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# APPENDIX H ADDENDUM AIR QUALITY IMPACT ASSESSMENT

## Minto Resource Recovery Facility Response to Submissions

15 DECEMBER 2017

Incorporating Hyder

21 November 2017

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Skylife Properties Pty Ltd
Minto Resource Recovery Facility
13 Pembury Road, Minto

**Attention: Shivesh Singh**

Dear Shivesh

# Minto Resource Recovery Facility - Redesign
# Revised Air Quality Impact Assessment
# 13 Pembury Road, Minto

## 1 Introduction

Approval is sought to increase the processing capacity of the existing Minto Resource Recovery Facility, located at 13 Pembury Road, Minto (the Proposal site), from 30,000 tonnes per annum (tpa) to 220,000 tpa. An approval will supersede previous approvals issued over the Proposal site and provide a new suite of operating requirements and mitigation measures commensurate to the increased processing capacity. The facility would continue to process general solid waste (non-putrescible), as described in the Waste Classification Guidelines, 2014, prepared by the NSW Environment Protection Authority (EPA). The facility is defined as a resource recovery facility under Part 3, Division 23 of *State Environmental Planning Policy (Infrastructure), 2007* (SEPP).

SLR prepared an Air Quality Impact Assessment (AQIA) for the proposed resource recovery facility (RRF) at 13 Pembury Road, Minto in March 2017 (SLR 2017) which has been documented in the Environmental Impact Statement (EIS) dated May 2017.

Amendments are now proposed to the Proposal based on submissions provided by government agencies and the community, as part of design progression, and to provide additional clarity where relevant. This addendum AQIA impact assessment has been prepared by SLR to quantify recent changes at the RRF and to assess the facility under its current proposed operational conditions (the Amended Proposal).

The purpose of this addendum AQIA is to assess the changes proposed in the Amended Proposal and quantify any change in impacts compared to those identified in the EIS.

### 1.1 Amended Proposal Description

The key components of the Amended Proposal include:

- Construction of a shed and roof structure to enclose the existing waste processing and handling area

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- Demolition of minor wall and cladding extents within Shed A and Shed C to accommodate the proposed shed extension, to facilitate changes to internal heavy vehicle flow paths
- Minor vegetation and landscape clearing, and planting of new landscaping
- Provision of 16 on-site car parking spaces and 1 accessible car space
- Relocation of demountable site office and amenities buildings
- Provision of two vehicle access points at the eastern entrance and a single exit point at the western exit.
- Removal of the existing above-ground wheel wash
- Installation of a new 20 m long weighbridge and in-ground wheel wash at the vehicle egress point
- Relocation of the 30,000 L self-bunded fuel tank closer to the rear of Shed A
- Extension of the dust suppression and sprinkler system across the new shed and its openings
- Provision of ancillary infrastructure and internal structures including new internal push walls
- Demarcation of an internal unloading floor and visual inspection area
- Extension of internal tipping floor and provision of new push walls
- Provision of an internal dangerous goods storage area.

The key operational components of the Amended Proposal would include:

- Increasing operational (including processing and waste delivery and collection) hours 6 am to 10 pm, Monday to Saturday (no works on Sundays or public holidays would be undertaken)
- Processing of up to 220,000 tpa of non-putrescible waste
- Waste storage of up to 10,000 tonnes of non-putrescible waste at any given time.

## 1.2 Proposal amendments

**Section 1.1** above describes the Amended Proposal for which approval is sought. The purpose of this assessment is to assess the above changes and quantify any change in impacts compared to those identified in the EIS. The key changes to the Proposal made since the EIS, and the subject of this assessment include:

- Construction of a shed and roof structure to enclose the waste processing and handling area
- Minor removal of walls and cladding
- Adjustments to the location of the proposed site office and amenities buildings and the provision of additional on-site parking spaces
- Alterations to landscaping
- Extension of a dust suppression and sprinkler system
- Minor changes and additions to internal infrastructure and operational layout
- Removal of the existing above-ground wheel wash and installation of a new 20 m long weighbridge and in-ground wheel wash at the vehicle egress point
- Relocation of the 30,000 L self-bunded fuel tank closer to the rear of Shed A.

An assessment of air quality impacts for the overall Amended Proposal (described in **Section 1.1** and including the above amendments) is also provided.

### 1.2.1 Construction

The EIS Proposal previously identified minor construction works only. To support the Amended Proposal a four month construction phase is now proposed, which is anticipated to commence in early 2018. Construction of the Amended Proposal would be undertaken in three key phases:

- **Stage 1** – Site preparation, demolition and installation of hardstand
- **Stage 2** – Construction of the enclosed processing shed, site office, amenity building and ancillary facilities
- **Stage 3** – Commissioning and demobilisation.

Operation of resource recovery activities would cease during the construction period.

## 2 Construction Impact Assessment

For the assessment of construction phase of the Amended Proposal, the *IAQM Guidance on the Assessment of Dust from Demolition and Construction* developed in the United Kingdom by the Institute of Air Quality Management (IAQM 2014) has been used to provide a qualitative assessment method (see **Appendix A** for full methodology). The IAQM method uses a four-step process for assessing dust impacts from construction activities:

- **Step 1**: Screening based on distance to the nearest sensitive receptor; whereby the sensitivity to dust deposition and human health impacts of the identified sensitive receptors is determined.
- **Step 2**: Assess risk of dust effects from activities based on:
    a. the scale and nature of the works, which determines the potential dust emission magnitude; and
    b. the sensitivity of the area surrounding dust-generating activities.
- **Step 3**: Determine site-specific mitigation for remaining activities with greater than negligible effects.
- **Step 4**: Assess significance of remaining activities after management measures have been considered.

### 2.1 Step 1 - Screening Based on Separation Distance

The nearest existing residential receptors have been identified as being located approximately 340 m west of the Proposal site. As the receptor is located within 350 m from the boundary of the Proposal site, further assessment is required.

### 2.2 Step 2a - Assessment of Scale and Nature of the Works

Based on the available information and the IAQM definitions presented in **Appendix A**, the dust emission magnitudes are presented in **Table 1**.

**Table 1 Categorisation of Dust Emission Magnitude**

| Activity | Dust Emission Magnitude | Basis |
|---|---|---|
| Demolition | Small | Total building volume <20,000 $m^3$, demolition activities <10m above ground, potentially dusty construction material |
| Construction | Medium | Total building volume 25,000 $m^3$ to 100,000 $m^3$ |
| Track-out | Medium | Between 10 and 50 heavy vehicle movements per day, surface material with low potential for dust release, unpaved road length <50 m |

## 2.3 Step 2b - Risk Assessment

### Receptor Sensitivity

Based on the criteria listed in **Table A1** in **Appendix A**, the sensitivity of the identified receptors in this study is concluded to be ***high*** for health impacts and ***high*** for dust soiling, as they include residential areas where people may be reasonably expected to be present continuously as part of the normal pattern of land use.

### Sensitivity of an Area

Using the classifications shown in **Table A2** in **Appendix A**, the sensitivity of the area to dust soiling is classified as ***low*** and the sensitivity of the surrounding area to health effects has been classified as '***low'***. This categorisation has been made taking into account the individual receptor sensitivities derived above, the annual mean background $PM_{10}$ concentration of 17.0 µg/m$^3$ (i.e. <20 µg/m$^3$), identified for the Proposal site in the previous AQIA (SLR 2017) and the anticipated number of receptors present within 350 m of the Project Site boundary.

### Risk Assessment

Given the sensitivity of the general area is classified as '*low'* for dust soiling and *'low'* for health effects, and the dust emission magnitudes for the various construction activities is shown in **Table 1**, the resulting risk of air quality impacts is presented in **Table 2**.

The results indicate that there is a low risk of adverse dust soiling and human health impacts occurring at the off-site receptor locations, even if no mitigation measures were to be applied to control emissions from demolition, construction and track-out.

**Table 2 Risk of Air Quality Impacts from Construction Activities (Uncontrolled)**

| Impact | Sensitivity of Area | Dust Emission Magnitude | | | Preliminary Risk | | |
|---|---|---|---|---|---|---|---|
| | | Demolition | Construction | Track-out | Demolition | Construction | Track-out |
| Dust Soiling | Low | Small | Medium | Medium | Negligible | Low | Low |
| Human Health | Low | | | | Negligible | Low | Low |

## 2.4 Step 3 - Mitigation Measures

The construction phase assessed within the EIS did not identify any potential impacts due to the limited construction activities originally proposed. The Amended Proposal would include the construction of the enclosure shed and therefore a short (four month) duration of construction activities would be required. The following mitigation measures will be implemented during the construction phase of the Amended Proposal. These measures are additional to those proposed in the previous EIS as a result of the change in construction activities and impacts.

Mitigation measures to manage air quality will be included in the CEMP prepared for the Amended Proposal, and will comprise the following:

- Where practicable, the disturbance footprint will be limited and unnecessary surface disturbance will be avoided.

