



# WestConnex M4-M5 Link

## Mainline Tunnel

Modification report

### Appendix A

Environmental assessment requirements





# Environmental Assessment Requirements

This appendix outlines the Environmental Assessment Requirements for each key element of the proposed modification. The Environmental Assessment Requirements and the location within the modification report that each requirement is addressed are proved in **Table 0-1**.

**Table 0-1 Environmental Assessment Requirements**

<b>Northcote Street civil and tunnel site</b>		
<b>Key issues</b>	<b>Environmental assessment requirement</b>	<b>Where addressed</b>
<b>1. Construction transport and traffic</b>	(a) Assessment of car parking arrangements for the construction workforce including the use of a shuttle bus for workers. This would be a qualitative assessment. The impact of shuttle buses on the road network surrounding the Northcote Street site would be assessed through the LinSig assessment.	Section 6.3.1 of the modification report and Chapter 4 of Appendix B (Traffic and transport report)
	(b) Quantitative assessment of traffic impacts associated with the proposed heavy vehicle and light vehicle estimates during the AM and PM peak hours in the forecast peak construction year (2021). This would be a LinSig model consistent with the construction traffic modelling methodology used for the EIS and the PIR and would include mid-block road capacity and performance of signalised intersections.	Section 6.3.1 of the modification report and Chapter 4 of Appendix B (Traffic and transport report)
	(c) Quantitative and qualitative assessments of other traffic and transport impacts including access, on-street parking, pedestrians and cyclists, public transport and traffic crashes.	Section 6.3.1 of the modification report and Chapter 4 of Appendix B (Traffic and transport report)
	(d) Swept-path analysis of key intersections along the proposed heavy vehicle haulage route.	Section 6.3.1 Chapter 4 of Appendix B (Traffic and transport report)
	(e) A separate assessment of traffic impacts from heavy vehicles using the alternative Wattle Street 'G-loop'. This would include a LinSig model scenario, and qualitative assessment of other traffic and transport impacts including access, on-street parking, pedestrians and cyclists, public transport and traffic crashes.	Section 6.3.1 and Chapter 4 of Appendix B (Traffic and transport report)
	(f) Detail the criteria under which spoil haulage route options for the Northcote Street civil and tunnel site would be used	Section 4.2.4 of the modification report
<b>2. Construction air quality</b>	(a) Assessment of air quality including dust impacts associated with the use of the site for tunnelling and associated activities during the construction period. This would be a risk-based assessment consistent with the assessment prepared for the EIS.	Section 6.3.2 of the modification report and Chapter 4 of Appendix D (Air quality report)

<b>3. Noise and vibration – amenity and structural</b>	(a) Assessment of noise and vibration impacts including sleep disturbance associated with the use of the site for tunnelling and associated activities during the construction period. For the purposes of the assessment, the design specifications for the acoustic shed from the M4 East Construction Noise and Vibration Impact Statement: Northcote Tunnel Support Site (June 2016) would be used.	Section 6.3.3 of the modification report and Chapter 5 of Appendix C (Noise and vibration report)
	(b) The noise assessment must use the as-built design specifications for the existing acoustic shed unless confirmation is provided that the shed has been built to the design specifications detail in the <i>M4 East Construction Noise and Vibration Impact Statement: Northcote Tunnel Support site</i>	Chapter 5 of Appendix C (Noise and vibration report)
	(c) Assessment of traffic noise impacts including sleep disturbance for sensitive receivers fronting the proposed heavy vehicle spoil haulage route. This would include assessment of both route options (Ramsay Street and the existing Wattle Street 'G-loop') and would be consistent with the construction traffic assessment methodology used in the EIS and PIR. The assessment would be undertaken using the Road Noise Policy, NSW EPA, 2011 and would also include a qualitative assessment of potential impacts associated with Lmax (peak noise level) events.	Section 6.3.3 of the modification report and Chapter 5 of Appendix C (Noise and vibration report)
	(d) Assessment of ground borne noise and vibration impacts associated with the proposed construction access tunnel.	Section 6.3.3 of the modification report and Chapter 5 of Appendix C (Noise and vibration report)
<b>4. Visual amenity</b>	(a) Assessment of visual impacts associated with the proposed construction infrastructure (e.g. acoustic shed, site offices, workshop) when viewed from nearby sensitive receptors and public vantage points including traffic along this section of Parramatta Road.	Section 6.3.6 of the modification report
<b>5. Socio-economic, land use and property</b>	(a) Assessment of settlement impacts associated with proposed construction access tunnel consistent with the assessment prepared for the EIS.	Section 6.3.5 of the modification report
	(b) Assessment of proposed changes to utility connections required for the site.	Section 6.3.5 of the modification report
<b>6. Water - hydrology</b>	(a) Assessment of potential groundwater impacts associated with the proposed temporary access tunnel having regard to local geological and groundwater conditions and potential cumulative groundwater impacts as a result of proximity to the M4 East tunnels.	Section 6.3.8 of the modification report

