ATTACHMENT 5

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REVIEW OF ACOUSTIC ISSUES
WESTCONNEX M4 EAST EXTENSION PROJECT (STAGE 1)
OPERATIONAL NOISE AND CONSTRUCTION NOISE AND VIBRATION
ASHFIELD LOCAL GOVERNMENT AREA

1.0 INTRODUCTION

WestConnex is a public infrastructure motorway Project linking the M4 and M5 motorways via a 33km tunnel scheduled to be constructed in three (3) stages. Roads and Maritime Services (RMS) is seeking approval for Stage 1, that is upgrade and extend the M4 Motorway from Homebush Bay Drive, Homebush to Parramatta Road, Ashfield and the City West Link (Wattle Street), Haberfield.

With respect to the Ashfield Local Government Area two (2) portals will provide for vehicle access and egress for the underground road works (tunnels). Twin tunnels approximately 5.5 kilometres long are proposed together with associated surface works to connect the tunnels to the existing road network. The western portal (City West Link Road) provides for air supply and ventilation on the corner of Wattle Street and Parramatta Road, Haberfield. Provisions are provided to expand the ventilation facility to service future works associated with M4-M5 connection and a second harbor crossing.

Atkins Acoustics was engaged by Ashfield Council to review the Noise and Vibration Impact Assessment (NVIA) prepared for the WestConnex East Project and provide advice with respect to the noise and vibration impacts associated with Stage 1.

2.0 ENVIRONMENTAL ASSESSMENT REQUIREMENTS

The NSW Department of Planning and Environment (DoPE) issued a list of Secretary's Environmental Assessment Requirements (SEAR's) (Application Number 6307) dated 16 June 2015.

As part of the SEAR's, Ashfield Council's (AC) submission raised concerns with respect to vehicles using the entry and exit lane ways to the tunnels and that very high levels of noise and vibration would be experienced at adjoining properties, including nearby residences. AC requested that the following details be provided in the EIS:

- the design of 'noise screening walls or devices',
- accompanied with a report by a qualified acoustic engineer, explaining how effective they will be in reducing noise impacts for adjoining properties.

General requirements of the SEAR's, include the following:

Noise and Vibration – including, but not limited to:

- an assessment of the noise impacts of the project during operation, consistent with the *Road Noise Policy* (EPA, 2011) and *NSW Industrial Noise Policy* (EPA, 2000). The assessment must include specific consideration of impacts to receivers (dwellings, child care centres, educational establishments, hospitals, motels, nursing homes, or places of worship), including specific consideration of sleep disturbance and, as relevant, the characteristics of noise (eg. low frequency noise), and identify reasonable and feasible mitigation measures;

  Comment: The NVIA provides no justification for not treating residential buildings exposed to road traffic noise greater than two (2) storey in height.

- an assessment of construction noise and vibration impacts, consistent with the *Interim Construction Noise Guideline* (DECCW, 2009) and *Assessing Vibration: a technical guideline* (DEC, 2006). The assessment must have regard to the nature of construction activities (including transport, tonal or impulsive noise-generating works and the removal of operational noise barriers, as relevant), the intensity and duration of noise and vibration impacts, the nature, sensitivity and impact to potentially affected receivers, the need to balance timely conclusion of noise and vibration-generating works with periods of receiver respite, and other factors that may influence the timing and duration of construction activities (such as traffic management), and mitigation and management measures. The assessment should present, as relevant, an indication

of potential for works outside standard working hours, including predicted levels and exceedences, justification for the activity and discussion of available mitigation and management measures.

Comment: The NVIA provides no information regarding cumulative noise impacts from surface and underground tunneling construction activities or justification for not addressing construction noise at properties greater than single storey.

3.0 OVERVIEW

Noise and vibration issues relating to the Ashfield LGA that require further investigation, include ambient background noise monitoring, construction noise and vibration and operational noise. The key issues, include:

- the demolition of buildings on Parramatta Road and Wattle Street and exposure of properties presently acoustically shielded from road traffic noise;
- the high ambient background noise levels measured at road frontages to establish NML's and assess construction and operational (ventilation) noise impacts;
- regenerated noise from road headers during tunneling based on preliminary data referenced to 2003;
- regenerated noise and vibration impacts from rockbreakers and other tunneling plant and equipment during tunneling;
- assessment of regenerated noise and management controls for assessing tunneling activities during daytime hours;
- assessment of vibration on sensitive building structures located within the Ashfield Conservation Area;
- cumulative regenerated noise within buildings from tunneling and airborne noise from surface excavation/construction activities. This project is unique in that there will be simultaneous intensive multiply underground tunneling and surface excavation/construction activities occurring;
- construction noise exposure and impacts for residential properties higher than single storey. Multi storey residential apartment buildings exposed to Parramatta Road are higher than single story buildings;
- sleep disturbance from nighttime construction truck movements;
- trigger levels for addressing non-compliant construction noise, vibration or regenerated noise exposure;
- residential properties identified for noise mitigation (NVIA Appendix N) to address operational traffic noise that are greater than two (2) stories in height do not qualify for noise mitigation treatment;
- residential properties exposed to Dobroyd Road between Crane Street and Hawthorne Parade (Wattle Street to City West Link) have not been addressed or assessed in terms of road traffic noise exposure. The properties are exposed to 'acute' traffic noise levels that will increase (2021) as a result of additional traffic associated with the Project; and
- the assessment of traffic noise without the M4-M5 Link has not been assessed or reported.

3.1 Ambient background noise monitoring

3.1.1 The NVIA reported ambient background noise monitoring was generally conducted at locations fronting road traffic noise, i.e., Parramatta Road, Wattle Street, etc. The measured levels established goals for assessing fixed plant operational noise (ventilation system), construction noise and validate the operational traffic noise model. The selected measurement locations and reported results are not representative for noise receptors set back from the roads or suitable for assessing construction noise impacts. For example, for Noise Catchment Area (NCA) 21, reference location L16 fronts Parramatta Road, the measured day/evening/night RBL's are 58/55/45, at reference location L19 set back and exposed to Parramatta Road traffic noise, the day/evening/night RBL's are 49/49/41. Differences of 6-10dBA are significant in terms of assessing noise exposure and impacts. Similar noise differences would be expected for residential receptors in NCA 14 and NCA15. Additional noise monitoring should be undertaken at representative locations set back from Parramatta Road and Wattle Street for assessing construction and operational noise impacts.

3.2 Construction noise criteria, modeling and assessment

3.2.1 Construction works at the Parramatta Road, Ashfield portals require the demolition of buildings on the southern side of Parramatta Road. Referring to the RBL's above (3.1.1), the daytime/evening/night construction assessment criteria or NML's adopted in the NVIA for the residential properties on Loftus Street, Curt Street and Chandas Street are based on noise measurements conducted on Parramatta Road. The reported background levels are not representative of the existing ambient noise levels experienced at properties set back from Parramattta Road and should be revised to established appropriate criteria or NML's .

3.2.2 Following the demolition of buildings on the southern side of Parramatta Road, existing developed multi storey residential properties on Loftus Street, Curt Street and Chandas Street will front onto and exposed to construction noise impacts. NVIA (Section 10.4.1 Table 28. Note 1) refers to modeling and the assessment of construction noise at 1.5m above ground level and reports that noise levels at upper floors of buildings may be higher. The NVIA provides no modeling or assessment of construction noise impacts for multi storey buildings or two storey buildings.

3.2.3 Construction works at the Wattle Street portals and tunneling require demolition of buildings on Parramatta Road and Wattle Street east. Ambient background noise monitoring for this area was conducted at properties on Parramatta Road and Wattle Street and is not representative for properties set back from the roads

that will be exposed to construction noise impacts. Additional ambient background noise monitoring is required to establish appropriate construction noise assessment criteria or NML's and assess construction noise impacts for properties set back from Parramatta Road and Wattle Street.

3.2.4 NVIA (Section 14 Overall Impact Summary) presents an assessment of construction noise impacts. NVIA compares predicted construction noise levels with NML's and describes the impacts as 'Minor' (less than 10dBA above NML), 'moderate (upto 20dBA above NML) and 'high' (greater than 20dBA above NML). NVIA provides no source reference, definition or description of the impacts arising from the predicted noise exceedances. Reference to the ICNG, the NML for assessing construction noise represent the level above which there may be some community reaction to noise. The ICNG recommends that where the predicted or measured levels is greater than the NML, the proponent should apply all reasonable and feasible work practices to meet the NML. For noise exposure levels greater than 75dBA, the ICNG identifies that strong community reaction may occur. NSW Transport Construction Authority (TCA), Construction Noise Strategy (PE-ST-157/1.0) is referenced in NVIA, albeit not referred to for assessing construction noise and vibration impacts. The Table below presents a summary from the TCA and compares community reactions to construction noise. The NVIA compares construction noise levels to NML's i.e., RBL +10dB, the TCA comparison is referenced to RBL's. It is recommended that the assessment of construction noise in the NVIA and the community response categories stated in the NVIA be justified or revised.

Source	LAeq (15 minute) noise level above background (RBL)			
NSW Transport Construction Authority	0 to 10dBA Noticeable	10 to 20dBA Clearly audible	20 to 30dBA Moderately intrusive	>30dBA Highly intrusive

3.2.5 NVIA provides no reference or assessment of noise impacts associated with construction workers vehicles and onsite parking.

3.2.6 NVIA (Section 11.1) presents procedures for assessing sleep disturbance including a screening criterion of RBL + 15 dBA and a NML of L_{Amax} 55 dBA (internal) or an external NML level of L_{Amax} 65 dBA (assuming open windows) for nighttime construction traffic. No modeling or assessment of L_{Amax} nighttime traffic noise is provided for properties exposed to construction traffic.

3.2.7 NVIA (Section 11.2) refers to 24 hour truck movements from the Northcote Street tunnel construction site. The hourly truck projections equate to 27.3 movements

per hour (7.00am to 6.00pm), 4.5 movements per hour (6.00pm to 10.00pm) and 2 movements per hour (10.00pm to 7.00am). On an understanding that roadheaders operate continuously 24 hours a day and are the main source of material to be removed from the construction site, no justification is provided to support the significant variation between the truck numbers during daytime/evening/night hours. The requirement for evening/nighttime construction truck movements from the Northcote Street site should be justified.

3.2.8 NVIA (Appendix F1A) provides traffic counts used for validation of the traffic noise model and reports for Wattle Street between Ramsey Road and Parramatta Road, a two-way day (15 hour) count of 33041 with 3521 HGV. The two-way count for Dobroyd Road east of Ramsey Street is 45507 with 1841 HGV. Counts reported for Ramsey Street are 12298 and 439 HGV. No traffic details are provided or referenced for modeling and assessment of construction traffic noise.

3.2.9 The WestConnex (Stage 1) project is unique in that there will be simultaneous intensive surface excavation/construction and multiply underground tunneling activities occurring in close proximity to residential and sensitive development. For surface excavation/construction and tunneling activities in vicinity of Wattle Street, Northcote Street and Parramatta Road (Ashfield) properties will be exposed to regenerated noise within buildings from tunneling and intruding airborne noise from surface excavation/construction. The NVIA has not considered, modeled or assessed the cumulative impacts from these activities.

3.2.10 NVIA (Section 14) Overall Impact Summary - Section 14 provides an overall summary of the environmental noise and vibration impact assessment of the proposal. For Noise Catchment Areas in the Ashfield LGA, construction noise impacts are assessed against exceedances of NML's and compared to expected community reaction not tested or referenced. Referring to construction noise exposure and levels greater than 75dBA, the ICNG identifies that strong community reaction may occur. NVIA (Section 14) commonly refers to predicted construction noise levels greater than 20dBA above the NML' i.e., equivalent to 30dBA above the RBL. With reported daytime assessment RBL's typically ranging between 54-58dBA, the NVIA assessment goals of 20dBA above NML's of 84-88dBA, significantly exceed the ICNG 75dBA level referenced to 'strong community response'. It is recommended that the assessment of construction noise in the NVIA and the community response categories stated in the NVIA be justified. Additionally the extent of properties exposed to construction noise levels greater than 75dBA should be identified.

3.3 Regenerated noise/vibration during tunneling

3.3.1 NVIA (Section 12.3. Figure 13) refers to source data from Wilkinson Murray (2003) for modeling and assessment of regenerated noise from road headers. More recent published data confirm that the NVIA source levels are up to 10dBA lower than reported. It is recommended that the NVIA reference source data be justified or the reported impacts revised.

3.3.2 NVIA (Section 12.4 Figure 15. Ground-borne noise from road headers) should be reviewed and revised.

3.3.3 NVIA (Section 12.4 Figure 14) refers to the mainline tunnel depths and existing ground elevations. At Wattle Street the tunnel depth is referenced to approximately 50m below ground level. No reference depths are provided or shown for the Wattle Street portals or the Parramatta Road portals. As a result of the intensity and complexity of tunneling at the eastern end of the Project more detail is required to assist with understanding the extent of noise and vibration impacts from the envisaged works.

3.3.4 NVIA refers to rockbreakers and blasting during tunneling, including the construction of cross passages between tunnels. The NVIA provides no assessment of regenerated noise or vibration from rock breakers or drilling for blasting.

3.3.5 NVIA (Section 21.2) refers to evening and night criteria and Noise Management Levels (NML's) for assessing regenerated noise in residential properties during tunneling 24/7 tunneling. No criteria, NML's or assessment of impacts at residential properties for daytime hour's i.e., 7.00am to 6.00pm, seven (7) days a week is provided.

3.3.6 NVIA (Executive Summary xvii) confirms that in the vicinity of Wattle Street, the access ramp to/from the main project tunnels climb to meet with Wattle Street and Parramatta Road at ground elevation. Receivers above these sections of tunnel are predicted to be subject to ground-borne noise levels in the region of 53 dBA LAeq, which significantly exceed both the evening (40dBA) and night-time criteria (35dBA). No assessment of the impacts is provided or the identification of the number of properties that would be exposed to the regenerated noise.

3.3.7 NVIA (Executive Summary xvii) While the majority of the tunnel is proposed to be excavated using roadheaders, rockbreaking to excavate benches and cross passages would be likely to exceed the construction ground-borne noise goals at receivers located above the works. No assessment of the impacts is provided or the identification of the number of properties that would be exposed to the regenerated noise from rockbreakers operating in the tunnels.

3.3.8 NVIA (Section 5.2) confirms for NCA13, at approximate chainage 6,000 (to the south of Parramatta Road, Ashfield), receivers are predicted to be subject to ground-borne noise levels up to around 43 dBA LAeq(15minute), which significantly exceed the night-time criteria (35dBA).. The NVIA refers to the most affected receivers experiencing noise levels above the night-time criterion for up to around six days. No assessment of ground-borne noise levels from rockbreakers or the number of properties affected by regenerated noise from road headers or rockbreakers identified.

3.3.9 NVIA Appendix S provides ground vibration exposure for road headers during tunneling. No mapping is provided for ground borne noise exposure in NCA12 and NCA13 for road headers or rockbreakers.

3.3.10 NVIA (Section 5.2) refers to NCA17 and NCA18 and predicted ground-borne noise levels up to around 53dBA LAeq(15minute) for up to around two weeks. No assessment of ground-borne noise levels from rockbreakers or the number of properties affected identified.

3.3.11 NVIA Appendix S provides ground vibration mapping to assess exposure for road headers during tunneling. No mapping is provided for ground borne noise exposure in NCA17 and NCA18 for road headers, rockbreakers or drilling is provided.

3.3.12 NVIA (Section 13.6) refers safe working distances for assessing vibration during construction and a summary of vibration impacts in NVIA (Table 57). For tunneling, vibration sources identified and assessed are restricted to road header and rock anchor drilling. No reference or assessment of vibration impacts is provided for rockbreakers or other tunneling plant/equipment in Table 57.

3.3.13 For the assessment of vibration impacts NVIA (Section 13.6) refers to safe working distances to 'Heritage listed buildings'. NVIA (Table 58) refers to 'Heritage and Conservation Listed Buildings'. The NVIA provides no definition for the classification of vibration sensitive buildings in the Ashfield Conservation Area.

4.0 OPERATIONAL TRAFFIC NOISE

4.1.1 Operational traffic noise modeling for 2031 is based on the assumption that the M4-M5 Link is operational. No traffic noise modeling or predicted traffic noise levels are reported for the year 2031 without the M4-M5 Link.

4.1.2 NVIA (Section 5.13) refers to Road and Maritime (RM) advice that it is generally not feasible and reasonable to provide at-receiver noise mitigation to multi-level residential receivers, i.e., greater than two stories. NVIA (Appendix N) provides a list of multi-storey buildings that qualify for secondary noise control treatment to control traffic noise. Justification is required to justify why the multi-storey buildings identified in NVIA (Appendix N) do not qualify for architectural building treatment to control road traffic noise.

4.1.3 NVIA refers to traffic noise levels due to the project road that result in 'acute' traffic noise levels and reports that 'no receivers are triggered on this criterion alone' (8.1.2). NVIA (Appendix N) identifies properties that are exposed to 'acute' traffic noise. For reference, NorthConnex (Appendix F) Noise and Vibration Technical Paper (Section 3.5.1) states that if the level of road traffic noise is 'acute' (i.e., 65 LAeq 15 hour (day), 60 LAeq, 9 hours (night) or greater) further detailed assessment of feasible and reasonable mitigation measures should be carried out. The RTA Environmental Direction No 24 refers to the RTA Policy for assessing 'acute' levels of traffic noise and the importance of reducing noise levels where existing or predicted road traffic noise levels are identified. The Policy refers to the importance of reducing traffic noise where existing or predicted impacts are 'acute' and a requirement to further detailed assessment of feasible and reasonable mitigation measures. Justification is required to support the NVIA that refers to 'acute' traffic noise exposure and reports (8.1.2) 'that no receivers are triggered on this criterion alone'.

4.1.4 Residential properties exposed to Dobroyd Road between Crane Street and Hawthorne Parade (Wattle Street to City West Link) have not been addressed or assessed in terms of road traffic noise exposure. The properties are exposed to 'acute' traffic noise levels that will increase (2021) as a result of additional traffic associated with the Project.

4.1.5 NVIA (10.8.3) Priority construction of noise barriers - recommends that the priority for the construction of noise barriers to mitigate operational traffic noise be given at the earliest practical stage in the construction period in order to provide noise screening during subsequent construction activities. Locations identified include the Northcote Street tunnel site and the Wattle Street (east) between Parramatta Road and Waratah Street.

4.1.6 NVIA (Section 14) Overall Impact Summary - Section 14 provides a summary of the existing and operational traffic noise impacts. For Noise Catchment Areas in the Ashfield LGA (NCA14, NCA15, NCA16, NCA17, NCA18, NCA19, NCA20 and NCA21) reported existing road traffic noise levels for properties fronting Wattle Street and Parramatta Road typically exceed $L_{Aeq\ 15\ hour}$ 65 and $L_{Aeq\ 9\ hour}$ 60dBA would be classified 'acute' and qualify for further detailed assessment of feasible and reasonable mitigation measures. The NVIA reports that predicted future traffic noise levels in these catchment areas would exceed $L_{Aeq\ 15\ hour}$ 65 and $L_{Aeq\ 9\ hour}$ 60dBA and identifies the number of receivers that qualify for consideration of at-property noise mitigation treatment. Advice is required to justify why multi-storey buildings identified in NVIA (Appendix N) with predicted traffic noise levels of $L_{Aeq\ 15\ hour}$ 65 and $L_{Aeq\ 9\ hour}$ 60dBA or higher do not qualify for architectural building treatments to control traffic noise intrusion.

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ATTACHMENT 6

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Review of WestConnex M4 East Air Quality Impact Assessment

Prepared for:

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Final

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Contents

Tables

Glossary

Units	Definition
$\mu g/m^3$	micrograms per cubic metre
µm	microns
°C	degrees Celsius
km	kilometre
km/h	kilometre per hour
m	metre
m/s	metres per second
m^2	square metres
m^3	cubic metres
m^3/s	cubic metres per second
ppb	parts per billion
ppm	parts per million
Nomenclature	
BTEX	Benzene, toluene, ethylbenzene and xylene
CO	carbon monoxide
NO	nitric oxide
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
PM_{10}	particulate matter with a diameter less than 10 micrometres
$PM_{2.5}$	particulate matter with a diameter less than 2.5 micrometres
SO_2	sulfur dioxide
Abbreviations	
AQIA	Air Quality Impact Assessment
DEC	Department of Environmental and Conservation
EIS	Environmental Impact Statement
NSW EPA	New South Wales Environmental Protection Authority
SEARs	Secretary's Environmental Assessment Requirements

1. INTRODUCTION

Katestone Environmental Pty Ltd (Katestone) was commissioned by Ashfield Council to conduct a peer review of the WestConnex M4 East Environmental Impact Statement Air Quality Impact Assessment (AQIA). The detailed technical report of the AQIA is contained in the M4 East Environmental Impact Statement (EIS) Volume 2B Appendix H.

In conducting the peer review Katestone has had regard to the following information and relevant documents:

- Secretary's Environmental Assessment Requirements (SEARs)
- NSW Environment Protection Authority's submission in preparation of SEARs (previously Directory General Requirements)
- NSW Health's submission in preparation of SEARs
- Strathfield Council's submission in preparation of SEARs
- Ashfield Council's submission in preparation of SEARs
- Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (DEC, 2005)
- *Protection of the Environment Operations Act 1997*
- *Protection of the Environment Operations (Clean Air) Regulation 2010*
- Air Emissions Inventory for the Greater Metropolitan Region in New South Wales – 2008 Calendar Year. Technical Report No. 7 – On-Road Mobile Emissions (NSW EPA, 2012)
- Road Tunnels: Vehicle Emissions and Air Demand for Ventilation, PIARC Technical Committee C4 Road Tunnels Operation (PIARC, 2012).

This report presents the outcomes of Katestone's peer review of the AQIA.

2. COMPLIANCE WITH SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

Table 1 provides a summary evaluation of the AQIA against the SEARs. In broad terms, the submissions of NSW EPA and NSW Health have been addressed by the SEARs. Consequently, the submissions of NSW EPA and NSW Health have not been addressed individually here. More detailed information and comments in relation to non-compliances with the SEARs is provided in Section 3.

Table 1 Evaluation of M4 East AQIA against SEARs

SEAR	AQIA Section	Compliance/comment
An assessment of construction and operational activities that have the potential to impact on in-tunnel, local and regional air quality. The air quality impact assessment must provide an assessment of the risk associated with potential discharges of fugitive[1] and point source[2] emissions on sensitive receivers, and include:	Chapter 7 (construction) Chapter 8 (operational impacts)	See comments below.
• The identification of all sources of air pollution and assess potential emissions of PM_{10}, $PM_{2.5}$, CO, NO_2 and other nitrogen oxides and volatile organic compounds (e.g. BTEX) and consider the impacts from the dispersal of these air pollutants on the ambient air quality along the proposal route, proposed ventilation outlets and portals, surface roads and ramps, the alternative surface road network, and in-tunnel air quality.	Chapter 3 (sources of pollution) Chapter 5 (identifies air pollutants) Chapter 7 (construction impacts) Chapter 8 (operational impacts)	**Construction:** Does not comply with SEAR. Construction emissions and impacts dealt with generically through a qualitative risk assessment. The underlying assumption is that impacts are manageable such that the residual effect will be "not significant". See issue AQ8. **Operation:** Partially complies with the SEAR. The AQIA has not considered all air pollutants that are likely to be emitted from the project. A range of air pollutants has been excluded for various reasons in Chapter 5. Whilst none of these excluded air pollutants will be critical in an assessment against air quality criteria, they may be an important consideration in the human health risk assessment. See issue AQ3.
• Assessment of worst case scenarios for in-tunnel and ambient air quality, including assessment of a range of traffic scenarios, including worst case design maximum traffic flow	Chapter 8 (operational impacts)	**In-tunnel** Complies with SEAR. **Ambient air quality** Unclear whether complies with SEAR.

[1] The term 'fugitive' is often used to refer to a wide range of emission sources. In the context of the AQIA, fugitive has been taken to refer to motor vehicle emissions on surface roads

[2] The term 'point source' refers to a controlled discharge via a stack or vent. In the context of the AQIA it refers to tunnel ventilation outlets.

SEAR	AQIA Section	Compliance/comment
scenario (variable speed) and worst case breakdown scenario, and discussion of the likely occurrence of each.		One "expected traffic scenario" has been considered for surface roads. Unclear whether the scenario is representative of worst-case. See issue AQ4.
• Details of the proposed tunnel design and mitigation measures to address in-tunnel air quality and the air quality in the vicinity of portals and any mechanical ventilation systems (i.e. ventilation stacks and air inlets) including details of proposed air quality monitoring (including criteria).	Chapter 10 (management of impacts)	Complies with the SEAR. The AQIA includes the details requested in the SEAR. The M4 East Tunnel is proposed to have two ventilation outlets for each three lane tunnel. The tunnel design philosophy is to ensure no portal emissions would occur except during emergency situations such as a fire near a portal. Each ventilation outlet is proposed to have an air inlet in close proximity. The project does not include filtration or denitrification emission controls. The following design features are proposed to minimise air pollutant emissions from the ventilation outlets: • Maximum gradient within tunnel is 4% • Large tunnel cross-sectional area (90m^2) • Tunnel height is 5.3m (c.f. M5 East: 4.6 m) • Jet fans automatically controlled using real-time traffic data (fleet mix and speed) and in-tunnel air quality sensors • Specific ventilations modes will be developed to manage breakdown, congestion and emergency situations • NorthConnex in-tunnel air quality concentration limits have been applied as standard conditions • Smokey vehicle cameras will be used. The AQIA has not specified in detail the air quality monitoring that is proposed. See issue AQ9.
• Demonstrate how the project and ventilation design ensures that concentrations of air emissions meet NSW, national and international best practice for in- tunnel and ambient air quality, and taking into consideration the approved criteria for the NorthConnex project.	Chapter 4 Chapter 5 Chapter 8 (operational impacts)	**In-tunnel air quality** Complies with the SEAR. Chapter 4 summarises in-tunnel limits set for other NSW tunnels and Appendix C summarises international standards for in-tunnel air pollutant concentrations. The AQIA states "..these criteria (in-tunnel air quality criteria) are equivalent to those applied to the NorthConnex project." In tunnel air quality was determined based on a number of potential traffic scenarios. Tunnel ventilation system is designed based

SEAR	AQIA Section	Compliance/comment
		on the maximum capacity traffic of the tunnel and the NorthConnex in-tunnel air quality criteria. IDA Tunnel Software was used to model the in-tunnel and ventilation outlet emission rates. Main finding is that the tunnels would be primarily self ventilating due to the piston effect of the predicted traffic flow scenarios. Jet fans would only be required at certain off-ramps to ensure net portal inflows. **Ambient air quality** Unclear whether complies with SEAR. The following issues are relevant: • Insufficient information provided to review adequacy of dispersion modelling methodology. Relevant data has been requested. See issue AQ1. • Unclear whether worst-case has been assessed for surface roads. See issue AQ4 and AQ6. • Dispersion modelling has not assessed potential impacts on elevated receptors. See issue AQ2. • I am advised by ToxConsult that the averaging periods that have been produced by the dispersion modelling are incompatible with those required for the Human Health Risk Assessment. See issue AQ5. • The AQIA has not provided predictions due to the ventilation outlets in isolation. See issue AQ7.
• Consideration of any advice from the Advisory Committee on Tunnel Air Quality on the project.	Advice provide by the Advisory Committee for the NorthConnex project was taken into account when developing the assessment methodology.	Cannot verify if complies with SEAR. Section 5.3 states that consultation took place with the relevant bodies listed in the SEAR.
• Details of any emergency ventilation systems, such as air intake/exhaust stacks, including protocols for the operation of these systems in emergency situations, potential emission of air pollutants and their dispersal, and safety procedures.	Section 2.4.3 Chapter 10 (management of impacts)	Partially complies with SEAR. Specific ventilations modes will be developed for to manage breakdown, congestion and emergency situations. General information on tunnel management is provided. No detailed information on ventilation operation during emergency is provided.
• Details of in-tunnel air quality control measures considered, including air filtration. Justification must be	Section 10.2 "...provides a review of the Australian and international	Complies with SEAR.