- Where practicable, dust-generating construction activities will be restricted during hot, dry and windy weather conditions.
- Where practicable, materials and structures will be dampened using water sprays prior to demolition and unsealed surfaces will be watered.
- Construction machinery and vehicles will be maintained and serviced according to the manufacturer's specifications, and engines will be switched off when not in use.
- Construction-related vehicle movements will be limited to a speed limit of 5 km/h.
- Vehicles removing earth or other dust generating material from the Proposal site will have their loads covered.
- Regular visual checks of excessive dust within the Proposal site will be undertaken and used to implement additional controls where required.

### 2.5 Step 4 - Residual Impacts

A reappraisal of the predicted unmitigated air quality impacts on sensitive receptors has been performed to demonstrate the opportunity for minimising risks associated with the use of mitigation strategies. These are termed 'residual impacts'. The results of the reappraisal are presented below in **Table 3**.

**Table 3 Residual Risk of Air Quality Impacts from Construction**

| Impact | Sensitivity of Area | Preliminary Risk | | |
|---|---|---|---|---|
| | | Demolition | Construction | Track-out |
| Dust Soiling | Medium | Negligible | Negligible | Negligible |
| Human Health | Low | Negligible | Negligible | Negligible |

The mitigated dust deposition and human health impacts of the construction phase are anticipated to be *negligible*.

For almost all construction activity, the IAQM Methods notes that the aim should be to prevent significant effects on receptors through the use of effective mitigation and experience shows that this is normally possible.

## 3 Operational Impact Assessment

As outlined in the EIS, the key atmospheric pollutants likely to be generated by operational activities at the Proposal site are fugitive emissions of particulate matter. The key emission sources and major pollutants identified at the Proposal site are as follows:

- Particulate emissions from loading/unloading of waste material
- Particulate emissions from waste material handling/sorting/processing activities
- Particulate emissions from on-site vehicle movements

It is noted that unlike the EIS, the revised design eliminates the potential for windblown dust from the site under high wind speed conditions as all onsite activities including loading/unloading, sorting and storage of materials are proposed to be carried out within an enclosure.

The activity data and assumptions representative of a potential worst case scenario (i.e. data representative of peak daily throughput) for the revised design is presented in **Table 4**.

As outlined in the EIS, it is noted that the downwind concentrations given by the modelling using the assumptions listed in **Table 4** assume that the Proposal site would operate at the maximum daily capacity with maximum number of truck movement on every day of the year, which would not be the case. Truck movements have been estimated based on the Addendum Traffic Impact Assessment prepared for the Amended Proposal.

This approach would result in the predicted short term (maximum 24-hour average) downwind concentrations being representative of the impacts that could occur based on the worst-case level of emissions under the worst-case meteorological conditions, and would therefore provide a conservative assessment of potential off-site impacts. As presented in **Table 4**, the Amended Proposal would operate with an annual throughput of 220,000 tonnes per annum. Therefore, this approach would also overestimate the long term (annual average) downwind concentrations as the Amended Proposal would not operate at the maximum daily capacity on every day of the year.

**Table 4 Activity Data and Assumptions Used for Estimation of Particulate Emissions**

| Parameter | Value | Units | Comments |
|---|---|---|---|
| | **Amended Proposal** | | |
| Operating hours | 96 | hours/week | 6 am to 10 pm Mon-Sat<br>No operation on Sunday |
| Operating days | 312 | days/year | Equivalent to 6 days/week |
| Total material throughput | 220,000 | tonnes/year | Annual maximum |
| | 705 | tonnes/day | Daily average (220,000 t/yr ÷ 312 days/yr) |
| | 1,600 [1] | tonnes/day | Daily maximum |
| Exposed area/stockpiles | - [2] | ha | - |
| Total length of internal road | 300 | m | |
| Silt loading of paved road [3] | 7.4 | g/m$^2$ | Assumed (USEPA AP42 13.2.1 – relevant to municipal solid waste landfill site) |
| Number of heavy vehicle movement[4] | 131 | trucks/day | |
| Average weight of vehicles – inbound trucks | 14.2 [4] | tonnes | |
| Average weight of vehicles – outbound trucks | 40.3 [4] | | |

[1] Based on a proposed design capacity of 100 tph.

[2] No exposed area due to the proposed enclosure.

[3] A silt loading factor of 1.1 g/m² representative of minimum silt loading data measured at municipal solid waste landfill sites was used in the EIS. The silt loading factor has been updated to 7.4 g/m² (representative of average silt loading data at municipal solid waste landfill sites) to provide a conservative estimate of on-site wheel-generated dust.

[4] Based on heavy vehicle traffic data (108 trucks transporting waste to the site and 23 trucks transporting processed waste from the site) provided for peak daily operation of the Amended Proposal. Wheel-generated emissions from the non-waste vehicles (e.g. staff cars, utility vehicles etc.) are expected to be negligible and therefore have not been considered.

## 3.1 Emissions Control

The Amended Proposal incorporates the following design features and operational measures to control dust emissions from the Proposal site:

- All loading, unloading, processing and storage of materials will be carried out within the proposed enclosure

- All vehicles leaving the premises will pass through a wheel wash to ensure prevention of any soil/mud transport from the Proposal site onto off-site roads;
- Vehicle speed will be limited to less than 5 km/hr on on-site roads; and
- The majority of the on-site truck movements will be within the proposed enclosure.

Use of the above mitigation measures is assumed to provide:

- An average 70% control on all loading/unloading and material handling activities and
- An average 70% control on emissions associated with wheel-generated dust
- 100% control for exposed areas that may generate windblown dust under high wind speed condition.

It is noted that a CoolMist™ system would also be installed at the Proposal site, which is designed to remove breathable and fugitive dust particles from 10 to 100 µm. The water droplets can be dispersed across most types of material to bond with dust particles assisting in the suppression process. The above control factors used in the emissions estimation are therefore expected to be conservative, resulting in an overestimation of actual emissions that would be anticipated and a conservative assessment of off-site impacts.

## 3.2 Estimated Emissions

The calculated emission factors for each activity and associated input parameters utilised to estimate emissions are presented in **Table 5**.

A comparison of the estimated emission rates for the revised design with those used in the EIS is presented in **Table 6**.

**Table 5 Emission Factors and Input Assumptions**

| Activity | Emission Factor | | | | Input Assumptions | Emission Factor Source |
|---|---|---|---|---|---|---|
| | TSP | $PM_{10}$ | $PM_{2.5}$ | Unit | | |
| Unloading materials | 0.0002 | 0.0001 | 0.00001 | kg/t | Wind speed factor: 1.39<br>Moisture content: 10% | USEPA AP42 |
| Material sorting/handling | 0.0002 | 0.0001 | 0.00001 | kg/t | | |
| Loading materials to truck | 0.0002 | 0.0001 | 0.00001 | kg/t | | |
| On-site hauling (inbound trucks) | 0.298 | 0.057 | 0.014 | kg/VKT | Mean vehicle weight: 14.2 tonnes<br>On-site road length: 0.3 km per return trip<br>Silt loading: 7.4 g/m² | |
| On-site hauling (outbound trucks) | 0.865 | 0.166 | 0.040 | kg/VKT | Mean vehicle weight: 40.3 tonnes<br>On-site road length: 0.3 km per return trip<br>Silt loading: 7.4 g/m² | |

**Table 6 Estimated Emissions from the Proposal site**

| Activity | Peak Emission Rate (kg/annum) | | | | | |
|---|---|---|---|---|---|---|
| | Amended Proposal | | | EIS | | |
| | TSP | $PM_{10}$ | $PM_{2.5}$ | TSP | $PM_{10}$ | $PM_{2.5}$ |
| Unloading materials | 30 | 14 | 2 | 126 | 60 | 9 |
| Material sorting/handling | 60 | 29 | 4 | 252 | 119 | 18 |
| Loading materials to truck | 27 | 13 | 2 | 101 | 48 | 7 |
| On-site hauling | 1,706 | 125 | 30 | 1,215 | 233 | 56 |
| **Total Emissions** | **1,824** | **383** | **88** | **2,186** | **705** | **114** |

The estimated emission data presented in **Table 6** shows that the potential for particulate emissions is significantly lower for the revised design compared to that presented in the EIS. Potential $PM_{10}$ and $PM_{2.5}$ emissions are estimated to be reduced by approximately 46% and 23% respectively. As outlined earlier in this report, the reduction in the estimated particulate emissions is due to the elimination of potential windblown dust emissions and refinement of the heavy vehicle data compared to that used in the EIS.

## 3.3 Modelling Methodology and Assessment Criteria

The predicted impacts presented in this report are based on using an identical modelling methodology and the same meteorological dataset as that used in preparing the AQIA for the EIS (SLR 2017). The predicted cumulative impact is compared to the relevant assessment criteria outlined in the EIS to assess the compliance of the Amended Proposal.

## 3.4 Predicted Impacts

### 3.4.1 Total Suspended Particulate (TSP) and Dust Deposition Rates

The annual average incremental and cumulative TSP concentrations and dust deposition rates predicted at the surrounding receptor locations for the Amended Proposal are presented in **Table 7**. The predicted incremental annual average TSP concentrations and dust deposition rates are presented as contour plots in **Figure 1** and **Figure 2**.