<b>7. Flooding</b>	(a) Qualitative assessment of drainage and flooding impacts associated with the site, including consideration of potential flooding impacts on the tunnel drive.	Section 6.3.4 of the modification report and Chapter 4 of Appendix E (Surface water and flooding report)
<b>Parramatta Road West and East civil sites</b>		
<b>Key issues</b>	<b>Environmental assessment requirement</b>	<b>Where addressed</b>
<b>1. Construction transport and traffic</b>	a) Assessment of heavy vehicle and light vehicle construction traffic movements to and from each civil and tunnel support site including potential impacts on road network performance, traffic and pedestrian safety and public transport services on Parramatta Road.	Section 6.4.1 of the modification report and Chapter 4 of Appendix B (Traffic and transport report)
	b) Assessment of on-site carparking provision for the construction workforce in the Haberfield and Ashfield area and arrangements proposed to manage carparking during the construction period.	Section 6.3.1 of the modification report and Chapter 4 of Appendix B (Traffic and transport report)
<b>2. Construction air quality</b>	a) Assessment of air quality including dust impacts associated with the proposed establishment and use of the civil and tunnel support sites and associated activities during the construction period. This would be a risk-based assessment consistent with the assessment prepared for the EIS.	Section 6.2.4 of the modification report and Chapter 4 of Appendix D (Air quality report)
<b>3. Noise and vibration</b>	a) Qualitative assessment of noise and vibration impacts including sleep disturbance associated with the proposed use of the civil and tunnel support sites on sensitive receivers surrounding each site including a comparison with relevant EIS assessment findings for these sites.	Section 6.4.3 of the modification report and Chapter 5 of Appendix C (Noise and vibration report)
	b) Qualitative assessment of traffic noise impacts including sleep disturbance for sensitive receivers associated with heavy vehicle and light vehicle construction traffic movements to and from each civil and tunnel support site. The assessment would be undertaken using the Road Noise Policy, NSW EPA, 2011 and would also include a qualitative assessment of potential impacts associated with L <sub>max</sub> (peak noise level) events.	Section 6.4.3 of the modification report and Chapter 5 of Appendix C (Noise and vibration report)
<b>4. Visual amenity</b>	a) Assessment of visual impacts associated with the proposed construction infrastructure (e.g. site offices, storage areas, workshop and carparking areas) when viewed from nearby sensitive receptors and public vantage points including traffic along this section of Parramatta Road.	Section 6.4.6 of the modification report

<b>Temporary pedestrian overpass across Parramatta Road</b>		
<b>Key issues</b>	<b>Environmental assessment requirement</b>	<b>Where addressed</b>
<b>1. Construction transport and traffic</b>	(a) Assessment of safety impacts associated with the pedestrian overpass for pedestrians and traffic (including public transport) using Parramatta Road.	Section 6.4.1 of the modification report and Chapter 4 of Appendix B (Traffic and transport report)
	(b) Assessment of traffic impacts associated with construction of the temporary pedestrian overpass including any impacts to traffic using this section of Parramatta Road. This would be a qualitative assessment as impacts on the road network would occur during establishment and decommissioning only and therefore over a short duration.	Section 6.4.1 of the modification report and Chapter 4 of Appendix B (Traffic and transport report)
<b>2. Noise and vibration - amenity and structural</b>	(a) Assessment of noise and vibration impacts associated with construction of the temporary pedestrian overpass.	Section 6.4.3 of the modification report and Chapter 5 of Appendix C (Noise and vibration report)
	(b) Assessment of noise impacts associated with the on-going use of the pedestrian overpass during the construction period. This would be a qualitative assessment.	Section 6.4.3 of the modification report and Chapter 5 of Appendix C (Noise and vibration report)
<b>3. Visual amenity</b>	(a) Assessment of visual impacts associated with the pedestrian overpass when viewed from nearby sensitive receptors and public vantage points including traffic along this section of Parramatta Road.	Section 6.4.6 of the modification report
	(b) Assessment of night lighting impacts associated with the on-going use of the pedestrian overpass during the construction period. This would be a qualitative assessment.	Section 6.4.6 of the modification report
<b>4. Heritage</b>	(a) Assessment of the potential impact of the pedestrian overpass on the visual setting of the adjacent Haberfield Heritage Conservation Area.	Section 6.4.8 of the modification report

