

23 October 2020

Justin Hazelbrook
Community and Conditions Coordinator
Fulton Hogan Egis O&M Pty Ltd
50 Clarence Street
Sydney NSW 2000

Re: M8 MCoA_E17 - Report on above ambient goal recording - 3 October 2020

Dear Justin,

1 Introduction

The Ministers Condition of Approval (MCoA) E17 for WestConnex M8 (New M5) includes a requirement for ambient monitoring notification and reporting, as follows:

Within 20 working days of any Notification of Above-Goal Recording, the Proponent must prepare and submit to the Secretary a Report on Above-Goal Recording that details the cause and major contributor of the exceedance and the options available to prevent recurrence.

Where the operation of the tunnel is identified to be a significant contributor to the recorded above-goal reading, the Report on Above-Goal Recording must include consideration of improvements to the tunnel air quality management system so as to achieve compliance with the ambient air quality goals, including but not limited to installation of the additional ventilation management facilities allowed for under condition B5, and discussion of whether those improvements are feasible and reasonable.

The Proponent must comply with any requirements arising from the Secretary's review of the Report on Above-Goal Recording.

A Notification of Ambient Above-Goal Recording was sent to DPIE¹, EPA and NSW Health for an exceedance which occurred on 3 October 2020 at seven of the eight monitoring sites. In accordance with MCoA E17, the purpose of this report is to follow up on the notification and provide a Report on Above-Goal Recording, identifying the cause and major contributor for the exceedance on 3 October 2020.

2 Analysis of above-goal recordings

The above-goal recording for 24-hour average PM_{2.5} concentration on 3 October 2020 is summarised in Table 2.1. Data are presented for the reported concentrations in the notification (taken directly from the website) and as revised concentrations, re-calculated from raw hourly average data. It is noted that the averaging period for data reported on the website is hours 1 to 24. However, the data are logged by the instruments for hours 0 to 23. This results in a slightly different 24-hour concentration between the two datasets (ie the website uses the first hour of the next day for the previous day average).

¹ Department of Planning, Industry and Environment

Table 2.1 Summary of above-goal recording

Date	Site	Pollutant	Concentration ($\mu\text{g}/\text{m}^3$)	
			Originally reported in the notification	Revised following analysis of raw data
3/10/20	Arncliffe 1 (West Botany St)	PM _{2.5}	33.3	36.8
	Arncliffe 2 (Eve St)		35.6	37.4
	Barton Park		33.7	34.9
	Kingsgrove 1 (MOC)		23.6	27.2
	Kingsgrove 2 (Kingsgrove Rd)		25.2	29.3
	St Peters 1 (Campbell St)		32.7	33.3
	St Peters 2 (SPI)		27.5	33.2
	St Peters 3 (St Peters St)		32.8	28.1

The notification sent to DPIE, EPA and NSW Health reported above-goal recordings at seven of the eight monitoring sites. However, the revised analysis found that the 24-hour average concentration at Kingsgrove 1 (MOC) was also above the goal.

2.1 Timeseries analysis

A timeseries of the 24-hour average PM_{2.5} concentration from 1 to 5 October 2020 for all sites is presented Figure 2.1. Also presented in the plot are the 24-hour average PM_{2.5} concentrations recorded at the closest ‘background’ monitoring station operated by DPIE at Earlwood. It is noted that Barton Park is located approximately 1km from the Arncliffe ventilation outlet and therefore also a ‘background’ site.

Figure 2.1 shows that, above-goal PM_{2.5} concentrations were recorded at all sites on 3 October 2020.

Figure 2.2 plots the hourly PM_{2.5} concentration from 1 to 5 October 2020 for all sites. All sites display peak hourly concentrations overnight for a few hours around midnight.

2.2 Source of peak concentrations

The elevated concentrations and consistent diurnal profile recorded across all sites is indicative of a regional influence on recorded concentrations, rather than any localised impact from ventilation outlets. A number of hazard reduction burns were planned over the weekend of 3 October 2020 and smoke from these burns has likely resulted in elevated PM_{2.5} concentration across parts of Sydney’s inner west. The Department of Planning, Industry and Environment monitoring sites at Earlwood and Rozelle also recorded exceedances for PM_{2.5} concentrations.