SEAR	AQIA Section	Compliance/comment
provided to support the proposed measures.	experience with filtration systems in tunnel environments."	
Details of the proposed mitigation measures to prevent the generation and emission of dust (particulate matter and total suspended particulate (TSP)) and air pollutants (including odours) during the construction of the proposal, particularly in relation to ancillary facilities (such as concrete batching plants), the use of mobile plant, stockpiles and the processing and movement of spoil.	Chapter 10 (management of impacts)	Partially complies with SEAR. Chapter 10 provides general information on dust management measures that may be included in Dust Management Plans. However, the AQIA also states in section 11.3.1 that "...A Construction Air Quality Management Plan will be produced to cover all construction phases of the M4 East project." See issue AQ8.
Cumulative assessment of the local and regional air quality due to the operation of the M4-M5 Link and surface road operations.	Chapter 8, Chapter 9 and Appendix K	Unclear if complies with SEAR. The 2031 Do Something Cumulative scenario included an assessment of surface roads, existing air quality and the M4-M5 Link. However, the adequacy of this assessment is unclear as detailed in the following issues: • Insufficient information provided to review adequacy of dispersion modelling methodology. Relevant data has been requested. See issue AQ1. • Unclear whether worst-case has been assessed for surface roads. See issue AQ4 and AQ6. • Dispersion modelling has not assessed potential impacts on elevated receptors. See issue AQ2. • I am advised by ToxConsult that the averaging periods that have been produced by the dispersion modelling are incompatible with those required for the Human Health Risk Assessment. See issue AQ5. • The AQIA has not provided predictions due to the ventilation outlets in isolation. See issue AQ7.
The air quality assessment, including the setting of air quality criteria, must be done in consultation with NSW Health and the Environment Protection Authority and with the consideration of any applicable advice provided by the Advisory Committee on Tunnel Air Quality.	Section 5.3	Cannot verify if complies with SEAR. Section 5.3 states that consultation took place with the relevant bodies listed in the SEAR.
Modelling (including dispersion modelling) must be conducted in accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (NSW DEC, 2005) or a suitably justified and verified alternative method based on	Chapter 8 (operational impacts) Appendix E (emission models) Appendix J (dispersion	Unclear if complies with SEAR. In general, modelling appears to have been conducted in accordance with the Approved Methods. However, the adequacy is this assessment is unclear as detailed in the

SEAR	AQIA Section	Compliance/comment
current scientific understanding of atmospheric dispersion. Particular attention must be given to the verification of the method of predicting local air quality or meteorological conditions based on non-local or modelled data.	model)	following issues: • Insufficient information provided to review adequacy of dispersion modelling methodology. Relevant data has been requested. See issue AQ1. • Unclear whether worst-case has been assessed for surface roads. See issue AQ4 and AQ6. • Dispersion modelling has not assessed potential impacts on elevated receptors. See issue AQ2. • I am advised by ToxConsult that the averaging periods that have been produced by the dispersion modelling are incompatible with those required for the Human Health Risk Assessment. See issue AQ5. • The AQIA has not provided predictions due to the ventilation outlets in isolation. See issue AQ7.

Table 2 provides a summary evaluation of the M4 East AQIA against Ashfield Council's submission to the SEARs.

Table 2 Evaluation of the M4 East AQIA against Ashfield Council's submission to the SEARs

Submission to SEAR	AQIA Section	Compliance/comment
Tunnel exhaust systems and filtration systems Tunnel exhaust vent discharge will be a key community concern due to potential impact on the health and wellbeing of local residents. The exhaust vents are also likely to be tall, visually prominent structures.	Overview contained in Section 2.4. Details contained in Chapter 8.	NA
The EIS must therefore include detailed consideration of the option of using 'vehicle emissions filtering' mechanisms for the tunnel exhaust systems. This must include a detailed proposal produced by an appropriately qualified expert(s), so that an adequate evaluation can be made of this option. It should also identify 'best practice' options for tunnel filtering in current use for projects of a similar scale to the Stage 1 works.	Section 10.2 "...provides a review of the Australian and international experience with filtration systems in tunnel environments."	A detailed proposal has not been provided in the AQIA. A review of air treatment systems has been provided in Section 10.2. In relation to particulate filtration technology, the AQIA states: "...the provision of a tunnel filtration system does not represent a feasible and reasonable mitigation measure and is not being proposed." In relation to denitrification (i.e. removal of oxides of nitrogen) the AQIA states: "... The technology around tunnel air filtering systems for nitrogen dioxide is relatively new and any benefit has yet to be

Submission to SEAR	AQIA Section	Compliance/comment
		sufficiently measured."
Any option for not using a 'vehicle emissions filtering' mechanism must show the position of exhaust vents, the number of properties which will be affected by emissions, and the degree of impact of those emissions on public health. Such an option must also provide evidence based data of appropriate scientific rigour to support no 'vehicle emissions filtering' mechanisms for Stage 1 works.	The position of ventilation outlets is provided in Chapter 2. The impact of the project is provided in Chapter 8.	No 'vehicle emissions filtering' is proposed for the ventilation outlets. The effect of the ventilation outlet on specific properties has not been provided. The change in air quality associated with project has been presented as the combined effect of surface roads and ventilation outlets or as the maximum contribution of the ventilation outlet at any receptor.
The EIS must include details of the position of the exhaust vents, their heights, and visual treatments and the proposed method of exhausting vehicle emissions.	The position of ventilation outlets is provided in Chapter 2 and heights are provided in Section 8.3.6.	This aspect has been addressed. No 'vehicle emissions filtering' is proposed for ventilation outlets.

3. KEY ISSUES

3.1 Design

AQ1. The GRAL dispersion model has been adopted in the air quality assessment for surface roads and for the ventilation outlet. The GRAL model was designed principally to model emissions from surface roads and tunnel portals in complex urban environments. Whilst the model has the capability to model emissions from ventilation outlets, other models such as CALPUFF are more often used. The GRAL model has certain limitations relative to CALPUFF, for example in relation to the characterisation of the temperature of the plume.

Insufficient information has been provided to enable a detailed review of the model inputs. Katestone has requested the relevant information from WestConnex.

AQ2. The AQIA has not predicted concentrations of air pollutants on elevated receptors. Experience elsewhere shows that higher concentrations of air pollutants will be experienced by receptors that are elevated above the ground when emissions occur from an elevated emission source. For example, the upper floors of a multi-storey building may receive higher concentrations of air pollutants from a stack or vent than are experienced at ground level. Consequently, the AQIA may have under-predicted concentrations of air pollutants on the upper floors of multi-storey apartments.

The AQIA should be revised to assess concentrations of air pollutants on the facades of any existing or possible future multi-storey buildings in the vicinity of the ventilation outlets.

The potential risks associated with impacts on future multi-storey developments may need to be reflected in the Ashfield Council Planning Scheme. Additional air quality impact assessment studies are likely to be required to support this.

AQ3. The AQIA has not quantified emissions or ground-level concentrations of all air pollutants that may be associated with motor vehicles. For example, metals associated with the project. I note that the NSW EPA's 2008 Air Emissions Inventory for the Greater Metropolitan Region in New South Wales includes a range of metals from motor vehicles.

In Section 8 of the AQIA, operational emissions and impacts of PM_{10}, $PM_{2.5}$, NO_2, CO, benzene, PAH (as BaP), formaldehyde and 1,3-butadiene have been considered. There are a range of other air pollutants that are emitted from motor vehicles including: metals, sulfur dioxide and volatile organic compounds.

Whilst these excluded air pollutants will not be critical in an assessment against air quality criteria, they may be an important consideration in the human health risk assessment.

AQ4. One "expected traffic scenario" has been considered for surface roads. It is unclear whether the scenario is representative of worst-case.

The AQIA considers only one "expected traffic scenario" for 2021 Do Something, 2031 Do Something and 2031 Do Something Cumulative. The outcome of the AQIA is critically dependent on the traffic scenarios. In particular, the "expected traffic scenario" results in significant reductions in vehicles on surface roads such as Parramatta Road. However, alternative traffic scenarios that might result in higher traffic levels on surface roads have not been explored in the AQIA.

The AQIA has relied upon the validity of the traffic modelling assessment. There may be important implications for air quality following from Council's traffic experts review of the M4 East EIS. If the traffic modelling assessment has under estimated traffic volumes or has incorrectly characterised traffic volumes, it is possible that the air pollutant levels may also have been incorrectly characterised.

AQ5. The AQIA has provided data only for the averaging times that are relevant for the regulatory assessment against air quality criteria. I have been advised by ToxConsult that model predictions of short-term periods is required for the Human Health Risk Assessment.

AQ6. The air pollutant emission rates applied in the dispersion model appear to have been averaged across three time periods through each day. If this is correct, peak 1-hour average ground-level concentrations of air pollutants are likely to have been underestimated. This will have implications for the regulatory assessment of nitrogen dioxide and other air pollutants that have criteria averaged over 1 hour. This will also have implications for the Human Health Risk Assessment.

AQ7. The AQIA has not provided predicted ground-level concentrations of air pollutants due to the ventilation outlets in isolation of the surface roads and regional background levels of air pollutants. This information is relevant to understanding the potential impacts of the project, whether filtration of ventilated air is required and its potential benefit.

3.2 Construction

AQ8. There is a lack of a quantitative assessment of air quality impacts from the construction phase of the project. The M4 East EIS has adopted a semi-quantitative approach to assess construction impacts on air quality. This approach assumes that mitigation "...should be straight forward." The underlying assumption is that impacts will be manageable such that the residual effect will be "not significant".

The AQIA has not quantitatively assessed emissions and potential impacts of air pollutants from the project during construction. Rather, the AQIA includes a qualitative risk based approach in relation to construction emissions and potential impacts (Chapter 7). The risk based approach is based on Guidance from the United Kingdom Institute of Air Quality Management that has been "...adapted for use in NSW." An inherent assumption of the assessment approach is that potential impacts can be managed to avoid adverse impacts. The approach does not have the ability to determine that a particular activity is not feasible because of its scale, duration or proximity to sensitive receptors.

The AQIA states that "...A Construction Air Quality Management Plan will be produced to cover all construction phases of the M4 East project." If more detailed assessment of the construction impacts is not to be completed at the EIS stage of this project, then a detailed quantitative air quality assessment of dust impacts from construction should be included in each Construction Air Quality Management Plan. The Construction Air Quality Management Plans should include requirements to conduct compliance monitoring for dust at nearest sensitive receptors. Ashfield Council should be provided with the opportunity to review and comment on the Construction Air Quality Management Plans.

3.3 Operation

AQ9. There is a lack of information in the AQIA regarding monitoring (both ambient and in-tunnel) during the operation of the M4 East Project.

The AQIA refers to five ambient air quality monitoring stations in the M4 East area established by WestConnex "...to support the development and assessment of the project" but it does not specify whether these monitors will remain operational after completion of construction of the M4 East Project. Nor does the AQIA indicate whether these monitoring locations best represent worst case impacts from the M4 East Project.

The AQIA should be amended to provide recommendations for ambient air quality monitoring. The ambient monitoring should be conducted in accordance with the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales* (DEC, 2007) and concentrations assessed against

the criteria stated in the *Approved Methods for the modelling and Assessment of Air Pollutants in New South Wales* (DEC, 2005) and the *National Environment Protection (Ambient Air Quality) Measure* and any relevant conditions of approval.

With regard to in-tunnel air quality monitoring, the AQIA states "...the ventilation system would be automatically controlled using real-time traffic data covering both traffic mix and speed, and feedback from air quality sensors in the tunnel, to ensure in-tunnel conditions are managed effectively in accordance with the agreed criteria." The AQIA does not specify the pollutants to be monitored, the method of monitoring, nor the location.

Monitoring should also be conducted within the ventilation outlet. The sampling point will need to be designed and located in accordance with the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales* (DEC, 2007). The pollutants to be monitored should be as per Table 8-21 of the AQIA and assessed against the concentrations limits specified within Table 8-21. Exit velocity and temperature should also be monitored.

4. OVERALL FINDINGS

The AQIA concluded the following with regard to potential impact due to the M4 East Project on air quality:

> "...Exceedances of some air quality criteria (one-hour NO_2, 24-hour PM_{10}, annual $PM_{2.5}$ and 24-hour $PM_{2.5}$) were predicted to occur at a small proportion of receptors both with and without the project. However, because there was a general reduction in the distribution of predicted concentrations across all receptors, the number of receptors with exceedances decreased with the project."

If the methodology for the AQIA has been appropriately implemented (which cannot be determined by Katestone at this stage without access to review the detailed modelling input information), then the above conclusion is reasonable.

Review of the operational impacts found two points that should be clarified in relation to 1-hour NO_2 and annual PM_{10}:

- The AQIA concluded the following regarding NO_2 (maximum 1-hour mean) "...there were some predicted exceedances of the one-hour NO_2 criterion at other receptors in the M4 East domain, but not as a consequence of the project." In Chapter 8 of the AQIA, the one-hour NO_2 2021-DS scenario (Figure 8-45) shows an area on Dobroyd Parade, Haberfield that may exceed the 1-hour criteria that is not evident in the 2021-DM scenario (Figure 8-44). The change in concentration plot (Figure 8-46) does not highlight this due to the coarse colour scale that was used. This may be inconsistent with the conclusion reached in the AQIA and should be clarified.
- The plot of annual mean PM_{10} 2021-DM (Figure K-61, Appendix K of the AQIA) indicates annual PM_{10} concentrations well above the air quality criteria. This is inconsistent with the annual PM_{10} concentrations tabulated in Table K-29 and the change in annual mean PM_{10} with the project 2021-DS (Figure K-63). It would appear likely that Figure K-61 is not the correct. Clarification should be requested.

5. COMPENSATORY MEASURES

The following compensatory measures are suggested:

- The AQIA be revised to address the issues identified in Section 3.
- The potential risks associated with impacts on future multi-storey developments may need to be reflected in the Ashfield Council Planning Scheme. Additional air quality impact assessment studies are likely to be required to support this.
- If more detailed assessment of the construction impacts is not to be completed at the EIS stage of this project, then a detailed quantitative air quality assessment of dust impacts from construction should be included in each Construction Air Quality Management Plan. The Construction Air Quality Management Plans should include requirements to conduct compliance monitoring for dust at nearest sensitive receptors. Ashfield Council should be provided with the opportunity to review and comment on the Construction Air Quality Management Plans.

ATTACHMENT 7

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Review of WestConnex M4 East Human Health Risk Assessment

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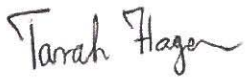

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Contents

1. Introduction & Scope

At the request of Ashfield Council, ToxConsult Pty Ltd has reviewed the human health risk assessment (HHRA) (Appendix J and Chapter 11 of Volume 1A) within the WestConnex M4 East Environmental Impact Statement (EIS). The review was conducted in accordance with recommendations in Chapter 7 of the enHealth *Guidelines for assessing human health risks from environmental hazards* (enHealth 2012a).

It was outside of the scope of the HHRA review to verify the air dispersion, traffic, noise, and vibration modelling assumptions or results, however it is recognised that the output of this modelling is pivotal data used by the HHRA is, especially the air dispersion modelling undertaken for the air quality assessment. Importantly, deficiencies in the modelling, or change in predictions of pollutant air concentrations are likely to impact the HHRA, and may change the conclusions of the HHRA.

2. Compliance with Secretary's Environmental Assessment Requirements

The HHRA part of the EIS provides a summary of the Secretary's Environmental Assessment Requirements (SEARs) related to human health and the internal report sections in which each requirement has been addressed. ToxConsult has read the HHRA and checked whether the SEARs have been adequately addressed.

- In relation to the requirement '*how the design of the proposal minimises adverse health impacts*':
    - Although features of the proposed project and an overview of the construction activities are provided in Section 2 of Appendix J, how the design, e.g. relative to other design options, minimises adverse health impacts is unclear.
    - Sections 11.3 and 11.4 in Volume 1A provide a summary of the conclusions of the HHRA assessment, and identify where mitigation measures will be required. However, there is no specific reference to how the design, or as yet unconfirmed mitigation measures, minimises adverse health impacts.
    - The HHRA reports the chosen in-tunnel air quality criteria for NO_2 may be exceeded. As a result the report concludes asthmatics who use the tunnel may be at an increased risk of experiencing adverse health effects (Section 7.5, Appendix J). However the HHRA also notes (Section 7.1) the ventilation system of the tunnel has been designed so in-tunnel air quality will not exceed these criteria. It is therefore difficult to objectively assess how the design of the tunnel minimises adverse health impacts.

It is our opinion for a project of this scale and longevity, additional detail for how the chosen project design, relative to other options, minimises adverse health impacts is required.

3. Overview comments

3.1 Omission of pollution abatement measures in tunnel exhaust stacks

Air quality (and resulting health impacts) once the tunnels are in operation was not assessed with the inclusion of filtration, or other pollutant reduction measures, in the tunnel exhaust stacks. Consequently the potential benefit to human health of including filtration has not been objectively assessed. It is also noted that in addition to providing potential physical/clinical benefits from reducing pollution exposure, there are psychological health benefits that should also be taken into consideration when evaluating the worth of installing pollution abatement measures in the stacks.

Furthermore, the Protection of the Environment Operations Act 1997 of NSW (NSW 1997) states that, amongst its objectives, are:

- *"to protect, restore and enhance the quality of the environment in New South Wales, having regard to the need to maintain ecologically sustainable development"*, and
- *"to reduce risks to human health and prevent the degradation of the environment by the use of mechanisms that promote the ……*
  ……. making of progressive environmental improvements, including the reduction of pollution at source."

It is our opinion omission of in-stack pollution reduction measures in the air quality and HHRA considerations of the HHRA is not consistent with the policy objectives of the Protection of the Environment Operations Act 1997 of NSW. It is not appropriate to use logic that relies on existing bad (and non-compliant) air quality, and the attending health risks not getting any worse to justify the project or not evaluating the inclusion of pollution abatement equipment.

Recommendation:

We recommend inclusion of pollution abatement equipment in tunnel exhaust stacks be objectively assessed.

3.2 Vehicle emission exhaust data

Given the recent revelation of vehicle manufacturers to significantly (perhaps by as much as 50%) understate pollutant emissions, we question whether vehicle exhaust data used in the dispersion

modelling to predict levels of community exposure are sufficiently robust to provide an accurate estimation of exposure.

3.3 Compliance vs. risk assessment

Apart from the assessment of NO_2 and PM, the health effects of all other compounds chosen for assessment have been evaluated by compliance with air quality guidelines. Such a screening compliance assessment does not necessarily evaluate the actual risks or impacts to health. It is arguable whether a compliance assessment is sufficient or appropriate for a project of this scale.

We have concern regarding:

- The justification for choosing the guidelines is not in the HHRA. For a project of this scale, it would be expected that a detailed explanation of the data underpinning the guideline value and why it is appropriate for judging the health effects (and not only compliance with a guideline) to people be provided. Included should be a scholarly exposure-response assessment (i.e. the effects that a substance may cause at exposure concentrations other than the effect used to set the guideline).

- For a number of the pollutants that may be in stack emissions the averaging times of the guideline may not be pertinent for assessing short term health impacts. Particularly for the assessment of eye and respiratory tract irritation from exposure to individual substances, and as a mixture. For example, acetaldehyde and formaldehyde were assessed against 1 hour guideline values derived by different States in the USA, but elicitation of sensory irritation can occur with very brief exposure, i.e. within 5-10 minutes (NHMRC 2006). Even though the irritation may be relatively mild, manifested as itchy eyes or a tingling nose, it can affect general amenity and wellbeing if it happens often and in conjunction with odour (see below). In this situation the effect should be considered adverse (NHMRC 2006).

- Missing from the HHRA is an evaluation for odour impacts. Repeated, unwanted odour can have significant bearing on the amenity of communities. It is well recognised that the health effects associated with malodour or unwanted odour are not of a clear toxicological nature but are an effect on wellbeing and include such non-specific symptoms such as headache, mental fatigue, stress and perceived irritation (NZ MfE 2002, TCEQ 2015). Providing the air concentration of odour is sufficient, only very short exposure times are required to experience an odour event, in the order of a few seconds. However we note that although a brief compliance assessment for odour was included in the air quality chapter of the EIS (Appendix

H, Part 5, pg. 170-171), the assessment was conducted using 1-hour average concentrations for only three individual pollutants.

The assessment is deficient in that biologically relevant exposure concentrations (brief exposures to peak concentrations) of mixtures of air pollutants have not been considered.

- Also missing from the HHRA is consideration of elicitation of an asthma response but not necessarily requiring a visit to a hospital emergency department.

  In Section 6.9.2 of the HHRA, it is acknowledged that a wide range of other health effects and health measures including mortality (for different age groups), chronic bronchitis, medication use by adults and children with asthma, respiratory symptoms (including cough), restricted work days, work days lost, school absence, and restricted activity days have also been associated with PM exposure.

  The report indicates while these associations have been identified the exposure-response relationships established are not as strong as those used in the assessment for quantitative evaluation. Also the available baseline data do not include information for many of these health effects which means it is not possible to undertake a quantitative assessment.

  Nevertheless, we consider it germane to consider other indicators of acute health effects to PM (i.e. <24 hours in duration), than hospitalisation or respiratory mortality, because substantially more persons are likely to be affected (NHMRC 2006). Notwithstanding that the health impacts from PM have apparently been agreed in consultation with the NSW Department of Health, we believe such consultation established the minimum health effects that should be examined, and should not limit health risk assessment to only those 'agreed' effects. This could be done by acknowledging that exposure to PM (and NO_2) should be somewhat less than the 24 hour guideline.[1]

Recommendation:

We recommend:

- A scholarly justification be provided for the selection of the guidelines used in the HHRA with regards to what health effects are associated with a substance and how the guidelines are protective of acute and chronic health effects.

[1] This is equivalent to a margin of exposure (MOE) relative to the guideline of greater than 1. Say 10 fold or more, to account for the increased number of persons potentially affected and the shorter exposure time required to elicit harm other than that requiring hospitalisation. The actual size of the MOE could be informed by prevalence estimates of effects other than hospitalisation.

- Appropriate justification for choosing a guideline over a different one.
- The risk of sensory irritation be assessed for all relevant compounds, and as a mixture.
- Odour impacts be assessed for the mixture of relevant compounds.
- The assessment for PM should include effects other than hospitalisation prevalence and mortality for shorter term exposures.

3.4 Choice of chemicals included in HHRA

Not all pollutants relevant for assessing the impact of tunnel emissions have been included in the HHRA, or have been reasonably/objectively dismissed as having possible negligible impact.

For example the Australian Motor Vehicle Emission Inventory for the National Pollutant Inventory (NPI) (Smit 2014) lists 116 pollutants, included are metals and 14 carbonyl compounds. However the HHRA does not consider metals at all, and only two carbonyls (acetaldehyde and formaldehyde) are included. Of note is the inventory does not include the wear release of compounds entrained within tyres and brake pads that become resuspended in air and emitted from the tunnel stacks. Various authors (e.g. Sternbeck et al. 2002, Lough et al. 2005, Grigoratos and Martini 2015) have found brake wear to be a major emission pathway for some metals. A consensus statement from an international workshop held in June 2011 concluded that wear-related PM emissions that contain high concentrations of metals may (despite their limited contribution to mass of non-exhaust emissions) cause significant health risks for the population, especially those living near intensely trafficked locations (Denier van der Gon et al. 2012).

It is acknowledged the selection of chemicals considered in the HHRA is probably limited by the data provided by the air quality assessment. However the air quality assessment did not include important scenarios:

- inclusion of in-stack pollution abatement equipment, and
- 'what-if' modelling for traffic density increases on Parramatta Road after the tunnel is operational.

Recommendation:

We recommend a robust rationale be provided for the choice of air quality guidelines, the chemicals included in the HHRA, and that the list of chemicals assessed be expanded to include metals and other vehicle wear-related substances.

3.5 High-rise exposure

There is no discussion in the HHRA regarding the potentially different exposure profile for people who may be living above ground in medium- to high-rise apartments. The air quality modelling has projected ground level concentrations. Current and future development of the area with more people inhabiting apartment buildings could affect the exposure profile for this sector of the population, particularly if windows are open to allow air flow through the apartments.

Recommendation:

We recommend consideration be given to how the exposure and resulting risk profile for individuals inhabiting above-ground level apartment buildings may be different from that discussed in the HHRA.

3.6 Lack of quantitative assessment of construction scenarios

Quantitative assessment of construction scenarios and lay-down areas has not been undertaken in the HHRA. The question arises how the construction management plan will ensure negligible health effects from potential dust impacts on nearby residents. For example drilling and grinding sandstone or other hard rock creates small biologically active silica particulates which have carcinogenic potential (QLD WH&S 2009, Safe Work 2013). Public exposure to these particulates has not been considered in the HHRA.

Recommendation:

We recommend conditions be added into a construction management plan that may assist with limiting public exposure to dust from construction activities. Such conditions should include:

- A requirement for measurement of respirable crystalline silica and adherence at the construction boundary to the Victorian ambient air standard (VIC EPA 2007)[2] of 3 µg/m^3 as $PM_{2.5}$.
- Installation of vehicle washes, especially wheel washes, before leaving construction areas and entering public roads.
- A minimum moisture content of trucked spoil of 10%.

