Submission No 400

INQUIRY INTO IMPACT OF THE WESTERN HARBOUR TUNNEL AND BEACHES LINK

Organisation: Willoughby City Council

Date Received: 17 June 2021

WILLOUGHBY CITY COUNCIL
City of Diversity

17 June 2021

Legislative Council
Parliament of New South Wales
Macquarie Street
SYDNEY NSW 2000

Attention: Public Works Committee

Dear Sir/Madam,

RE: INQUIRY INTO THE IMPACT OF THE WESTERN HARBOUR TUNNEL AND BEACHES LINK – WILLOUGHBY CITY COUNCIL SUBMISSION

The **Western Harbour Tunnel and Beaches Link** program of works (the Program) comprises two separate but related projects:

- **The Western Harbour Tunnel and Warringah Freeway Upgrade (WHT/WFU)** project
- **The Beaches Link and Gore Hill Freeway Connection (BL/GHFC)** project

The Program is a city-shaping project that, if built, will have significant traffic and transport, environmental, social and economic impacts on the Willoughby local government area (LGA).

Council made a submission on the Environmental Impact Statement (EIS) for each project during their respective exhibition periods. These are attached to this submission as follows:

- **Attachment 1** – Willoughby City Council – Western Harbour Tunnel and Warringah Freeway Upgrade – Submission to Transport for NSW – undated (submitted March 2020)
- **Attachment 2** – Willoughby City Council – Beaches Link and Gore Hill Freeway Connection – Submission on Environmental Impact Statement – March 2021

Council's comments in this submission relate primarily to the BL/GHFC project, given its location and thus more direct impact on Willoughby LGA. These Attachments are referred to in Council's comments in response to each point of the Terms of Reference (ToR) for the Inquiry on the following pages.

Thank you for your consideration of this submission. You can contact Andrew Gillies, Strategic Transport Planner on for clarification on any of these points.

Yours sincerely,

Ian Arnott
PLANNING MANAGER, PLANNING AND INFRASTRUCTURE

Inquiry into the impact of the Western Harbour Tunnel and Beaches Link

Terms of Reference (ToR) and Willoughby City Council responses

That the Public Works Committee inquire into and report on the impact of the Western Harbour Tunnel and Beaches Link Project, including each of its constituent parts being the Warringah Freeway Upgrade, the Western Harbour Tunnel and the Beaches Link, including:

(a) the adequacy of the business case for the project, including the cost benefits ratio,

Council response:

As stated in part 4a of Council's submission on the EIS for the Beaches Link and Gore Hill Freeway Connection (BL/GHFC) project (see Attachment 2 – pg. 17), Council is of the view that:

> *"The EIS has not demonstrated that the Program overall, and the project specifically, is the best solution to address the transport issues facing the northern Sydney region (as outlined in Chapter 3), and has not thoroughly assessed feasible public alternatives to the project, such as an extension of the Sydney Trains or Sydney Metro network (e.g. between Chatswood and Dee Why)."*

The related recommendation 4a states:

> *"It is recommended that Transport for NSW (TfNSW) release the final Business Case prepared for the Program/project to demonstrate why the Program/project was considered the best option for addressing the transport issues facing the northern Sydney region."*

Given the scale and impact of the Program overall – and the BL/GHFC project within Willoughby local government area (LGA) in particular – this remains Council's recommendation. Without the Final Business Case being released to the public, it is impossible to determine the adequacy and overall cost benefit ratio of the Program overall, or its constituent parts – the Western Harbour Tunnel and Warringah Freeway Upgrade (WHT/WFU) and BL/GHFC – individually.

(b) the adequacy of the consideration of alternative options,

Council response:

As stated above, Council is of the view that TfNSW has not demonstrated that the Program overall (particularly the BL/GHFC project) is the best solution to address the transport issues facing the northern Sydney region. In particular, the EIS for the BL/GHFC project has not thoroughly assessed feasible public transport alternatives such as an extension to the Sydney Trains or Metro network.

