

25 August 2021

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 - 16 August 2021

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 a marginal exceedance which occurred on 16 August 2021 at the St Peters (Campbell Street) monitoring site. 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 marginal exceedance on 16 August 2021.

¹ Department of Planning, Industry and Environment

2 Analysis of above-goal recordings

The above-goal recording for 24-hour average PM₁₀ concentration on 16 August 2021 is summarised in Table 2.1.

Table 2.1 Summary of above-goal recording

Date	Site	Pollutant	24-hour average concentration (µg/m ³)
16/08/2021	St Peters 1 (Campbell Street)	PM ₁₀	50.4

2.1 Timeseries analysis

Figure 2.1 plots the hourly PM₁₀ concentration from 14 August 2021 to 18 August 2021 at St Peters 1 (Campbell St) and each of the other St Peters monitoring sites. Also presented is the corresponding hourly PM_{2.5} concentration at Campbell St.

As shown in Figure 2.1, the above-goal PM₁₀ concentration at St Peters 1 (Campbell St) was caused by a single peak hourly concentration of approximately 800 µg/m³ occurring at 2pm. The concentration for the hours preceding and following this peak were approximately 20 µg/m³ and 30 µg/m³ respectively. There is no corresponding peak PM₁₀ concentration at the other St Peters sites.

If the peak PM₁₀ concentration at 2pm was caused by the ventilation outlet, or another localised source, a corresponding peak PM_{2.5} concentration would also be expected at the Campbell St site. As shown in Figure 2.1 there is no corresponding peak PM_{2.5} concentration at the Campbell St site.

A polar plot of the maximum 1-hour PM₁₀ concentration for the Campbell St site (same period) is presented in Figure 2.2. The plot shows the wind speed and wind direction under which the peak concentrations occur and is useful to identify where pollution is originating from. The peak concentration at 2pm (shown by the darker colour dot) occurred when winds are blowing from the west-southwest. The ventilation outlet is located south-southwest of the Campbell St site², indicating that the St Peters ventilation outlet did not cause the peak concentration.

It is understood that there is no evidence of an instrument fault or error at the time of the peak concentration; notwithstanding, the peak concentration recorded at 2pm appears to be a data outlier.

² The locations for each monitoring site, relative to the ventilation outlets is shown in Appendix A