3.7 Averaging time used for calculation of incremental risk of NO_2 and PM

The calculation of incremental change in individual risk from modelled change in NO_2 and PM concentrations has been undertaken in the HHRA using several short-term and long-term health endpoints. Many of the concentration-response functions from the literature which have been used in

[2] NSW has not set an ambient air standard for crystalline silica.

the HHRA are related to a daily maximum concentration (for NO_2) or daily average concentration (for PM). However, the HHRA has used a change in annual average NO_2 and PM for assessment against the short-term health endpoints. This is inappropriate, and is likely to be diluting the exposure and therefore the estimation of potential risk.

Recommendation:

We recommend the assessment of incremental risk be redone for short term health endpoints with the appropriate modelled concentration data.

3.8 In-tunnel health risk assessment

- The modelled in-tunnel concentration data are provided as maximum 1-hour average concentrations. However, the in-tunnel criteria which are used to judge the potential for health impacts are related to shorter averaging times. Comparison of the two is inappropriate. In addition, the HHRA states the ventilation system in the tunnel has been designed so as not to exceed the in-tunnel criteria (Section 7.1). However for NO_2, it is clearly evident that the in-tunnel criteria would be exceeded (since there are instances where the modelled maximum 1-hour average already exceeds the 15-minute criteria chosen as the guideline for HHRA).

- The HHRA rightly concludes there may be a health risk for asthmatics who travel through the tunnel. The advice for management of this risk to asthmatics is to keep windows up and air conditioning on recirculation. This management approach is considered inadequate, in that:
    - it does not protect motorcyclists or other persons not in a fully enclosed vehicle.
    - the first point of exposure management should be with improvement of the tunnel design and engineering controls in order to minimise exposure.

- An 'in-tunnel' worst case exposure scenario that addresses ventilation decrease, or failure, has not been included in the HHRA.

- It is also noted that NSW Health commented in their requirements that in-tunnel exposures for vehicle occupants and motorcyclists be assessed, and that the assessment should include consideration of all reasonable and feasible mitigation measures. An objective assessment of all feasible mitigation measures does not seem to have been provided.

Recommendation:

We recommend the in-tunnel air quality modelling be redone, other exposure scenarios be included, and the health impacts for each be reassessed to match the relevant averaging times of the in-tunnel

criteria. We also recommend additional engineering solutions be included to reduce pollutant concentrations inside the tunnel.

3.9 Combining suburbs

Appendix F in the HHRA presents the assessment of increased or decreased number of cases by suburb related to the population weighted change in modelled air concentration.

It is unclear from the Appendix or the rest of the HHRA why Strathfield, Burwood and Ashfield have been combined and reported as one area.

Figure 6.4 in the HHRA indicates Haberfield (within the Ashfield LGA) is one of most impacted suburbs, but it does not appear to have been separately assessed with respect to health impacts though it contains areas from the dispersion modelling with higher concentrations.

This may be obscuring the potential health impact to the Ashfield LGA as a whole.

Recommendation:

We recommend the assessment of change in the number of cases be redone for individual suburbs in the Ashfield LGA.

4. Detailed comments

Table 4.1 provides detailed comments on the human health risk assessment (Appendix J of the EIS); the report section to which the comment refers is provided in the first column, the comment in the second column, and the potential impact on the conclusions provided in the third column. Included in the table are areas of the HHRA that we consider have been appropriately conducted as well as the inevitable inconsistencies and typographical errors that occur with large screening risk assessments. Not all of the latter may have been identified however, and a through editorial read should be done by the consultants.

Table 4.1: Detailed comments on WestConnex M4 East Human Health Risk Assessment

Report reference	Comment	Potential impact on conclusions
Various sections of the report	- Several typos identified, references to some figures missing in text. - Consistency of language (e.g. receiver vs. receptor) could be improved throughout report.	None
Section 3.2	Scope is stated as: "*to evaluate health impacts associated with the project*". It is unclear whether the scope of the risk assessment was for assessment of public health impacts only, or whether the health of workers should have also been addressed (e.g. maintenance workers in the tunnel, construction workers).	Occupational risk has not been assessed. If this was a requirement for the health impact assessment, this may impact on the conclusions or mitigation measures recommended.
Section 4.3	The selection of sensitive community receivers, along with the location where maximum impacts from the project are predicted to occur, is considered appropriate.	None
Figure 4.2	Receiver 21 missing from figure legend.	None
Figure 4.3	Figure indicates % incidence for population is based on data for 2014, whereas the figure legend indicates it is for 2009.	Unknown
Section 4.5.2, page 4-9, last paragraph	It is unclear where the information on psychological distress for people living in the LGAs of Ashfield, Burwood and Strathfield being similar to rates for NSW has come from. The information is not in Figure 4.3.	If people living in these LGAs had higher rates of psychological distress, they may be considered more susceptible to experiencing anxiety from the project.
Figure 4.4, 4.5	Figures indicate information was age-adjusted to Australian population as at 30 June 2001, whereas figure title indicates data are from 2011 (Figure 4.4) or 2013-14 (Figure 4.5).	Unknown

Report reference	Comment	Potential impact on conclusions
Table 4.4	The footnote to Table 4.4 indicates the data for the Sydney metropolitan area for 2010 comes from Golder (2013). After comparing the information with that in the Golder (2013) report, it is unclear where the rates per 100,000 (for the wider metro area in Sydney) have come from. This is demonstrated by the following: - In Appendix D of the Golder (2013) report, mortality all cause (non-trauma) for ≥ 30 yr olds is given as **1,485** for the year 2010. Presumably this is number of people over the whole population of Sydney. - According to Table 4.2 in Appendix J of the EIS, the population of Sydney in the 2011 census year was 4,391,674. This would equate to **33.8** deaths (all cause non trauma ≥30 yrs) per 100,000 people. However the table provides **56.9** deaths per 100,000 people for this endpoint. - Alternatively if only the population of ≥ 30 yr olds is used in the calculation (i.e. 1,317,502) this would equate to **112.8** deaths per 100,000 people who are ≥ 30 yrs old. - Similarly, mortality from all causes ≥ 30 yrs is given in Golder (2013) as 25,490 people in 2010. This would equate to **580.4** people per 100,000, or **1,935** people per 100,000 aged ≥ 30 yrs. However the table provides a mortality rate of **976.6** people per 100,000.	Since these data have been used in the characterisation of risk in Section 6, the impact could be an under- or over-estimation of risks.
Section 4.5.1	For a city the size of Sydney with pockets of industry and proximity to the sea, it may be expected that different suburbs may have different prevalence of disease. In the calculations for individual and suburb risk, disease incidence data for the Greater Metropolitan Area of Sydney have been used instead of individual suburb data. The HHRA has provided reasonable justification for doing this, including a comment regarding the uncertainties of using these data.	None
Section 4.5.3, last paragraph	The footnotes to Table 4.4 suggest the health statistics that are bolded in the table (i.e. *the ones for Sydney, NOT NSW) have been used in the risk assessment.* This paragraph suggests the ones for the whole of NSW have been used.	Unknown
Section 6.3.1	The construction related air quality impacts were assessed qualitatively. The conclusion was that appropriate mitigation measures would be required to minimise impacts on the local community during construction, and that an air quality management plan will be produced which specifies the mitigation measures to be implemented. How will the management plan ensure impacts are minimised to a stage where they will be considered acceptable?	May impact on conclusions if construction management plan is not done appropriately. *Suggest specific conditions to monitor compliance during construction (see Section 3.6).*
Table 6.2	Reference for the information in this table was not provided. Abbreviations not defined.	None

Report reference	Comment	Potential impact on conclusions
Table 6.3	It is not clear from the text and table how the mass fraction of individual VOCs was calculated.	These assumptions are integral in calculating concentrations of individual VOCs which people may be exposed to. Changes in these assumptions may result in an under- or over-estimation of health risk.
Section 6.6.3 *(PAH weighting factors)*	For carcinogenic PAHs, the HHRA states the weighting factors presented by the Canadian Council of Ministers of the Environment have been adopted in the risk assessment. These are the same as are used in the *National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended*, and therefore consistent with current Australian science policy. However the HHRA does not provide any information on how the weighting factors have been applied, information on the concentrations of other PAHs in emissions or in the tunnels appears to be missing.	Unknown
Section 6.6.3 *(Assumed fraction for individual PAHs)*	- No definition/criteria are provided to define a carcinogenic PAH. It appears that only benzo(a)pyrene has been considered as being carcinogenic. - The DEH (2003) report (Appendix 2) provides measured emissions for 16 different PAHs for 12 different vehicles. The fraction of total PAH emissions are highly dependent on the vehicle tested. It is unclear which vehicle type the fractions reported in Table 6.4 correspond to, or whether this is an average (or some other statistic) of the 12 different vehicles. Does the DEH (2003) report appropriately reflect vehicle emissions in 2015? - The potential impact on the health risk assessment conclusions has been investigated in relation to the carcinogenic PAHs. In Table 6.4, the fraction of PAHs assumed to be carcinogenic in the assessment was 0.9% for steady traffic flow. This should be the sum of all 'carcinogenic' PAH fractions as benzo[a]pyrene TEQ, but this doesn't appear to be the case. Using the information provided in DEH (2003, pgs. 82, 83) for a 1995 Nissan Navara and a 1986 Toyota Landcruiser LX Turbo, the benzo[a]pyrene emissions alone make up approx. 5% of total PAHs. Thus the fraction of 'carcinogenic' PAHs should be at least 5%, but probably higher if other carcinogenic PAHs are included.	This could potentially underestimate the calculated incremental lifetime cancer risks.
Section 6.6.4 *(Background exposure VOCs & PAHs)*	Where health effects are associated with a threshold, the maximum predicted incremental increase in concentration of individual VOCs and PAHs associated with the project were compared against health-based guidelines. Background exposure has not been included for these pollutants. For some areas within the modelling (and HHRA) domain background concentrations may be quite high, higher than say the Sydney wide average.	This could underestimate the potential health impacts of total exposure (background + incremental).

Report reference	Comment	Potential impact on conclusions
Table 6.6 *(Formaldehyde chronic guideline value)*	It is not mentioned that this guideline is also an effect screening level from TCEQ, i.e. it incorporates an additional safety factor of 3.3 as per TCEQ policy. Therefore it is not surprising that it is lower than the WHO guideline.	None
Table 6.6 *(Acetaldehyde chronic guideline value)*	The inhalation RfC for acetaldehyde listed on the current IRIS website is 9×10^{-3} mg/m^3, i.e. 9 µg/m^3. That is double the value listed in Table 6.6.	The health risk due to acetaldehyde may have been overestimated in the assessment.
Table 6.6 *(Anthracene chronic guideline value)*	The current US EPA IRIS lists the oral RfD for anthracene as 3×10^{-1} mg/kg/d (i.e. 0.3 mg/kg/d). Applying the route-to-route extrapolation method referenced in the HHRA to an inhalation RfC results in: $\frac{0.3 \text{ mg/kg/d} \times 70 \text{ kg}}{20 \text{ m}^3\text{/day}} = 1.05 \text{ mg/m}^3$ That is 1,050 µg/m^3. The value listed in Table 6.6 is 10 times lower than the value obtained.	This may have resulted in an overestimation of the health risks associated with anthracene exposure.
Table 6.6 (*Use of simple route-to-route extrapolation*)	The HHRA uses simple route-to-route extrapolation to derive inhalation guideline values for PAHs from oral reference doses available from the US EPA IRIS. The HHRA cites that extrapolation has been done as per US EPA (2009b), *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment)*. It is noted, however, this reference discourages the use of simple route-to-route extrapolation from oral data using default assumptions about inhalation rate and body weight. Instead, in the absence of inhalation data, it recommends "*the risk assessor should conduct a qualitative evaluation of this exposure route. The risk assessor should discuss in the uncertainty section of the risk assessment report the implications of not quantitatively assessing risks due to inhalation exposures to chemicals lacking inhalation toxicity data*" (US EPA 2009b, pg. 21). No toxicological justification for using route-to-route extrapolation has been provided, nor has a justification been provided for using surrogate information for PAHs with no guideline value. Such a discussion should include a comparison of the adverse effects after oral and inhalational exposure, consideration of bioavailability after oral and inhalation exposure, and a discussion of similar or varying potencies of these effects for different PAHs.	This diminishes the reliability of the conclusions with respect to PAHs.

Report reference	Comment	Potential impact on conclusions
Section 6.6.4, Tables 6.7-6.9 *(Where has concentration of total PAHs come from?)*	It is unclear where the concentrations used for the assessment of short term and long term impacts from PAHs have come from. The source could not be located elsewhere in the EIS.	Conclusions cannot be independently verified. The impact on the risk assessment conclusions is therefore uncertain.
Section 6.6.4 *(Calculation of lifetime incremental cancer risks)*	The methodology used for calculating incremental lifetime cancer risk has been checked, and is consistent with enHealth (2012a) guidance.	None
Section 6.6.4 *(Choice of carcinogens for estimation of total cancer risk)*	Calculation of an overall cancer risk has not included all carcinogens. For example, 1,3-butadiene has not been included.	This may have resulted in an underestimation of the total incremental lifetime cancer risk.
Table 6.8	Adding up all the hazard indices in the relevant columns of the table gives total hazard indices of 0.06-0.14, much lower than the 0.9-1 provided in the table.	Assuming the concentrations in Table 6.8 have been correctly transcribed from the air modelling data, the incremental health risk for VOCs and PAHs have been overestimated in Table 6.8.
Table 6.9	The table indicates maximum predicted 1-hour average concentrations were used for calculation of an incremental lifetime carcinogenic risk, whereas previous text indicated an annual average concentration was used. The more appropriate indicator for estimates of chronic health effects (such as carcinogenicity) is an annual average.	None, assuming an annual average concentration was used in the calculation. The risks may be overestimated if a maximum predicted 1-hour average was used.
Section 6.7	Reference for NSW EPA guideline for CO (15-minute average) not provided.	None
Section 6.8 *(General methodology)*	For NO_2, health risk was estimated by two approaches: 1) comparison of total modelled NO_2 to current ambient air quality guidelines and 2) calculation of individual risk associated with incremental increases and/or decreases in modelled NO_2 as a result of the project. Conceptually the two approaches provide a balanced method to assessing health risk. However NO_2 induction of airway hyper-responsiveness to other pollutants has not been factored into the HHRA considerations of health effects from the mixture of substances emitted from the tunnel stacks.	None

Report reference	Comment	Potential impact on conclusions
Section 6.8 (*NO_2 comparison to acute 1-hr NEPC guideline)*	The current NEPC guidelines (1-hr and annual) were adopted for comparison with cumulative modelled NO_2 exposure. The author of the risk assessment indicates these guidelines are considered to be protective (of health) of short and long term exposure, but notes current review of these guidelines is underway. WHO (2013) indicate the additional studies that have been published since the last update of the WHO guidelines for NO_2 could very well result in a lowering of the guideline values (it should be noted the WHO guidelines are already lower than the NEPC guidelines). For example, WHO (2013) cites evidence from chamber studies of inflammation and airway hyper-responsiveness with NO_2 exposure (15 minutes – 6 hours) in the range of 380 – 1,880 µg/m^3, with more consistent responses observed from 1,880 µg/m^3. WHO (2013) also indicates new review reports also suggest weak to moderate lung cell changes occurring in animal studies at 1-hr concentrations of 380 – 1,500 µg/m^3. The concentrations are not far from maximum concentrations of NO_2 (as 1-hr averages) modelled in the assessment with (243-307 µg/m^3) or without (286-375 µg/m^3) the project. The chamber studies examined small numbers of healthy or mildly asthmatic subjects, whereas the general population will include subjects who are more sensitive and may therefore experience more pronounced effects at lower concentrations. This point lines up well with evidence from time-series epidemiological studies which have shown associations with short-term respiratory effects (e.g. asthma hospital admissions) at lower NO_2 concentrations than those in the chamber or animal experiments. Section 6.8 comments that predicted 1-hour concentrations of NO_2 exceed the acute NEPC guideline value of 246 µg/m^3 (both with and without the project), but makes no comment about what this may mean in terms of health risks to the community.	Currently, no conclusion with respect to potential health risk as a result of modelled concentrations of NO_2 exceeding the NEPC 1-hour guideline is provided in the report. This diminishes the potential importance of the exceedences; this is critical information for the risk managers in their consideration of options for improvement of air quality.
Section 6.8.3	It is unclear why for the incremental exposure assessment of $PM_{2.5}$, calculations for both individual risk and population risk (as number of additional cases) by suburb have been undertaken. However for NO_2 and PM_{10}, only risk for individual receivers has been assessed, and not suburbs. The rationale for this is not provided.	Unknown. The assessment should be internally consistent.
Section 6.8.3	The calculation of incremental change in individual risk due to predicted NO_2 has been done using short-term health endpoints. In the Golder (2013) report, from which the concentration-response functions have been adopted for this assessment, the relevant beta coefficients are related to a daily maximum concentration. However, the HHRA for the M4 East project has used an increase in annual average NO_2 for assessment against the short-term health endpoints. This is inappropriate, and may be diluting the exposure and therefore the potential risk.	This may have underestimated the potential health risks associated with NO_2.
Section 6.9.1	Good description of different PM particle size fractions.	None

Report reference	Comment	Potential impact on conclusions
Section 6.9.3 *(General methodology)*	For PM, health risk was estimated by two approaches: 1) comparison of total modelled PM_{10} and $PM_{2.5}$ to current ambient air quality guidelines/goals and 2) calculation of individual risk & population risk (by suburb) associated with incremental increases and/or decreases in modelled PM as a result of the project. Conceptually the two approaches provide a balanced method to assessing health risk.	None
Section 6.9.4	Section 6.9.4 comments that predicted maximum 24-hour concentrations of PM and annual average $PM_{2.5}$ exceed the NEPC guideline/goal values (both with and without the project), but makes no comment about what this may mean in terms of health risks to the community.	Currently, no conclusion with respect to potential health risk as a result of modelled concentrations of PM exceeding the NEPC guideline/goal is provided in the report. This diminishes the potential importance of the exceedences; this is critical information for the risk managers in their consideration of options for improvement of air quality.
Section 6.9.5	HHRA states "*The health impact functions presented in this table are considered to be the most current and robust values, and are appropriate for the quantification of potential health effects for the health endpoints considered in this assessment*", but no references are provided.	This statement should be supported by references, but will probably have no impact on the conclusions.
Figures 6.5, 6.6	These figures provide a good visual summary of the predicted incremental change in individual risk and change in incidence (number of attributable cases).	None
Section 6.11.1	There is no discussion in the uncertainty section regarding the potentially different exposure profile for people who may be living above ground in medium- to high-rise apartments. The air quality modelling has predicted ground level concentrations only.	Current and future development of the area with more people inhabiting apartment buildings could affect the exposure profile, and therefore the health risk, for this sector of the population.
Sections 6.11.2-6.11.9	A good discussion of the uncertainties with the assumptions made in the HHRA has been provided.	None
Section 7.2	The HHRA indicates the tunnel has been designed to meet the in-tunnel limits for CO, which include 3-, 15-, and 30-minute rolling averages. However a quantitative comparison of predicted CO concentration within the tunnel has only been conducted for the 1-hour average CO concentration. No data have been provided for modelled shorter averaging times.	A third party is unable to reach an independent conclusion regarding whether the short-term in-tunnel CO concentration limits are likely to be met, since the modelling for these short-term average concentrations has not been provided.

Report reference	Comment	Potential impact on conclusions
Section 7.3	The HHRA indicates the tunnel has been designed to meet the in-tunnel criterion for NO_2, which is 0.5 ppm as a 15-minute rolling average. Section 7.3 indicates the maximum 1-hour modelled NO_2 concentration may be up to 0.8 ppm. Modelling data for a 15-minute averaging time are not provided, however the 15-minute averages would be expected to be higher than the 1-hour average. Since the 1-hour average exceeds the 15-minute tunnel criterion for NO_2, the tunnel does not appear to have been designed to meet the criteria. The HHRA rightly concludes the data suggest an increased risk of adverse effects for those with asthma.	The advice for management of this risk to asthmatics is to keep windows up and air conditioning on recirculation. This management approach is considered inadequate, in that: - it does not protect motorcyclists. - the first point of management should be with improvement of the tunnel design in order to minimise exposure.
Section 8.5.1 (*Construction noise)*	The HHRA notes it is likely the noise screening criterion for sleep disturbance will be exceeded for night works adjacent to residential receivers for most works scenarios. As a mitigation measure, the report proposes that construction works will be undertaken during daytime hours wherever possible, and that "*further consideration of the need for noise mitigation measures where works are required at night would be undertaken during detailed design*". However, specific reference to how the design minimises adverse health impacts were not made.	The proposed mitigation measures for reducing the impact of noise do not provide much assurance, without these becoming a condition of approval. The SEAR on this topic has not been adequately addressed.
Section 8.5.1 (*Construction vehicle noise)*	The HHRA indicates Short Street East and Powell Street in Homebush Bay will be the most affected local roads in terms of construction vehicle noise, however no mitigation measures have been proposed.	The potential health and amenity impact from vehicular construction noise is not proposed to be managed/minimised.
Section 8.6	The HHRA appropriately indicates without the detailed design for noise mitigation measures, it is not possible to evaluate whether health effects (due to noise) are likely, how significant they will be or where they may occur during the construction phase of the project. During operation of the project, the HHRA concludes increased levels of stress may be experienced at individual properties located near the interchanges, due to increased levels of noise in outdoor areas. This conclusion is also considered appropriate.	None Appropriate management of the identified noise impacts will be very important for minimising potential health impacts due to noise increases.
Section 11 (References)	Several references missing from reference list/within text: - NSW Health 2015 - US EPA (date not provided)	None
Appendix A	The equations in Appendix A were checked, and all seem to have been reported appropriately. However it is not transparent how the "simplified equation", which is used to calculate suburb risk for PM, was derived.	None It is suggested more transparency be provided in the derivation of the "simplified equation."

Report reference	Comment	Potential impact on conclusions
Appendix B	Appendix B states (with respect to the OEHHA unit risk value for diesel exhaust) *"This estimate has been widely criticised as overestimating the risk and hence has not been considered in this assessment"*, but no references are provided to substantiate this statement and no discussion why it overestimates the risk.	None
Appendix C (*Justification for 'acceptable' levels of risk)*	A good description and justification for the levels of risk considered negligible/ acceptable/tolerable has been provided. However, it is arguable whether the design of the project includes the best available technology to minimise public exposure (see later comment).	None
Appendix C (*Project incorporates measures to minimise exposure)*	Appendix C of the report indicates the design of the project has incorporated measures to minimise exposures to traffic-related emissions in local areas. However, the report does not seem to provide detail on how this is achieved.	The assessment does not sufficiently comply with the SEAR relating to this aspect (see Section 2). It is our opinion for a project of this scale and longevity, much more additional detail of how the project design minimises adverse health impacts is required.
Appendix C (*tolerable risks*)	'Tolerable' risks are defined in Appendix C as those that can be tolerated (and where the best available, and most appropriate technology has been implemented to minimise exposure) in order to realise some benefit. 'Tolerable' risks are considered in Appendix C to correspond to an increased level of risk between 10^{-6} and 10^{-4}. This begs the question whether for receivers at which a 'tolerable' level of increased risk has been calculated, has the best available, most appropriate technology been implemented to minimise exposure? Can additional technology be implemented to reduce these 'tolerable' levels of increased risk?	It is arguable whether the design of the project includes the best available, most appropriate technology to minimise public exposure (e.g. filtration and/or scrubbers in tunnel emission stacks). This calls into question whether an incremental increased public health risk between 10^{-6} and 10^{-4} should be considered 'tolerable.'
Appendix C (*negligible increased incidence in number of cases)*	The adoption of the more conservative tenfold margin of safety to determine what changes in incidence may be considered negligible in a study population is, in our opinion, appropriate considering the scale and sensitivity of this project. In addition it caters for the fact that an incremental change in the number of cases related to a particular endpoint was calculated. However it is unclear why a similar approach was not used for judging what level of incremental health risks may be considered 'tolerable', i.e. why cognisance was not given to an individual's existing health risk from existing air quality.	None for the number of cases. However, for the judgement of 'tolerable' incremental individual risk, adoption of a different level may affect the conclusions.
Appendix D (*Math of calculations*)	In relation to the math, the calculations in Appendix D appear to have been done correctly, according to the equations provided in Appendix A. However, there is an issue with the transparency of how the "simplified equation", which is used to calculate suburb risk for PM, is derived (see previous comment), as well as an issue with the use of incremental changes in the annual average pollutant concentrations for delineation of short term health risks.	This may have underestimated the potential health risks associated with NO_2 and PM.

5. Compensatory measures

Based on our review of the human health risk assessment, we recommend the following compensatory measures be implemented:

1. The HHRA be revised addressing the data gaps identified in Sections 2-4 of this review.
2. Construction phase: Conditions be added into a construction management plan that may assist with limiting public exposure to dust from construction activities. Such conditions should include:
    a. A requirement for measurement of respirable crystalline silica and adherence at the construction boundary to the Victorian ambient air standard (VIC EPA 2007)[3] of 3µg/m^3 as $PM_{2.5}$.
    b. Installation of vehicle washes, especially wheel washes, before entering public roads.
    c. A minimum moisture content of trucked spoil of 10%.
3. Construction and operational phase: Noise mitigation measures which reduce levels of noise to those unlikely to impact on the wellbeing of individuals should be implemented as a condition of approval for the project.
4. Operational phase: Engineering solutions should be installed into tunnel stacks to reduce emissions.

[3] NSW has not set an ambient air standard for crystalline silica.

6. References

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Ashfield Council

ATTACHMENT 8

SOCIAL AND ECONOMIC IMPACT ASSESSMENT RESPONSE

1.0 Background

Council has reviewed the WestConnex Delivery Authority's (WDA) Social and Economic Impact Assessment contained in Volume 1 B Chapter 14 and Appendix M-O of the Environmental Impact Statement (EIS).

This response has taken into consideration feedback from Council staff, the business community and other local stakeholders and notes various negative impacts and potential risks arising from the WestConnex project on local residents, businesses and social infrastructure.

Ashfield has a rich cultural diversity and heritage, and is a significant point of connection between the city and the greater west. It is a community of villages and a major town centre which will be severely impacted by this major infrastructure project.

This response recommends a range of actions to minimise the impacts associated with the project during and post construction. The recommendations work towards ensuring that appropriate and ongoing support is offered to the Ashfield community as a result of the impact of the WestConnex project.

Recommendation

1. The WDA produce a summary of the EIS and the expected project impacts and that this be translated and made available in Mandarin, Italian and Greek.

2.0 SOCIAL IMPACT ASSESSMENT

2.1 Specific aspects relevant to social impact assessment

2.1.1 Property Acquisition

A total of 182 residential properties will be acquired under the project in accordance with the Land Acquisition (Just Terms Compensation) Act 1991.