The modelling results show that the incremental annual average TSP concentrations and dust deposition rates predicted at all surrounding sensitive (residential) receptors are negligible. The cumulative annual average TSP concentrations and dust deposition levels predicted at all surrounding residential, industrial and community receptor locations comply with the relevant ambient air quality criteria.

The off-site TSP concentrations and deposition rates predicted for the Amended Proposal are relatively lower than those predicted in the EIS.

**Table 7 Annual Average TSP Concentrations and Dust Deposition Rates Predicted at Receptor Locations**

| Receptor ID | Receptor Type | TSP (µg/m³) | | Dust Deposition (g/m²/month) | |
|---|---|---|---|---|---|
| | | Increment | Cumulative | Increment | Cumulative |
| R1 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R2 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R3 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R4 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R5 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R6 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R7 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R8 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R9 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R10 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R11 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R12 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R13 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R14 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R15 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R16 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| R17 | Residential | <0.1 | <34.1 | <0.1 | <2.1 |
| **Community Receptors** | | | | | |
| C1 | Community | <0.1 | <34.1 | <0.1 | <2.1 |
| C2 | Community | <0.1 | <34.1 | <0.1 | <2.1 |
| C3 | Community | <0.1 | <34.1 | <0.1 | <2.1 |
| C4 | Community | <0.1 | <34.1 | <0.1 | <2.1 |
| C5 | Community | <0.1 | <34.1 | <0.1 | <2.1 |
| C6 | Community | <0.1 | <34.1 | <0.1 | <2.1 |
| **Industrial Receptors** | | | | | |
| I1 | Industrial | 0.4 | 34.4 | <0.1 | <2.1 |
| I2 | Industrial | 0.8 | 34.8 | <0.1 | <2.1 |
| I3 | Industrial | 0.9 | 34.9 | <0.1 | <2.1 |
| I4 | Industrial | 0.4 | 34.4 | <0.1 | <2.1 |
| I5 | Industrial | 0.5 | 34.5 | <0.1 | <2.1 |
| **Criteria** | | **-** | **90.0** | **2.0** | **4.0** |

**Figure 1 Predicted Incremental Annual Average TSP Concentrations**

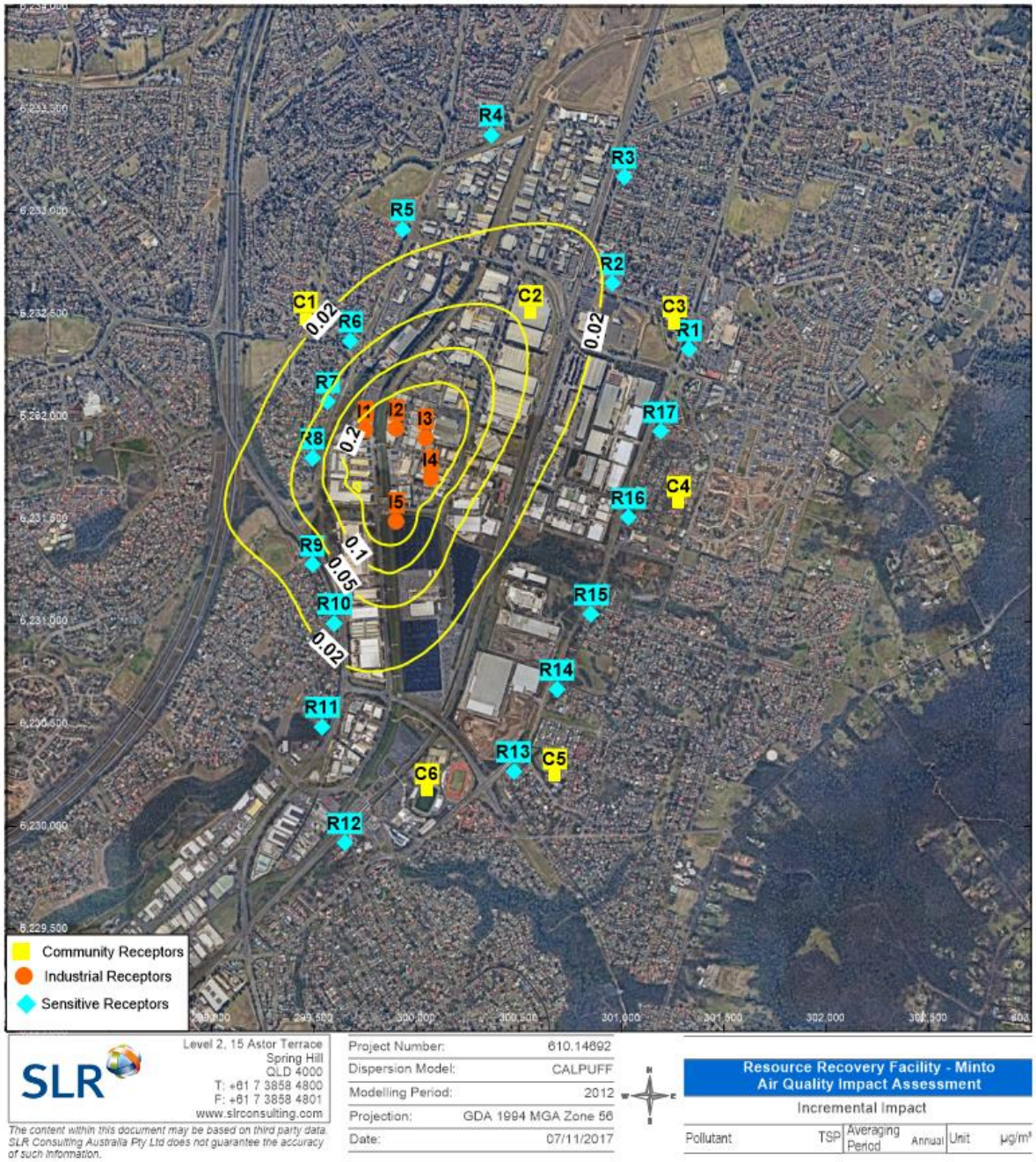
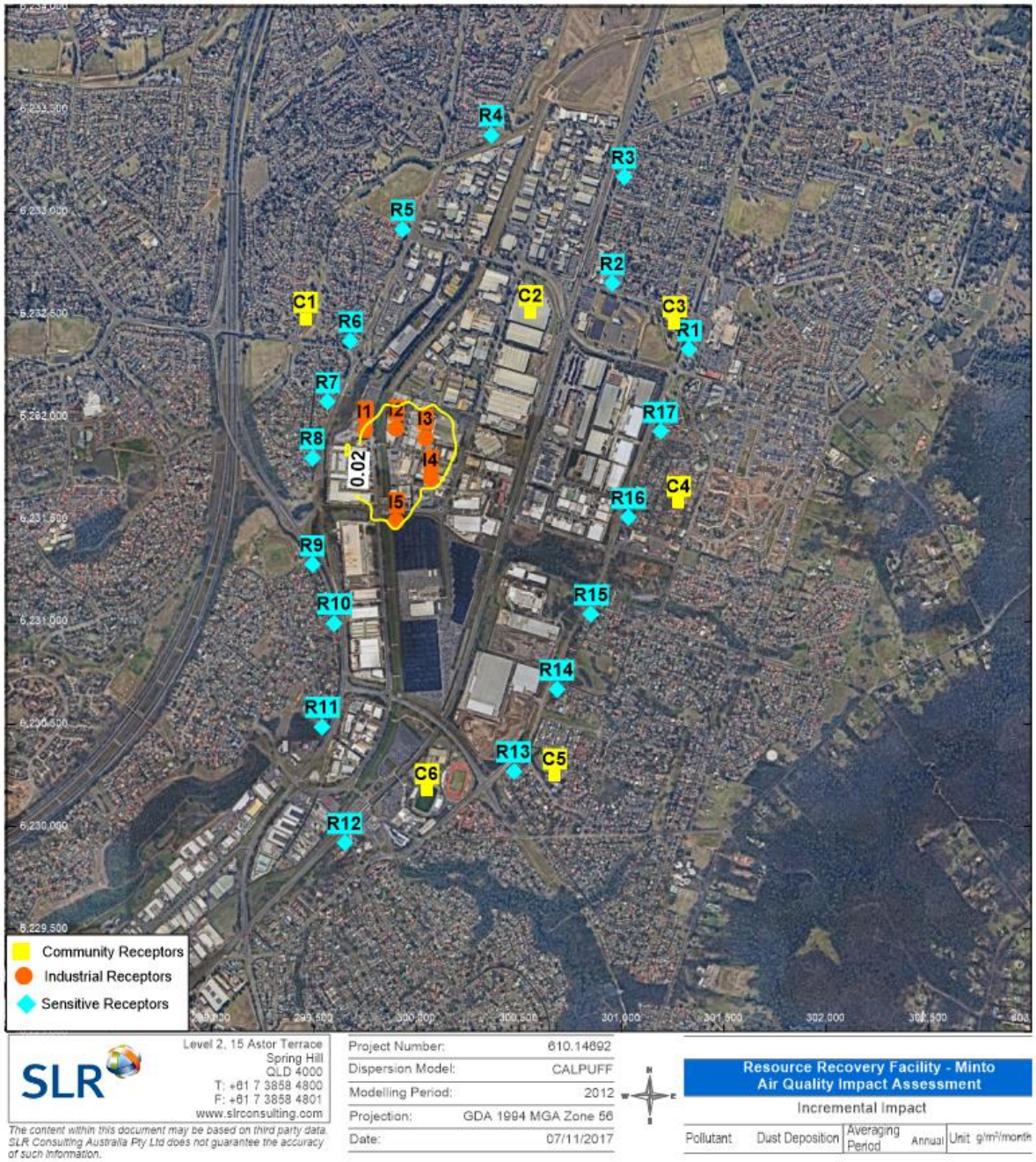


**Figure 2 Predicted Incremental Annual Average Dust Deposition Rate**



### 3.4.2 Particulate Matter < 10 µg/m³ ($PM_{10}$)

The maximum 24-hour and annual average incremental and cumulative $PM_{10}$ concentrations predicted at the identified surrounding receptor locations are presented in **Table 8**. The predicted incremental and cumulative 24 hour and annual average $PM_{10}$ concentrations are presented as contour plots in **Figure 3** and **Figure 4**.

