Witness Statement

Whitehorse City Council

Planning Scheme Amendment C230whse

Planning Panel Hearing: 7, 8, 9, and 10 February 2023

Barry Cook

23 January 2023

1. Name and Address

Mr Barry Cook,

6 Gunsynd Court, Bacchus Marsh, Victoria 3340.

2. Qualifications and Experience

- B,Sc (Hons) University of Melbourne 1983
- Member, Clean Air Society Australia and New Zealand
- Certified Air Quality Professional (CASANZ)

- Professional Experience
  - August, 2007 to Present,

    Principal/Technical Director - GHD
  - Start-2004 to June, 2007

    Technical Director, Synergetics – Environmental Engineers
  - August, 1996 to end-2003

    Air Quality Control Meteorologist, Mount Isa Mines
  - April, 1987 to August, 1996

    Air Quality Meteorologist, Environment Protection Authority of Victoria
  - July, 1985 to Now

    Principal – Australian Weatherwatch

3. Areas of Expertise

I have qualifications in meteorology and have specialised in air quality meteorology, the latter for the last 35 years. During those past 35 years, I have worked on air quality impacts for an environmental regulator, a large mining industry and a consulting firm.

4. Expertise to Prepare Report

I have reported on air quality impacts in many cases for Planning Panels and VCAT proceedings and have conducted such assessments for major infrastructure projects including road tunnel projects in NSW and SA, the Frankston By-pass (now PenLink), East-West Link, Westgate Tunnel Project and Craigieburn Road upgrade.

5. Instructions which defined the scope of Report

I received instructions from Norton Rose Fulbright, Lawyers acting for Dandenong Views Pty Ltd affected by Whitehorse Planning Scheme Amendment C230whse, to:
(1) Review the briefing materials provided to you in this matter;

(2) Consider the appropriateness of the proposed Amendment, having regard to relevant air quality considerations;

(3) Prepare an expert witness statement explaining your conclusions, and the reasoning and analysis by which you have reached such conclusions; and

(4) Appear before the Panel to give independent expert evidence in this matter.

6. Facts, Matters and Assumptions Relied Upon

• Review of plans and reports

• My experience relevant to near-road air quality impact assessments for road project infrastructure.

7. Documents to be taken into account

- Traffix Group: Traffic Engineering Assessment, Proposed Rezoning Application, 500 Burwood Highway, Vermont South, October 2021, G22764R-03D (Exhibited document #17).
- EPA Victoria: Proposed Planning Scheme Amendment C230 Whitehorse Planning Scheme 480-500 Burwood Highway, Vermont South, Ref: REQ002157, 4 July 2022 (Exhibited document #38).
- Planning Panels Victoria (29 November 2022): “Issues for response in relation to Amendment C230whse to the Whitehorse Planning Scheme arising from the site visit on 21 November 2022.”
- Schedule 6 – Design and Development Overlay (Exhibited document #13).
- Council Meeting Minutes, exhibited document #32.
- EPA Victoria: Review of Air Quality Near Major Roads, Publication 1025, February 2006.
- Google Maps ®: Site boundary at Burwood Highway.
- Stantec via Norton Rose Fulbright lawyers: Updated Burwood Highway traffic data (email from Shantanu Joshi).
- VicRoads: Air Quality Screening Tool (V3.0).
- NEPC: National Environment Protection (Ambient Air Quality) Measure

8. Identity of Persons Undertaking Work

Barry Cook

9. Summary of Opinions

The substantive portion of my statement is given in the Australian Weatherwatch report # 299-23021 attached.

10. My opinions are not provisional except where specifically qualified.

11. The analysis presented in this report is within my area of expertise.

12. I declare that I have made all the inquiries that I believe are desirable and appropriate, and no matters of significance which I regard as relevant have to my knowledge been withheld from the Panel.