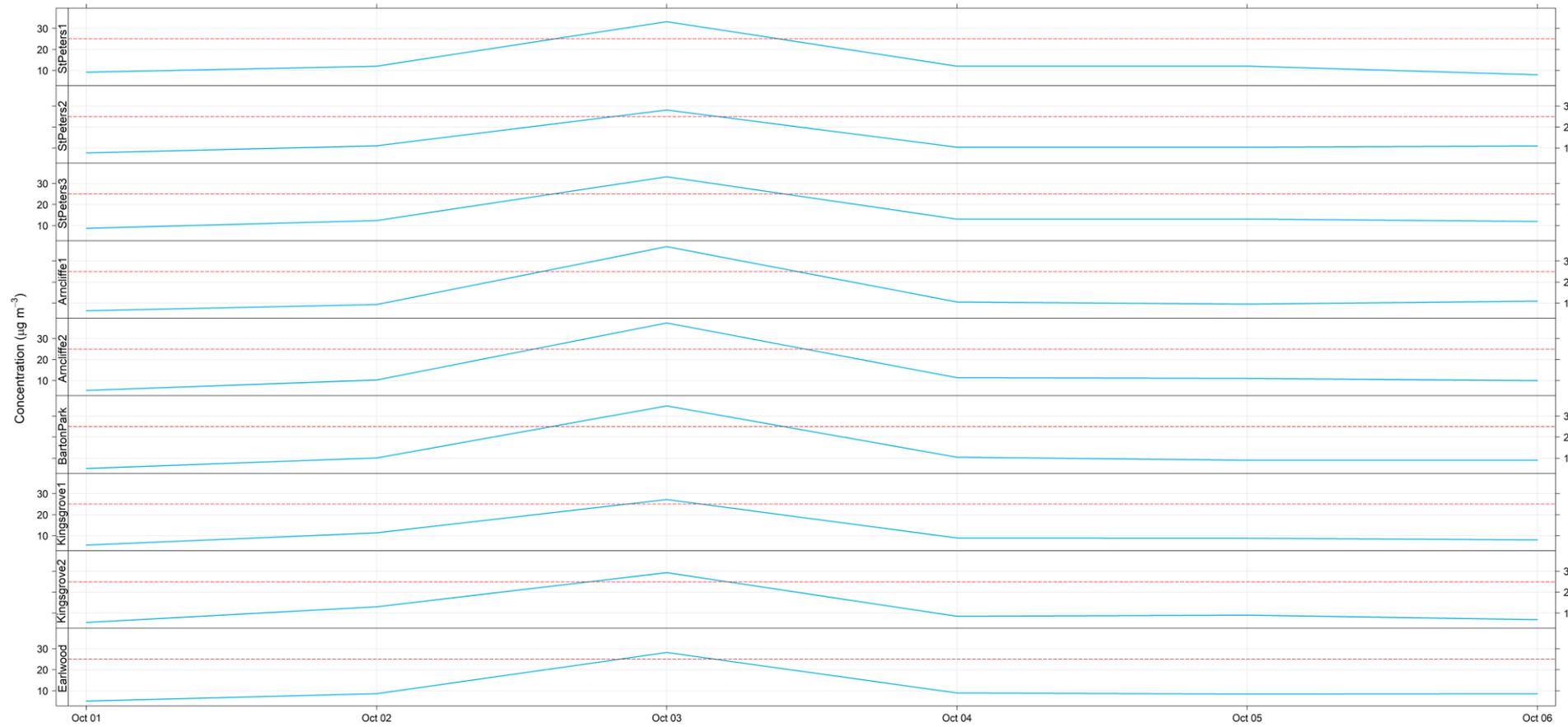


Figure 2.1 Time series plot of 24-hour average PM₁₀ concentration (µg/m³) for all sites – 1/10/2020 to 05/10/2020