<b>Operational water treatment plant at St Peters</b>		
<b>Key issues</b>	<b>Environmental assessment requirement</b>	<b>Where addressed</b>
<b>1. Construction transport and traffic</b>	(a) Qualitative assessment to determine traffic impacts associated with construction of the water treatment plant <sup>1</sup> .	Section 6.6.1 of the modification report and Chapter 4 of Appendix B (Traffic and transport report)
<b>2. Air quality</b>	(a) Qualitative assessment of air quality (dust) impacts associated with construction of the water treatment plant.	Section 6.6.2 of the modification report and Chapter 4 of Appendix D (Air quality report)
<b>3. Noise and vibration - amenity and structural</b>	a) Qualitative assessment to determine noise impacts associated with construction of the water treatment plant.	Section 6.6.3 of the modification report and Chapter 5 of Appendix C (Noise and vibration report)
	b) Operational noise impacts associated with plant required for the water treatment plant (e.g. pumps) in consideration of the NSW EPA Industrial Noise Policy.	Section 6.6.3 of the modification report and Chapter 5 of Appendix C (Noise and vibration report)
<b>4. Visual amenity</b>	(a) Visual impacts associated with the water treatment plant when viewed from nearby sensitive receptors and public vantage points.	Section 6.6.6 of the modification report
<b>5. Socio-economic, land use and property</b>	(a) Impact of the water treatment plant on proposed land uses including the New M5 St Peters interchange and associated landscape areas and the proposed open space area to the east on the south side of Campbell Road.	Section 6.6.5 of the modification report
<b>6. Water – hydrology</b>	(a) Whether treatment of the discharge point would be required to mitigate flow rates, minimise scour potential and minimise disturbance of contaminated sediments within Alexandra Canal.	Section 6.6.4 of the modification report and Chapter 4 of Appendix E (Surface water and flooding report)
<b>7. Soils</b>		
<b>8. Water - quality</b>	a) Quantity and quality of discharge from the water treatment plant and impact on the receiving environment (water ways). b) How treated wastewater from the water treatment plant would be discharged and the location of the discharge point.	Section 6.6.4 of the modification report and Chapter 4 of Appendix E (Surface water and flooding report)
<b>9. Flooding</b>	(a) Qualitative assessment of potential flooding and drainage impacts during construction and operation.	Section 6.6.4 of the modification report and Chapter 4 of Appendix E (Surface water and flooding report)
<b>10. Heritage</b>	(a) If a new discharge point is proposed any potential impact of the required works on the significance of listed heritage items (e.g. Alexandra Canal).	Section 6.6.8 of the modification report

<b>Deletion of the Darley Road civil and tunnel site</b>		
<b>Key issues</b>	<b>Environmental assessment requirement</b>	<b>Where addressed</b>
<b>1. Construction transport and traffic</b>	a) Detail any increase in spoil volumes proposed at the Northcote Street civil and tunnel site (by comparison to the Parramatta Road West civil and tunnel site in the EIS), and any changes to spoil volumes from the other tunnelling sites (by comparison to the EIS) as a result of the removal of the Darley Road civil and tunnel site.	Section 6.5.6 of the modification report
	b) Confirm that any increases in spoil volumes will be handled by increasing the overall duration of tunnelling at each tunnelling site and that no changes are proposed to the EIS or Submissions and Preferred Infrastructure Report (SPIR) heavy vehicle spoil haulage volumes (daily and peak hour volumes) except as a result of the proposal to tunnel from the Northcote Street civil and tunnel site (by comparison to the Parramatta Road West civil and tunnel site in the EIS).	Section 6.5 of the modification report
<b>2. Noise and vibration and visual amenity</b>	a) Detail any additional utility infrastructure such as pumps required for the construction water treatment plants and an assessment of associated noise and visual impacts.	Section 6.5.6 of the modification report
<b>3. Socio-economic, land use and property</b>	a) The estimated increase in duration (in months) of tunnelling and spoil haulage from each of the tunnelling sites as a result of the removal of the Darley Road civil and tunnel site.	Section 6.5
	b) An assessment of the potential impacts on the local community including residents, local businesses and community facilities as a result of the extended tunnelling duration.	Section 6.5.4 of the modification report
<b>4. Water - quality</b>	a) Quantity and quality of discharge from the other construction water treatment plants as a result of the removal of Darley Road civil and tunnel site. This will include the location of the discharge points and an assessment of potential impacts on the receiving environment (water ways) arising from any changes in discharge volumes, rates and water quality.	Section 6.6.4 and section 6.5.6 of the modification report and Chapter 4 of Appendix E (Surface water and flooding report)