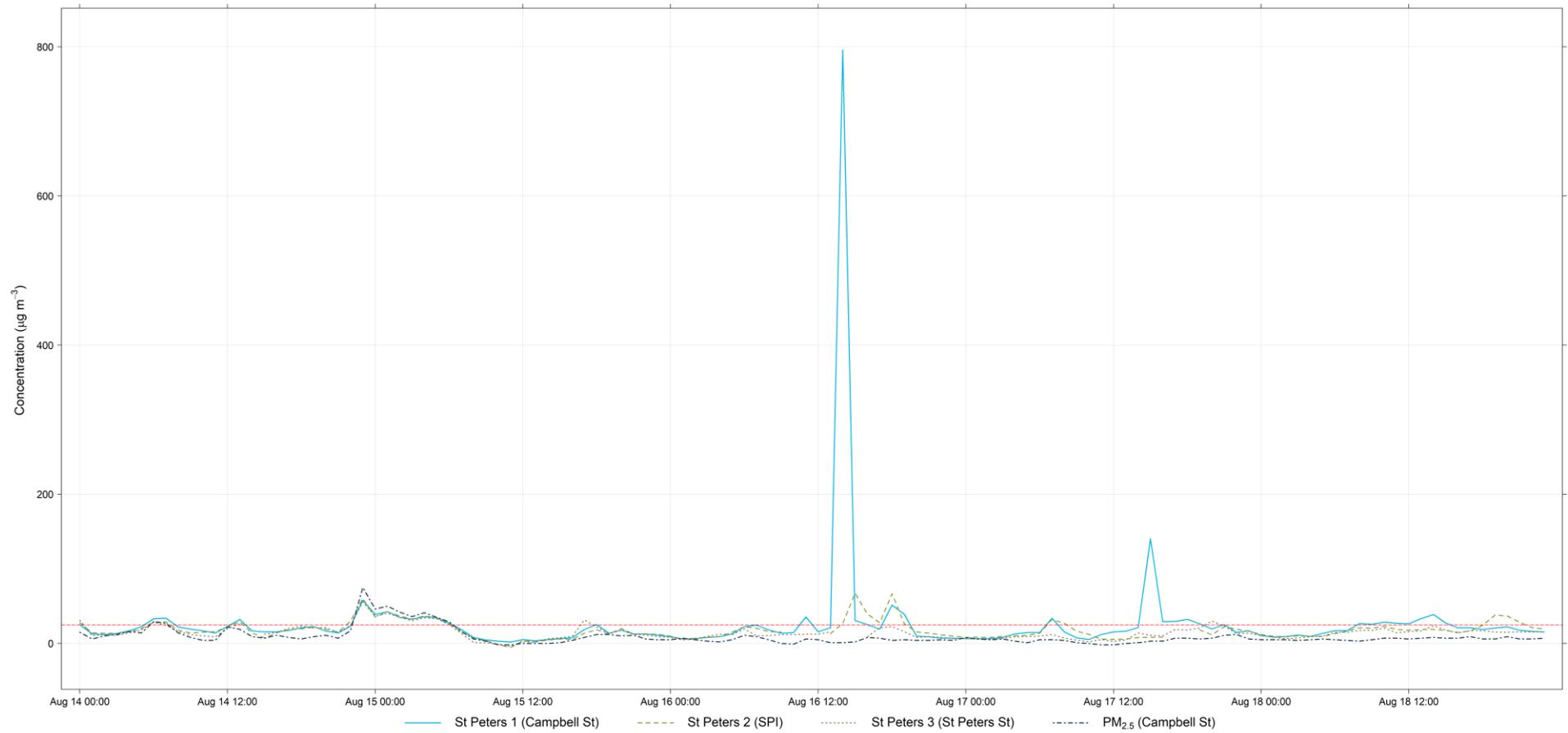
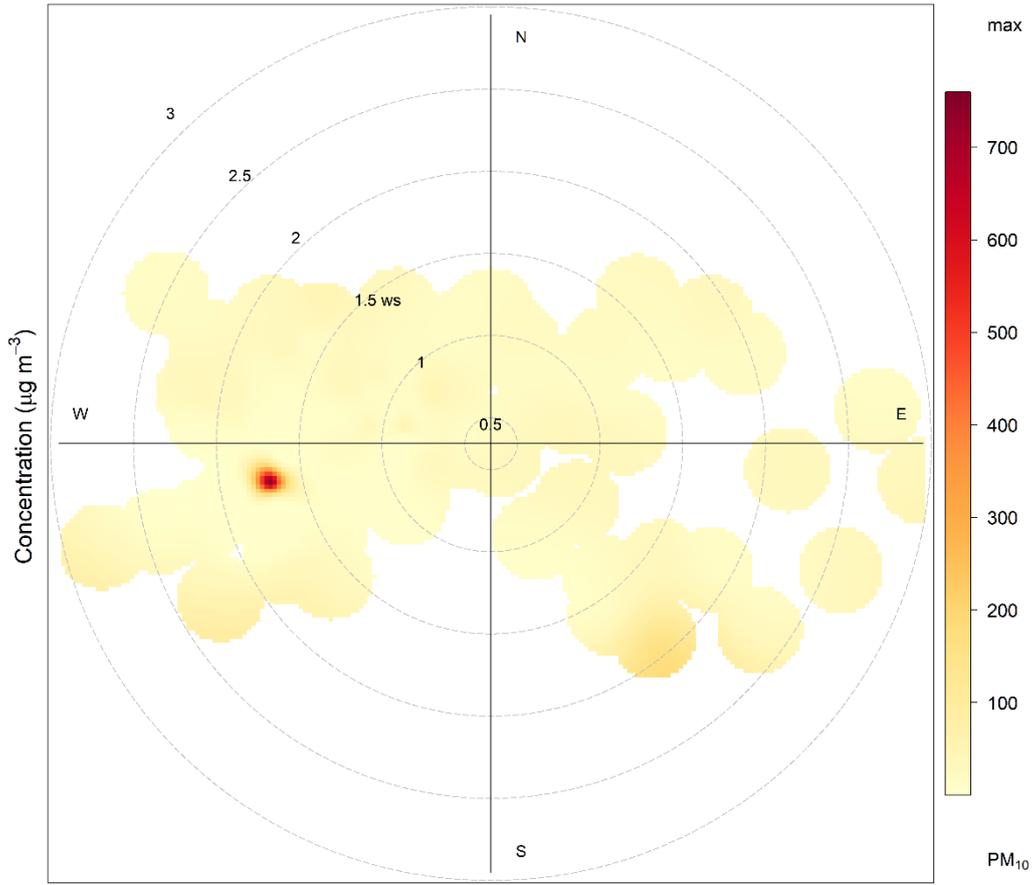