Issue

A high number of residential properties to be acquired are located in Ashfield LGA, largely in Haberfield, which was established in 1901 as a model 'Garden Suburb', and

also in the Ashfield. Haberfield is recognised for its heritage significance through its conservation area status and is renowned for its Federation design.

The relatively short period of time property owners and tenants have been given to respond to property acquisitions have made it difficult for many owners and residents to obtain independent valuations and negotiate an appropriate compensation offer. Many owners have found that in the current residential property market they have been unable to find alternative property options within their current community both from a financial and availability perspective.

Recommendations

1. Property owners are given appropriate resources and additional time beyond the mandatory statutory requirements to finalise their response to acquisition notices to ensure that fair and reasonable compensation packages can be negotiated.

2. That the Valuer-General NSW or some other independent body be made available to review property compensation offers where offers are in dispute.

3. That all residual land in the Ashfield LGA available post construction of the WestConnex project be offered to Ashfield Council, at no cost, for consideration as a compensatory measure for community use.

2.1.2 Construction vehicle access and parking

Issue

It is noted that the construction workforce is to be encouraged to utilise public transport to gain access to the various construction sites and that some parking zones will be established for workers. While this sentiment is supported, a project of this scale needs to provide dedicated and specific transport access to construction sites for employees to ensure local residents are not disadvantaged by potentially large numbers of workers choosing to drive to work and utilise surrounding local streets for on street car parking.

Recommendations

1. The project proponent provide a shuttle bus service for workers from existing key public transport nodes during the entire construction period of the project to alleviate traffic congestion and reduce potential demand for on street car parking at or in the vicinity of proposed construction sites.

2. The project proponent makes available to all employees a scheme which provides a significant financial incentive to workers to use public transport to and from work.

Ashfield Council

2.1.3 Public transport services

Issue

The EIS notes that local residents, business owners and bus passengers would be advised of planned construction activities and changes to bus stop locations during construction. There is no mention that such information will be made available in other languages. The Ashfield LGA has a high number of Chinese and Italian residents whose first language is not English.

Recommendations

1. Public transport changes (e.g. new bus stop locations) are clearly communicated in with appropriate signage in multiple community languages.

2. All general public information to local residents regarding the project is provided in multiple community languages.

2.1.4 Walking and cycling

Issue

A number of pedestrian diversions are proposed in addition to the establishment of alternate cycle routes. Additional measures need to be considered given the anticipated increase in traffic and congestion and to assist the more vulnerable and disadvantaged groups in the community.

Recommendations

1. The project proponent provides road safety officers around key construction sites and at major local crossings to direct traffic and assist local residents.

2. The project proponent establish dedicated pedestrian and cycle links during the construction phase that provide both safe and accessible alternate options for the community to use to maintain connectivity throughout areas around construction activity.

3. The project include additional pedestrian crossing opportunities in the following areas:
    - Parramatta Road at Ashfield Park, Wattle Street and Bland Street
    - Wattle Street at Ramsey Street and Reg Coady Reserve
    - Dobroyd Parade at Timbrell Drive

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2.2 Assessment of construction and operational impacts

Issues

The social impacts relating to *Specific impacts to social infrastructure, Access and connectivity* and *Changes in amenity* have been described in the EIS assessment as mainly short-term impacts. This is not a realistic appraisal of the likely outcome of the project.

The WestConnex project will have many long lasting impacts on the Ashfield community:

- The loss of local connectivity, as this will be severely comprised in the Haberfield and Ashfield areas
- Traffic access to areas will dramatically impact on local residents, schools, childcare and aged care facilities
- Pedestrian access between Ashfield and Haberfield will be compromised in terms of ease of access, physical separation, directness and safety, affecting access to services and facilities such as:
    - Ashfield Railway Station
    - Medicare Local
    - Haberfield Public School
    - Ashfield Boys High School
    - De La Salle College
    - The Infants Home
    - Ella Community Centre
    - More than eight child care centres and after-school hours care centres
- Amenity impacts such as access to parks, community centres, public transport and businesses
- Ongoing traffic noise
- Visual amenity changes with new structures, portals, acoustic walls, etc
- Loss of open space

Recommendations

1. The project proponent commission a way finding study to examine opportunities to upgrade existing signage, particularly post the operational phase of the project, to direct people to new amenities and facilities and access arrangements. The way finding study recommendations are to be implemented by the project proponent prior to the commissioning of the new road works.

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2. To assist in minimising the visual impact of the project during and post construction the proponent engages a Public Art Consultant to develop a Public Art Strategy for the project. The outcomes of the Strategy shall include a detailed rolling implementation plan based on consultation with the Council and a budget of $500,000 which covers: -
    - a public art coordinator to implement the plan
    - payment for artists
    - community development strategies
    - materials, installation and ongoing maintenance program
    - marketing campaign

3. The project proponent shall construct new pedestrian and cycle links that provide safe and accessible routes for the community to use to maintain connectivity throughout areas around the new infrastructure works.

4. Land which is surplus to the project after completion of construction shall be restored to a state which is suitable for community use and be offered to the Council, at no cost, for consideration for potential community use.

5. The State Government be requested to, as a compensatory measure to the community, offer the Yasmar site to the Council for community use together with a one-off contribution of $4.5million to be put towards the restoration of the site including the removal of existing unsympathetic buildings, conservation and adaptive reuse of Yasmar, and reconstruction of the historic gardens.

6. An air quality monitoring scheme be put in place to monitor air quality impacts arising from the project on an ongoing basis with regular reports to be publicly available and accessible on a dedicated website.

7. That long-term continuous air quality improvement measures be implemented post project implementation.

8. A cash contribution of $250,000 is provided to the Council in support of its annual Carnival of Cultures event in Ashfield Park, to foster ongoing community support and business development opportunities.

3.0 ECONOMIC IMPACT ASSESSMENT

3.1 Assessment of construction impacts

3.1.1 Construction expenditure and employment

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Issue

The EIS economic impact assessment assumes that local businesses in Ashfield LGA would benefit from the project expenditure through purchases made by construction contractors and associated workers, however, this has not taken into account that the economy is mainly driven by its multicultural community, local eat-streets and retailers who are mainly small to medium size businesses. Further, the location of project works does not lend itself for local businesses in Ashfield LGA to cater to the day-to-day needs of the construction workforce. The zones which may yield a benefit are located on Parramatta Road and are the larger food franchise operations.

Recommendations

1. The project proponent commission further research into the project's impact on employment within the Ashfield LGA, including the projected net change in the number of people employed in businesses and the projected net change in turnover ($) generated by local businesses. The findings of this research are to be reported to the Council together with any recommendations arising from the findings.

2. The project proponent looks at opportunities to assist local businesses, through signage or other means, to direct people to businesses in the local area.

3.1.2 Land acquisition

The majority of business sites required for the project are located along Parramatta Road.

Issue

The EIS economic impact assessment argues that because the acquired businesses on Parramatta Road generally serve a wider catchment area, their loss will not significantly disadvantage the local community. However, this has not taken into account that such commercial activity provides a flow on effect to other businesses in the vicinity of their operations. This is particularly relevant to the viability of the Haberfield village centre which will be impacted by the loss of these businesses. In addition, the Haberfield centre and surrounding businesses are still experiencing issues resulting from:

- the Global Financial Crises (GFC)
- spending shifts relating to internet retailing
- down turn in foot traffic
- traffic congestion
- low growth in employment figures

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Recommendation

A cash contribution of $500,000 is provided to the Council to support further upgrades to the Haberfield centre to assist local businesses post completion of the project's construction phase.

3.1.3 Changes in amenity

Issue

The EIS economic impact assessment concludes that because local businesses including childcare and aged care facilities in Ashfield LGA, are already impacted by the poor amenity of Parramatta Road due to current traffic volumes, noise and air quality, the impact brought about by the WestConnex project will therefore be less significant, given this local context. This somewhat narrow view does not, however, appear to have considered the cumulative impacts of WestConnex on the local community.

Recommendations

1. The project proponent provides assistance to the Council in developing a marketing campaign for individual businesses directly affected by the project during construction which is focused on the Haberfield village centre.

2. A liaison centre or representative is made available for duration of the project's construction phase for business operators to access with any concerns arising from the impacts of the project.

3.1.4 Assessment of operational impacts

Issue

At an Ashfield LGA level it is noted that the EIS identified the following potential project impacts:

- Reduced accessibility for customers, staff and deliveries to business premises due to congestion, change in public transport and loss of parking from construction vehicles in side streets, particularly for Haberfield village and the Parramatta Road enterprise zone not directly affected by property acquisitions

- Reduced quality of business operations brought about from the impact of vibration disturbance and noise and air quality

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- Loss of business brand image due to impact on business visibility through obstruction of views by construction materials and reduction in passing traffic
- Productivity downturn due to staff uncertainty of how the project will impact on their jobs
- Businesses losing key staff due to uncertainly of the operation or difficulties in accessing the actual business premises
- Reduction in community funding into the LGA as businesses cease operations or put on hold sponsorship due to uncertainty of future viability
- Reduced likelihood of new businesses choosing Ashfield Town Centre or Haberfield village centre to set up, decreasing local employment opportunities
- Increased likelihood of newly established businesses failing due to combination of above pressures
- For businesses with outdoor dining: decreased amenity for customers, due to increased traffic volumes on local roads; adverse noise levels due to construction and increased traffic; avoiding construction zone, ultimately reducing customer volumes
- For businesses located near the construction zones: reduction of foot traffic due to difficultly accessing the area; reduced customer catchment due to difficulty crossing Parramatta Road from Ashfield or Wattle Street from Five Dock, via foot, car or cycling; business down turn; cost of relocating business to new location; loss of income
- For the working population: Haberfield is a mostly car dependent suburb (>50% households have at least two cars and >75% of people use *private* transport to get to work) and will experience increased traffic volumes, congestion during peak hours increasing journey to work time, impacting productivity of broader economy of Sydney's Inner West and CBD

Recommendations

1. The project proponent assist local business during the project's construction phase by including promotional material and articles in periodic newsletters and general project information promoting a 'business as usual' theme in the Ashfield LGA to showcase the village areas as places to do business. This promotional material is also to be made available to local newspapers - Inner West Courier, CIAO and The Vision China Times.

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2. A cash contribution of $50,000, each year, over a five year period is made available to the Council to support Feast of Flavours events in Haberfield, Ashfield and Summer Hill to support renewed economic development during and post-construction.

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ATTACHMENT 9

URBAN DESIGN AND VISUAL AMENITY IMPACTS

1.0 Introduction

This is a review of Urban Design and Visual Amenity component of the WestConnex project for the part affecting the Ashfield LGA – being one of the considerations of the 'Secretary's Environmental Assessment Requirements' for the WestConnex EIS (see Part 2 below).

1.1 Volume 1A – Executive Summary document

Volume 1A first refers to Urban Design, Landscape Character and Visual Impact Assessment and acknowledges there is much design work yet to be resolved. It states: *"The urban design and landscape approach for the project would be developed during detailed design with the aim of integrating the project into the surrounding landscape and visual setting".*

1.2 Volume 1B document

Volume 1B attempts to summarise the findings of Appendix L which provides the detailed commentary for Urban Design, Landscape Character and Visual Impact Assessment. The document provides a summary table basically pointing out how various places have rankings of low, moderate or high impacts. These rankings are meant to be given some plain English meaning in Table 13.1.2 - Environmental *management measures* (at pages 13-48), which sets out what additional design work should be carried out, which is considerable.

1.3 Appendix L document - Urban Design, Landscape Character and Visual Impact Assessment

Appendix L uses the Roads and Maritime Service 2013 guidelines as its methodology for the assessment, which is a basic spatial tool. A more useful approach to present this information, with today's technology, would have been to produce a 3 dimensional spatial movie type simulation to understand the visual impacts, and the various components described below.

Schematic plans within Volume L of the actual WestConnex proposal positions for Ashfield first appear at Section 6.3 - Urban Design Assessment of the document. Schematic means that the plans show the general locations of the parts of the proposal, but do not contain very much detail. They are therefore subject to further

future design development. Normally, this absence of detail, e.g. at Development Application stage, would not be acceptable. To be able to properly graphically read these plans and understand spatially what is proposed, which is the purpose of producing such plans, a person must rely on enlarging the plans. For example, to be able to see where noise walls are going and how effective they will be.

At Part 2.3 of the document only one major 'birds eye' view/aerial artist impression rendering of the Wattle Street portal interchange is found at Figure 2.8, and likewise for the Parramatta Road interchange at Figure 2.9. Both these views use trees to mask the complete width of the motorway and disguise its hard edge spatial severity.

Schematic designs of three types of noise walls are provided to outline the type of walls that would be placed against house property boundaries to deflect noise. As noted above, a lack of detail makes it difficult to assess specific localised impacts.

After examination of the detail provided in the EIS, albeit schematic, it is evident that the WestConnex project will result in a major intervention or 'cut out' of the western heart of the historic garden suburb of Haberfield. The 'cut out' being approximately 780 metres long and approximately 53 metres at its widest point. Appendix L in various parts concludes this is indeed a 'high impact' and does not fit in with the existing historic character of the area. The Parramatta Road interchange area will also result in a large part 'cut out' being approximately 500 metres long and approximately 60 metres at its widest point. The key 'tool' to mitigate this significant visual impact is to provide tree planting.

The EIS assessment of Urban Design and Visual Amenity Impacts concludes:

"This assessment has found that the preferred design is generally consistent with the objectives and design principles set by the WUDF and Roads and Maritime Services design guidelines. However, it is difficult at this early stage of the design resolution to be conclusive with regard to all of the required elements. Where exceptions exist it is generally due to the lack of detailed design resolution rather than in appropriate design".

Elsewhere in the EIS it is implied that the 'preferred design' is justified for the greater strategic traffic engineering of Sydney. Noting the above, part 3 below focuses on key issues that have not been adequately addressed and need upfront resolution.

2.0 Compliance with Secretary's Environmental Assessment Requirements (SEAR)

The following are the conditions required to be addressed by the EIS, shown in the first column, with a general response for the areas affected within the Ashfield LGA given in

the second. More detail is provided in part 3.0 of this response under key issues - for matters that have not been adequately addressed.

SEAR Requirement	Compliance Response
Urban Design and Visual Amenity – including but not limited to:	
A consideration of the urban design and visual amenity implications of the project, including supporting infrastructure, during construction and operation. The assessment must identify urban design and landscaping objectives to enhance the interchanges, tunnels, "cut and cover" and "slot" arrangements; consider resulting residual land and treatments, and demonstrate how the proposed hard and soft urban design elements of the project would be consistent with the existing and desired future character of the area.	In terms of designs that would describe these components, only schematic small scale drawings have been provided. These drawings describe what will be constructed. In Appendix L it is acknowledged that there is considerable design detail yet to be worked out, and that there should be a specialist design review panel set up to review this further level of information. Appendix L does constructively suggest a number of things that require further resolution, which are found in part 7 of Appendix L (and repeated in Volume 1B at 13.5 Management of Impacts).
Consideration of the WestConnex Urban Revitalisation Project.	There is some brief mention of the Parramatta Road Urban Transformation Strategy.
Identification of opportunities to utilise surplus or residual land, and utilise key structures (such as stacks) for multiple uses i.e. integration with other structures.	Opportunities to utilise surplus or residual land according to the Appendix L should be left to the future as part of an iterative planning process.
Identification and evaluation of the visual impacts and urban design aspects of the project (and its components) on surrounding area.	There should have been many more location 'receivers' reviewed, e.g., the eastern ventilation facility stacks building is 25 metres high (equivalent to 8 storeys) and will naturally have a long distance impact, and its

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	appearance must be resolved with an appropriate design. The EIS has not adequately taken into account the Haberfield heritage context- in that there is not enough acknowledgement of the intrinsic 'Garden Suburb' character qualities reflected within the urban design components of the proposal.
A consideration of impacts on views and vistas, streetscapes, key sites and buildings.	There should have been many more location 'receivers' reviewed. Refer to part 3 below – key issues.
Identification of measures to create, promote, and enhance connectivity across Parramatta Road, where impacts to connectivity are associated with the project.	In terms of explicit designs that would describe these components, such designs have not been provided. See below in Part 3.0 for additional areas that should be covered.
Measures to manage lighting impacts both during construction and operation.	Appendix L states there is no expert lighting engineering report to assess. This is to be left for future resolution.
Artist impressions and perspective drawings of the proposal from a variety of locations along and adjacent to the route.	There are very few substantive artists impressions provided (see comments in part 1). A prime visual impacts matter is that for community consultation, one would have expected a computer simulation of the main visual impacts of the project - i.e. views to the portals, ventilation infrastructure, etc. This would have enabled the community most impacted by the proposal to be able to view and so understand the spatial impacts <u>in any location</u> in the Ashfield LGA and then give consideration to what needs to be done to improve the actual real spatial

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	outcomes. This is a significant deficiency in the exhibition material.

3.0 Key Issues

3.1 At a high/primary level:

(i) The proposal will cause a 'spatial divide', a type of loss of connectivity, for significant parts of Ashfield. It follows that where there is an opportunity to remedy this, it should be explicitly addressed and resolved.

(ii) There are a significant number of remaining residences that will be severely exposed both during construction work, and after the motorway is in operation. Careful resolution should occur of the actual spatial devices used to ameliorate those impacts, the position of roadways, and provision of areas for buffer tree planting.

(iii) The Wattle Street area is self evidently within the historic Haberfield Conservation Area, the 'Garden Suburb', and wherever possible, there should be landscape and architectural acknowledgment /interpretation of this context.

(iv) There is substantial reliance, essentially on trees and landscaping, to visually mask the major motorway components and so to ameliorate their visual impacts. Some of these areas will be contained above concreted structural parts of the tunnels. It is therefore fundamental that these places be structurally designed to accommodate dense and tall tree planting, and evidence of this needs to be provided.

(vi) During construction works, likely to occur over many years, there will continuous night time works at the three 'civil sites' - Northcote Street, east side of Wattle Street, and south side of Parramatta Road. These works sites will naturally requiring night time lighting and so there will be potential nuisance to many adjacent and nearby residences. A lighting engineer specialist will need to be employed by WestConnex to assess the situation and make any required adjustments to ameliorate potential nuisance arising from such lighting.

(vii) There is considerable outstanding design work that is yet to be resolved and which will require more detailed drawings to be produced. This is acknowledged in the Environmental Impact Statement.

3.2 Noting the above, the following are particular or location specific issues which are either not covered, or not adequately covered, in Appendix L or within the other parts of the EIS.

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Protection of Amenity of residents in Wattle Street, and historic urban design setting

(i) For the houses along the west side of Wattle street (see the red line in Diagram 1), and especially for the southern part of Wattle Street toward Parramatta Road, it should be investigated whether there is scope to have a much wider verge (footpath) say around 6 metres to maximise the separation buffer between the houses and the roadway, given the houses obvious close proximity to the numerous hard edged and noisy traffic lanes and portal ramps, an area up to 53 metres wide (equivalent of 17 traffic lanes) at its widest part. This is justified because of:

- the cognitive benefit for residents - extra verge width and increased distance separation to the road kerb, plus more vegetation, will bring amenity improvements for adjacent residents.

- Haberfield conservation area theme - i.e. 'you have entered the garden suburb - not the concreted noisy suburb', and so one would have a strong and regular tree planting along the footpath, which would be symmetrically placed to balance the proposed tree planting along the east side shown on the schematic plans.

- the 24/7 impacts these Wattle Street residences will endure - e.g. intensive truck movements, for many years.

Diagram 1- Area along Wattle Street between Parramatta Road and Martin Street

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Pedestrian Connectivity across footpath areas at Ramsay Street and Wattle Street

(ii) Given the historic context of Haberfield area, the Ramsay Street crossing verge areas (footpaths) across Wattle Street (see Diagram 2) should be much wider and take a 'fit out' that acknowledges the verges are within a historic area and one of the visual gateways into the Haberfield Town Centre.

The area at the Wattle Street and Ramsay Street crossing will be hard edged and pedestrian unfriendly and dominated by traffic movements. Its significant with of approximately 65 metres will result in long pedestrian crossing times. The northern footway section, as currently shown on the schematic drawings, will be narrow and hard paved, with a likely 'caged pedestrian protection barrier'. The view to the north will be through this narrow opening down to noisy and expansive portal ramps. This is a key visual impact receiver area (to use the EIS terminology).

For the northerly side verge along Ramsay Street (seen red line in Diagram 2), a preferred option would be a much wider verge area (at least 6 metres), with special treatments to the pavements and to the balustrade fencing, space for separate bicycle paths, and with thematic public artwork placed in this location, and regular rhythmic planting disguising the major roadways vista to the north. For the south side this type of treatment should be mirrored with a verge area comprising special treatments to the pavements and with thematic public artwork placed in this location.

Diagram 2 - Area at junction of Wattle Street and Ramsay Street

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Urban Design at Wattle Street and Parramatta Road intersection

(iii) The area around the south side of Wattle Street adjacent to Parramatta Road will thematically be the entry into the 'Garden Suburb' and this area should therefore require special thematic treatments, which can easily be located in positions with no detrimental impacts on the actual roadway design. This area should also include public art.

There will also be long pedestrian travel times along Parramatta Road, being approx 77 metres wide, and dominated by traffic movements, and so there is need for special attention to the pavement treatments and for pedestrian islands for pedestrian safety.

Visual impact and outstanding design development of eastern ventilation stacks and ancillary buildings and the site's open space.

(iv) The corner of Parramatta Road and Wattle Street will contain a large site with several visually prominent buildings, including very tall 25 metre high ventilation exhaust stacks which will obviously have long distance visual impacts (see Diagram 3). The precise aesthetic composition of those buildings needs to be carefully resolved in a way that notes and acknowledges the Haberfield context and is not blandly modularly simplistic. There are standard compositional canons that one would normally make use of, together with some creative interpretative imagination. The open space setting and landscape design of the site should have high design standards, e.g. there shouldn't be cyclone wire mesh security fencing. A stretch of 125 metres of the site is actually adjacent residential properties in Walker Avenue. Similar comments apply to the construction sites on the west corner of Wattle Street and Parramatta Road.

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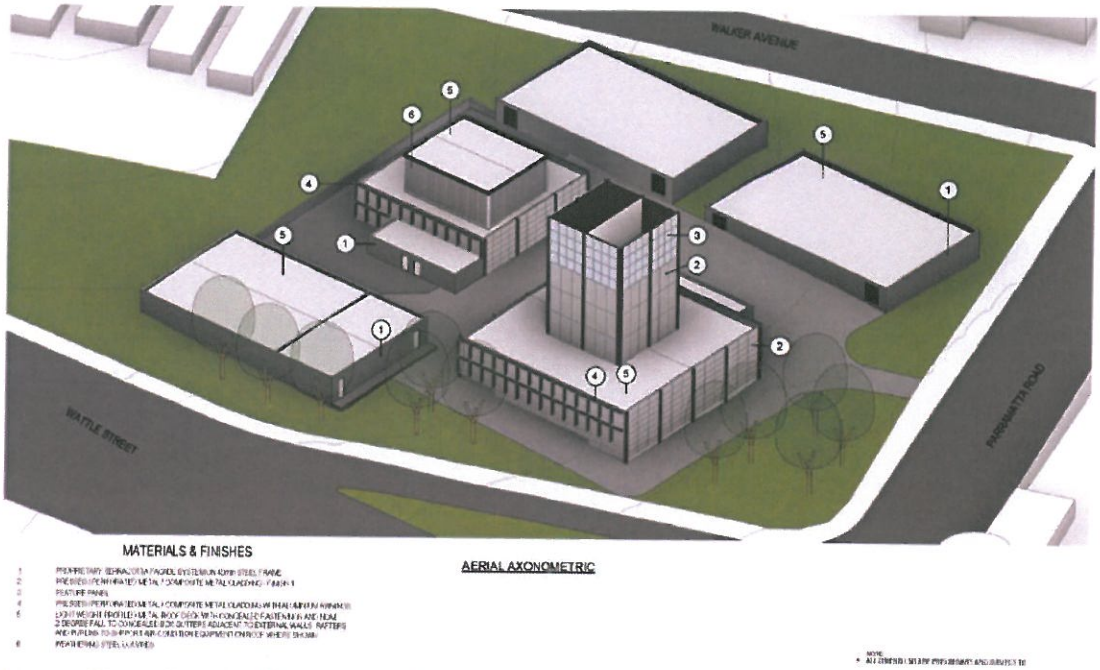

Figure 6.38 **Axonometric view from the west of the eastern ventilation facility. This image is conceptual and is included for illustration purposes only.**

Diagram 3 - Axonometric from EIS at Appendix L - Eastern Facility Site at corner Wattle Street and Parramatta Road.

Foreground frontage of Yasmar site on Parramatta Road

(v) A wider verge (footpath) area should be provided along the frontage of Yasmar on Parramatta Road. Conceptually/thematically this widened verge would be respectful of the front garden grounds of the only major middle 1800s historic residence remaining on this part of Parramatta Road. It will also provide extra width capacity for pedestrian movement (including school children) in the event the grounds for Yasmar were opened up to the community. The EIS claims there will be a wider verge area provided, but there is no evidence of this on the schematic design drawings.

Adjacent and nearby affected neighbourhood parts of Haberfield area and street treatments

(vi) It is estimated there may be around 25 places in local streets where 'urban design street improvements' or local area traffic management (LATM) treatments could occur, to protect and continue a 'sense of place' for residents, and ameliorate against the motorway impacts. This would benefit both affected areas to the north and south side of Parramatta Road. Ideally, these street fit outs would be required before the commencement of construction. These street treatments, for example, might consist of

raised road thresholds thereby slowing traffic, parking lanes being replaced and planted out by trees, bushes and ground cover vegetation. Benefits would include:

- visual buffer to the WestConnex roadways for adjacent neighbourhoods
- terminate or delineate the boundary of the Haberfield conservation area given that the new boundary will a harsh, hard edged motorway
- improved amenity for adjacent and nearby affected residents
- control the speed of through traffic
- ameliorate the interface with the ventilation and service complex along Walker Avenue.

The State Government should provide funding to the Council for construction of these works.

Connectivity and north south pedestrian trail connection at Dobroyd Canal and Parramatta Road crossing

(vii) It should be a straightforward exercise to design and construct a north/south pedestrian pathway link across Parramatta Road at Dobroyd Canal (see Diagram 4) with a pedestrian pathway continuing to the south along Dobroyd Parade utilising the 6-9m wide Council owned land. A scenario exists where to the north of Parramatta Road, there could be pathway that loops the west toward the traffic lights at Great North Road. Once across Parramatta Road, a widened pathway could continue to the east until it meets the Council land at Dobroyd Canal, and then a ramped pathway connecting to a pathway along the east side of Dobroyd Canal, up to Church Street, as shown in red line below.