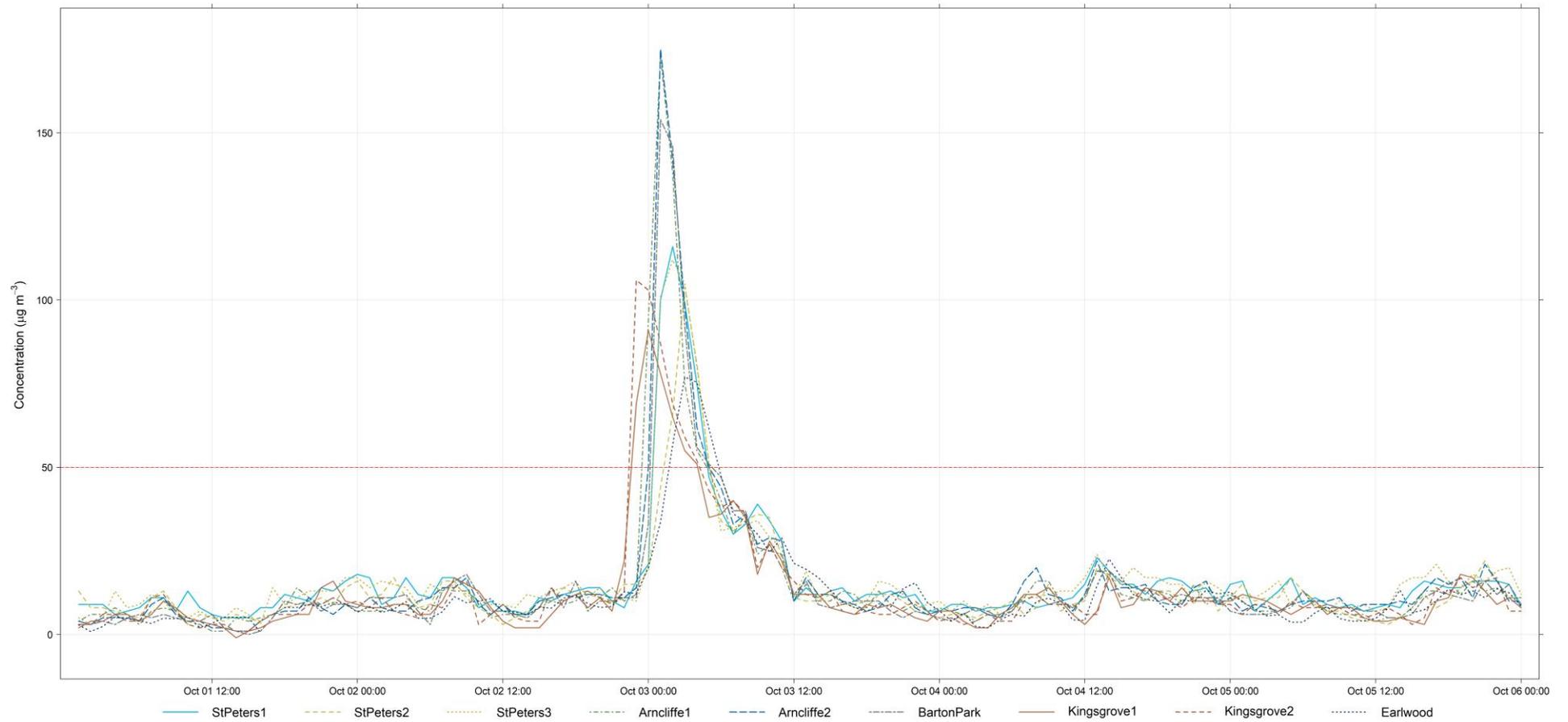


Figure 2.2 Time series plot of 1-hour average PM_{2.5} concentration (µg/m³) for all sites – 1/10/2020 to 05/10/2020

3 Conclusion

Our review of ambient air quality data has found that the operation of the tunnel has not caused nor is a major contributor to the above-goal recording on 3 October 2020, for the following reasons:

- elevated concentrations and similar diurnal profile recorded across all sites is indicative of a regional influence on recorded concentrations, rather than any localised impact from ventilation outlets;
- elevated 24-hour average PM_{2.5} concentration were also recorded DPIE monitoring sites at Earlwood and Rozelle on 3 October 2020;
- hazard reduction burns planned over the weekend of 3 October 2020 is likely to have caused smoke across parts of Sydney;
- peak concentrations occurred overnight for a few hours around midnight of 3 October 2020, when traffic in the tunnel would be minimal; and
- none of the ventilation outlets recorded above-limit readings on the 3 October 2020.