**Table 8 24-Hour and Annual Average $PM_{10}$ Concentrations Predicted at Receptor Locations**

| Receptor ID | Receptor Type | Incremental $PM_{10}$ (µg/m³) | | Cumulative $PM_{10}$ (µg/m³) | |
|---|---|---|---|---|---|
| | | 24-Hr | Annual | 24-Hr | Annual |
| R1 | Residential | <0.1 | <0.1 | 49.4 | <17.1 |
| R2 | Residential | <0.1 | <0.1 | 49.4 | <17.1 |
| R3 | Residential | <0.1 | <0.1 | 49.4 | <17.1 |
| R4 | Residential | <0.1 | <0.1 | 49.4 | <17.1 |
| R5 | Residential | <0.1 | <0.1 | 49.4 | <17.1 |
| R6 | Residential | <0.1 | <0.1 | 49.4 | <17.1 |
| R7 | Residential | 0.2 | <0.1 | 49.4 | <17.1 |
| R8 | Residential | 0.1 | <0.1 | 49.4 | <17.1 |
| R9 | Residential | 0.1 | <0.1 | 49.4 | <17.1 |
| R10 | Residential | <0.1 | <0.1 | 49.4 | <17.1 |
| R11 | Residential | <0.1 | <0.1 | 49.4 | <17.1 |
| R12 | Residential | <0.1 | <0.1 | 49.4 | <17.1 |
| R13 | Residential | <0.1 | <0.1 | 49.4 | <17.1 |
| R14 | Residential | <0.1 | <0.1 | 49.4 | <17.1 |
| R15 | Residential | <0.1 | <0.1 | 49.4 | <17.1 |
| R16 | Residential | <0.1 | <0.1 | 49.4 | <17.1 |
| R17 | Residential | <0.1 | <0.1 | 49.4 | <17.1 |
| **Community** | | | | | |
| C1 | Community | <0.1 | <0.1 | 49.4 | <17.1 |
| C2 | Community | 0.1 | <0.1 | 49.4 | <17.1 |
| C3 | Community | <0.1 | <0.1 | 49.4 | <17.1 |
| C4 | Community | <0.1 | <0.1 | 49.4 | <17.1 |
| C5 | Community | <0.1 | <0.1 | 49.4 | <17.1 |
| C6 | Community | <0.1 | <0.1 | 49.4 | <17.1 |
| **Industrial** | | | | | |
| I1 | Industrial | 0.6 | <0.1 | 49.4 | <17.1 |
| I2 | Industrial | 1.4 | 0.2 | 49.5 | 17.2 |
| I3 | Industrial | 1.3 | 0.2 | 49.4 | 17.2 |
| I4 | Industrial | 0.9 | 0.1 | 49.5 | 17.1 |
| I5 | Industrial | 1.0 | 0.1 | 49.4 | 17.1 |
| **Criteria** | | **-** | **-** | **50** | **25** |

**Figure 3 Maximum Predicted Incremental 24 Hour Average $PM_{10}$ Concentrations**

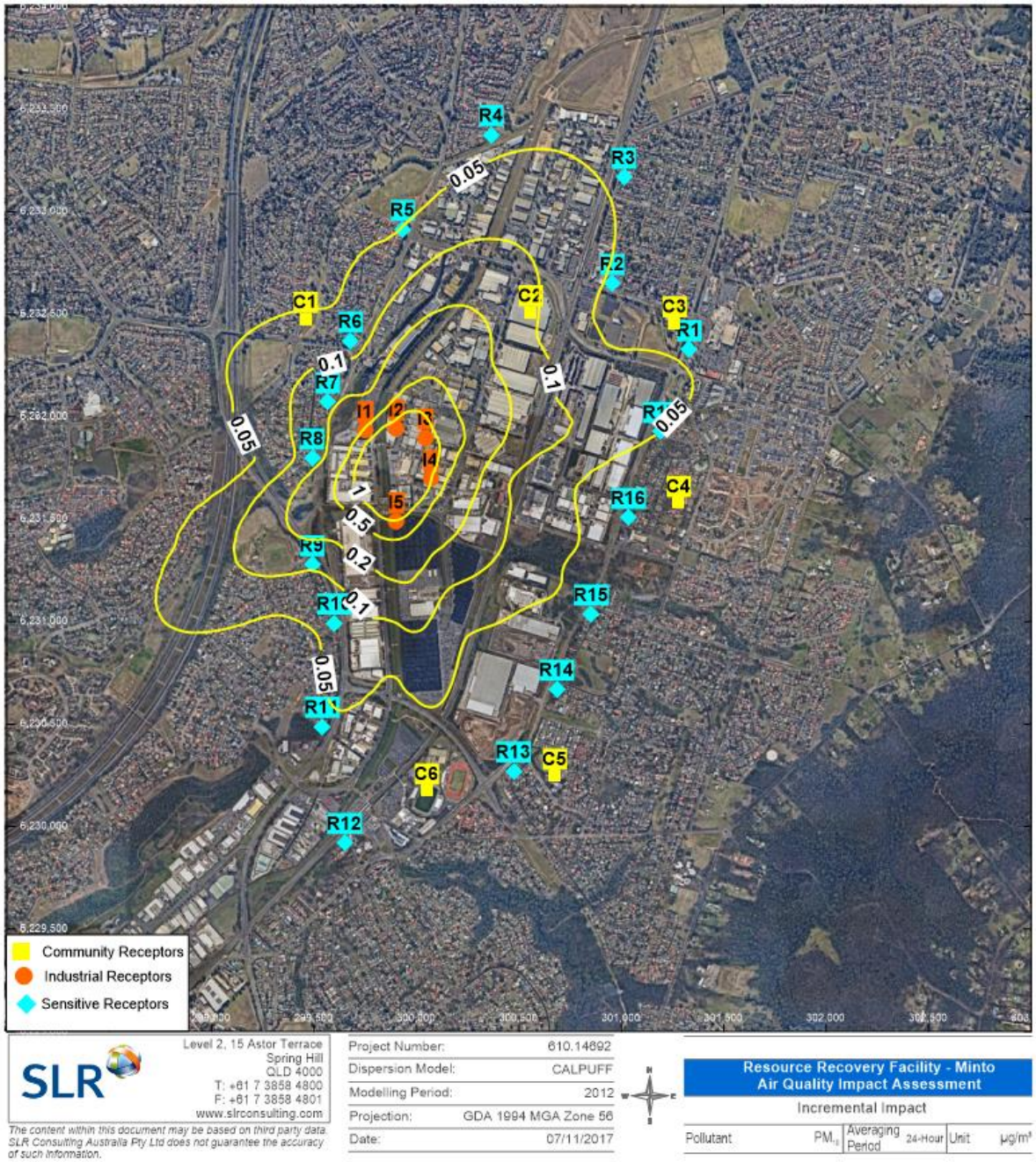
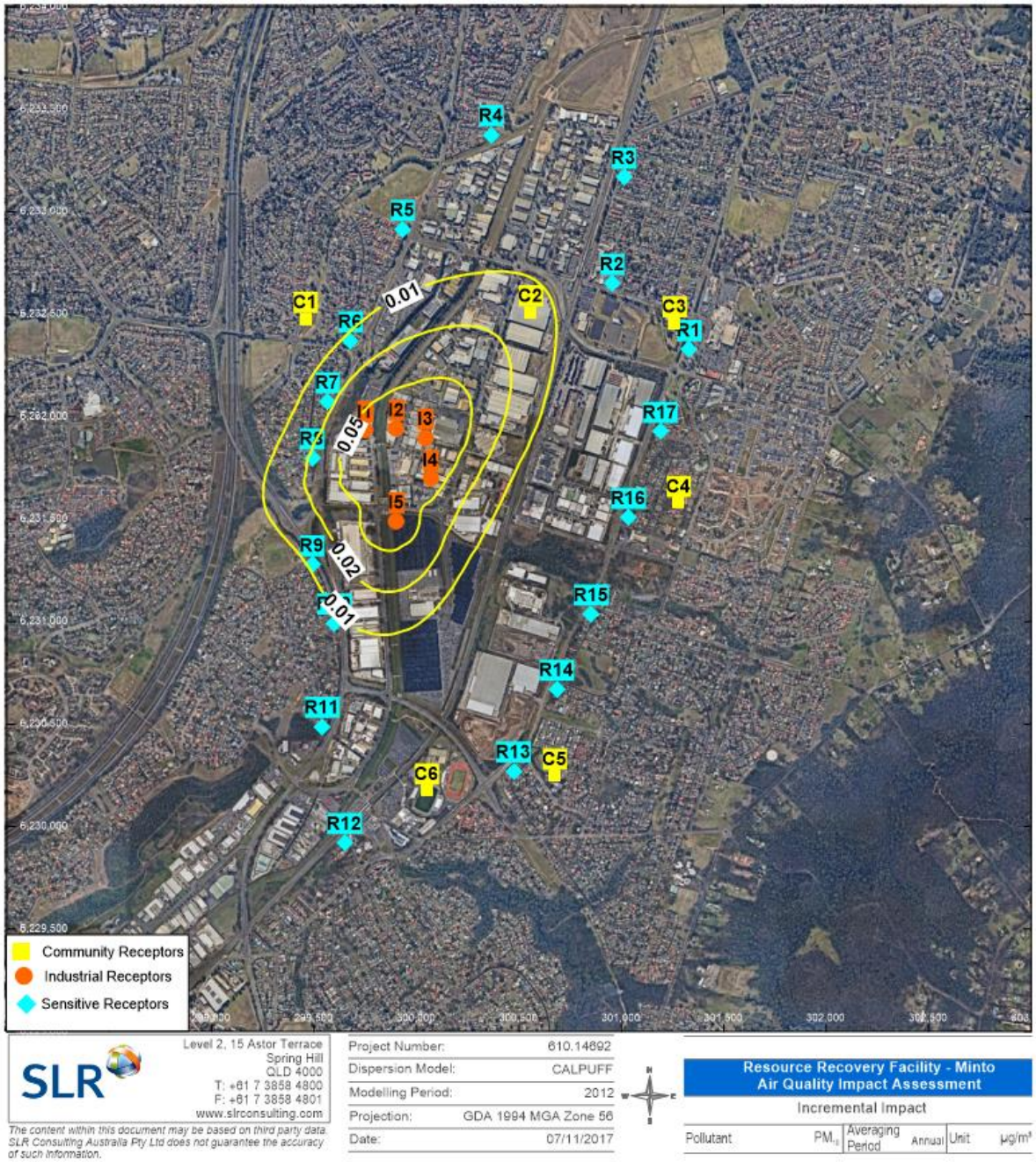