B. Cook

23 January 2023

AUSTRALIAN WEATHERWATCH

Meteorological Consultants

Dandenong Views Pty Ltd

Whitehorse Planning Scheme Amendment
C230whse Panel Hearing
Land: 490-500 Burwood Highway,
Vermont South

Planning Panels Victoria Hearing
Expert Witness Statement Report

January 2023

Document: 299-23021
Author: Barry J Cook, B.Sc. (Hons), CAQP

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Figures

1. Introduction

Norton Rose Fulbright act for Dandenong Views Pty Ltd, the owner of the Land, in respect of Whitehorse Planning Scheme Amendment C230wshe (Amendment). The Land is identified in Certificate of Title Volume 10528 Folio 902, and is formally described as Lot 1 on Plan of Subdivision 518296N. The Land is also known as the former Australian Road and Research Board (ARRB) site.

Norton Rose Fulbright have instructed me to:

1. Review the briefing materials provided to you in this matter;
2. Consider the appropriateness of the proposed Amendment, having regard to relevant air quality considerations;
3. Prepare an expert witness statement explaining your conclusions, and the reasoning and analysis by which you have reached such conclusions (this document); and
4. Appear before the Panel to give independent expert evidence in this matter.

Figure 1 provides context for the site with respect to Burwood Highway and surrounding existing residential housing. The Land (subject site) is represented by a dashed blue line.

Figure 1 Detail from Existing Zoning Map

2. Consideration of air quality impacts

2.1 Issues arising

The EPA Victoria referral response (Exhibited document #38) makes two recommendations. The first concerns land contamination while the second includes:

- "Council may wish to consider the noise and air quality impacts on the proposed residential redevelopment from Burwood Highway" (EPA Victoria, 4 July 2022, p.4).

The former issue is taken up by Planning Panels Victoria in their letter (29 November 2022) pertaining to "Issues for response in relation to Amendment C230whse to the Whitehorse Planning Scheme arising from the site visit on 21 November 2022". However, the consideration of this document, air quality, is not. Nonetheless, this witness statement considers the appropriateness of the proposed Amendment, having regard to relevant air quality considerations (from Burwood Highway on the development, Viz future residents).

EPA Victoria raise concerns about air quality in relation to:

- Planning scheme clause 13.06-1S; and
- Obligations under the GED (General Environmental Duty).

Clause13.06-1S, since 10 June 2022, is a requirement for "strategies aimed at minimising exposure of sensitive uses to air pollution." The GED applies to anyone who engages in an activity that may give rise to risks of harm to human health or the environment and from pollution or waste (EPA Victoria, https://www.epa.vic.gov.au/about-epa/laws/laws-and-your-business/general-environmental-duty). However, the proponent and future residents will not be generating pollution or waste to the degree of what is emitted by others on Burwood Highway.

2.2 Minimising exposure

Having regard to air quality considerations from Burwood Highway on the development requires the Clause 13.06-1S need to have strategies in place to minimise exposure on sensitive uses (Viz. future residents). The proponent is unable to influence the source of emissions (vehicles on Burwood Highway) so as to comply with GED. However, a minimisation strategy is possible by utilising a setback from the source to the receptor. This is akin to a 'separation distance' (see EPA Victoria Publication 1949 "Separation distance guideline")[1] that minimises air quality impact – albeit a transport corridor is not an industrial use.

[1] New guidelines for industry separation distances and landfill buffers. https://engage.vic.gov.au/separation-distances-and-landfill-buffers.

A concept plan proposed for the Whitehorse Planning Scheme (exhibited document #13) is provided in Figure 2. The majority of the land fronting Burwood Highway is reserved for communal open space. This is an excellent example of providing a separation distance from source to receptor. The indicative apartment building envelope of just one building fronts Burwood Highway. This will provide a separation distance from the nearest carriageway of Burwood Highway of at least 15 metres (see Figure 3). Moreover, the landscape plan (Figure 8 of Council Meeting Minutes, exhibited document #32) for the site has retained trees between the site boundary and the indicative apartment building envelope.

