as high as any stockpiles on site. | H |
| 4.3 | Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period. | H |
| 4.4 | Avoid site runoff of water or mud. | H |
| 4.5 | Keep site fencing, barriers and scaffolding clean using wet methods. | H |
| 4.6 | Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below. | H |

| | | |
|-----------|--|---|
| 4.7 | Cover, seed or fence stockpiles to prevent wind erosion. | H |
| 5 | Operating Vehicle/Machinery and Sustainable Travel | |
| 5.1 | Ensure all on-road vehicles comply with relevant vehicle emission standards, where applicable. | H |
| 5.2 | Ensure all vehicles switch off engines when stationary - no idling vehicles. | H |
| 5.3 | Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable. | H |
| 5.4 | Impose and signpost a maximum-speed-limit of 25 km/hr on surfaced and 15 km/hr on unsurfaced haul roads and work areas. | D |
| 5.5 | Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials. | H |
| 5.6 | Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing). | D |
| 6 | Operations | |
| 6.1 | Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems. | H |
| 6.2 | Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate. | H |
| 6.3 | Use enclosed chutes and conveyors and covered skips. | H |
| 6.4 | Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. | H |
| 6.5 | Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. | H |
| 7 | Waste Management | |
| 7.1 | Avoid bonfires and burning of waste materials. | H |
| 8 | Demolition | |
| 8.1 | Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust). | D |
| 8.2 | Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground. | H |
| 8.2 | Avoid explosive blasting, using appropriate manual or mechanical alternatives. | H |
| 8.3 | Bag and remove any biological debris or damp down such material before demolition. | H |
| 9 | Construction | |
| 9.1 | Avoid scratching or roughening of concrete surfaces, where possible. | D |
| 9.2 | Ensure sand and other aggregates are stored in banded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. | D |
| 10 | Trackout | |
| 10.1 | Use water-assisted dust sweeper(s) on the access and local roads to remove, as necessary, any material tracked out of the site. | D |
| 10.2 | Avoid dry sweeping of large areas. | D |
| 10.3 | Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. | D |
| 10.4 | Record all inspections of haul routes and any subsequent action in a site log book. | D |
| 10.5 | Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). | D |

H = Highly recommended; D = Desirable

6 Warehouses 4C and 4D - Operations

The peak hourly traffic volumes and daily traffic volumes were calculated in the 2017 AQIA based on application of factors contained within the *Technical Direction 04a: Traffic Generated Developments – Updated traffic surveys* (RMS Guide Update), being:

- 1.892 daily vehicle trips per 100 m² of industrial gross floor areas (GFA) including ancillary office floor space.
- 0.163 peak hour vehicle trips per 100 m² of industrial GFA including ancillary office floor space.

Traffic numbers used in the 2017 AQIA were provided by the project's traffic consultants as conservative estimates due to the Project uncertainties at the time. The peak hourly and daily vehicle numbers adopted for the AQIA were 1,426 vph and 16,544 vpd respectively. A review of the proposed GFAs for each precinct in the current proposed OWE Masterplan has identified minor variations in the GFAs of all precincts. A summary of the total precinct GFAs and associated peak and daily vehicle numbers compared to that assessed in the AQIA is provided in **Table 3**.

Table 3 Vehicle Volumes Projected for OWE – Current Proposed Masterplan

| Precinct | Proposed ¹ | | |
|------------------------------------|-----------------------|------------------------|------------------------------|
| | GFA (m ²) | Vehicles per Day (vpd) | Peak Vehicles per Hour (vph) |
| Total – Current² | 599,455 | 11,249 | 1,326 |
| Total – 2017 AQIA | | 16,544 | 1,426 |

¹ Traffic generation during 'seasonal peak' as 'worst-case' scenario for known tenants (ie buildings 1A and 2B) have been incorporated.

² Traffic estimates for 4C and 4D (559 vph and 130 vph respectively) have been incorporated based on a total GFA of 36,820 m² (30,020 m² for 4C and 5,200 m² for 4D)

As the air dispersion modelling was based on the vehicular emissions for the total OWE, it can be seen from **Table 3** that the AQIA was based on significantly higher peak and daily traffic estimates than currently proposed under the modified masterplan. Therefore, the predicted dispersion modelling results shown in **Table 1**, which are well below guideline levels, provide a conservative assessment of the expected worst case air quality impacts at the sensitive receptor locations.

7 Conclusions

Based on the above, it is concluded that an update of the original AQIA is not required to address the proposed revision to the layout of Lots 4C and 4D, and that as originally concluded, air quality impacts should not be considered a constraint to this development application.

Yours sincerely



VARUN MARWAHA
Principal Air Quality Consultant

Checked/
Authorised by: GS (16.01.23)