**Figure 4 Predicted Incremental Annual Average $PM_{10}$ Concentrations**



### Sensitive Receptors

The modelling results indicate that the incremental annual average $PM_{10}$ concentration attributable to emissions from the Proposal site is negligible (<0.1 µg/m³) at all surrounding sensitive receptors. The cumulative annual average $PM_{10}$ concentrations predicted at all surrounding sensitive receptor locations comply with the relevant ambient air quality criterion of 25 µg/m$^3$. The off-site $PM_{10}$ concentrations predicted at sensitive receptor locations for the Amended Proposal are relatively lower than those predicted in the EIS.

The cumulative 24-hour average $PM_{10}$ concentrations predicted by the modelling at all surrounding sensitive receptors comply with the relevant criterion of 50 µg/m$^3$. Receptor R7, located to the west of the Proposal site, is predicted to be the worst impacted residential receptor, with incremental and cumulative 24-hour average $PM_{10}$ concentrations of 0.2 µg/m³ and 49.4 µg/m³ respectively predicted.

A summary of the top five contemporaneous 24-hour average incremental and background $PM_{10}$ concentrations predicted at R7 is presented in **Table 9**. This analysis shows that the incremental impact predicted due to emissions from the Proposal site at R7 on days with a high background level is negligible, while the background level on days with the highest predicted increment is relatively low.

**Table 9 Contemporaneous Impact and Background Analysis – Receptor R7**

| Date | $PM_{10}$ 24 Hour Average (µg/m³) | | | Date | $PM_{10}$ 24 Hour Average (µg/m³) | | |
|---|---|---|---|---|---|---|---|
| | Highest Measured Background | Predicted Increment | Total | | Background | Highest Predicted Increment | Total |
| 21-11-2014 | 49.4 | 0.0 | 49.4 | 07-12-2014 | 9.8 | 0.2 | 9.9 |
| 31-12-2014 | 38.2 | 0.0 | 38.2 | 06-03-2014 | 27.4 | 0.2 | 27.5 |
| 27-10-2014 | 36.8 | 0.0 | 36.8 | 04-08-2014 | 17.7 | 0.1 | 17.8 |
| 10-02-2014 | 36.5 | 0.0 | 36.5 | 15-11-2014 | 31.3 | 0.1 | 31.4 |
| 17-12-2014 | 35.3 | 0.0 | 35.3 | 09-12-2014 | 17.6 | 0.1 | 17.7 |
| **Criterion** | | | **50** | | | | **50** |

### Industrial Receptors

The cumulative annual average $PM_{10}$ concentrations predicted at the industrial receptor locations for the Amended Proposal comply with the relevant ambient air quality criterion of 25 µg/m$^3$.

The results also show that the maximum predicted cumulative 24-hour average $PM_{10}$ concentrations comply with the ambient air quality criterion at all industrial receptor locations.

It is noted that these industrial receptors are located in close proximity to the Proposal site. As a result, given the short distances between the emission sources and receptor points within the model, there is a relatively high level of uncertainty associated with the $PM_{10}$ concentrations predicted by CALPUFF at these locations.

As noted earlier in this section and similar to EIS, the modelled dust emissions from the Proposal site were estimated based on the daily maximum throughput and assumed that the Proposal site would operate at the maximum daily capacity every day of the year, which would not be the case. Furthermore, all material handling activities at the Proposal site would be undertaken within the shed with a CoolMist system as an additional dust mitigation measure. However no published control factors are available for the CoolMist system and it was therefore not factored into the estimated dust emissions. Therefore the estimated dust emission rates used in this assessment are expected to be overestimated.

It is also noted, that as industrial sites, the relevant air quality criteria would be occupational exposure levels rather than ambient air quality criteria developed for the wider population. This is due to the fact that:

- As places of work, people would not be expected to be present at these locations for 24-hours a day; and
- The people present in these work places would not be expected to include the very young or elderly, which the ambient air quality criteria have been developed to protect.

The maximum 8-hour average $PM_{10}$ concentrations predicted at the industrial receptors surrounding the Proposal site are shown in **Table 10**. The predicted incremental concentrations are less than 0.1% of the Worker Exposure Standard – Time Weighted Average (WES-TWA) of 10 mg/m$^3$ (i.e., 10,000 µg/m$^3$) set by Safe Work Australia for particulate matter where no specific exposure standard has been assigned and the substance is both of inherently low toxicity and free from toxic impurities. It can therefore be concluded there would be no potential for exceedances of the occupational exposure guideline for respirable dust at the surrounding industrial sites, even under conditions of elevated background levels.

**Table 10 8-Hour Average $PM_{10}$ Concentrations Predicted at Industrial Receptor Locations**

| Receptor ID | Incremental 8-Hour Average $PM_{10}$ Concentration (µg/m³) |
|---|---|
| I1 | 1.5 |
| I2 | 3.6 |
| I3 | 3.3 |
| I4 | 2.5 |
| I5 | 2.2 |
| WES-TWA | 10,000 |

### 3.4.3 Particulate Matter <2.5 µg/m³ ($PM_{2.5}$)

The maximum 24-hour and annual average incremental and cumulative $PM_{2.5}$ concentrations predicted at the surrounding receptor locations are presented in **Table 11**. The predicted incremental and cumulative 24 hour and annual average $PM_{2.5}$ concentrations are presented as contour plots in **Figure 5** and **Figure 6**.

The modelling results indicate that incremental annual average $PM_{2.5}$ concentrations predicted as a result of emissions from the Amended Proposal are negligible (<0.1 µg/m³) at all surrounding industrial and residential receptor locations. The cumulative annual average $PM_{2.5}$ concentrations predicted at all surrounding industrial and residential receptor locations comply with the relevant ambient air quality criterion of 8 µg/m$^3$.

The cumulative 24-hour average $PM_{2.5}$ concentrations predicted at all surrounding industrial and residential receptors for the Amended Proposal comply with the relevant criterion of 25 µg/m$^3$. Among the residential receptors, Receptor R7, located to the west of the Proposal site, is predicted to be the worst-impacted receptor with incremental and cumulative 24-hour average $PM_{2.5}$ concentration of 0.04 µg/m³ and 18.5 µg/m³ predicted. Among the industrial receptors, Receptor I3 located to the east of the Proposal site is predicted to be the worst-impacted receptors with incremental and cumulative 24-hour average $PM_{2.5}$ concentrations of 0.3 µg/m³ and 18.5 µg/m³ predicted respectively.