Yours sincerely



Ronan Kellaghan
Associate - Air Quality

rkellaghan@emmconsulting.com.au

Appendix A

Monitoring locations

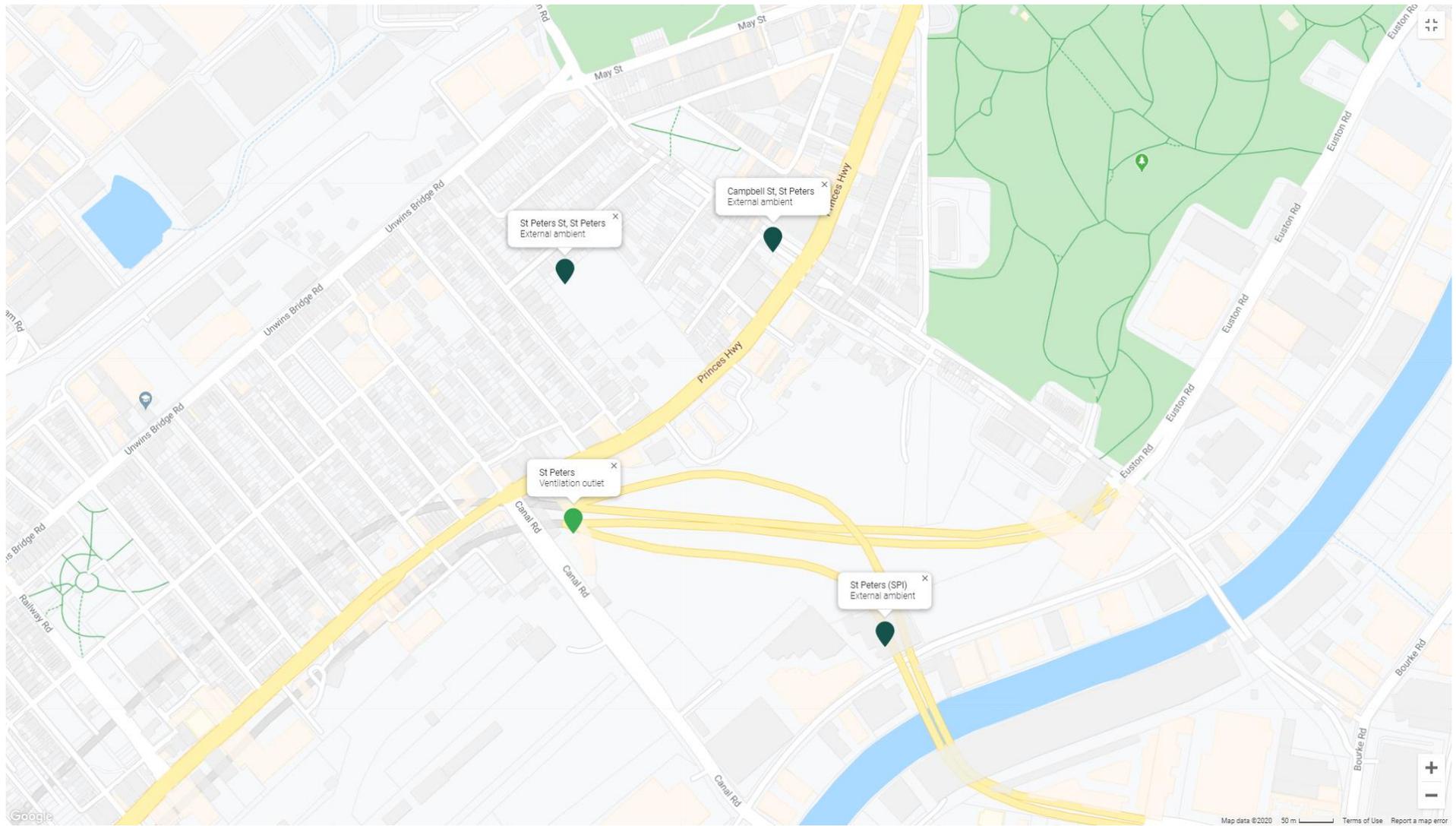


Figure A.1 St Peters monitoring locations

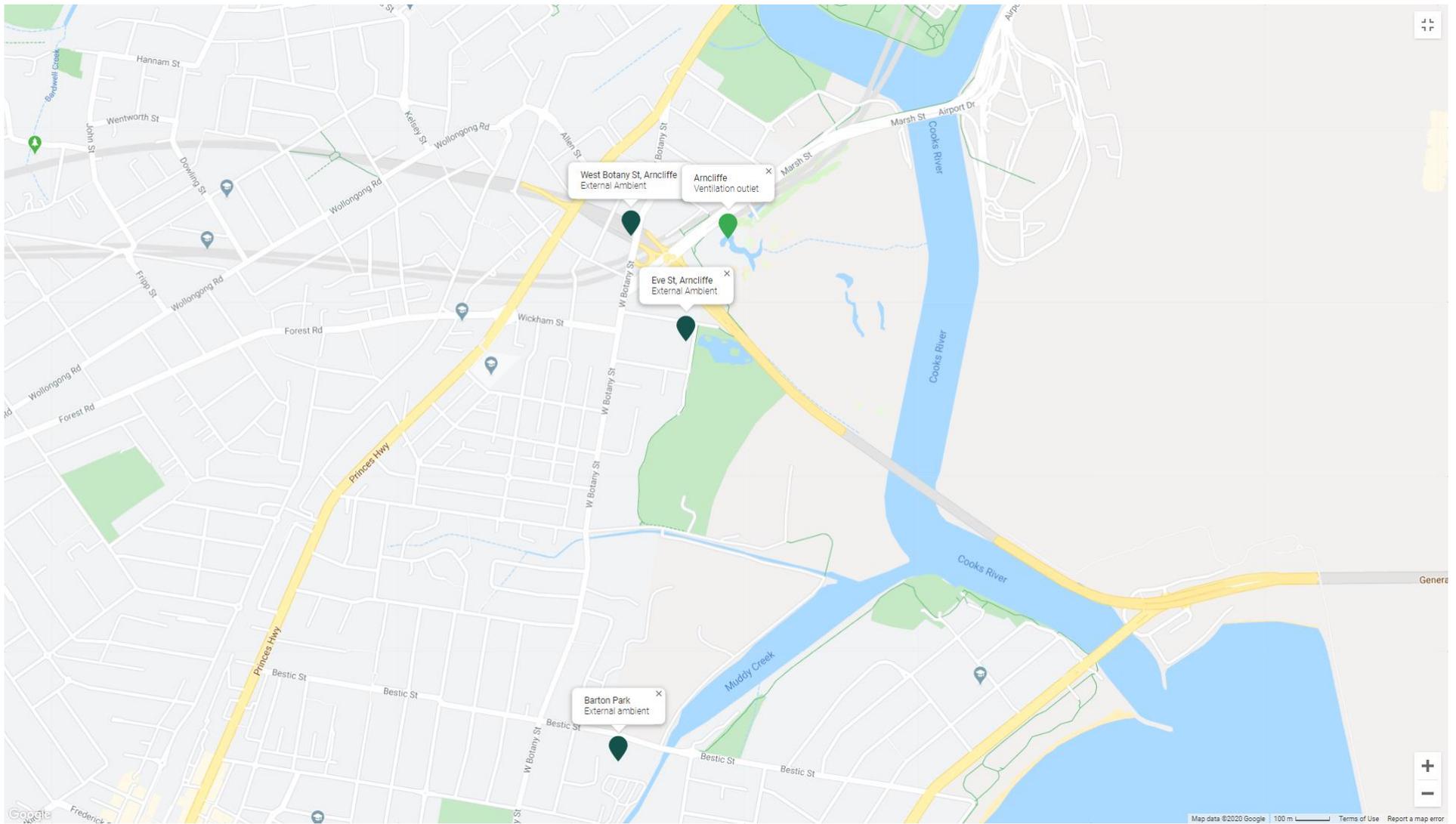