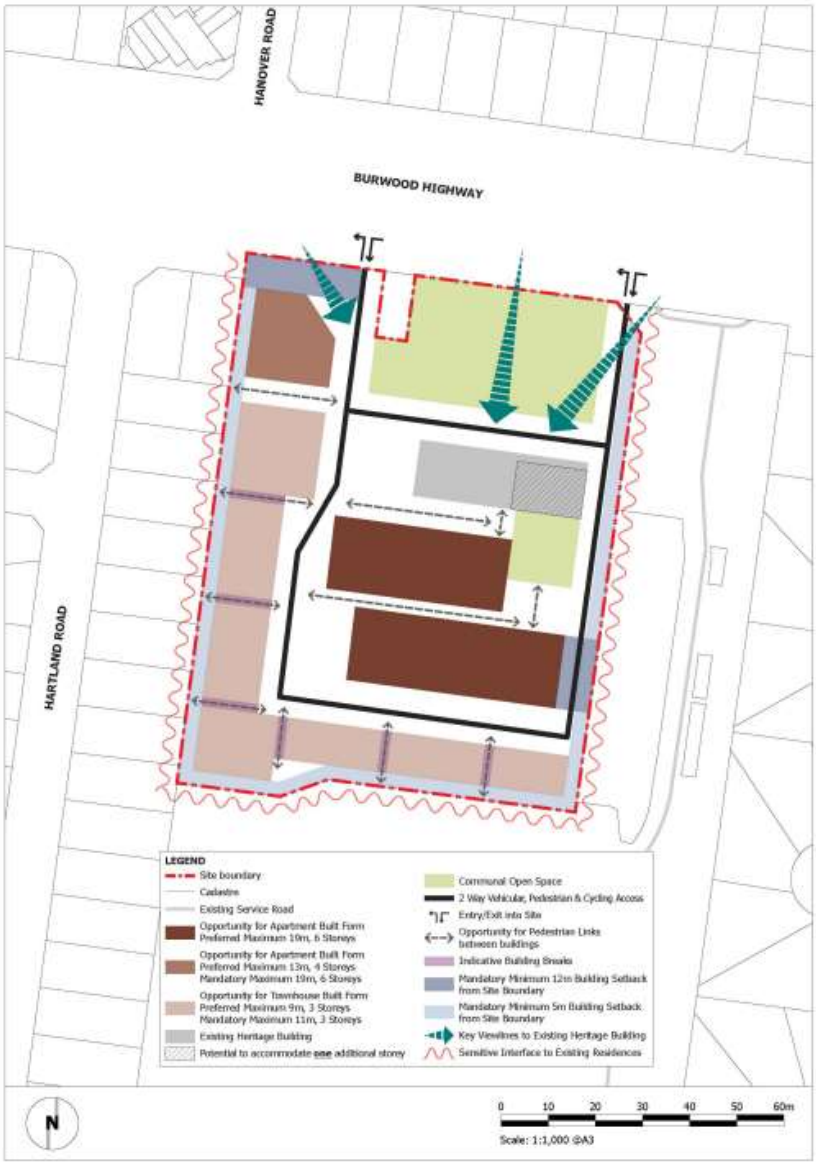

Figure 2 Concept plan proposed for Whitehorse Planning Scheme

Figure 3 Aerial image of site boundary distance to Burwood Highway carriageways (Source: Google Maps ®).

3. Near-road Impact

3.1 Vehicle emissions

A major arterial road such as Burwood highway, with many vehicles using it, will generate a multitude of pollutants (due to internal combustion engine vehicles). It has been universally established that there is a rapid decrease in near-road pollutant levels as distance from the road increases. Such a decrease has been generically modelled and published by EPA Victoria (EPA Victoria Publication 1025, February 2006). Figure 4 is taken from EPA Victoria (ibid, p.9) and shows a dispersion model prediction of an air pollutant as a function of downward distance[2]. Within 30 metres the pollution level has halved in concentration.