The off-site $PM_{2.5}$ concentrations predicted at sensitive receptor locations for the Amended Proposal are relatively lower than those predicted in the EIS.

**Table 11 24-Hour and Annual Average $PM_{2.5}$ Concentrations Predicted at Receptor Locations**

| Receptor ID | Receptor Type | Incremental $PM_{2.5}$ (µg/m³) | | Cumulative $PM_{2.5}$ (µg/m³) | |
|---|---|---|---|---|---|
| | | 24-Hour Average | Annual Average | 24-Hour Average | Annual Average |
| R1 | Residential | 0.01 | <0.1 | 18.5 | <6.4 |
| R2 | Residential | 0.01 | <0.1 | 18.5 | <6.4 |
| R3 | Residential | 0.01 | <0.1 | 18.5 | <6.4 |
| R4 | Residential | 0.01 | <0.1 | 18.5 | <6.4 |
| R5 | Residential | 0.01 | <0.1 | 18.5 | <6.4 |
| R6 | Residential | 0.02 | <0.1 | 18.5 | <6.4 |
| R7 | Residential | 0.04 | <0.1 | 18.5 | <6.4 |
| R8 | Residential | 0.03 | <0.1 | 18.5 | <6.4 |
| R9 | Residential | 0.03 | <0.1 | 18.5 | <6.4 |
| R10 | Residential | 0.02 | <0.1 | 18.5 | <6.4 |
| R11 | Residential | 0.01 | <0.1 | 18.5 | <6.4 |
| R12 | Residential | 0.00 | <0.1 | 18.5 | <6.4 |
| R13 | Residential | 0.00 | <0.1 | 18.5 | <6.4 |
| R14 | Residential | 0.01 | <0.1 | 18.5 | <6.4 |
| R15 | Residential | 0.01 | <0.1 | 18.5 | <6.4 |
| R16 | Residential | 0.01 | <0.1 | 18.5 | <6.4 |
| R17 | Residential | 0.01 | <0.1 | 18.5 | <6.4 |
| **Community** | | | | | |
| C1 | Community | 0.01 | <0.1 | 18.5 | <6.4 |
| C2 | Community | 0.03 | <0.1 | 18.5 | <6.4 |
| C3 | Community | 0.01 | <0.1 | 18.5 | <6.4 |
| C4 | Community | 0.01 | <0.1 | 18.5 | <6.4 |
| C5 | Community | 0.00 | <0.1 | 18.5 | <6.4 |
| C6 | Community | 0.01 | <0.1 | 18.5 | <6.4 |
| **Industrial** | | | | | |
| I1 | Industrial | 0.1 | <0.1 | 18.5 | <6.4 |
| I2 | Industrial | 0.3 | <0.1 | 18.5 | <6.4 |
| I3 | Industrial | 0.3 | <0.1 | 18.5 | <6.4 |
| I4 | Industrial | 0.2 | <0.1 | 18.5 | <6.4 |
| I5 | Industrial | 0.2 | <0.1 | 18.5 | <6.4 |
| **CRITERIA** | | **-** | **-** | **25** | **8** |

**Figure 5 Maximum Predicted Incremental 24 Hour Average $PM_{2.5}$ Concentrations**

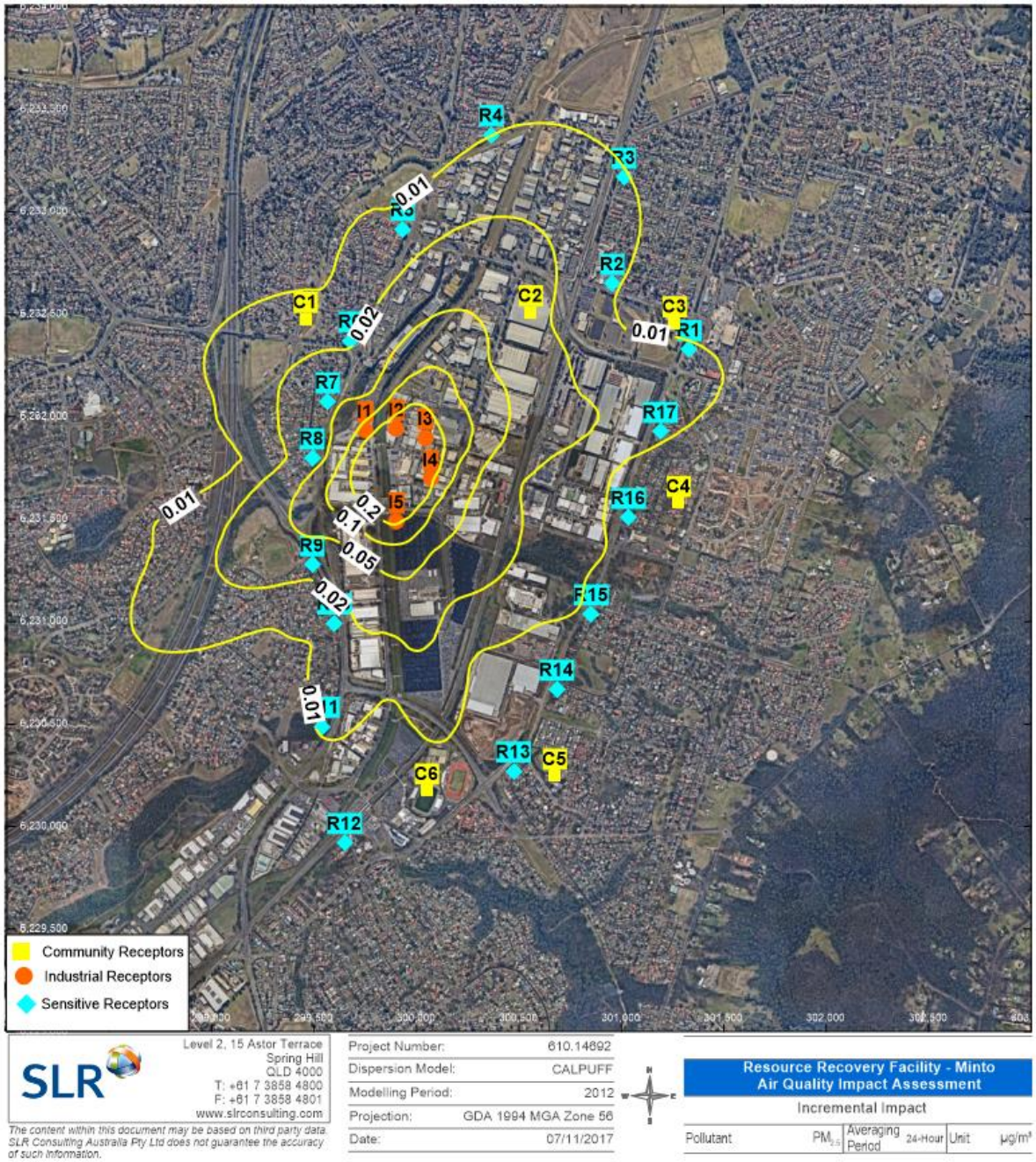
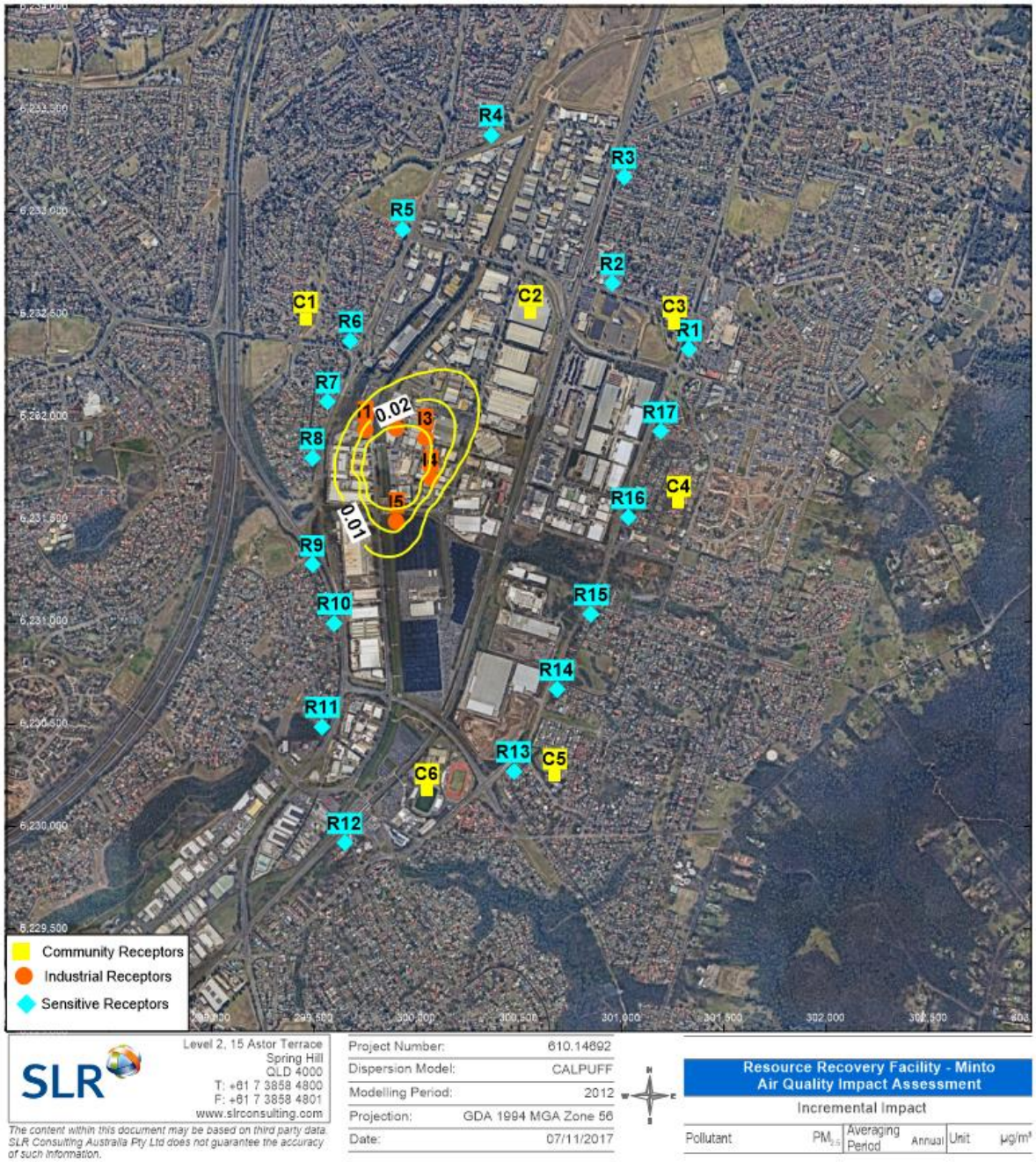