Figure A.2 Arcliffe monitoring locations

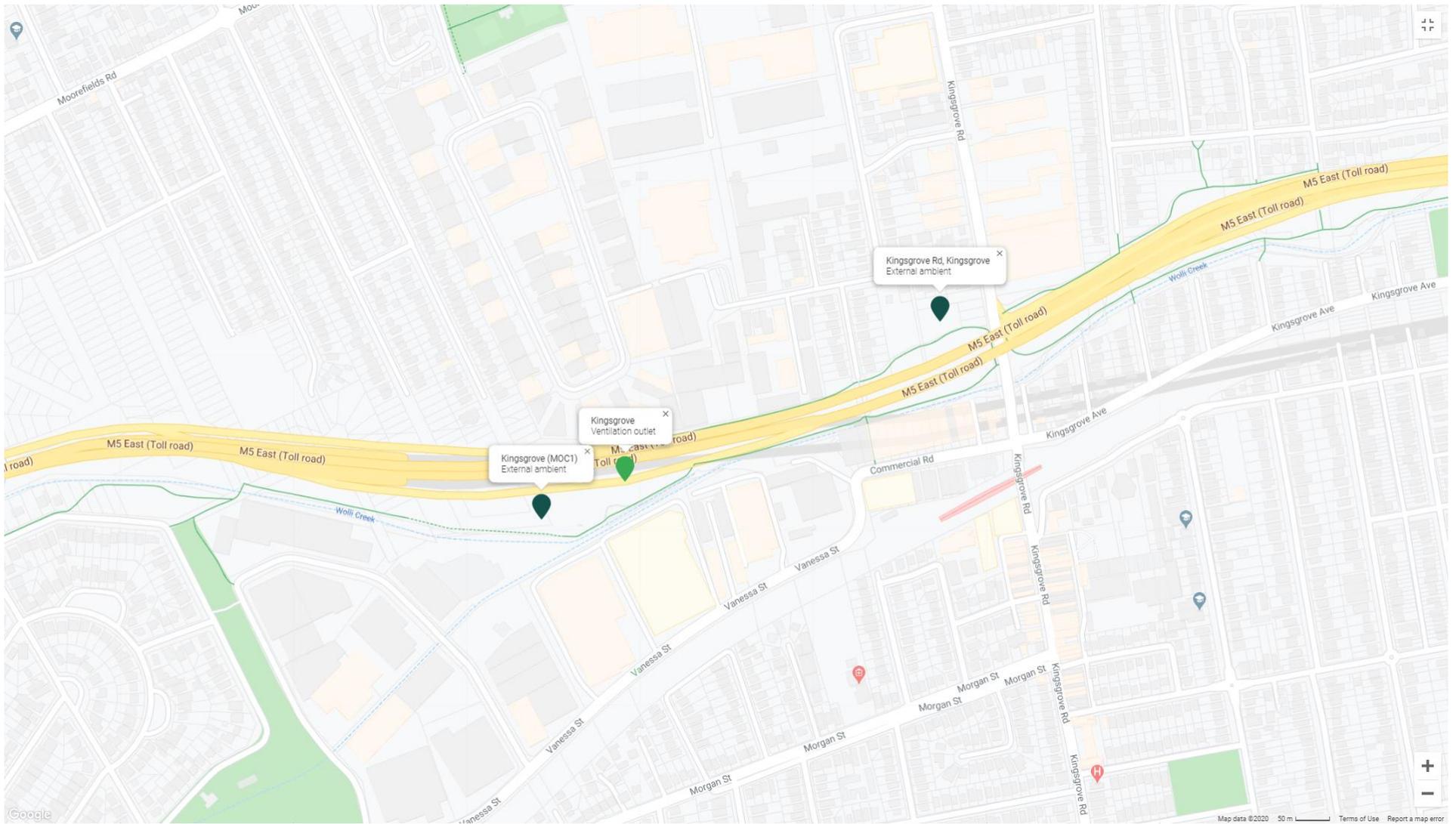


Figure A.3 Kingsgrove monitoring locations