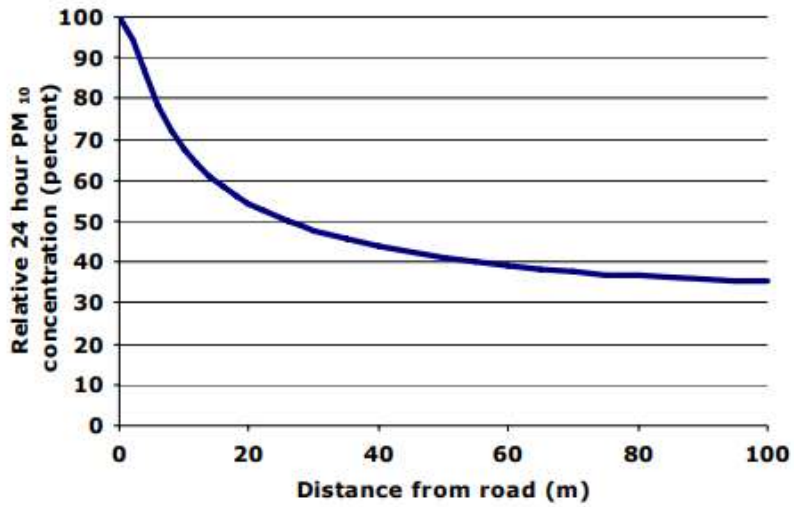

Figure 4 Near road pollutant concentration as a function of distance from the road

3.2 VicRoads Screening Tool

Planners, Project Engineers and atmospheric pollutant scientists are able to assess screening test compliance of near-road emissions by using a worst-case approach. VicRoads and EPA Victoria have developed the "VicRoads Air Quality Screening Tool" (AQST) which is now at its third revision (Air quality - Air quality screening tool. https://www.vicroads.vic.gov.au/planning-and-projects/environment/air-quality):

- "Results from the AQST are used to determine whether the air quality component of the project is satisfied, or alternatively whether a detailed air quality impact assessment is warranted."

[2] The model has been run for a typical 100,000-vehicle-per-day road with four lanes (two each way, no median strip) and symmetric diurnal traffic profile with a background 20 µg/m^3. The graph is a worst-case scenario to be expected in a year for the conditions modelled.

3.3 Burwood Highway

3.3.1 Peak hour traffic levels

The Traffic Engineering Assessment report by Traffix Group (October 2021, exhibited document #17) collected SCATS data to determine the existing traffic conditions of the surrounding road network. Figure 6 of their report (ibid., p.14) provides morning and afternoon peak hour vehicle numbers for the Burwood Highway lanes adjacent to the proposed development. From Figure 5, it can be calculated that the through traffic on Burwood Highway has a morning peak hour vehicle count of 3093 + 1913 (5006) vehicles and the afternoon peak has 1755 + 3040 (4795) vehicles.