**Figure 6 Predicted Incremental Annual Average $PM_{2.5}$ Concentrations**



# 4 Greenhouse Gas (GHG) Assessment

The Amended Proposal would have minor additional GHG sources including:

- Construction-phase emissions; and
- Increased operational energy consumption within the shed enclosure.

The construction phase would be of short duration and would include minor construction activities only. GHG emissions associated with the proposed construction activities are therefore considered to be negligible.

The results of the GHG Assessment presented in the EIS found the emissions generated as a result of electricity consumption within the operational phase would be 105 $tCO_2$-e/annum only. This is considered to be an insignificant contribution to state and national GHG emission inventories. A minor increase in energy use at the facility would result in a minor increase in the annual GHG emission, which would still be considered negligible.

# 5 Mitigation and Management Measures

The mitigation measures outlined in Section 6 of the EIS are considered adequate to address impacts associated with the Amended Proposal. The following additional mitigation measures are proposed to address the change in impacts associated with the Amended Proposal

## 5.1 Air Quality

### 5.1.1 Construction

Mitigation measures to manage air quality impacts during the construction works will be included in the CEMP prepared for the Amended Proposal, and will comprise the following:

- Where practicable, the disturbance footprint will be limited and unnecessary surface disturbance will be avoided.
- Where practicable, dust-generating construction activities will be restricted during hot, dry and windy weather conditions.
- Where practicable, materials and structures will be dampened using water sprays prior to demolition and unsealed surfaces will be watered.
- Construction machinery and vehicles will be maintained and serviced according to the manufacturer's specifications, and engines will be switched off when not in use.
- Construction-related vehicle movements will be limited to a speed limit of 5 km/h.
- Vehicles removing earth or other dust generating material from the Proposal site will have their loads covered.
- Regular visual checks of excessive dust within the Proposal site will be undertaken and used to implement additional controls where required.

### 5.1.2 Operation

The mitigation measures outlined in Section 6 of the EIS are considered adequate to address impacts associated with the Amended Proposal and, aside from those additional controls incorporated into the Amended Proposal design itself (i.e. construction of an enclosure over the site and installation of a wheel wash facility for all outgoing vehicles), additional measures are not proposed.

### 5.2 Greenhouse Gases

The mitigation measures outlined in Section 6 of the EIS are considered adequate to address impacts associated with the Amended Proposal and additional measures are not proposed.

## 6 Conclusion

SLR was engaged by Skylife Properties Pty Ltd to revise the air quality impact assessment for the proposed Resource Recovery Facility at Minto based on the revised design and operational parameters.

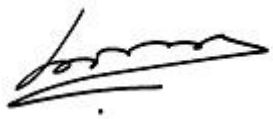
Considering the short duration and small scale of construction related activities, a qualitative air quality impact assessment was conducted for the proposed construction phase of the Amended Proposal. The assessment showed that the potential impact at surrounding sensitive receptors is likely to be negligible with the proposed mitigation measures outlined in **Section 2.4**. A detailed quantitative assessment is therefore not warranted for the proposed construction phase of the Amended Proposal.

Based on a review of design information provided on the Amended Proposal, the following design/operational changes were identified that are likely to affect the potential particulate emissions during the operational phase of the Amended Proposal, compared to that presented in the EIS.

- Construction of an enclosure for all loading/unloading, processing and storage of materials, resulting in the elimination of any potential windblown dust generation from the site.
- Refinement of the incoming/outgoing waste truck data based on the revised design. It is noted that, traffic data was not available at the time of preparing the AQIA for the EIS and a number of conservative assumptions were made to estimate the potential worst case traffic data. These numbers have been revised in this report based on updated traffic data for the Amended Proposal that were provided to SLR by ttpp (Traffic consultant for this Project)
- The silt loading assumed for the onsite paved roads was increased from 1.1 g/m² to 7.4 g/m² to ensure that the estimated emissions are conservative.

The revised estimated particulate emission rates and the predicted impacts at surrounding sensitive receptors are lower compared to that presented in the EIS. No exceedances of relevant ambient air quality guideline are predicted for the proposed operational phase of the Amended Proposal. Based on the model predictions, it can be concluded that predicted incremental impacts associated with the Amended Proposal is minimal and unlikely to make any significant contribution in elevating the current background levels at any surrounding sensitive receptors.

Yours sincerely



FARDAUSUR RAHAMAN
Principal - Air Quality

Checked/
Authorised by:KL

**Step 1 – Screening Based on Separation Distance**

The Step 1 screening criteria provided by the IAQM guidance suggests screening out any assessment of impacts from construction activities where sensitive receptors are located more than 350 m from the boundary of the Project Site, more than 50 m from the route used by construction vehicles on public roads and more than 500 m from the Project Site entrance. This step is noted as having deliberately been chosen to be conservative, and will require assessments for most projects.

**Step 2a – Assessment of Scale and Nature of the Works**

Step 2a of the assessment provides "dust emissions magnitudes" for each of four dust generating activities; demolition, earthworks, construction, and track-out (the movement of site material onto public roads by vehicles). The magnitudes are: *Large*; *Medium*; or *Small*, with suggested definitions for each category. The definitions given in the IAQM guidance for earthworks, construction activities and track-out, which are most relevant to this Development, are as follows:

Demolition *(Any activity involved with the removal of an existing structure [or structures]. This may also be referred to as de-construction, specifically when a building is to be removed a small part at a time)*:

- ***Large***: Total building volume >50,000 $m^3$, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >20 m above ground level;
- ***Medium***: Total building volume 20,000 $m^3$ – 50,000 $m^3$, potentially dusty construction material, demolition activities 10-20 m above ground level; and
- ***Small***: Total building volume <20,000 $m^3$, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <10m above ground, demolition during wetter months.

Earthworks *(Covers the processes of soil-stripping, ground-levelling, excavation and landscaping)*:

- ***Large***: Total site area greater than 10,000 $m^2$, potentially dusty soil type (eg clay, which will be prone to suspension when dry due to small particle size), more than 10 heavy earth moving vehicles active at any one time, formation of bunds greater than 8 m in height, total material moved more than 100,000 t.
- ***Medium***: Total site area 2,500 $m^2$ to 10,000 $m^2$, moderately dusty soil type (eg silt), 5 to 10 heavy earth moving vehicles active at any one time, formation of bunds 4 m to 8 m in height, total material moved 20,000 t to 100,000 t.
- ***Small***: Total site area less than 2,500 $m^2$, soil type with large grain size (eg sand), less than five heavy earth moving vehicles active at any one time, formation of bunds less than 4 m in height, total material moved less than 20,000 t, earthworks during wetter months.

Construction *(Any activity involved with the provision of a new structure (or structures), its modification or refurbishment. A structure will include a residential dwelling, office building, retail outlet, road, etc)*:

- ***Large***: Total building volume greater than 100,000 $m^3$, piling, on site concrete batching; sandblasting.
- ***Medium***: Total building volume 25,000 $m^3$ to 100,000 $m^3$, potentially dusty construction material (eg concrete), piling, on site concrete batching.
- ***Small***: Total building volume less than 25,000 $m^3$, construction material with low potential for dust release (eg metal cladding or timber).