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Diagram 4 – Dobroyd Canal north south pedestrian trail

New Public Open Space

(viii) Noting there is a high density of residential flat buildings to the south of Parramatta Road, and there is shortage of public open space around 50 percent of what would normally be required for these residents, the following lands should be dedicated to Council.

Residual land at 152 -162 Parramatta road to west of Ashfield Park.

The residual land, approx 3475 sqm (equivalent of 6 standard suburban house blocks) could be dedicated to Council as a local park or a site for community facilities or similar – noting that there is shortfall of open space for residents to the south of Parramatta Road within existing flat buildings.

Yasmar site

The Yasmar site and building could be dedicated to Council, with funding provided to Council for the repair and restoration of the site and ongoing maintenance. This is also relevant because the historic site should be able to be used day to day by the local community instead of being quarantined, as well being accessible by the wider Sydney community interested in the history of the site.

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Parramatta Road portal interchange area between Bland Street and Ashfield Park

(ix) This area is approximately 500m long with the north and south sides of Parramatta Road clearly being significantly separated from each other in this location. Approximately 250 metres along the south side will contain no buildings – and so no street/road activation for pedestrian surveillance. There will no safe means of pedestrian crossing for approx 655 metres between Dalhousie Street and Bland Street. A pedestrian bridge would contribute to better north south connectivity, and could potentially be placed on or adjacent to residual land at 162 Parramatta Road and span across the road to be near the Presbyterian Aged Care home at 169 Parramatta Road. The bridge would also provide surveillance of the area along Parramatta Road, and act as visual/sculptural portal and so bring aesthetic interest to this part of the roadway which will be up to 60 metres wide (equivalent of 20 traffic lanes). It is also relevant that Parramatta Road is a historic road, and so some thematic acknowledgement of this could be integrated into a new pedestrian facility. If such a bridge was not technically feasible, as a minimum substantial public art should installed along this part of the road.

(x) The area at Bland Street south of Parramatta Road is used by schoolchildren to access the Haberfield Public school to the north (see blue line in Diagram 5). The EIS states that trucks will be using Bland Street as an exit to access Parramatta Road. This is a major public safety concern and an unacceptable traffic arrangement at this significant pedestrian crossing point. Ideally, trucks should only exit onto Parramatta Road directly, and the existing Bland Street bridge kept in operation.

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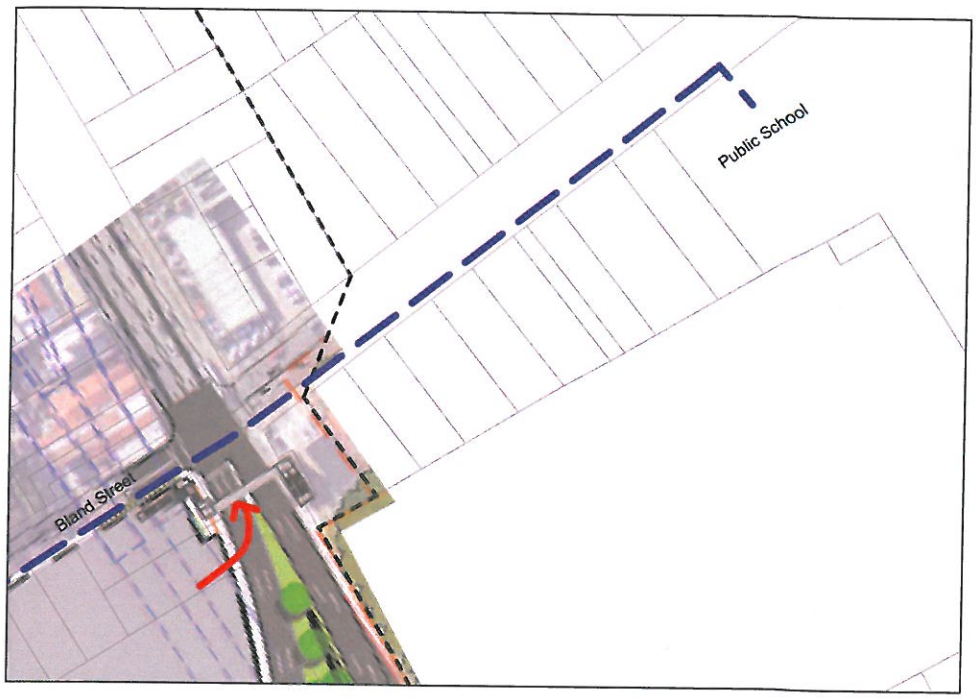

Diagram 5 – Area corner Bland Street and Parramatta Road

4.0 Compensatory measures

To address the matters outlined in part 3.0, the following recommendations should be applied to any project approval.

1. WestConnex should carefully consider the alignment of Wattle Street between Parramatta Road and Ramsay Street and Martin Street, and provide a wide verge area no less than 6 metres in width along the west side of Wattle Street and provide tree planting along that verge.

2. The east/west footpath area along the northern side of Ramsay Street at the Wattle Street intersection must be a minimum of 6 metres in width, and incorporate the matters stated in recommendation 1.

3. Historic thematic treatments should be incorporated into the design of the verge areas to acknowledge the Haberfield garden suburb context. This should include provision of a much wider verge area along the northern part of Ramsay Street at the corner with Wattle Street. These areas must include the relevant design of pavement treatments, balustrades, fencing, and colour palettes. It must include the installation of symbolic or interpretive historic objects, and use of public art. It must include the treatment of the verge foreground of Yasmar along Parramatta Road. Detailed landscape architects drawings must be prepared of this information.

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4. The design of the eastern ventilation stacks and ancillary buildings, between Walker Avenue and Wattle Street must be a design composition which acknowledges the historic Haberfield context setting, is architecturally imaginative and has a dialogue with the Haberfield landscape character, and which does not rely on simplistic modular compositions. Design resolution must also apply to the open space grounds and include for any perimeter fencing that might be required for the eastern facilities ventilation and civil sites. Detailed architects and landscape architects drawings must be prepared of this information.

5. Noise walls adjacent residences shall be constructed and use materials in a way which is sympathetic to the character of those places, and which ensures that the components of those walls achieve adequate privacy, and that their glazed areas are sufficient to provide adequate solar access.

6. Pedestrian pathways across Parramatta Road at Wattle Street must include areas for pedestrian islands for public safety.

7. The road area at Bland Street south of Parramatta Road should not be used as an exit route by trucks from the adjacent construction site. Trucks should exit only onto Parramatta Road, and the existing Bland Street bridge be kept in operation at all times.

8. A qualified landscape architect must check that for those areas which will have tree planting located above structural components of the motorway, that adequate soil depths have been allowed for by the structural engineers, and that those places will be able to have dense and tall tree planting to ameliorate visual impacts.

9. Future detailed design development drawings for recommendations 1-8 must be assessed by an independent design review panel, as recommended in Appendix L of the EIS, and that panel must include Ashfield Council's Heritage Adviser(s), a representative from the Haberfield Association (local historical group) and a representative from the Ashfield Council.

10. Ashfield Council is given adequate funding by the project proponent for street works improvements to nearby streets, for up to 25 locations, for the construction of urban design and traffic improvements.

11. A lighting specialist must be employed by the project proponent to design and manage night time lighting at the construction sites for the purpose of ensuring that any nuisance to adjacent and nearby residential properties is minimised.

12. Funding must be provided for the design and construction of pedestrian pathway across Parramatta Road at the Dobroyd canal crossing, and for the continuation of the pathway to the south along Dobroyd canal using the Council land on the east side of

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Dobroyd Canal, and for the continuation of the pathway to Reg Coady Reserve to the north.

13. Additional design development must be carried out as recommended in Table 13.12 of Volume 1 B of the EIS.

14. The State Government vest in Council ownership the historic Yasmar site and provide a one-off contribution of $4.5million for its repair, maintenance and adaptive reuse.

15. The residual site at 152-162 Parramatta Road, to the west of Ashfield Park, is provided to Council for future open space or community use.

16. Ashfield Council to be involved in determining the future land uses of residual land after the completion of the motorway.

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ATTACHMENT 10

BIODIVERSITY AND WASTE COLLECTION IMPACTS

1.0 Introduction

Ashfield Council staff have reviewed the WestConnex Delivery Authority's Environmental Impact Statement (E.I.S.) and this document provides a response to the following issues:

- Biodiversity
- Impacts to Council's Waste Collection Services

2.0 Key Issues

2.1 Biodiversity

2.1.1 Vegetation Clearing

The EIS for the M4 East project states that vegetation clearance will result in minimal habitat fragmentation, given the already fragmented state of habitat within the project footprint. The document also describes that as opportunities for threatened species are currently reduced or restricted in the area then the loss of habitat and foraging areas will not impact significantly on these species. The document states that impacts to biodiversity within the M4 east project footprint would be restricted due to the proposed clearing of vegetation taking place in 'highly modified areas which provide limited habitat for Biodiversity values'. Within the proposal, approximately 1 hectare of native vegetation along Dobroyd Parade including mature eucalypts and well established understorey plantings will be removed. The EIS report recommends that no offsets be given for biodiversity losses due to the WestConnex Project.

This assessment is extremely disappointing to Council in the highly urban context of Sydney's Inner West. These small areas provide absolutely vital and important habitat links in an area with restricted habitat connectivity. The significance of these niche habitat areas increases when they are located where opportunities for native fauna have been significantly reduced through urbanisation. Evidence of the importance of these links is given in the GreenWay Biodiversity Strategy (2012) which identifies 'Islands of Habitat' within the urban landscape as biolinks which provide opportunities for fauna species to exist, move, forage, breed and shelter where habitats are fragmented and discontinuous. These 'bio-links' support functional ecological communities in restricted areas and are more realistic and achievable than creating corridors in an urban settings. Additionally, further evidence of the importance of these

habitat areas is given in the newly completed Parramatta River Native Habitats and Fauna Report 2014 which identifies the native vegetation along Dobroyd Parade within the project footprint as areas of:

- Landscape Corridor – with potential for a linear corridor
- Potential Stepping Stone Habitat – Street Planting Community Involvement

The native vegetation along Dobroyd Parade includes mature eucalypt trees (*Eucalyptus robusta*) as well as flowering shrubs and understorey species that provide urban biodiversity with rare opportunities to forage, breed, shelter and feed and make movement through the landscape in such a highly urban context possible. The impacts associated with the removal of this vegetation needs to reconsidered in relation to the recommendations of the two reports mentioned above in this submission.

2.1.2 Threatened Species

The recently confirmed presence of an Eastern Bentwing-bat (*Miniopterus schreibersii*) roost site with 1.6km of the project area in Summer Hill may be impacted by this project through construction noise and vibration as well as the reduction in foraging opportunities.

The EIS states (20.3.1) that 15.7 hectares of potential foraging area for Eastern Bentwing-bats will be removed as a result of the M4 East Project and that roosting habitats will be temporarily disrupted.

Field surveys conducted as part of the EIS were unable to record details of microbat movements due to the "poor recording quality of calls" (20-12). With the location of the Inner West Easter Bentwing-bat roost site now well established and in close proximity to the project an additional assessment of the impacts on this population as a result of the project is essential.

2.1.3 Management of impacts to Biodiversity

The EIS in Table 20.6 lists a number of management measures relating to biodiversity. All of these measures are yet to be undertaken as they are the responsibility of the construction contractor as such it is impossible to determine if they will include adequate protection for the remaining biodiversity or sufficient mitigation/ revegetation post construction.

Ashfield Council

Recommendations

1. Further assessment of the potential impacts is undertaken for the Threatened Eastern Bent wing bat as there is a known roost site located in close proximity to the project foot print.

2. The impacts of the proposed vegetation clearance at Reg Coady Reserve, Haberfield and along Dobroyd Parade, from Martin Street to Loudon Street in Haberfield be reviewed with a more detailed regard to the impacts on habitat connectivity as highlighted in the Parramatta River Native Habitats and Fauna Report 2014.

3. Biodiversity offsets be reconsidered as a way to mitigate the losses to biodiversity and increased fragmentation of habitats as a result of the project.

4. Council is consulted regarding the detail included in the Environmental Management Measures – Biodiversity as listed in Table 20.6 prior to these plans being finalised by the construction contractor.

2.2 Impacts to Council's Waste Collection Services

Council staff have already raised serious concerns regarding the partial closure of various local roads and the impact on residents and traffic due to these closures during construction phase of the project. The following streets are of particular note:

- Allum Street
- Chandos Street
- Northcote Street
- Martin Street
- Walker Avenue

These and any other partial or full road closures will potentially impact the ability for Council to provide adequate waste collection services to our community. Any such proposal will need to duly consider truck movements and the ability for ingress and egress of large waste collection vehicles.

It is noted that the project proponent intends to construct a new access road to 98 Chandos Street, Ashfield. As part of the project any design of this road including weight limits needs to adequately consider how waste services will be provided to this property.

Ashfield Council

Recommendation

1. The design of any partial or full road closure considers the need of large truck movements and provides for adequate turning circles to ensure residential waste collection can be undertaken.

Ashfield Council

ATTACHMENT 11

SOIL AND WATER IMPACT ASSESSMENT

1.0 Introduction

This is a review of the Soil and Water components of the WestConnex EIS for the part affecting the Ashfield LGA being one of the considerations of the Secretary's Environmental Assessment Requirements (SEAR).

2.0 SEAR Response

SEAR Requirements (in part)	Compliance Response
Soil and Water - including but not limited to: Identification of potential impacts of the project on existing flood regimes, consistent with the Floodplain Development Manual (Department of Natural Resources, 2005), including impacts to existing receivers and infrastructure and the future development potential of affected land, demonstrating consideration of the changes to rainfall frequency and/or intensity as a result of climate change on the project. The assessment shall demonstrate due consideration of flood risks in the project design;	In general, the assessment of flooding and any necessary stormwater upgrades and improvements has not been addressed sufficiently within the EIS. Much of the EIS states that further detailed investigations will need to be undertaken during detailed design and construction planning. It will be necessary for Council to see the detailed designs in order to provide further comment on the impacts of the project on existing flood regimes, including impacts to existing receivers and infrastructure and the future development potential of affected land.

3.0 Key Issues

The key stormwater and flooding issues are as follows:

- The assessment of flooding and any necessary stormwater upgrades and improvements has not been addressed sufficiently within the EIS;
- There are unacceptable proposed increases in flooding to downstream properties;
- There are potential increases in stormwater volumes within Council's stormwater pit and pipe network.

These will be discussed in more detail below.

In general, the assessment of flooding and any necessary stormwater upgrades and improvements has not been addressed sufficiently within the EIS. Much of the EIS

states that further detailed investigations will need to be undertaken during detailed design and construction planning. It will be necessary for Council to see the detailed designs in order to provide further comment and to ensure that flooding impacts and hazard risks are not increased.

3.1 Parramatta Road Interchange

Section 17.3.1 Volume 1B of the EIS states, "The cut-and-cover section of tunnel at the Parramatta Road interchange is located across an existing overland flow path that operates during storms more frequent than the five year ARI. To construct the cut-and-cover section, the existing stormwater drainage line that crosses Parramatta Road at Chandos Street would be converted to a siphoned arrangement to direct overland flows along Parramatta Road and Bland Street. This mitigation measure would be further developed during detailed design and construction planning."

Comment: Council does not support the proposed siphonic system. Strong opposition would be raised if this proposed arrangement results in increased potential flooding to downstream land. Council will not accept any additional impact and/or volume of water into its stormwater pit and pipe network.

3.2 Construction Activities

Section 17.3.2 Volume 1B of the EIS states, "The investigation found that construction activities have the potential to exacerbate flooding conditions in adjacent development at a number of locations along the project corridor. While the greatest impacts are associated with construction ancillary facilities C3a and C10, adverse flooding conditions arising in adjacent development are also associated with construction ancillary facilities C1, C4, C5, C6 and C9. There is also the potential for all 10 construction ancillary facilities to affect local catchment runoff; local stormwater management controls would be implemented to manage this impact."

Comment: Further information is needed on what these stormwater management controls are. Strong opposition would be raised if this proposed arrangement results in increased potential flooding to downstream land. Council will not accept any additional impact and/or volume of water into its stormwater pit and pipe network.

3.3 Parramatta Road (Chandos to Bland Street)

Section 17.3.2 Volume 1B of the EIS states, "The construction ancillary facility would obstruct overland flow that travels west across Parramatta Road at Chandos Street. Depths of overland flow along Parramatta Road between Chandos Street and Bland Street would increase by up to 120 mm. There would be a slight increase in the extent of inundation within development located at the corner of Parramatta Road and Chandos Street. Flood levels within properties along Bland Street and Parramatta Road north of Bland Street would be increased by up to 120mm."

Comment: Flooding properties by an additional 120mm is unacceptable. Mitigation measures must be put in place to ensure that property is flooded by no more than an additional 10mm. Council will not accept any additional impact and/ or volume of water into its stormwater pit and pipe network.

3.4 Localised increases in peak PMF levels

Section 17.4.a Volume 1B of the EIS states, in reference to Wattle Street: "Localised increases in peak PMF levels in the vicinity of Loudon Avenue, by a maximum of 0.04 m. An increase in the depth of inundation in Dobroyd Parade of between 0.1 and 0.3 m across the range of potential storm events." Parramatta Road: "An increase in peak 100 year ARI flood level in Parramatta Road, north of Chandos Street in Haberfield, to a maximum of 0.32 m, resulting in an increase in the extent of inundation in the adjacent commercial property. An increase in peak 100 year ARI flood level on the corner of Parramatta Road and Bland Street by a maximum of 0.12 m. Similar increases would be experienced at three commercial properties in Parramatta Road, north of Bland Street, Haberfield. Localised increases in peak 100 year ARI flood levels along Bland Street, between Parramatta Road and Curt Street in Ashfield, by a maximum of 0.07 m. These increases in peak flood levels have the potential to impact one residential property in Bland Street. A reduction in peak 100 year ARI flows and flood levels along the Sydney Water trunk drainage line downstream (north) of Bland Street in Haberfield, due to the attenuating effect of the stormwater detention tank and the diversion of a portion of the catchment at the tunnel dive structure to the tunnel drainage system. An increase in peak PMF levels along Parramatta Road between Chandos Street and Walker Avenue in Haberfield, to a maximum of 0.48 m north of Chandos Street, but typically 0.05 m or less."

Comment: Flooding properties by these additional amounts is unacceptable. Mitigation measures must be put in place to ensure that property is flooded by no more than an additional 10mm. Council will not accept any additional impact and/or volume of water into its stormwater pit and pipe network.

3.5 Dobroyd Parade

Table 6.4 (Appendix Q) demonstrates significant increases in flooding on Dobroyd Parade, caused by the proposed project. Further, section 6.2.8 (Appendix Q) states in relation to flooding on Dobroyd Parade, that "the road would be trafficable for floods less than about a 5 year ARI".

Comment: This is of significant safety concern. This implies that any flood greater than a 5 year ARI will make Dobroyd Parade unusable and potentially dangerous. Given that this is a highly trafficked road, appropriate modifications and upgrades must be made to the road levels and/or stormwater network to manage this issue.

Ashfield Council

3.6 General Comments

Specific details of the location and possible upgrade/changes to stormwater structures have not been provided within the EIS.

If there are to be direct connections to Council's existing downstream stormwater system, then Council must be provided with a detailed hydraulic assessment and understanding of the proposed performance of the system. Where the connection is likely to increase the impacts on Council's stormwater system, Council expects that it will be upgraded to meet the increased demand from the project.

With the substantial works being undertaken in the vicinity of the intersection of Chandos Street and Parramatta Road, (both North and South) this will pose a significant impact on the existing drainage network (both major and minor) within this area. That is, the overland flow paths will alter and the existing pipe network crossing Parramatta Road will no longer be functional. This will also have an adverse affect on the road network and neighbouring properties.

With the substantial works being undertaken in the vicinity of the intersection of Wattle Street and Allum Street this will pose a significant impact on the overland flow within this area. That is, the overland flow paths will alter and be diverted. This will also have an adverse affect on the road network and neighbouring properties.

With the substantial works being undertaken in the vicinity at the intersection of Ramsay Street and City West Link Road and Martin Street and City West Link Road this will pose a significant impact on the existing drainage system (both major and minor) within this area. That is, the overland flow paths will alter and the existing pipe network crossing the City West Link Road will no longer be functional. This will also have an adverse affect on the road network and neighbouring properties.

4.0 Recommendations

Below are suggested modifications to the EIS Conditions and additional proposed EIS Conditions.

4.1 Modified proposed conditions

Modify EIS proposed FD1 to state:

FD1. A flood management strategy (FMS) will be prepared to manage flooding and stormwater related issues and will include:
- The layout of construction ancillary facilities
- Location of amenities buildings and equipment outside high flood hazard areas
- Controlled diversion of overland flow either through or around work areas

- Staging construction to limit the extent and duration of temporary works on the floodplain
- Monitoring weather conditions
- Ensuring construction equipment and materials are removed from floodplain areas at the completion of each work activity, or upon issuing of a weather warning of impending flood producing rain
- Provision of temporary flood protection for properties identified as being at risk of adverse flood impacts during any stage of construction of the project
- Development of flood emergency response procedures to remove temporary works during periods of heavy rainfall and staff evacuation plans.
- For site facilities located within the floodplain, the FMS will identify how risks to personal safety and damage to construction facilities will be managed.

The sites must be established and amenities located so as to prevent any possible flooding hazard and to eliminate any possible risk.

Stockpiles must be suitably located so that they do not obstruct flow paths which will cause adverse flooding affects to neighbouring properties and allow material to be washed into drainage lines and receiving waters. If this is not possible, suitable measures need to be implemented so as to avoid any possible risk of material being washed into receiving drainage lines and waterways and to protect any neighbouring property that will be affected.

The FMS shall be peer-reviewed and confirmed as meeting the requirements of this condition by a suitably qualified and experienced independent hydrological engineer and Council.

Modify EIS proposed FD13 to state:

FD2. A barrier wall will be provided along the eastern side of the tunnel dive structure to direct overland flow around the tunnel entry during a PMF event. The top of the barrier wall will be located a minimum 0.5 m above the 100 year ARI flood level.

An investigation is to be undertaken into the impact on the surrounding localised catchment. Appropriate mitigation measures are to be implemented such that there is no additional flooding to adjacent land and a maximum increase of 10mm on Parramatta Road.

The investigation and design shall be peer-reviewed and confirmed as meeting the requirements of this condition by a suitably qualified and experienced independent hydrological engineer and Council.

Ashfield Council

Modify EIS proposed FD14 to state:

FD3. The diversion of stormwater drainage line XD09c and the overland flow path at Chandos Street will be designed to contain flows within the project footprint, preventing an increase in the extent of inundation within the adjacent commercial property.

Refinement of the pit and pipe drainage system design will be undertaken to prevent an increases in flows and flood levels along Parramatta Road and Bland Street.

That any modifications to the drainage line are to be in form of a conventional stormwater drainage system and it is not to be a siphonic arrangement.

An investigation is to be undertaken into the impact on the surrounding localised catchment. Appropriate mitigation measures are to be implemented such that there is no additional flooding to adjacent land and a maximum increase of 10mm on Parramatta Road, Chandos Street and Bland Street.

The investigation and design shall be peer-reviewed and confirmed as meeting the requirements of this condition by a suitably qualified and experienced independent hydrological engineer and Council.

Modify EIS proposed FD15 to state:

FD4. Road level and barriers at the entry to the tunnel portals will prevent ingress of floodwaters during a PMF event, providing a freeboard allowance greater than 0.5 metres freeboard to the peak 100 year ARI flood level.

A drainage path will be provided to drain local catchment runoff from Allum Street around the tunnel dive structure during a PMF event.

An investigation is to be undertaken into the impact on the surrounding localised catchment. Appropriate mitigation measures are to be implemented such that there is no additional flooding to adjacent land and a maximum increase of 10mm on Wattle Street or Allum Street.

The investigation and design shall be peer-reviewed and confirmed as meeting the requirements of this condition by a suitably qualified and experienced independent hydrological engineer and Council.

Modify EIS proposed FD17 to state:

FD5. Measures will be implemented and maintained to intercept concentrated flow and divert it in a controlled manner to prevent scour of disturbed surfaces and transportation of sediment and construction materials.

Surface earthworks are required to be suitably protected from any possible scouring in the event of a storm, so as to prevent the transport of any sediment and construction materials to receiving waters.

The investigation and design shall be peer-reviewed and confirmed as meeting the requirements of this condition by a suitably qualified and experienced independent hydrological engineer and Council.

Modify EIS proposed FD23 to state:

FD6. Bunding will be provided to direct overland flow along the haul road and around the Sydney Water pump station.

An investigation is to be undertaken into the impact on the surrounding localised catchment. Appropriate mitigation measures are to be implemented such that there is no additional flooding to adjacent land and a maximum increase of 10mm on Wattle Street.

Modify EIS proposed FD25 to state:

FD7. The flood standard adopted at each tunnel entry during construction will take account of the duration of construction, the magnitude of inflows and the potential risks to personal safety and the project works.

A Risk Management Plan must be developed that addresses floods in excess of the flood protection levels so as not to pose any safety risk to road users and operations staff.

4.2 Additional Conditions

FD8. All surface water flows from construction sites shall be detained through appropriate measures to ensure that there is no exacerbation of existing flooding to the satisfaction of Ashfield Council. Agreement must be reached with Ashfield Council on appropriate and specific measures to be implemented at various locations.

FD9. A detailed Operational Stormwater Management Sub Plan shall be prepared in consultation with Ashfield Council. The Sub Plan shall provide details on flood risks, catchment analysis including localised flooding, local drainage catchment assessments, existing drainage systems and

Ashfield Council

capacity, drainage changes resulting from the proposal and implications for the system. The Proponent must fund any additional stormwater drainage systems required as a result of the project, including any detention requirements. The design must take into consideration climate change implications on rainfall and drainage characteristics and blockages of waterway structures from floating debris. The new proposed drainage systems shall be designed to ensure there is no substantial increase in downstream flooding (inundation level or duration) or increase in total volumes to existing drainage systems. The new proposed drainage systems must ensure that flood hazards and risks are eliminated. The design shall meet the following criteria:

- A maximum increase in inundation time of one hour in a 1 in 100 year ARI rainfall event;
- A maximum increase of 10mm in inundation at properties where floor levels are currently exceeded in a 1 in 100 year ARI rainfall event; and/or provide alternative flood mitigation solutions consistent with the intent of these limits;
- A maximum increase of 10mm in overland flow paths on public roads; and/ or provide alternative flood mitigation solutions consistent with the intent of this limit;
- The identification of measures to be implemented to minimise scour and dissipate energy at locations where flood velocities are predicted to increase as a result of the project and cause localised soil erosion;
- Identification of drainage system upgrades;
- Alterations/augmentations to existing stormwater infrastructure;
- Substantial drainage improvements must be undertaken in the vicinity of the intersection of Chandos St and Parramatta Road, (both North and South) so that any storm event up to a 100 year ARI will not pose any risk or damage to life or property.
- Substantial drainage improvements must be undertaken in the vicinity of the intersection of Wattle Street/Allum Street and Ash Lane so that any storm event up to a 100 year ARI will not pose any risk or damage to life or property.
- Substantial drainage improvements must be undertaken within the vicinity of the intersection of Ramsay Street/City West Link and the intersection of Martin Street/City West Link and in the receiving stormwater pipe network of Martin Street so that any storm event up to a 100 year ARI will not pose any risk or damage to life or property.
- Identification of the timing of ongoing maintenance for the works.