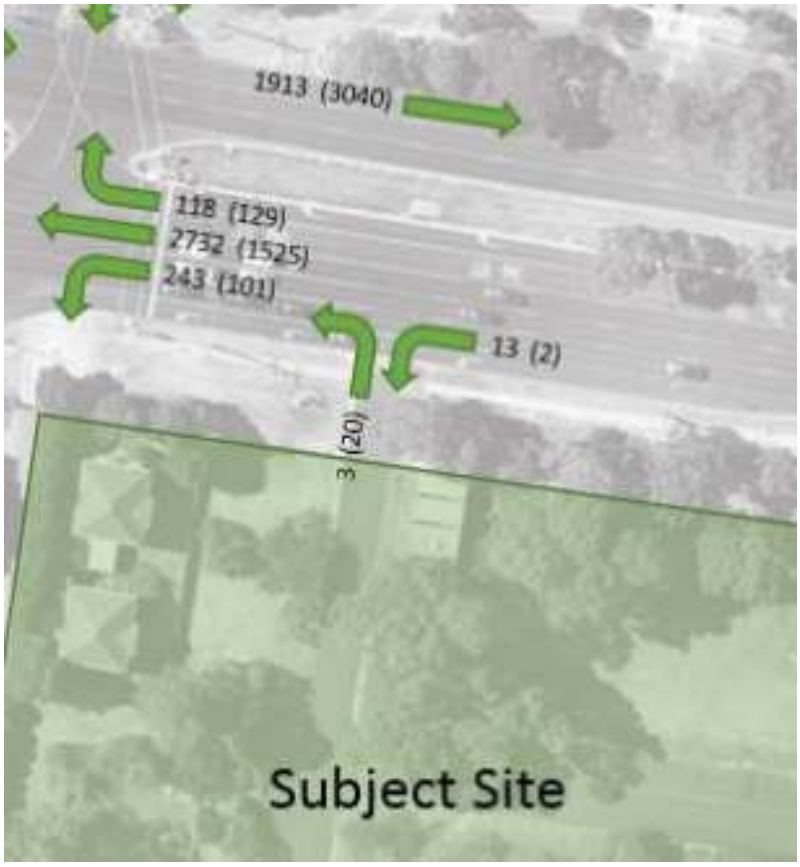

Figure 5 Traffix Group Existing Peak Traffic Conditions (8am-9am & 5:15pm-6:15pm)

Shantanu Joshi (pers.comm, Fri 20/01/2023 5:03 PM) from Norton Rose Fulbright lawyers provided an updated traffic assessment that included heavy vehicle numbers as recorded by Stantec. Figure 6 and Figure 7 provide the morning and afternoon, respectively, peak hour traffic counts where yellow is for light vehicles (LV) and green is for heavy vehicles (HV).

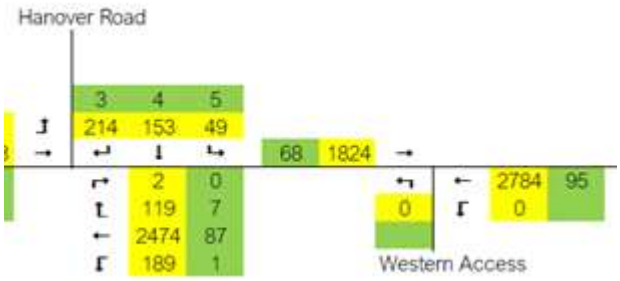

Figure 6 Weekday AM Peak traffic (LV + HV)

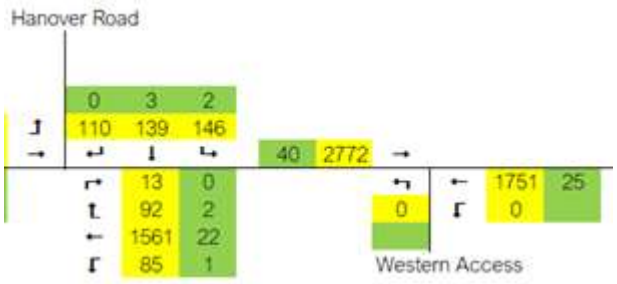

Figure 7 Weekday PM Peak traffic (LV + HV)

By using the traffic count numbers as they pass the 'Western Access' location, the morning peak is calculated at 4771 total vehicles while the evening peak is 4588 total vehicles. While the latest values are slightly lower than the original values, they are no more than 5% different.

3.3.2 Heavy vehicle ratio

These data are also able to show that the ratio of heavy vehicles is no more than three percent.