Figure 2.1 Time series plot of 1-hour average PM₁₀ concentration (µg/m³) for all St Peters sites and 1-hour average PM_{2.5} concentration at Campbell St



St Peters 2 (SPI)

Figure 2.2 Polar plot of maximum hourly PM₁₀ concentration (µg/m³) – Campbell St

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 16 August 2021, for the following reasons:

- the above-goal PM₁₀ concentration at Campbell St was caused by a single peak hourly concentration occurring at 2pm;
- there is no corresponding peak PM_{2.5} concentration (which would be expected if vehicle emissions from the ventilation outlet were the cause);
- plots of peak concentrations with wind speed and direction indicate that the 'source' of the peak concentration does not align with the ventilation outlet; and
- although there is no evidence of an instrument fault or error, the single peak hourly concentration appears to be a data outlier.

Yours sincerely



Ronan Kellaghan

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Appendix A

Monitoring locations

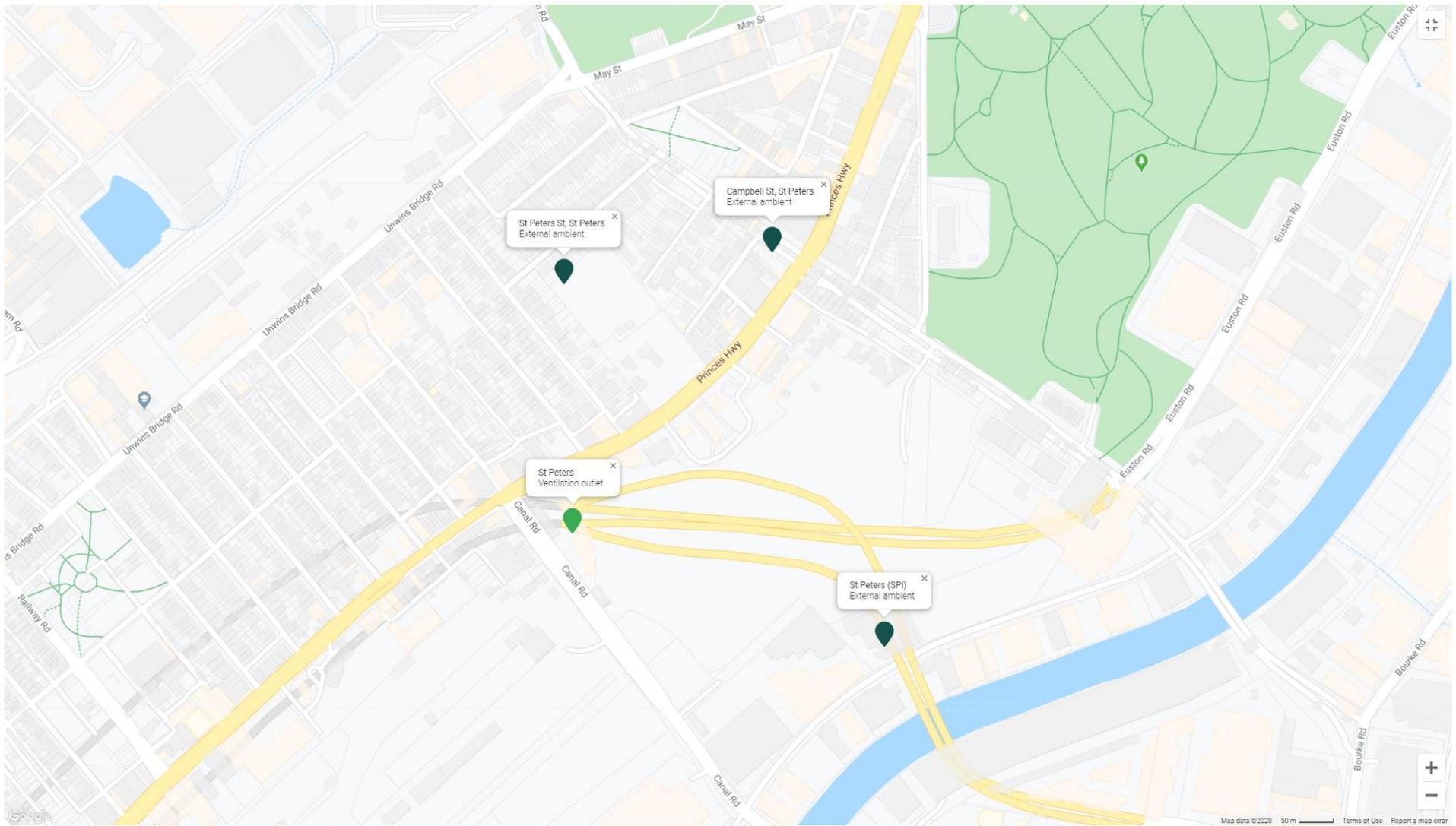


Figure A.1 St Peters monitoring locations

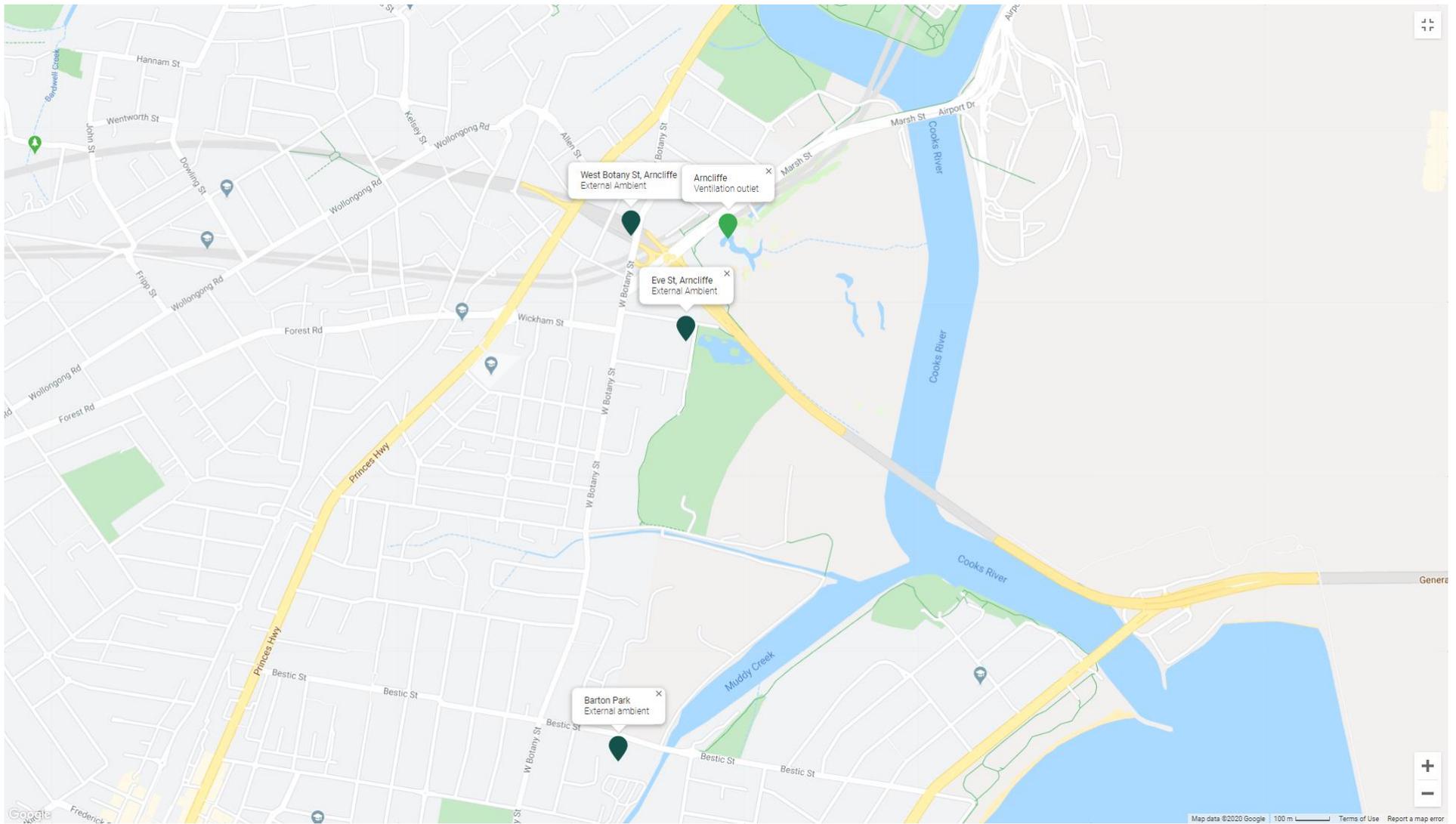


Figure A.2 Arcliffe monitoring locations

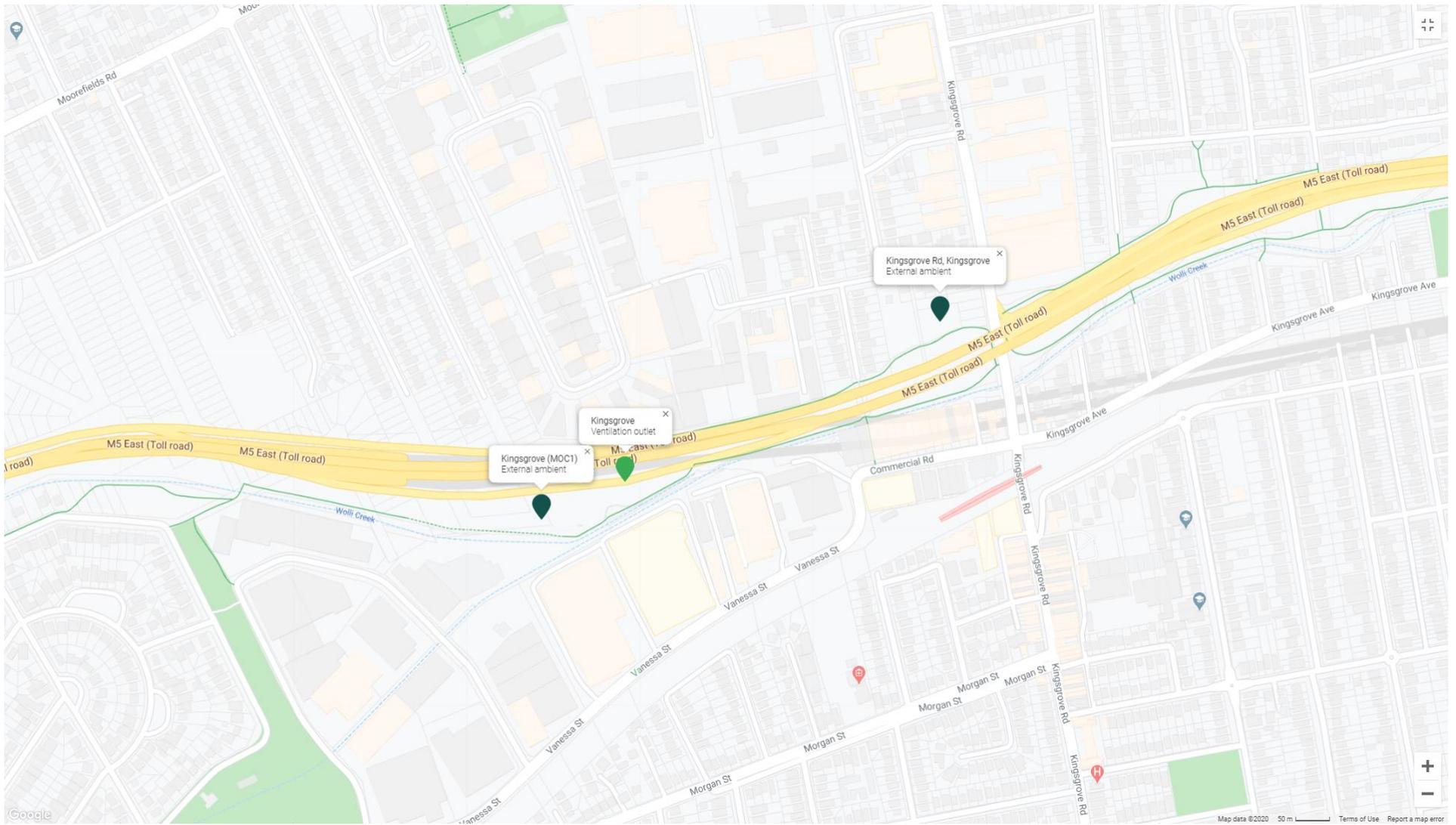


Figure A.3 Kingsgrove monitoring locations