

MELBOURNE METRO RAIL PROJECT ENVIRONMENT EFFECTS STATEMENT
INQUIRY AND ADVISORY COMMITTEE

MMRA TECHNICAL NOTE

TECHNICAL NOTE NUMBER: 003

DATE: 26/07/16

PRECINCT: Eastern Portal Precinct

EES/MAP BOOK REFERENCE: Appendix H to the EES

SUBJECT: Dust dispersion modelling - Eastern Portal
Response to item 3 of the IAC request for
information dated 13 July 2016

NOTE:

1. Dust dispersion modelling was not prepared in relation to the Eastern Portal Precinct.
2. One of the steps in the Air Quality Impact Assessment (Appendix H of EES) was to review Project information from MMRA, including proposed construction activities, and carry out a risk assessment to identify the areas with the highest potential to cause adverse air quality impacts to sensitive locations. The risk assessment considered a range of potential air quality issues including construction dust (at all proposed locations), odour, vehicle exhausts, ventilation shafts and emissions, operational emissions, portals, and fires.
3. The key issue from the risk assessment was identified as dust from the proposed construction activities. In particular, the Arden Station, Domain Station and Fawkner Park precincts were identified as the locations where air quality impacts were most likely to occur. This outcome arose from a review of the proposed spoil handling quantities, estimated truck movements and exposed areas data. Specifically, the highest volumes of spoil and truck movements were proposed for the Arden Station, Domain Station and Fawkner Park sites. As an example, the truck movements at the Eastern Portal are anticipated to be in the order of 10-15% of the movements at the Arden Station, Domain Station and Fawkner Park sites. This means that annual dust emissions (in the form of TSP, PM10, and

PM2.5) will be highest at the Arden Station, Domain Station and Fawkner Park sites, and much higher than at the Eastern Portal.

4. From this review, dust emissions from construction activities in the Arden Station, Domain Station and Fawkner Park precincts were determined to be greater than emissions from other locations or activities. Therefore, further investigation of the potential air quality impacts in the vicinity of these three sites was carried out.
5. The investigations of potential impacts in the Arden Station, Domain Station and Fawkner Park precincts involved quantification of construction dust emissions and prediction of dust concentrations and deposition levels using an air dispersion model. The dispersion model used was EPA's regulatory model known as AERMOD. Meteorological conditions, emission estimates and existing air quality conditions were the main inputs to the model.
6. The modelling indicated that air quality criteria for key dust classifications (PM10, PM2.5 and deposited dust) could be achieved at all off-site sensitive locations under average background air quality conditions, however there was the potential for short-term PM10 criteria to be exceeded if background levels were already very close to the criteria on a particular day. It was therefore concluded that the Project was unlikely to be the cause of an air quality exceedance. In addition, it was inferred that compliance with air quality criteria could also be achieved in the vicinity of all other construction sites (based on the risk assessment from Section 6 of Appendix H to the EES), including at the Eastern Portal, since these other sites will have lower levels of activities and consequently lower overall dust emissions.

ATTACHMENTS:

None