The Operational Stormwater Management Sub Plan shall be prepared by a suitably qualified and experienced person in consultation with directly affected landowners and Council. The Operational Stormwater Management Sub Plan shall be peer-reviewed and confirmed as meeting the requirements of this condition by a suitably qualified and experienced independent hydrological engineer and Council. All relevant infrastructure

information shall be provided to the relevant Council and NSW State Emergency Service, to assist in the preparation of any new or necessary update(s) to the relevant plans and documents in relation to flooding.

FD10. No disposal of stormwater shall be permitted to Council's stormwater system without prior agreement from Ashfield Council. Any changes to Council stormwater, including increased volumes, shall be designed, constructed, operated and maintained to meet the requirements of Ashfield Council.

FD11. All new and/or modified stormwater drainage and facilities, including gross pollutant traps and sedimentation basins, shall be inspected regularly and maintained in a functional condition for the life of the project by the Proponent, with an emphasis on ensuring there are no system blockages and there is no additional flooding on adjacent land and roads.

FD12. Any stormwater released into Council's stormwater network and/ or Iron Cove is to be equivalent or better quality. Stormwater treatment may be required, including ongoing maintenance.

FD13. Appropriate modifications and upgrades must be made to the road levels and/ or stormwater network to manage flood risk on Dobroyd Parade. Any changes must be undertaken in consultation with the community and they will require the approval of Ashfield Council.

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ATTACHMENT 12

COUNCIL ASSETS IMPACTS

1.0 Construction Sites

It is proposed to acquire and lease parts of the Reg Coady reserve for use as a construction site. It is essential that safe public pedestrian access and resident amenity is maintained around the construction sites.

2.0 Road Closures

It is proposed to undertake partial closure of various local roads for use as construction sites, including the following:

- Allum Street
- Chandos Street
- Northcote Street
- Martin Street
- Walker Avenue

It is noted that the Proponent has not sought Council's approval for use of these local roads. Any damage caused to local roads must be repaired to Council's specification and to the satisfaction of Council, at the Proponent's expense.

3.0 New Access Road

It is noted that the Proponent intends to construct a new access road to 98 Chandos Street, Ashfield as part of the project. Council will not take responsibility for this new access road. This is a matter between RMS and the property's strata.

4.0 Trees

Landscaping, including a number of new trees are proposed as part of the WestConnex project. The planting of new trees is generally supported. It is important that they are appropriate species and in accordance with Council's Street Tree Strategy.

5.0 Recommendations

The following are additional recommended conditions of approval to be included should the proposal be supported.

1. That a facility management plan is developed for each of the construction sites. This must include:

    - Details for safe public pedestrian access around the construction site
    - Details of how it is intended to manage light spill from the construction sites onto residential properties, to minimise impact on resident amenity. Light spill as

Ashfield Council

measured at adjacent residential properties must be no greater (brighter) than P5 as defined in AS1158.

2. Any damage caused to local roads must be repaired to Council's specification and to the satisfaction of Council, at the Proponent's expense.

3. That the Proponent be responsible for the ongoing renewal and maintenance of the new access road to 98 Chandos Street, Ashfield.

4. The applicant is to manage (including remove, protect, plant and maintain) all trees in accordance with Ashfield Council's Street Tree Strategy 2015, as periodically amended. In this regard, the following must be implemented:

- The plant species shall include a mixture of both locally indigenous and Australian native as well as exotic plant species;
- The plant species will demonstrate an understanding of the requirements of the relevant Park Plans of Management, heritage issues, biodiversity, habitat creation opportunities, soil types (including acid sulphate soils), global warming (including related changes to soil hydrology) and the individual planting requirements due to the planting site microclimates;
- Stormwater recycling is to be a permanent component for the long term irrigation of the tree planting and landscaped screen planting;
- Ashfield Council is to be consulted with regard to the species and landscape design prior to its adoption;
- All trees planted in the road easements, landscape buffers, and adjacent open space/ parkland are to be planted from containers having a minimum size of 45 litres;
- All trees planted in turfed areas are to be mulched;
- An Australian Qualification Framework Level 5 Consultant Arborist is to be responsible for the supervision and auditing of the protection and pruning of all retained trees and the supervision of all tree works associated with the nursery stock selection, tree transport to site, planting and establishment maintenance;
- WestConnex and its contractors are to provide effective landscape establishment maintenance for a period of 18 Months; and
- Ashfield Council will not accept the long term landscape and tree maintenance for the WestConnex works.

5. Specific to Reg Coady Reserve, any fig trees that are required to be removed for construction or associated site works, access and construction management are to be replaced on a 2 for 1 basis (that is 2 replacement trees for each 1 tree removed) from 1000 litre containers.

Ashfield Council is to be consulted as to the suitability and quality of all completed tree planting and soft landscaping.

ATTACHMENT 13

negocio resolutions

COMMUNICATE INNOVATE COLLABORATE FACILITATE NEGOTIATE MEDIATE EDUCATE

Notes of Meeting 23 September 2015 at 6.30pm
Ashfield Town Hall

Community Engagement re Environmental Impact Statement for Westconnex Project

1. **Notable attendances**

- Councillor Lucille McKenna, Mayor of Ashfield
- Councillors and Staff
  - Ashfield Councillor Alex Lofts
  - Ashfield Councillor Caroline Stott
  - Ashfield Councillor Monica Wangmann
  - Vanessa Chan - General Manager
  - Nellette Kettle - Director Corporate and Community Services
  - Jane Harris – Team Leader – Sustainability
  - Atalay Bas – Acting Director Planning and Environment
  - Bernadette Selfe – Business Relations Coordinator
  - Gabrelle Rennard – Group Manager – Community Programs and Services
  - Jane Pollard – Team Leader Community Programs
  - Cathy Edwards-Davis – Director Works and Infrastructure
  - Con Colot – Senior Strategic Planner
- Member for Strathfield – Jodi McKay MP
- WestConnex Delivery Authority (WDA)
  - Terry Chapman – Project Director
  - Jacqui Smith – Principal Manager Community Engagement
  - Verity Humble-Crofts – EIS Coordinator
  - Andrew Mattes – Air Quality Specialist
  - Simon Kean – Noise Specialist
  - Matthew Morgan - Senior Project Engineer
  - Usha Jacome – Traffic Specialist
  - Eamonn O'Lionnain – Traffic Specialist
  - Chelsea Cooper – Property Acquisition Coordinator
  - Danielle Borowski – Subsurface Acquisition Coordinator
  - Amber Cameron – Community Engagement

- Leighton Samsung John Holland Joint Venture (LSJH)
    - Matt Lennon - Tunnelling Manager
    - Jim Koukoutaris – Surface Works Manager
    - Fiona Court – Community Manager
    - Melissa Read – Place Manager – Haberfield/Ashfield
- **Consultants engaged by Ashfield Council**
    - Kendal MacKay (Don Fox Planning) Report Coordinator
    - Simon Welchman (Katestone) – Air Quality
    - Roger Drew (Tox Consult) – Human Health
    - Tarah Hagen (Tox Consult) – Human Health
    - Robert Moore (Robert Moore Architects) – Non-Aboriginal Heritage
    - Graham Atkins (Atkins Acoustics) – Noise and vibrations
- Stephen Lancken (facilitator), Negocio Resolutions
- Lara Nunn (note-taker), Negocio Resolutions
- Members of the public and residents of Ashfield

2. Welcome by Stephen (Steve) Lancken, Negocio Resolutions

The meeting was opened by Stephen Lancken who explained the purpose of the meeting as being:

- an opportunity for residents to ask questions or raise concerns about the WestConnex project, and in particular the EIS and
- for Council and its consultants to hear the issue and take them into account when preparing Ashfield Council's submission about the EIS.
- to provide an opportunity to raise questions to the WestConnex Delivery Authority (WDA) about technical or specific issues of concern.

3. Welcome by Mayor Lucille McKenna

Welcome note attached (Annexure 2).

4. Steve Lancken Reiterates Purpose of Meeting

This meeting is an opportunity to raise concerns or ask a question or discuss technical issues arising from the release of the Environmental Impact Statement. Where possible, WDA will address questions as part of the discussion. Participants reminded to keep comments or questions brief. Participants advised questions can be submitted via email, twitter or a written form which has been distributed.

5. Question and Comments from the floor

Answers provided by representatives of WDA where noted

(i) **Background**: Reference to the nature of work occurring 24/7, particularly near the Wattle Street and Parramatta Road intersection with high levels of hourly truck movements estimated.

Comment: Concern expressed about the"24/7" nature of the operations in a densely populated residential area? Request that there be consideration of respite or limits to the operations.

(ii) **Background:** Concern over the lack of public transport included within the proposal and changes to bus operations.

a. **Comment:** More attention needs to be provided to the integration of public transport within this project, should it go ahead.

(iii) **Comment: Dissatisfaction at the consultation process to date for project. A written Motion was presented to meeting for consideration:**

a. *Mayor addressed this motion within her closing comments see below.*

b. Motion: This public meeting of people in the Ashfield Municipality strongly supports Ashfield Council's opposition to the WestConnex scheme and calls for an immediate halt to all compulsory property acquisitions and the geotechnical drilling program pending:

i. a public inquiry into the WestConnex project.
ii. Publication of a full business case and cost benefit analysis for the WestConnex project.
iii. Revisions of the Environmental Impact Statement to take account of UrbanGrowth's plans for hundreds of thousands of additional people residing in tens of thousands of new dwellings along the Parramatta Road corridor (with no additional public transport provision.)
iv. Publication of a summary of the Environmental Impact Statement (EIS) in the main community languages of Ashfield (Mandarin, Cantonese, Italian, Greek, Spanish, Arabic, Hindi, Korean, Tagalog, Bengali, Vietnamese and Filipino).
v. Extension of the period of consultation on a revised and updated EIS to 90 days from the date of publication of the EIS and summary in community languages.

(iv) **Background:** Reference to regular backup and traffic halts within M5 and eastern distributor tunnels due to traffic lights and merging in to surface traffic at exit points.

a. **Comment**: The design of the tunnel to Haberfield when bringing traffic from the tunnel to the surface will result in concentrating traffic to a single point. And the point where the traffic emerges has existing traffic issues.

(v) **Question:** Who has provided the authority for the Geotechnical investigations and drilling which is being conducted in Croydon, and who has provided the authority for the tunnelling?

Answer (WDA) – The approval for the Geotechnical drilling is given by Roads and Maritime Services as part of the Review of Environmental Factors. The authority for tunnelling has been provided by the Department of Planning.

(vi) **Background:** Concern raised over the fact that contracts were signed for the construction before the completion of the EIS process or the publication of a full business case. Referred to concerns about figures by AECOM in developing the EIS with recent actions of that company in relation to Queensland toll roads.

a. Comment: The community expressed a lack of faith in the EIS and the project which it was said has been developed without proper process.

(vii) **Background:** Travel time saving information provided in documents (EIS) (e.g. 40 mins to airport, bus travel times to be halved). Additional comments were made about travel time saving information within the EIS. Concern expressed that these estimates were not accurate.

a. **Question:** How were these times developed?

(viii) **Background: referred to a submission which was made by Ashfield Council during 2005 for the previous proposal.**

a. **Question:** Why did the previous proposal not succeed/ proceed and what have been the changes developed for the current proposal?

(ix) **Background:** accessibility of the EIS document for residents without a technical background or a non-English speaking background.

a. **Question:** Will a summary of the EIS be provided in community languages with the EIS period extended?

Answer (WDA) – There are translation services available to assist with residents from non-English speaking backgrounds with the EIS.

An overview or summary document of the EIS is expected to be available by the end of the week.

Unable to provide comment on the extension of the EIS period.

(x) **Background:** Raised comments in relation to the redevelopment of the Parramatta Road corridor by UrbanGrowth NSW.

a. **Comment:** Concern expressed about the re-zoning and increased development along the Parramatta Road Corridor which will occur as a result of the project.

(xi) **Background:** Comments about particulate matter and Nitrogen Dioxide estimations within the EIS Air Quality and Human Health Sections.

a. **Question:** Why was a scenario of higher volume of traffic along Parramatta Road not taken in to account as higher traffic volumes are likely?

Answer (WDA) – These calculations are made from the calculation of the net sum of all traffic which should be on the roads after completion.

(xii) **Question:** Does the WestConnex project take in to account the projected increase in population on Parramatta Road?

Answer (WDA) – The project does take in to account an estimated increase of 130,000 residents.

(xiii) **Background**: A resident has received a dilapidation report with a high level of existing cracks reported and would like an independent assessment.

a. **Question:** Is there a recommendation for an independent source for secondary dilapidation reports?

(xiv) **Background:** Facing 18 months of construction with potentially no noise walls

a. **Question:** Will there be a review of noise abatement measures for residents in impacted areas during construction?

Answer (WDA) – Residents with particular concerns about construction noise impacts should directly contact WDA or the contractor with those concerns.

(xv) **Comment:** A question was raised about the consistency of the data within the EIS report, particularly in relation to sections 9.2.4 [NSW Assessment Criteria] and 9.2.7 [Model selection and validation].

(xvi) **Question:** What monitoring of existing air quality has been carried out along Parramatta Road, particularly at the proposed tunnel entry point?

Answer (WDA) – There are two types of monitoring which occur.

- Performance modelling which is required as part of the review of environmental factors. This takes place when the project is complete and
- Baseline monitoring which has been conducted at key points within the impact zone of the project

(xvii) **Question:** Has there been long term health exposure studies conducted in relation to this type of tunnelling work?

Taken on notice by WDA

(xviii) **Question:** In the absence of a business case – what are the "Motherhood statements" the project is addressing?

Objectives of the project can be found in M4 East EIS Volume 1A, page iii

(xix) **Comment:** Why is it suggested that unfiltered stacks are un-economical, when measured against the cost of potential ongoing health concerns for the community?

a. **Question:** What analysis has been carried out on the impacts on community?
Answer (WDA) – There has been detail analysis within the Human Health Section of the EIS.

(xx) **Comment:** Raised concerns about the cumulative impacts of the construction dust and noise, along with additional vehicle movements through local streets – pedestrian and children safety particularly noted.

Answer (WDA) – Chapter 6 [Construction work] of the EIS sets out the approved construction traffic routes along with the Construction Environmental Management Plan (CEMP) which has been developed to have these routes approved.

It was clear from the response of the meeting and other questions that this issue was concerning for most attendees.

(xxi) **Comment:** Concern expressed about the construction and long term impacts on the heritage value and character of Haberfield. This comment was reiterated in later discussions recognising that Haberfield is an internationally recognised garden suburb.

Comment from WDA – Heritage assessments are within Appendix S (Chapter 19) [Non-Aboriginal heritage impact assessment] of the EIS.

(xxii) **Question:** Has a cost benefit analysis been carried out for the project, where is it available and if not, why?

(xxiii) **Question:** Will the data which lead to the placement of the ventilation facilities, without filtration be available for public review?

Answer (WDA) – Data from the performance measurements which are underway will be made publicly available. This will also be required to be independently reviewed and verified. The use of filtering would not have a significant or noticeable change in air quality.

(xxiv) **Comment:** Concerned about the effect that this project and particularly the widening of Wattle Street will have on the community connection between Haberfield and West Haberfield.

(xxv) **Background:** Resident has neighbouring land which has been acquired for construction purposes.
Question: How will the re-zoning of this land be managed post construction?

Answer from Ashfield Council: Council is requesting that land which has been acquired for construction be returned to Council at the completion of work to manage the reintegration of the land appropriately in to the community.

(xxvi) **Question:** How will traffic be managed to ensure the traffic from WestConnex will flow into the City Westlink. Concerns about an interrupted flow of traffic arriving at existing traffic lights and congestion points. Has there been consideration of the potential for congestion on both Parramatta Road and within the WestConnex tunnel, especially in situations where there is an unexpected event and motorists choose to seek alternative routes?

Comments: Existing limits around Debroyd Parade were noted east of the Haberfield tunnel entry point and at Cloverleaf west of the Homebush entry point.

Response from WDA– This is a staged project and this first stage of works is not expected to improve Parramatta Road to the east of the tunnel until the completion of stage 3. RMS will be looking at options to mitigate traffic by developing a management strategy based on the existing network and corridor. This type of strategy is in place on most connection routes in Sydney.

(xxvii) **Comment:** About the management of traffic on Mortley AvenueBridge and the additional impacts this would cause on Wattle Street.

Response from WDA– Treatments around Mortely Avenue were raised in the EIS as potential management measures, however will not be part of this project. This will be looked in to by RMS.

(xxviii) **Comment:** Concerns were again expressed about the assumptions which have been made within the EIS and whether those assumptions could be trusted.

(xxix) **Background:** The resident lives within 100 metres of the proposed entry point location at Bland Street/ Parramatta Road. Referred to earlier air quality comments and wanted to know how pollution is managed from the entry/ exit points.

Response from WDA: The jet fans located within the tunnel entry point are able to be reversed to suck air in and regulate the air flow within the tunnel, rather than push it directly out. There should be no emissions from the portals.

(xxx) **Question:** If WestConnex construction goes ahead, will WDA consult with the community about sound quality and noise mitigation measures?

Response from WDA: There is a strict noise criteria within EIS that will be included in the conditions of approval. There are several mitigation measures which can be looked at on a project and individual level which can include options such as noise barriers and treatments to houses. In the case of WestConnex, houses will be identified that will be impacted and the owners and residents will be consulted individually to discuss options. Anyone with specific concerns should approach WDA.

(xxxi) **Comment:** Reference to the Auditor-General's report which was released reviewing the WestConnex proposal and business case. This was referred to again in subsequent comments, with additional comment that the agencies have not followed due process. Concern expressed about the integrity of the planning process and assumptions that are relied on.

(xxxii) **Background:** Reference to the M5 east tunnel air filtration trial evaluation, comment that the EIS air quality figures were matched against tunnels without filtration systems. Wondered why this was the case when there are tunnels which have filtration systems in place and the data was not used in the evaluation.

(xxxiii) **Question:** The key rationale for this project is to extend the M5. Why is stage 1 going ahead, when there hasn't been funding approved for stage 3.

(xxxiv) **Question:** Will the Haberfield Conservation zone be preserved by UrbanGrowth NSW as they look at the redevelopment of the Parramatta Road corridor?

(xxxv) **Comment from WDA –** the 2013 Summary of Business case is available on the website. Reiterated this is a staged project and advised the funding approval for stage 3 is currently an issue for the Government. The construction of stage 1 will be managed so that all the enabling work for stage 3, such as the east facing ramps and the ventilation units will be completed to minimise surface interruptions following the completion of stage 1 and when stage 3 is commenced.

6. Close of the meeting by Mayor Councillor Lucille McKenna

The Mayor

- Thanked the community and the representatives from the WDA and Leighton Samsung John Holland venture for attending. Acknowledged it has been government responsibility for the approval of the project.
- Noted that for between three and eight years, Ashfield, Haberfield and surrounds will be a highly impacted construction zone.
- Raised concerns over the number of vehicle movements to remove spoil from Wolseley Street to the Depot.

- Raised concerns regarding the impacts and proposed closure of the Blanch Street pedestrian bridge and the safety for school commutes.

- Discussed the impacts of the widening of Wattle Street and the disconnection this will cause the community and the changes to walking accessibility

- Commented on the heritage concerns to the community and on individual properties, referencing a statement within the EIS that there is likely to be impacts to buildings, and the impacts to Haberfield are likely to be extreme. Concerned that if this is the case, should the project be proceeding

- Commented on the bus lane to Burwood and where and when this will be delivered.

- Raised concerns about where parking compounds will be located and staff commuting to site.

- Commented about dust from trucks not only being from the loads, but would be from tyres and the body of the vehicles.

- Reiterated there would be four major worksites within the immediate area. Acknowledgement that while contracts had been signed and it was not likely that the project could be stopped the Council will be campaigning for better outcomes for the community during the delivery.

Motion from comment (iii) was put to the floor.

The Motion was moved and seconded and endorsed by the meeting with a show of hands.

The meeting was closed by the Mayor at about 8.45pm

Ashfield Council

WestConnex EIS Public Meeting

23 September 2015, 6.30pm

Welcome – Cr Lucille McKenna OAM, Mayor of Ashfield

Good evening, everyone and thank you for coming, tonight.

I'd like to open this evening's Meeting by acknowledging that we are meeting on country for which the members and elders of the local Aboriginal community have been custodians for many centuries, and on which Aboriginal people have performed age old ceremonies. We acknowledge their living culture and unique role in the life of this region.

I would also like to acknowledge, the Shadow Minister for Justice and Police, and for Roads, Maritime and Freight and Member for Strathfield, Jodi McKay, Deputy Mayor of Ashfield, Councillor Alex Lofts, Councillors Caroline Stott and Monica Wangmann.

Ashfield Council resolved to hold a public meeting in response to the WestConnex EIS, to provide our community with an opportunity to voice their concerns and ask questions. This is the third public meeting we have held about WestConnex, the most recent one was at the end of July for residents whose homes were being acquired.

At this meeting, it became clear that our community is understandably distressed about the circumstances they find themselves in. Whether that is having your home acquired and being forced to leave an area where you have established support networks, neighbourhoods facing being affected by increased traffic, the dust and noise of construction for the next eight years. Worries about the impact of vibrations from all the work on federation properties. The disconnection between Ashfield and Haberfield due to the loss of safe pedestrian crossings and footbridges and the widening of Parramatta Road. Concern for the unique and distinct heritage of our garden suburb, when it is carved up for a tunnel entrance. Or a feeling despair when Ashfield will become the depot for the WestConnex, with multiple construction work sites, in a small area – it appears that our community will be bearing the greatest cost, for very little gain – a six minute reduction in travel time.

It seems that the social, economic and environmental costs our community is being asked to endure are disproportionate to the benefits we will ever see, let alone the benefits of the whole project.

Ashfield Council has had a very clear and consistent position on this project. We do not support it. No sound business case has been established, justifying the $15 billion expense for the M4 East tunnel. Sydney has a very poor record for building tunnels, in particular, that fail to meet the expected volumes of traffic or motorways that solve congestion on our roads. The WestConnex EIS shows that there is no funding commitment for public transport infrastructure as part of this project.

It is investment in public transport in Western Sydney that is needed to address the traffic congestion in the Inner West and Sydney CBD. We are very concerned about the integrity and transparency of the process, with a contract for construction signed months before the release of an EIS. And when that EIS is released, important information was missing. While we welcome the 10 day extension to the exhibition period, 55 days is a very short timeframe for Council to assess over 5000 pages worth of information and formulate a considered response, let alone to allow the residents and businesses who are directly affected to do so.

Tonight's meeting is an opportunity for you to ask questions and raise your concerns. Council is assessing the Environmental Impact Statement, released only two weeks ago, and preparing a response. Tonight, Council is listening to our community to ensure we have due consideration of the impacts from your perspective in our response. We have also invited the WestConnex Development Authority to attend and utilise this forum to provide information about the EIS, in answer to your questions.

WestConnex are running their own information sessions about the project. Our meeting tonight is different. We have neutral facilitator moderating our discussion. While I can't promise that you will leave tonight with the answers you seek, your questions, your concerns, your voices will be on the public record and Ashfield Council is listening.

An individual response to WestConnex M4 East proposal Dr Victor Storm (for Councillors)

This document summarises my objections to the recently published EIS for the M4East proposal. It concentrates on aspects of the health and social impact, including social & emotional wellbeing of residents as a consequence of the M4 East proposal. This along with linked projects, the M5 East duplication & the M4-5 link projects are the bulk of the 33 km long road & tunnel project, collectively known as WestConnex.

Individually and collectively these projects have already impacted on the social and economic life of residents and workers in the inner west, since the current proposal was first mooted in late 2013. In particular, the M4 East project impacts heavily on the residents and businesses around Homebush/North Strathfield & Concord and its Western end and Haberfield/Ashfield & Croydon at its eastern end.

In addition the proposals for this project occur while there are other significant proposals that are affecting residents in the inner west.

- The first are the NSW Urban growth proposals for the Parramatta Road Corridor, with five of the eight proposed growth precincts within the inner west, coupled with the Bays precinct and the Central to Eveleigh project. Together these projects will have substantial influences on the character, built environment and population make-up of the inner west.
- The second are proposals for forced amalgamations of local councils. Many residents are concerned that this will mean local affairs will be managed by large distant bureaucracies. There is a real sense that local decision-making and democracy is being removed from residents by this enforced process. There is also great frustration that decisions affecting the lives of people are being made by a government that has shown no interest in the impacts these decisions have on the lives of local people. There has been no attempt by the Premier nor relevant Government ministers to actually visit the sites of where residents are being forced from their homes. They have not justified why it is necessary to destroy vibrant communities. Nor have they proposed adequate mitigation of these impacts on the lives of individuals, families, friends and community.

I object to the proposal because it has not been presented in a way that enables the public to determine if the proposal is an appropriate and effective solution for Sydney's significant transport problems.

These combined sets of factors have left local residents feeling sad and angry about the process to date, and many feel sceptical about there being any real concern for their rights and welfare by the NSW and Federal Governments or their agencies.

In addition no comprehensive business case has been presented and the arguments in the 5000 page EIS are simplistic and lack depth. Critic such as the NSW Auditor-General and MLC Ms Mehreen Faruqi have seen the business case and have made strong arguments against why they consider it to be a flawed process and proposal. There has been no serious rebuttal from the proponents, which suggests that the critiques are accurate and that the whole process is flawed. If this were private money taking the risk, the lack of a business case would be disturbing for shareholders. With the M4

East project it is public money that is being proposed for investment. The scheme proponents are keeping the public in the dark about their financing methods.

I object to the fact that public money has been used to establish a private company, with 2 ministerial shareholders, so that the corporation does not have to be publically accountable. The opportunity costs of this project and the alternatives that could be developed by equivalent investment have not been tested in public.

I object because the whole process has been corrupted by the agencies that are its proponents. This is evidenced by, the awarding of contracts for the project, notice of compulsory acquisition of family homes and the planned destruction of local communities; All before the matter has been properly considered and approved. It is also evidenced by the unseemly haste in which the EIS has been prepared and the even further "haste" with which the community is expected to respond to a very large and multilayered set of documents.