Track-out *(The transport of dust and dirt from the construction / demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network)*:

- ***Large***: More than 50 heavy vehicle movements per day, surface materials with a high potential for dust generation, greater than 100 m of unpaved road length.
- ***Medium***: Between 10 and 50 heavy vehicle movements per day, surface materials with a moderate potential for dust generation, between 50 m and 100 m of unpaved road length.
- ***Small***: Less than 10 heavy vehicle movements per day, surface materials with a low potential for dust generation, less than 50 m of unpaved road length.

Note: No demolition of existing structures will be performed as part of this Development.

In order to provide a conservative assessment of potential impacts, it has been assumed that if at least one of the parameters specified in the 'large' definition is satisfied, the works are classified as large, and so on.

**Step 2b – Risk Assessment**

**Assessment of the Sensitivity of the Area**

Step 2b of the assessment process requires the sensitivity of the area to be defined. The sensitivity of the area takes into account:

- The specific sensitivities that identified sensitive receptors have to dust deposition and human health impacts;
- The proximity and number of those receptors;
- In the case of $PM_{10}$, the local background concentration; and
- Other site-specific factors, such as whether there are natural shelters such as trees to reduce the risk of wind-blown dust.

Individual receptors are classified as having *high*, *medium* or *low* sensitivity to dust deposition and human health impacts (ecological receptors are not addressed using this approach). The IAQM method provides guidance on the sensitivity of different receptor types to dust soiling and health effects as summarised in **Table A-1**. It is noted that user expectations of amenity levels (dust soiling) is dependent on existing deposition levels.

**Table A-1 IAQM Guidance for Categorising Receptor Sensitivity**

| Value | High Sensitivity Receptor | Medium Sensitivity Receptor | Low Sensitivity Receptor |
|---|---|---|---|
| Dust soiling | Users can reasonably expect a high level of amenity; or<br>The appearance, aesthetics or value of their property would be diminished by soiling, and the people or property would reasonably be expected to be present continuously, or at least regularly for extended periods as part of the normal pattern of use of the land. | Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or<br>The appearance, aesthetics or value of their property could be diminished by soiling; or<br>The people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land. | The enjoyment of amenity would not reasonably be expected; or<br>Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or<br>There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land. |
| | *Examples: Dwellings, museums, medium and long term car parks and car showrooms.* | *Examples: Parks and places of work.* | *Examples: Playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads.* |
| Health effects | Locations where the public are exposed over a time period relevant to the air quality objective for $PM_{10}$ (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day). | Locations where the people exposed are workers, and exposure is over a time period relevant to the air quality objective for $PM_{10}$ (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day). | Locations where human exposure is transient. |
| | *Examples: Residential properties, hospitals, schools and residential care homes.* | *Examples: Office and shop workers, but will generally not include workers occupationally exposed to PM10.* | *Examples: Public footpaths, playing fields, parks and shopping street.* |

According to the IAQM methods, the sensitivity of the identified individual receptors (as described above) is then used to assess the *sensitivity of the area* surrounding the active construction area, taking into account the proximity and number of those receptors, and the local background $PM_{10}$ concentration (in the case of potential health impacts) and other site-specific factors. Additional factors to consider when determining the sensitivity of the area include:

- any history of dust generating activities in the area;
- the likelihood of concurrent dust generating activity on nearby sites;
- any pre-existing screening between the source and the receptors;
- any conclusions drawn from analysing local meteorological data which accurately represent the area and if relevant, the season during which the works will take place;
- any conclusions drawn from local topography;
- the duration of the potential impact (as a receptor may be willing to accept elevated dust levels for a known short duration, or may become more sensitive or less sensitive (acclimatised) over time for long-term impacts); and
- any known specific receptor sensitivities which go beyond the classifications given in the IAQM document.

The IAQM guidance for assessing the sensitivity of an area to dust soiling is shown in **Table BA-2**. The sensitivity of the area should be derived for each of activity relevant to the project (i.e. construction and earthworks).

**Table A-2 IAQM Guidance for Categorising the Sensitivity of an Area to Dust Soiling Effects**

| Receptor sensitivity | Number of receptors | Distance from the source (m) | | | |
|---|---|---|---|---|---|
| | | <20 | <50 | <100 | <350 |
| High | >100 | High | High | Medium | Low |
| | 10-100 | High | Medium | Low | Low |
| | 1-10 | Medium | Low | Low | Low |
| Medium | >1 | Medium | Low | Low | Low |
| Low | >1 | Low | Low | Low | Low |

Note: Estimate the total number of receptors within the stated distance. Only the *highest level* of area sensitivity from the table needs to be considered. For example, if there are 7 high sensitivity receptors < 20m of the source and 95 high sensitivity receptors between 20 and 50 m, then the total of number of receptors < 50 m is 102. The sensitivity of the area in this case would be high.

A modified version of the IAQM guidance for assessing the *sensitivity of an area* to health impacts is shown in **Table A-3**. For high sensitivity receptors, the IAQM methods takes the existing background concentrations of $PM_{10}$ (as an annual average) experienced in the area of interest into account and is based on the air quality objectives for $PM_{10}$ in the UK. As these objectives differ from the ambient air quality criteria adopted for use in this assessment (i.e. an annual average of 20 µg/m$^3$ for $PM_{10}$) the IAQM method has been modified slightly.

This approach is consistent with the IAQM guidance, which notes that in using the tables to define the *sensitivity of an area*, professional judgement may be used to determine alternative sensitivity categories, taking into account the following factors:

- any history of dust generating activities in the area;
- the likelihood of concurrent dust generating activity on nearby sites;
- any pre-existing screening between the source and the receptors;
- any conclusions drawn from analysing local meteorological data which accurately represent the area, and if relevant the season during which the works will take place;
- any conclusions drawn from local topography;
- duration of the potential impact; and
- any known specific receptor sensitivities which go beyond the classifications given in this document.

Given the above, for the purposes of this study, all receptors have been classified based on the sensitivity classifications for a background annual average $PM_{10}$ concentration of 17 µg/m$^3$, as outlined in **Section** Error! Reference source not found..

**Table A-3 IAQM Guidance for Categorising the Sensitivity of an Area to Dust Health Effects**

| Receptor sensitivity | Annual mean $PM_{10}$ conc | Number of receptors [a,b] | Distance from the source (m) | | | |
|---|---|---|---|---|---|---|
| | | | <20 | <50 | <100 | <350 |
| High | >20 µg/m³ | >100 | High | Medium | Low | Low |
| | | 10-100 | High | Medium | Low | Low |
| | | 1-10 | Medium | Low | Low | Low |
| | <20 µg/m³ | >100 | Medium | Low | Low | Low |
| | | 10-100 | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low |
| Medium | - | >10 | High | Medium | Low | Low |
| | - | 1-10 | Medium | Low | Low | Low |
| Low | - | >1 | Low | Low | Low | Low |

Notes: (a) Estimate the total within the stated distance (e.g. the total within 350 m and not the number between 200 and 350 m); noting that only the highest level of area sensitivity from the table needs to be considered.

(b) In the case of high sensitivity receptors with high occupancy (such as schools or hospitals) approximate the number of people likely to be present. In the case of residential dwellings, just include the number of properties.

(c) The estimated background annual average $PM_{10}$ concentration is taken from monitoring data as outlined within **Section** Error! Reference source not found..

### Risk Assessment

The dust emission magnitude from Step 2a and the receptor sensitivity from Step 2b are then used in the matrices shown in **Table A-4** (demolition), **Table A-5** (earthworks and construction) and **Table A-6** (track-out) to determine the risk category with no mitigation applied.

**Table A4 Risk Category from Demolition**

| Sensitivity of Area | Dust Emission Magnitude | | |
|---|---|---|---|
| | Large | Medium | Small |
| High | High Risk | Medium Risk | Medium Risk |
| Medium | High Risk | Medium Risk | Low Risk |
| Low | Medium Risk | Low Risk | Negligible |

**Table A-4 Risk Category from Earthworks and Construction Activities**

| Sensitivity of Area | Dust Emission Magnitude | | |
|---|---|---|---|
| | Large | Medium | Small |
| High | High Risk | Medium Risk | Low Risk |
| Medium | Medium Risk | Medium Risk | Low Risk |
| Low | Low Risk | Low Risk | Negligible |

**Table A-5 Risk Category from Track-Out Activities**

| Sensitivity of Area | Dust Emission Magnitude | | |
|---|---|---|---|
| | Large | Medium | Small |
| High | High Risk | Medium Risk | Low Risk |
| Medium | Medium Risk | Low Risk | Negligible |
| Low | Low Risk | Low Risk | Negligible |

### Step 3 - Site-Specific Mitigation

Once the risk categories are determined for each of the relevant activities, site-specific management measures can be identified based on whether the Project Site is a low, medium or high risk site.

### Step 4 – Residual Impacts

Following Step 3, the residual impact is then determined after management measures have been considered.