3.4 AQST results

Version 3.0 of the Air Quality Screening Tool Workbook was run with the following key parameters (as shown in Figure 8):

- Road type – Arterial
- Gradient – Flat (no fill)
- Peak hourly traffic volume – 4,000 and 8,000 (model defaults with lower value an underprediction and the higher value conservative)
- Peak daily traffic volume – 40,000 and 60,000 (model defaults with lower value an underprediction and the higher value conservative)

- Heavy vehicle percentage – 8% (the lowest value available in the model)
- Receptor distance – 15 metres

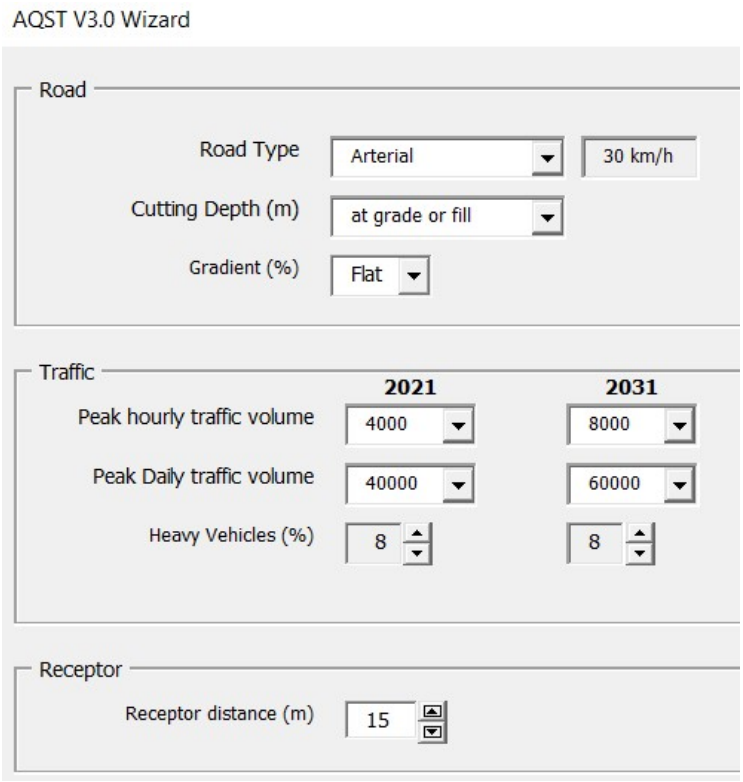

Figure 8 AQST V3.0 Wizard settings

Predicted results from the model are provided in Figure 9. The result of the screening run is a pass where no further work is required. Even if the assessment criteria levels for NO_2, PM_{10} and $PM_{2.5}$ are lowered to the latest (from May 2021) National Environment Protection (Ambient Air Quality) Measure standards of 163, 50 and 25 (20 from 2025) µg/m^3, respectively, the screening assessment still passes.

Indicator	Year	Averaging period	Predicted concentration (ug/m3)	Criteria (ug/m3)	Status
NO2	2021	1 hour	98.3	262	Pass
NO2	2031	1 hour	136.3	262	Pass
PM10	2021	24 hour	26.9	60	Pass
PM10	2031	24 hour	28.3	60	Pass
PM2.5	2021	24 hour	12.1	36	Pass
PM2.5	2031	24 hour	13.2	36	Pass

Figure 9 AQST Model Output

4. Conclusion

A consideration of air quality impacts for the proposed residential redevelopment at 490-500 Burwood Highway Vermont South has been requested by the referral agency EPA Victoria. Moreover, Clause 13.06-1S requires that strategies aimed at minimising exposure of sensitive uses to air pollution at a minimum considered and at best implemented.

While the proponent is unable to influence the non-industrial emissions that occur on the adjacent Burwood Highway, they can meet the General Environmental Duty (GED) by maximising separation distances from the pollutant source (the transport corridor that is beyond their 'duty to control') to the building envelopes proposed for the land.

A screening model with very conservative assumptions about the impact of vehicle emissions from Burwood Highway to the site boundary at 15 m from the nearest carriageway has demonstrated that the impact is within acceptable levels. Therefore, the impact to future residents on the site, at more (and in most cases considerable) distance can be considered to be acceptable.