I object that the EIS has in large part been prepared by AECOM, whose reputation for impartial independent advice must be in serious question. How can the public have any confidence in a company that has recently settled claims against it with a $280 million settlement because of inaccurate traffic forecasting for the RiverCity tunnel project in Brisbane?

The most disturbing outcome of M4 East proposal, coupled with the other assaults on community rights and the ability of the public to engage in decision making about their city, is the further distrust about governance and probity in NSW. The planning and development process of the M4 East project smacks of back room deals hidden behind the cloak of "commercial-in- confidence concerns", so that the public who pays for this are not truly involved in the decision making. This is a fundamental core of my objection to what appears is a flawed proposal.

Initial Impacts

I object to how this process has been managed, since its inception, including poorly run community "engagement". The "consultations" appeared more concerned with the marketing and media spin, rather than provision of information. If we were watching an episode of the television series "Utopia", the dark humour may be appreciated. However the cruel impact of decisions, made by people who do not have to live with the consequences, is very disturbing for those that suffer the consequences.

The initial announcement of this project was made in the last quarter of 2013. The WestConnex Delivery Authority (WDA) conducted a series of information sessions near the proposed concept route. At that time, many local residents and businesses received letters that their homes/ buildings would probably be resumed for the project.

These "consultation" sessions were characterised by what many residents in Homebush, Concord, Ashfield and Haberfield characterised as contradictory and misleading information. There was considerable distress amongst older residents at the prospect of being forced from their homes to an unknown and uncertain future.

There was an immediate deflation on local real estate prices in the affected areas. Many property owners who have rental properties were not directly advised of the property resumption intention.

Many discovered from tenants about the WDA property resumption plans. In some instances the owners discovered the resumption plans when their tenants gave sudden notice. Other long-term owners in Haberfield and Concord were pressured to sell their properties for low prices, by WDA/RMS agents.

Many businesses faced uncertainty about their prospects and found that trade reduced quite quickly through 2014.The proposed resumption and demolition of a family run motel on Parramatta Road will be significant loss for the district.

In mid 2015, a large number of residents who had lived for over 18 monthswith the apprehension of their homes being resumed, were suddenly advised that their properties were no longer required. Others who had not had any such notice received letters stating their properties would be resumed. This occurred in Ashfield and Haberfield. The cumalative and individual impact of proposed resumptions in Haberfield and Ashfield is significant. There is no proper analysis of this in the EIS. Many core agencies have not been consulted prior to the EIS. Some schools, local chambers of commerce and local social infra-structure providers have only been consulted since the release of the EIS. Others have not been consulted at all. Hence, the social impact assessment is seriously deficient and inadequate.

- **Lack of analysis of the Socio-economic impact**: The EIS identifies the social impacts on individual finances, health and loss of equity caused by compulsory land acquisition. It also concludes that this disadvantages the sick, frail, elderly and poor. It also concludes that property owners who seek to find property in the district are also disadvantaged by the limited time available to find suitable property. The remedies offered in the EIS are limited and does little to identify how local residents can be properly supported. It appears to conclude that any social impact is just necessary collateral damage. There is no detailing of the socio-economic cost of these impacts. These need to be appropriately estimated and considered within a comprehensive social impact statement. ***Those disadvantaged by the proposed measures must have appropriate financial restitution to compensate for current and future losses***.

- **Demolition of Apartments and social housing stock**: One impact particularly for Haberfield/Ashfield and also Concord is the proposed demolition of many apartments and social housing blocks. Haberfield will lose over 50% of its apartment dwellings, many of which house long term residents who are single people, elderly and others with special disability needs. There is little if any equivalent stock available for them to purchase or rent nearby. Many of the people being forced out their homes will have to find a new home some distance away from their established communities, in which they have lived for years. Compulsory acquisition processes are already being implemented on local residents. Families, friends and neighbours are being separated. So while the impact is most significant for the 400 or more people who are being forced to move, it also affects the thousands who remain behind in their once shared community. ***Housing stock needs to be replaced and made locally available for people on low incomes.***

- **Supports for those affected by proposals**: The EIS suggests WestConnex would offer a counselling service to those impacted. This is a somewhat akin to a person assaulting

another and then offering counselling to the assaulted person! ***The only reasonable support to offer is independent financial, legal, counselling and social support to affected people. There must be payment of full and appropriate sums to compensate for all imposed losses***.

- **Destruction of Urban Heritage in Historic Conservation Area**: The heritage report identifies that many of historic houses that are slated for destruction are in Haberfield and Ashfield. It will result in a permanent scar on the historic fabric of the world's first garden suburb and also cut off the western corner of the suburb from the rest of this treasured precinct. The EIS states that this proposal will have a major adverse impact on Haberfield and the overall project will have a major cumulative impact on the Haberfield Conservation Area. It does not propose any mitigation or restitution for this loss. (*Definition of Major Adverse Impact p 19-11, Table 19-4 EIS Section 1B: "Actions that would have a severe, long-term and possibly irreversible impact on a heritage item. Actions in this category would include partial or complete demolition of a heritage item or addition of new structures in its vicinity that destroy the visual setting of the item. These actions cannot be fully mitigated."*)

- **Loss of Community**: The EIS itself says in 14.4.2, "Changes to the amenity of a street or suburb can negatively impact the sense of belonging and identity of its residents and consequently their cohesion and connectedness. Areas with heritage values can also be a significant contributor to local character and community sense of place. Impacts on heritage assets affect not only the value of the assets, but the value communities place on the quality of their environment, and their connections to it, both past and present." "These impacts are primarily along the M4 corridor in Homebush at the western and eastern ventilation facilities, Concord Road interchange, and Parramatta Road and Wattle Street interchanges." It describes that the impacts for Haberfield are "major adverse impacts" with the whole project having cumulative adverse impacts. ***It proposes no solution or restitution for this impact. This is not acceptable.***

- **Ongoing implied forced acquisition of property prior to any official approval for the project**: in the last 3 weeks residents and businesses in Haberfield & Ashfield have received compulsory acquisition notices (PANS), which set a 90 day time frame for a negotiated settlement to be finalised, before legal proceedings would commence. Residents, who have lived their whole lives in the district, are being forced from their homes, often with what is considered inadequate funds to secure housing within the neighbourhood. Residents report that RMS staff are behaving in a forceful and what some consider a bullying manner towards them. They find it difficult to understand that as the EIS has just been released for community consultation, planned acquisitions are being forced through, prior to any formal approval and prior to any proper consideration of community submissions and concerns. Many believe the EIS process to be a sham formality. ***All property acquisition processes must cease until there is full release of the Business case to parliament and the public to allow appropriate analysis of the M4 East proposal and for transport alternatives to be properly considered. This must include a full socio-economic impact analysis that accounts for the true costs of the project and does not hide the costs borne by individuals if the M4 East project were to proceed***.

Construction related impacts

The size of the project is huge with a reported 65 hectare (650,000 square metres) project footprint. This includes clearance of 13 hectares of vegetation and established tree cover. **I object to the removal of established trees and vegetation for this project and in particular the proposed destruction of healthy iconic trees in the Reg Coady reserve.**

- **Noise and Dust**: The EIS discusses a construction period of some 3 years. It proposes a plan for 24 hour operations of heavy truck removal, with many places experiencing 20-40 heavy truck movements an hour 24 hours a day, as over 1.7 million cubic metres or some 16 million tonnes of spoil are removed. It is also proposed that trucks run up and down Wattle Street adjacent to residential areas where traffic is usually light between 9 pm & 6 am. **I object to the proposed 24 hour spoil removal by truck**. ***There must be respite from this process, from 9pm to 7am.***
- All the trucks from Haberfield/Ashfield would congregate in Concord through Homebush and beyond for 24 hours a day, subjecting many people along that corridor to extended period of noise & dust. Current proposed mitigation measures for this cumulative impact is inadequate. ***Appropriate noise mitigation through double glazing and sound proofing on individual homes is required. This will also require installation of high capacity dust filtration on air-conditioners. The capital and recurrent operating costs should be borne by WDA/SMC.***
- **Vibration & potential damage to homes:** There is significant local resident concern on the impact of tunnelling beneath and around properties and the possibility of structural damage to old homes. The assessment of properties for which structural condition reports are provided needs to cover a greater area than is proposed in the EIS. ***There must be independent structural assessment of all houses in the region of the proposed tunnelling and blasting (within 200metres either side of the tunnels and construction areas). All damage must be compensated with full remediation .***
- **Destruction to Neighbourhood and Community:** The grief and mourning caused by the forced breakup of family kinship and community ties will be long-lasting and inter-generational..

Health Impacts

I object to this project because a number of health impacts resulting from this project are not satisfactorily addressed in the EIS.

- Sleep Disturbance; if heavy truck movement is permitted on a 24 hour basis, it will disrupt sleep patterns for many local residents. Poor sleep is associated with a raft of health impacts, including increased blood pressure, increased cholesterol levels, impaired work performance, increased anxiety & depression, and relationship stress and breakdown. ***There needs to be a truck operation and movement curfew between 9pm and & 7 am, along with noise mitigation described above***
- Respiratory Irritation due dust: Spoil removal from tunnelling will increase dust locally and this will impact on general respiratory health, particularly for young infants and children and those with pre-existing heart & lung conditions. ***There needs to be appropriate glazing and***

air filtration mitigation as proposed above. In addition round the clock monitoring of local air quality is required and residents should be alerted if dust levels are raised at certain times.

- Mourning & Grief over loss over home & community: This will be an enduring influence on many people, including those forcibly moved and those that remain. It will also increase the risk of both anxiety and depressive conditions. The loss of home and community attacks a basic need for all humans, to have stable shelter and accommodation. Many people believed that a home within the confines of the Heritage Conservation area would safe-guard them from such destruction and vandalisation of their community as proposed by the M4 East project. ***The lack of any proposed mitigation for this major impact is a serious deficiency in the EIS. It requires appropriate address and resolution. There should not be any progress on the project until this matter is satisfactorily addressed and appropriate restitution made to affected residents***
- Anxiety about impact on homes: The ongoing work, associated, with blasting, tunnelling and spoil removal will leave many remaining residents anxious about the security of their own homes, probable financial loss and reduced ability to care for themselves and their families' future
- Impact on Family life: The loss of close family and friends from an immediate neighbourhood diminishes the quality of life for many people. Increased isolation, particularly those who were in their own or rented flats will be associated with increased health morbidity. ***It is most likely that the initiation of the project will hasten the death of many elderly residents if they are displaced from their long-standing homes and community. The lack of a clear and compassionate plan to deal with these major problems is a serious deficiency of the EIS.***

Post Construction related impacts

I object that even when the M4 East is completed, the traffic congestion impacts in the Haberfield/Ashfield localities will not have improved.

Once the project is completed in 2019, the Haberfield/Ashfield sector will remain significantly impacted as the increased induced traffic will funnel into 2 already crowded corridors, namely Parramatta Rd and Dobroyd Parade. Proposed new right hand turns at Ramsay Street & and Waratah St off Wattle Street will increase through traffic in what is a residential suburb. The EIS also notes in its cumulative impact section (26), that there would be greater traffic densities along both the Eastern sector of Parramatta Rd and Wattle St when the whole project is complete. This appears to contradict other assertions about the localised benefits. It also states in Section 26.4.2 that there would be significant increases in concentrations of pollutants in a select number of sites, but does not specify where. ***Detailed information is required about where the pollution impacts are predicted to be worse as consequence of this project and identification of what remedies or solutions are proposed. The project should not be approved to proceed until these matters are satisfactorily addressed.***

I object to the current proposal because the EIS fails to satisfactorily address a number of significant concerns about ongoing health impacts:

- **Localised noise hot spots**: The redistribution of traffic and focussed portal entry & exits will cause concentrations of noise. In addition ventilation fans and exhaust stacks will create new noise sources that will require monitoring. Ambient noise will combine and effect the Haberfield/Ashfield interchange and Concord interchange zones. ***This information should be clearly spelled and readily identified and appropriate mitigation planned.***
- **Ongoing sleep disturbance**: The localised hot spots will contribute to ongoing sleep disturbance with health impacts that are known and documented
- **Localised Pollution hotspots**: The Portal entry and exits will create localised pollution hot-spots. In addition until the project is complete, as described above there will be ongoing increased traffic in Parramatta road east of Bland Street, which will cause local problems. ***Again detailed information of these impacts is required along with mitigation proposals***
- **Exhaust stack plume dispersal**: If we accept the assertion in the EIS that the exhaust ventilation tunnel will for the most part allow for reasonable distribution of pollutants away from the immediate vicinity, two issues of concern remain.
- The first is ***what is the impact of intense localised plume strikes onto small areas, which will cause often short, but quite intense concentrations of pollutants in a restricted area, due to changes in wind patterns or atmospheric inversion layers?*** These acute events can be a major trigger for acute asthma episodes or people with other chronic lung conditions. A further issue is that plume strikes will more frequently hit high rise buildings, so projected high rise apartments along the Parramatta Rd corridor, especially at Kings Bay, Burwood and Homebush, will be more likely to be affected than low rise housing.
- The second issue is, ***do these pollutant plumes continue to contribute to the adverse air quality conditions in the SW of Sydney?*** So is the claim of an improved local air quality in in the inner west, done at the expense of a worsening of the air quality in the South West, due to the prevailing air movements?
- The EIS does not consider the impact of traffic growth along the Parramatta Road corridor following the proposed developments proposed by Urban growth for the corridor. How will air quality improve if traffic volumes build up due to increased population densities proposed for the corridor?
- **In Tunnel exposure to pollutants**. The EIS identifies the pollutant exposure for the Concord-Haberfield journey. However, there does not appear any recognition of cumulative exposure for people such as transport and taxi drivers, once all proposed tunnel projects are complete. If a person takes a return trip from Hornsby to the airport via NorthCONnex & WestCONnex, over half the journey by 2023 will be in a tunnel. So there would be some 40 or more minutes spent driving in a tunnel on a return trip. What will be the cumulative in-tunnel exposure from such a lengthy trip? Or if a taxi driver does this trip three times in a day, the exposure may even be longer; say a minimum of 120 minutes of in tunnel ambient exposure. How would the cumulative impact accrue in terms of NO2 or CO exposure. Would there need to be advisory information to limit in-tunnel exposure to less than 60 minutes per day?
- **The lack of analysis about particulate matter pollution**. The EIS raises a number of contradictory issues about PM monitoring. The EIS argues that the NSW approved methods has no requirement to measure PM2.5. In fact much of the analysis is done on standards promulgated in 1998, and probably on science that is over 30 years old! There have been

huge advances in knowledge and measurement technologies, that this raised questions about claims that this project is being based on world's best practice. The air quality standards proposed in the EIS do not appear to match the proposed standards contained in the revised National Environment Protection (**Ambient Air Quality**) Measure, which would be equal to world's best practice. The EIS should apply the standards which are to be implemented across the country rather than the current out dated standards.

- **How were vehicle exhaust predictions calculated**? Did the EIS calculate motor vehicle exhaust emission in tunnel based on the proposed mix of vehicles and the type of emission under varying operating conditions as supplied by vehicle manufacturers? Were any of the calculations based on what we know to be false and misleading data from companies such as VW?
- **We know that there is no safe limit to most exhaust emission exposure**. They contribute to both increased rates of cardio-vascular disease and lung conditions, including lung cancer, which is now increasing amongst non-smokers.
- **Diesel exhaust emissions are carcinogenic**. Modern Diesel exhaust consists mostly of particles sized PM0.5 and smaller (i.e less than 0.5 micrometer, at least one fifth smaller than PM2.5). There is no measurement of the quantity of these particles which drivers will be exposed to in tunnels. These particles penetrate into the blood stream and long term effects are not well known. ***It is not acceptable to state that the technology to measure these PM emissions is difficult and not required by NSW approved methods (section 9.2.4). The public needs to know what they will be exposed to in tunnel and via the tunnel exhaust vents. There are mitigating technologies that reduce in-tunnel and from tunnel exhaust ventilation stacks, by the use of electronic precipitators, which if designed from the start would work satisfactorily, as they do in Madrid and Hong Kong. Also carbon filtration can reduce Nitrous oxide build-up both in tunnel and from exhaust.***
- **Diesel vehicles may need to be banned from the tunnels and also from our urban environments.**

IN SUMMARY

The EIS clearly outlines the enduring and destructive impact that the WestCONnex project will have on the lives of people in select communities of the inner west. The loss of heritage items will be irreplaceable. The social connections and networks of families and friends will be disrupted. No meaningful mitigation is proposed. The central argument of the project proponents is that the perceived benefits will make Sydney a better place to live and work, so presumably, although it is not stated explicitly, the enforced sacrifices on several hundred thousand residents of the inner west justifies this outcome. The proponents do not give any real evidence to support their thesis and to date no business case, with all the socio-economic costs and benefits, has been made available. In fact it would appear that the proponents are pushing ahead with the project in spite of clear external critiques and with no logical rebuttal to the critics.

The project has already had an impact on the health and wellbeing of local citizens. During construction further impacts are proposed, that if unmodified will have serious impact on local wellbeing, particularly the 24 hour heavy vehicle traffic and tunnelling work. Even when the M4east is completed, local pollution and noise hot-spots will remain; East of Bland St and along City West link will be as congested as ever, with increased the capacity coming to a stuttering halt at those 2

choke points. Improved public transport plans for Parramatta road corridor are not even planned to be operational until 2031.

As outlined there remain too many unanswered questions about the health impacts. From a health perspective for local affected communities this is a slow moving disaster. The disaster is easily avoidable and should be avoided by not proceeding headlong with this project. It is the wrong project at the wrong time for Sydney. Let us stand back, take a deep breath and work collaboratively, using proper planning principles, to design a twenty-first century transport solutions for our communities and metropolis.

Dear Cr Wangmann

I have realised that there is a minor error in the email I sent through - it was a slip. The date in the sentence about the consultations should be **2015** not 2014
Just to clarify - the Consultant was GHD. **In 2014** GHD did consult at least to some extent with Ashfield Council - the results of that are in a table in the report. However GHD's Ann Mathieux explicitly told us that she did not consult with Council in 2015 after the final route was established. This came about because I told her I was surprised Ashfield Council response on housing and heritage was not recorded - she then explained there were no consultations after the final route was announced. This seems quite inappropriate because the issues for the social impact study changed dramatically when the final route was announced .
This may explain why some infrastructure such as Dobroyd Point school was left out - she was quite disconcerted when Sharon raises DPS and I think Ella Centre with her. Once she looked at the map she could see that they should have been included
I got the feeling that the whole report was rushed.

In 2015 the only questions that were asked of anyone were via the communications staff at Westconnex, which was quite inappropriate given their role in communicating forced acquisition information etc

She was not at all engaged with the site (I think she may have visited the general site a couple of times) but had not familiarity with it -

In the methodology section it refers to 'other social research' - she could not explain what that was and this explains why there is no references to other literature other than the basic data literature in the bibliography.

Wendy

Wendy Bacon
Professorial Fellow
Journalist and Researcher
Australian Centre for Independent Journalism
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On Tue, Oct 27, 2015 at 12:25 AM, Monica Wangmann <monicawangmann@gmail.com> wrote:

Dear Vanessa and Phil,

Thank you for the WestConnex EIS response draft from Council.

As discussed tonight, please see attachments in next email. I realise it is extensive and some of it is commentary. If possible can we incorporate these useful components into our response?

Some documents are in the next email that I hope will provide some assistance on the Social Impact and Economic impact statements.

You may also be interested in the People's EIS site http://www.m4eis.org/www.m4eis.org site for useful material / additional comments.

Further info is also available on http://m4eis.org/2015/10/24/major-flaws-in-westconnex-eis-

biodiversity-study/

GHD did not consult with Ashfield Council at any time after 2014 when a different route was planned - this is why there is no mention in the Social Impact statement of Ashfield Council being concerned about loss of homes, and heritage. See the feedback table in Appendix M (there are additional points about this in the attached notes from Sharon)

The consultant did however have up to date data on the properties to be acquired but the report lacks any sense of depth or immediacy because no direct consultation with community members occurred at all.

The only consultations that occurred at all were through questions fed through Westconnex communication staff and then the answers were fed back to her. This is why the information in the report in the feedback tables is not at all up to date. This is completely inappropriate and certainly compromises the data in the report.

Other points

- A three way framework for analysis is set up in the methodology section of the Social Impact report but is then only referred to once or twice. It is not applied systematically which is unacceptable. She said that findings were just a matter of professional judgement - for example she concludes that dislocation of homeowners could have short term major impacts - why only short term? She does not explain
- There was NO direct consultation with businesses done at all for the economic impact report which is then folded into the Chapter on Social Impacts - there should have been a consultation with those affected - either through focus groups or interviews.
- There is a reference in the study for ' other social research". She agreed that no other social research was done which is why there is nothing in the bibliography indicating it had been done
- She seemed to regard her task as quite procedural and routine
- A serious problem when it comes to recommendations for mitigation eg counselling - she 1) takes at face value Westconnex statements on this without testing at all and 2) doesn't understand that the stress and anxiety about moving impacts **are well and truly underway.** She did not seem to have been properly informed about the urgency or the fact that Westconnex are pushing ahead without approval.
- The study area is variously described in the report but in fact for the direct impacts is only narrowly defined around the project area. In fact the 'hot spots' and traffic impacts will extend further and some organisations that will be impacted such as Dobroyd Point School or Ella Centre were not included - the consultant seemed to understand that this was an error. This again probably could have been due to not researching the actual project route for the initial part of the study.
- Residents have done interviews with businesses who are very unhappy about treatment - not all will speak publicly however because they are worried that their businesses will lose all value
- Problems identified in other studies will all have implications for the social impact study - for example the noise critique. Since most of these reports were only ready briefly before due date, it would not have been possible for her to review the other technical reports (as the report claims has been done) in anything but very superficial way.

Surely the Social Impact study should have been undertaken once the final route was known? - what happened here was an insertion of some up to date material on the back of official data research and

some consultations done in 2014. The community has a right to expect better research to be done, especially when it is done at public cost.

Just as your heritage consultant argues that the impacts are extremely significant not acceptable so should such serious dislocation of hundreds and serious impact on thousands including on their health could be rejected as not acceptable, particularly on the back of such a flimsy case. I can't think of another recent parallel example - indeed the Heritage Council told me that they cannot remember such serious heritage impacts since the Bradfield Highway in the 1930s.

Attached documents in next email include

a) Dr Victor Storm - as you know Dr Storm is a very experienced psychiatrist who lives in the area

b) Sharon Laura - I was with Sharon when she talked to Ann Mathieux for most of the conversation and heard the same comments. She has consistently spoken to members of the community over a long period.

c) Anthony McCosker wrote notes for a critique

d) Soon to follow today - interview with man in 80s who is in an extremely stressful situation plus possibly another - plus interview with Willows Nursing Home plus some analysis of that

I am sure Jo Haylen's office can add material

Here is a summary of Social and Impact Statement with some editor's notes that may be helpful

http://m4eis.org/2015/10/04/summary-of-m4eis-social-and-economic-impact-reports/

perhaps the way forward is to add a further part to the motion tomorrow

"that Council officers, under the guidance of the GM incorporate useful information as described above, including from links above and associated attachments recently sent directly to Mr Sarin in an email."

Kind regards
Monica

Extra information and comments regards Social Impact Assessment, M4 East EIS.

Hi,

I think Ashfield Councils response to the M4East EIS project was great. Thanks to all those Officers involved in the process.

However, I would like to provide some extra information and my thoughts about the Social Impacts Assessment (SIA) prepared by GHD (on behalf of AECOM) in Volume 2E of the EIS.

I would also like to ask you all, given what is missing, and it seems all baseline information and the majority of research material for the assessment was supplied by the proponent of the M4East project, what weight can be given to the validity of the SIA? How meaningful is the identification of the true and complete social impacts of the M4 East project on the Haberfield and Ashfield communities, - and what chance of redress and mitigation for us all?

I hope you might find this material useful. Thanks.

Sharon Laura
slaurar@gmail.com
25/10/15

Background & Comment

I attended a number of the WestConnex information sessions with a list of prepared questions. On a number of different occasions, I spoke at length to people employed by WDA/SMC, RMS and the M4East project contractors, (Leighton Samsung John Holland Joint Venture). At the Strathfield session, I was able to talk to Anne Mithieux, the consultant responsible for the SIA. Whilst I liked her and felt she really wanted answer my questions and be helpful, I was appalled at the answers she gave about the methodology used in compiling the SIA.

At a previous information session, WDA/SMC employees were completely unable to answer my specific questions about the SIA, and had arranged for Anne to attend the Strathfield session in order to meet and talk. Hence, we had such a long uninterrupted time together to discuss the SIA, - except for intervention at the start of our conversation by a member of the WDA/SMC communications team sent to sit in and supervise. Anne was clearly uncomfortable with this, but initially complied with directions not to comment. Initially she appeared nervous about talking, because of the presence of the WDA/SMC employee and was looking around for others to help her answer questions. But eventually, she indicated that she could and would answer. She then firmly brushed aside the inappropriate interventions by the WDA/SMC employee. Wendy Bacon, independent journalist and social activist also sat in on much of my discussion with Anne, who was quite comfortable for Wendy to be included, much to the chagrin on the WDA/SMC employee.

Basically, Anne admitted that the SIA report was not as good as it could or should have been. That it was light on and not at all perfect in methodology. She finally said that what was missing and deficient in the SIA was essentially caused by the haste in which the SIA had to be prepared. That the time permitted for its research, development and writing was not really adequate and she would have preferred more time to do better.

I had a sense that as our conversation took place, over almost 2 hours, Anne was somewhat embarrassed by what had been missed in the SIA. However, she did emphasise that she was the consultant 'responsible' and that nothing in the SIA, not even a word could be changed without her say so, because she had 'signed off' on it.

Anne confirmed that she become involved in the M4East project SIA only recently, around March 2015, - and after taking over from two colleagues. That GHD has started on the SIA sometime in 2014. Earlier SIA work had been done by others during the concept phase of the project. This was when 'baseline' work was completed. She said that there was no SIA consultation with Council after the concept plan phase. She also said that she had not worked with original data for a lot of the time, but had identified the social infrastructure providers (SIPs) and set questions to be asked of and about them. Anne admitted that she did not do any direct consultation herself, and that she would have preferred this. She also confirmed that much of the material and information she used as a basis for the GHD SIA had been collected prior to her involvement and supplied to the SIA team by WDA. She said it had never been considered necessary to talk direct to residents in the affected communities in relation to the SIA because only individual residents whose homes were being acquired were being dealt with by WDA/RMS.

As I was asking Anne really specific questions about the social impacts of the M4 East project on people living and working in Haberfield and Ashfield, I became aware of how little she knew or was informed about out community. She also had very limited knowledge of the details of the project route and where it goes in relation to our local streets.

She was completely unaware of Dobroyd Public School, St Joan of Arc Primary School, Ella Community centre and outreach programs, the Ella residential care facility, Ella childcare, and the other child care centre in Ramsay St, Habefield. When I asked why these had not been considered in the SIA, she replied that this information had not been supplied to her. She also said she was only required to consider SIPs located directly along the route and within the project area. She thought the above services must be outside of this area, hence why they were absent.

She had no idea of the Bland St, Ashfield construction site exit, and was completely unaware of the proposed right hand turn into Waratah St, Haberfield, - or the proposed changes to traffic around Dobroyd Parade/City Link at the intersection of (Timbrell Drive) and Mortley Avenue, Haberfield.

I identified streets, and the locations of some of the social infrastructure providers in Haberfield and Ashfield, that were not know to the writer of the SIA. And certainly not consulted or considered in the preparation or recommendations of the report. On a map, I pointed out the local street changes that would be required due to the new right

hand turn into Waratah St, and traffic restrictions across the Mortley Avenue, intersection. I also talked out the social impacts on the residents Ashfield & Haberfield due to trucks exiting from a construction site onto Bland St, Ashfield, in the middle of a densely populated area.

Conclusion & request

I think the SIA of the EIS is a very shabby report, and an insult to all of us who live in Haberfield and Ashfield. I hope Council may be able to elaborate further on this in its final submission on EIS of the M4East project.

Extra information re Social & Economic Impacts of WestConnex in Haberfield and Ashfield.

Re: EIS Volume 2E
Executive Summary (Page v)

Q. When did WDA/RMS actually consult with local businesses and on what basis? (What I have observed and been told)

I first started walking Parramatta Rd and talking to business people on both sides of Parramatta Rd (from Wattle St to Ashfield Park), after the concept plan was released in late 2013. I have continued walking and talking right up to the present time.

From discussions I've had with commercial property owners and business operators (not always the same people) along Parramatta Rd, the only 'consultation' that seems to have taken place was after the concept design was released and was in relation to acquisitions proposed on the northern side of Parramatta Rd, between Alt St and Rogers Avenue, Haberfield.

Of businesses on the Ashfield (southern side) of Parramatta Rd, only GM Architects seems to have been be in direct and ongoing communication with WDA/RMS for any period of time. GM said they had been reassured by WDA/RMS that the then (concept) plans for WestConnex would not interfere with GM Architects development application for redevelopment of their site between Brescia/Woolworths and Chandos St Ashfield. (Please note: GM architects has now been acquired and their premises vacated.)

Throughout 2014/2015 other businesses on the southern side were complaining bitterly that WDA/RMS was not interested in talking about their concerns re immediate financial implications due to uncertainty caused by the release of the concept design and project; or that WDA/RMS was prepared to discuss or compensate owners for the expected loss of future business during the construction phase.

Some businesses on the Haberfield (northern) side, in 2014 and early 2015 were initially being pressured to negotiate and settle on a 'voluntary' acquisition price. Other businesses to be left standing, were desperately seeking information re available support from WDA/RMS in the pre EIS and pre construction phase of the then (concept) route. Many businesses were indeed willing to talk me about their frustrations with trying to deal with WDA/RMS. They often complained about the lack of any meaningful consultation with, or information from WDA/RMS

Eventually, some businesses on the Haberfield side complained that negotiations had stalled, information had completely dried up, and that phone calls were not being returned at all by WDA/RMS. These businesses felt in limbo land about running or developing their businesses, selling or not, relocating or not.

Then in mid 2015, the indicative route was released. Now, most businesses on the Haberfield side are 'safe' - and now, many on the Ashfield side are to be acquired. Some businesses on the Ashfield side have already settled and vacated their premises.

Some businesses on the Haberfield (northern side) whose businesses were winding down and were seriously looking for new premises to rent or acquire, are no longer to be compulsorily acquired. So now, they are in a different limbo land than they were previously.

I know commercial businesses, remaining in situ on Parramatta Rd that say they have never been properly consulted or considered by WDA/RMS. Who say they have already suffered considerable business loss, and who believe they will continue to lose more $$ and business in the pre, actual and post and construction phases of the M4 East project.

Haberfield Village

Since the concept plan was released in late 2013, I also have spent a lot of time shopping, dining and talking to business owners in the Haberfield Village. They would often ask me about what was happening with WestConnex because they said they had received no direct or specific information from WDA/RMS about WestConnex.

Also, I was often approached by a real estate agency to get information and have discussion about the implications of the project upon valuations. And this was after the real estate agency said they had failed to get meaningful information from WDA/RMS

I would regularly and frequently ask shopkeepers if WDA or RMS had made any approaches to businesses owners in the village. The answer was always in the negative, - until after the announcement of the contractor and release of the indicative route in mid 2015. It was only some time after this announcement, when business owners said they were hoping to meet with WDA/RMS and the Joint Venture Contractor. Even then, it seemed that what was being encouraged, proposed and set up, was actually initiated by Ashfield Council through their liaison person for Haberfield business. Not exactly a true consultation between Haberfield businesses and WDA/SMC and Joint Venture Contractor.

I was actually shopping in Haberfield when members of the communications team for WestConnex/ Joint Venturer were doing a walkabout of Haberfield village businesses. Shopkeepers were concerned, interested and confused by how and why they were being approached by WCX/Joint Venturer in this unexpected and inappropriate way. It had all the hall marks of meet, greet and spin tour, rather than being a true consultation.

Because shopkeepers were none the wiser after the communications team left, I was later invited to attend the WDA/JV presentation that was to be set up and given to the Haberfield Chamber of Commerce. I am not a member of the Chamber. I was asked to attend because I was seen to have some knowledge of the M4East project and therefore might be able to assist shopkeepers after the presentation in making sense of information delivered at the presentation.

When I attended the WDA/JV presentation, I was not expecting to ask questions or speak. I went only to listen. However, during the presentation, the WDA/JV

presenters were often not able to answer very specific questions asked of them by the business people. So questions were directed to me, to either answer, or to help clarify the questions. Presenters were also not able to identify many local locations on M4East route maps projected onto the wall. I found myself, up front, physically pointing out various locations of concerns.

What this highlighted for me, and was then remarked upon by business people afterwards to me, was that the WDA/JV presenters had no real knowledge or understanding of the Haberfield village, businesses or community. And whilst there was some acknowledgment of the likely chaos and impacts to be caused by the M4East project, the only compensation or sympathy offered by the presenters was that all the workers would be buying their coffees and lunches in Haberfield during construction.

In conclusion, what I have heard, and now understand, in relation to consultation between WDA/JV and businesses in Haberfield and along Parramatta Rd (Haberfield and Ashfield), is that there has been none of any real significance. That the Economic Impact Assessment 'consultation' has only been around specific issues related to the acquisition of individual commercial premises and businesses.

Not unlike the Social Impacts Assessment (SIA) in relation to residents.

In relation to the SIA, was actually told by the consultant who signed off on it that the only direct 'consultation' with residents, was with those residents whose properties were to be acquired.

Sharon Laura
slaurar@gmail.com

Social and economic responses

General

- Of the 5 road or tunnel projects the SIA (see Appendix A within Appendix M) uses as precedents for SIAs of 'other similar projects', one has been cancelled prior to building (the East-West Link in Melbourne), and three have proven financially unviable (Brisbane's Clem7 and in Sydney the Lane Cove Tunnel and the Cross City Tunnel [which failed financially twice])

- **Noted in consideration of alternatives?** In terms of public transport, the report repeatedly states that seven train stations service the area, North Strathfield, Flemington, Homebush, Strathfield, Burwood, Croydon and Ashfield, it is also serviced by seven bus routes (525, 526, 415, 461, 490, 491 and 492) and the project runs parallel to the train line
  - Also the data all traffic modelling is based on ignores trends such as 'peak car' (see for instance Newman and Kenworthy 2015), changing youth preferences for transportation options, the effects of induced traffic, and increasing societal preference for urban living. Given that these factors are overlooked, the modelling and thus the analysis for the alternative scenarios will be biased towards road- and automobile-based solutions

- **Noted in consultation?** 'Stakeholder and community involvement in program planning and ongoing environmental management would be key to avoiding, minimising and mitigating the social impacts of the project', yet when evaluated against the IAP2 Public Participation Spectrum (https://www.iap2.org.au/resources/iap2s-public-participation-spectrum) the 'community involvement' centres around 'informing' (the lowest stage on the spectrum with the least impact on decisions) and only rarely could be considered 'consultative' (the second lowest):
  - 'The framework would ensure that local residents, businesses and workers are provided timely and clear ***information*** about local changes and the progress of construction and operation. Project communication would need to consider the cultural and linguistic diversity in the project area, so that project ***information is communicated*** effectively' (emphasis added)
  - 'The [community consultation] framework should also provide opportunities for local communities and specific key stakeholders discussed in the social impact assessment to have input into the development and refinements of construction management plans, and for the use and management of residual lands on operation. The framework would also provide for community feedback or monitoring by telephone and online.'

- **Noted in consultation/EIS process?** Other 'comparable' projects allocated considerably more time to the EIS process than the M4 – East project, such as the Legacy Way project in Brisbane (see http://www.dilgp.qld.gov.au/assessments-and-approvals/legacy-way-project-formerly-called-northern-link-road-tunnel.html):

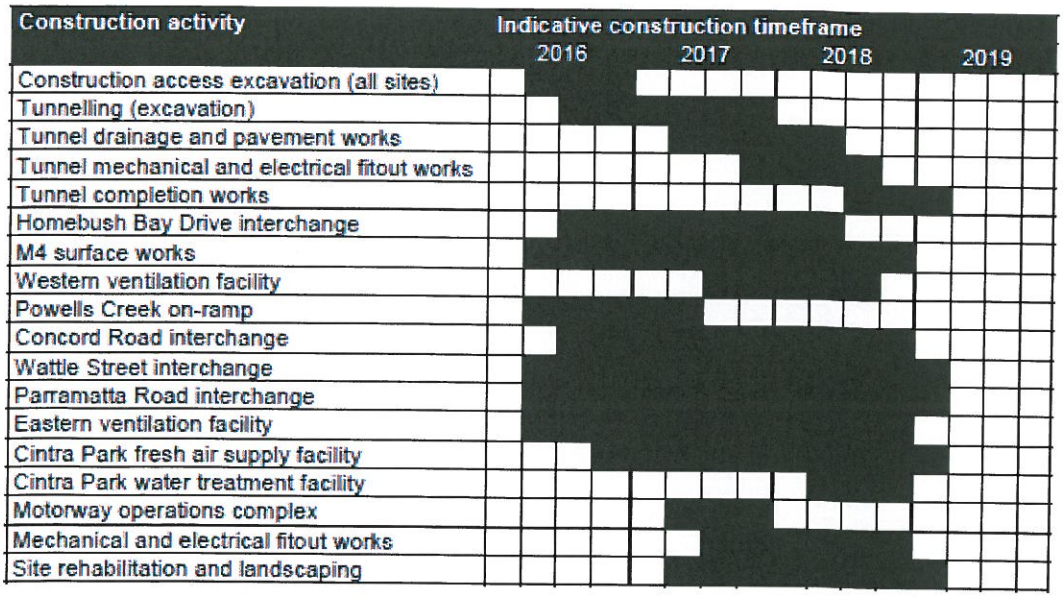
Environmental impact statement (EIS) process

Date	Activity
23 April 2010	Coordinator-General's report on EIS (713 KB) released. • Appendix 1 - Conditions (404 KB) • Figure 1 - Map of the project (409 KB)
2 July 2009	Supplementary EIS submitted.
25 October 2008 to 15 December 2008	Public consultation on EIS.
18 April 2008	Terms of reference for EIS (386 KB) released.
1 December 2007 to 31 January 2008	Public consultation on draft terms of reference for EIS.
30 November 2007	Project not deemed a 'controlled action' by Commonwealth Minister for the Environment.
5 November 2007	Project referred to Commonwealth Minister for the Environment.
2 November 2007	Gazettal of significant project declaration (190 KB)
28 September 2007	Application, including initial advice statement (905 KB), submitted.

Above: Legacy Way project EIS process

Whereas the M4 – East project has allocated until 2nd November 2015 for public exhibition of the EIS, then for construction to begin in the second quarter 2016 (see below)—inadequate time for submissions and findings of EIS to be considered, summarised and incorporated?

Table 2.1 Indicative construction program overview



Above: The construction schedule, starting in the second quarter of 2016 and continuing to the first quarter of 2019 (taken from Appendix M, p. 12)

Seemingly inconsistent assessment of level of impacts between SIA (Appendix M) and EIA (Appendix N), and Chapter 14 Social and economic, raising concerns as to information left of the 'main document' and included only in Appendices:

- While seemingly significant heritage effects are identified in Appendix M and concerns raised by local councils regarding this, the only mention in the main document's Chapter 14 Social and economic comes briefly under 'Section 14.4.2 Changes in amenity' ('loss of heritage items and changes to streetscapes') and concerns brought up during community consultation (Section 14.1.4)
- Health, mentioned in Appendix M (p. 87) as 'worst case assessments without mitigation would likely generate health impacts for some receivers during some works', though these are not elaborated on in Chapter 14, with mentions of 'health' limited to issues raised during community consultation (section 14.1.4), under construction impacts and operational impacts as 'Health of the community' (though no further information is given), and in broad terms (such as 'Relocation health risks' or 'important for community health'). Given community health concerns (and those raised during consultation with the public and councils)—this issue needs to be better addressed to ensure the appropriate 'mitigation' measures as mentioned are followed

- The document is poorly worded and constructed, with errors such as 'Table 14.8 outlines the impacts on all directly impacts and potentially indirectly social infrastructure facilities' reducing comprehension and making it all the more difficult for people attempting to read the document and understand the ramifications
    - Also differing page number formats (such as between Appendices M and N) increase difficulty in referring to specified sections

Assessment methodology

- Outlines the methods used to conduct the social and economic impacts, including the socio-economic assessment methodology (Chapter 14, p. 2), a social impact assessment framework and rating table (Chapter 14, p. 3) where impacts are evaluated in consideration of their duration and spatial scope, and the combination of these two is given as the level of impact. It is difficult from this point on (and including in the SIA and EIA) to see this methodology utilised in any great detail, and especially not with any consistency
    - For instance, how does the EIA come to the finding that 'Overall, the assessment has concluded that the positive impacts on businesses and the economic benefits of the project are expected to outweigh any negative impacts that cannot be satisfactorily mitigated' (Appendix N, p. 9-1)?
- The social impacts of transport infrastructure, prior to analysis (given in the methodology section), are considered to be 'property acquisition, community networks and amenity' (Chapter 14, p. 2), an insufficient and assumptive starting point for a project of this scope and impact
- The maximum spatial scope of the Impact assessment rating criteria is 'Inner western region of Sydney'—though with this project touted to be the 'biggest transport project in Australia' (http://www.westconnex.com.au/news/media_releases/media_releases_2013/20130919_biggest_transport_project_begins.html) the economic and social ramifications of it will be far broader than this. The scope of this section is too confined. For instance:

- 'Significant subsurface works associated with the project, such as tunnelling, would occur outside these precincts; however, these are not expected to impact at the surface'—no objective analysis or findings from other sections given, assumed from the start of this section
- 'City of Sydney Council LGA is outside the project footprint and would be indirectly affected'—at this scale transport infrastructure would be expected to affect traffic flows and the central city of the region in which it is implemented. Also, 'indirect effects' that positively boost the state's economy are examined in a subsequent section

- Community consultation is not distinguished between its different elements or functions (Chapter 14, p. 6), for example consultation 'undertaken...during land acquisition and community engagement activities' is unlikely to allow for any collaboration or empowerment of the community. 'Consultation' will continue through to operation of the M4 – East project, but the lack of clarification between types of consultation on the IAP2 spectrum (https://www.iap2.org.au/resources/iap2s-public-participation-spectrum) in this section indicates insufficient consultation
  - Particularly for the EIA, which was not based on direct consultation (see Appendix N, p. 3-2)—instead using data from other sections of the EIS, stating that consultation with businesses and business groups will continue
- The SIA (Appendix M) is not definitive, and would have hopefully been able to collect more reliable data so that the effects and its findings could be validated:
  - 'It is important to note, that not all social infrastructure may be captured in this report. Information has been gathered through desktop research, site visits, information from Councils and information provided as part of community consultation. There may be some social infrastructure which is not identified at this stage but it is anticipated that Appendix C will be continually updated as part of the ongoing environmental planning and assessment process' (Appendix M, p. 49)
- The EIA (Appendix N) is not based on a sound business case or cost-benefit analysis, thus limiting detail and the accuracy of any findings made
  - For instance there is no consideration of negative, direct or indirect effects to the 'wider state economy' (Appendix N, p. 6-1), despite consideration of several positive indirect or accumulative effects
  - 'For the purpose of the EIA, an affected business has been defined as a business that would be impacted by property acquisition, changes in amenity, changes to accessibility or changes in the volume of passing trade due to the construction and operation of the project'—though a figure for the actual total number of businesses these changes affect is not provided in the EIS
- The scope was wider (including the wider state economy) for the EIA (Appendix N)—but this is not made clear in Chapter 14 Social and economic where analysis takes places seemingly simultaneously between social and economic impacts, at differing scales
- In 'Chapter 14 Social and economic', Appendix M and Appendix N, cumulative benefits are given preference (such as overall travel time improvements to 2031 once all project sections are complete) while cumulative negative impacts of the overall project are largely overlooked
  - *If cumulative negative aspects were considered, the opportunity cost of not spending $15.4 billion on a more efficient transportation system (or any public asset) could be evaluated (if the benefits are considered for the whole project at a NSW scale, so too should the negative aspects). Instead, the EIA is by its own admission predominantly*

'a qualitative assessment of the impacts' (Appendix N, p. 3-4), despite its use of economic multipliers as a quantitative measure

Existing environment

- A 52% rise in urban population to 2031 as will be experienced in the study area alone needs different solutions to roads—local congestion will be an issue without increased traffic/changed conditions due to construction and 'rat-running' to avoid tolls during operation
- Given the types of businesses in the area (the major three being real estate, professional and technical), and the focus in the preceding 'benefits' of the project on freight, it is clear that the project will be of minimal economic benefit to those businesses within the study area
- 2% travelling by bus in the area—yet one of the big 'benefits' of this project is improved bus service—not necessarily needed in the area with such low patronage and given train connections within the local study area (7 train stations)
- Just 30-40% of trips during peak and business hours are for business purposes, and this high level of other discretionary trips (60-70%) provides an opportunity for traffic demand management strategies to reduce congestion and increase efficiency without expanding the roadway. Though 'additional capacity is limited during peak periods', removing even a limited percentage of these discretionary trips, or having them change to out of peak use of the roadway, would remove the need for the M4 – East project
- 'Congestion costs' as quoted in the report are crude measures that simply assume an hourly wage that everyone would be earning and multiply it by the time they are in traffic, and the modelling that leads to the rise to costs of $8.8 billion does not consider the effects of 'peak car' and changing consumer and travel trends (Newman and Kenworthy, 2015) such as the possibility of *reduced* per capita or even *reduced* overall car use. If congestion costs are to be included, so too could measures such as the cost of associated greenhouse gas emissions from the project on the environment, and also the social and economic cost of health problems associated with increased car use and sedentary lifestyles
- Simply listing social infrastructure within the study region cannot be defined as social impact assessment—nowhere (either in Chapter 14 or in the Social Impact Assessment) is there a systematic review of each piece of (social) infrastructure against a best-practice framework to determine whether it will be affected and, if so, the extent to which it will be
- Under 'Existing environment of social infrastructure', little is made of the sense of community or the impact the project might have. Social infrastructure can be defined as the 'hard' infrastructure (Hancock, 1993) (such as halls, schools, churches etc. and is rudimentarily addressed in this SIA and EIS) and the 'soft' infrastructure (such as the relationships that form between people and groups in the community and is largely overlooked in this report)
    - A relevant example of 'soft' social infrastructure might be the fact that in many suburbs groups have mobilised against the project—simultaneously giving an idea of community sentiment regarding the project, community spirit and the types of social aspects that the report fails to even approach
    - The social effects of such large scale road projects are evident in works such as Jacobs (1961) and are hinted at by the local government submissions in this report (such as concern by Ashfield Council regarding the mobility, safety, connectivity and isolation of its older residents) (see Appendix M, p. 61). Many cities globally have realised this and have either stopped building large road projects, or are ripping existing ones down

Assessment of construction impacts

- The fact that the first construction impact is economic stimulus and a boost in the economy and no evaluation of its effects (such as 'minor') shows that the framework of evaluating impacts outlined in the methodology section has not been followed, especially considering the far greater negative impacts that will occur
    - 'increase in demand for labour may increase wages in the region, particularly for construction workers'—no reference or mention of where else has happened in either the main document or the EIA
- Noise and vibration—only action is to consider more measures
- Visual environment only considers residents and workers—disregards context given above (that the area also includes businesses and important social infrastructure such as schools, churches etc) which would require shoppers, students, etc. to be included—otherwise why was the 'Existing environment' given in such detail?
- While changes to accessibility appear to have been evaluated against the framework listed in the methodology, it is not clear how they are rated (eg are they evaluated as 'minor' impacts due to them being considered 'short-term' but with considerable effects, or some other combination?)
- Given the impact assessment rating criteria (Table 14.2), the medium-term timeframe and the municipality (and in some cases regional) effects of these considerations, it can be assessed that each of the impacts concerning traffic delays would be at least moderate (though no measure is given in the EIS)?
- Property acquisition:
    - Simply stating that dwellings on partially acquired properties will not be affected is insufficient—what measures are to be taken to ensure this from a social/economic perspective, or what reason is there to assume that they will not be affected?
- '14.3 Assessment of construction impacts' lists 'Health of the community' as one of six considerations that will be discussed in the following section, however there is no such section

Assessment of operational impacts

- To list the negative aspects of surface works in dot point form in Chapter 14 given the extent of the impact they will have socially *and* economically on the region (consider: loss of vegetation screening, new road infrastructure – interchanges, tunnel ramps, bridges/flyovers and new noise walls, closer proximity to new road infrastructure for some properties, ancillary operation facilities such as ventilation facilities, the motorway control centre, electricity sub-stations and the water treatment facility, loss of heritage items and changes to streetscapes) is insufficient, with minimal additional detail given in Appendices M and N (for instance regarding the new road infrastructure and the ventilation stacks, electricity sub-stations and the loss of heritage items)
- In Appendix M health is listed (p. 93), talks about vehicle emission rates however not at the emission stacks (should be addressed here considering community concern and council concern at the social impacts of these ventilation facilities)
- For those properties affected by noise of the project it is assumed that they will 'keep external windows and doors shut and have minimal use of outdoor areas' and that 'Impacts on the use and enjoyment of outdoor areas due to increased noise may result in increased levels of stress at individual properties'

- Minimal consideration is given to existing businesses along Parramatta Road, especially in the EIA, despite the fact of a '19% loss of output and full time employment for businesses along Parramatta Road due to reduced passing trade, equivalent to $7.3 million output'
    - Although 'This assessment does not take into account the **potential increase in passing trade for businesses along Parramatta Road, west of Concord Road, from an increase in traffic volumes associated with drivers choosing to avoid the motorway tolls.** Five businesses were identified as potentially benefitting from an increase in passing trade, comprising service stations, a car wash and cafes/restaurants.'—making the possibility of 'rat-running' clear, and again showing preference to include data when it benefits the issue in question
    - The inclusion of such broad and abstract terms such as claims that 'Travel time savings (or transport efficiency) provide significant social benefits, freeing more time for recreation, social interaction and economic activities, all of which contribute to physical and mental health. With reduced congestion on major roads in the long term, local mobility would also likely be enhanced. Parramatta Road is currently a barrier to many local and regional social networks. Reduced congestion at intersections to cross the corridor and on the road itself would be an incentive for increased expansion across the corridor for community interaction, enhancing access to regional social infrastructure such as Sydney Olympic Park and Flemington Markets.' These claims open the door to analysis through similar broader lenses including car dependence (and its effects on population health, the economy and societal connections), induced traffic demand and impacts on social infrastructure/community connectedness
- 'Improvements in public transport availability and efficiency would have broad social benefits. The use of public transport includes incidental exercise (eg walking to and from bus or train stops), increasing the chance of travellers meeting recommended daily physical activity targets. A more active lifestyle can help reduce the risk of preventable diseases, including coronary heart disease, stroke, type 2 diabetes, obesity and some cancers. It can also help improve mental health, community life, social wellbeing and community safety.' *Taken directly from the document—well said*
- '14.4 Assessment of operational impacts' lists 'Health of the community' as one of six considerations, however no further details are given

Assessment of cumulative impacts

Construction:

- Cumulative impacts most likely to occur because of concurrent construction activity (such as new M5 and M4 widening)—employment and economic stimulus opportunities, increased local employment opportunities, potential higher wages for construction workers, opportunity for local businesses to supply the goods and services. To consider these positive aspects as the first 'cumulative impacts' is difficult to comprehend, and to exclude any potential negative cumulative impacts of multiple construction works from Chapter 14
- No further mention in Chapter 14 of how any other negative impacts during construction would interact with each other or on other users of the area (residents, business owners etc.), which is surely one of the points of cumulative impacts (eg loss of local amenity AND loss of local service AND loss of accessibility AND impacting on more vulnerable groups such as elderly populations...)

- *Some* negative cumulative impacts of construction are given in Appendix M (p. 95): 'Construction of the project and M4 West (Parramatta to Homebush) would overlap, resulting in extended durations of construction impacts. At a local and regional level, for commuters, public transport users, pedestrians and cyclists, social impacts related to travel delays, diversions and inconvenience, exposure to visual and noise amenity impacts would be prolonged.'

Operation:

- No negative cumulative social and/or economic impacts of the operation of this project are outlined (needs to be a people's EIS with lots)—not even negative operation impacts given in Appendix M

Management of impacts

- Management of changes to amenity, traffic and access refers readers to other chapters, but this is the section in which the *social* and *economic* impacts of these should be addressed in detail. They are not
- Bill Boyce and Reg Coady reserves are listed as being restored to their 'pre-construction condition' with the timing given as 'pre-construction'—this would be nice (ie to not lose park land) but is certainly not the plan and confusing as to their meaning?
- Mitigation works, such as those to reduce impacts on social infrastructure (Appendix M, p. ii), centre predominantly around consultation and lack clear and decisive measures in which tangible effects (such as noise, vibration and visual amenity) will be addressed
- Given the extent of the social and economic impacts that *will* occur as a result of the project, the list of proposed actions is insufficient in both impacts that it addresses and the detail of responses given for the matters that are addressed