Broad claims with little justification are described in Chapter 3 of the EIS for the BL/GHFC project to dismiss other alternatives. The phenomenon of 'induced demand' created by expanding road space is not addressed in any level of detail by the EIS or its Appendix F (Technical working paper: Traffic and Transport – December 2020 – Jacobs Group (Australia) Pty Ltd).

As per recommendation 4a of Council's submission on the EIS for the BL/GHFC project:

"It is recommended that TfNSW release the final Business Case prepared for the Program/project to demonstrate why the Program/project was considered the best option for addressing the transport issues facing the northern Sydney region.

If this is not forthcoming, in its Response to Submissions, TfNSW is to provide a more thorough and comprehensive assessment of alternative public transport options to the project – in particular an extension of the Sydney Trains or Sydney Metro network (e.g. between Chatswood and Dee Why). Evidence is to be provided as to why these public transport options were discounted in favour of the project.

Furthermore, TfNSW is to address the issue of induced demand, providing a more direct, detailed, relevant and clear assessment of what effect this phenomenon will have on the project itself and arterial and local roads within the vicinity of the project footprint. This assessment should also have a longer time horizon than just 2027 and 2037."

This remains Council's recommendation.

(c) the cost of the project, including the reasons for overruns,

Council response:

A figure of $14 billion has been quoted in the media as the projected cost for the Program overall. However, as far as Council is aware, this figure has not been made official by the NSW Government – either in the EIS for either the WHT/WFU or BL/GHFC projects or separately – nor has the breakdown of this cost between the two constituent projects been defined.

Ultimately this is a matter for the NSW Government and TfNSW to clarify, however Council's overall view is that there needs to be greater transparency about the cost of the Program overall and its constituent parts respectively.

(d) the consideration of the governance and structure of the project including the use of a 'development partner' model,

Council response:

This is a matter for the NSW Government and TfNSW. Council has not raised this matter in its submissions on the EIS for either project.

(e) the extent to which the project is meeting the original goals of the project,

Council response:

Chapter 3 of the EIS for the BL/GHFC project talks about the strategic context and project need.

As described in part 3a of Council's submission on the EIS (see Attachment 2 – pg. 5), it is also believed that the project is deficient in meeting the stated goals of the project and aligning with broader state and Council's own priorities. This includes:

- How the project contributes to achieving the '30-Minute City' ideal *by public transport*, as per the wording of various state strategic plans including *Future Transport 2056.*
- How the project aligns with all six Outcomes of *Future Transport 2056*, including Outcome 6 – Sustainable, given the projects will perpetuate car dependency and do nothing to help achieve the NSW Government's stated goal to reach net-zero emissions by 2050.

With particular regard to the BL/GHFC project, no clear active and public transport improvements are proposed under the EIS. As a past example, the construction of the Lane Cove Tunnel included reallocating road space to create permanent 24-hr bus lanes in each direction on Epping Rd, due to general traffic being redistributed to the Tunnel.

It is Council's view that such measures should be given direct consideration as part of the assessment and any approval for this project to realise public transport benefits on key corridors to/from the Northern Beaches (e.g. Warringah Rd/Boundary St) and support TfNSW's claim of the project being an integrated transport solution.

(f) the consultation methods and effectiveness, both with affected communities and stakeholders,

Council response:

In relation to the WHT/WFU project (which has been approved), as stated in Council's submission on the EIS for that project (see Attachment 1 – pg. 5):

> *Council would welcome an opportunity to review the Community Communication Strategy approach that will guide interactions with the community and stakeholders and which outlines engagement activities proposed throughout the project design, construction and project opening phases.*

This remains Council's recommendation.

As stated in part 7a of Council's submission on the EIS for the BL/GHFC project (see Attachment 2 – pg. 38):

> *"The overall community engagement approach by TfNSW (formerly RMS) has generally been appropriate to this point, however specific consultation with Council only occurred at a very late stage in the development of the EIS. Early scoping of the project did not include impacted suburbs, particularly in relation to route selection which has created a technical gap in terms of risk assessment."*

Briefings on the projects were held in late 2020 by the project team with the Mayor, CEO, Councillors and staff, and Council thanks the project team for these sessions.

However, the release of the EIS for the BL/GHFC project on 9 December 2020 and the period to make submissions (until 1 March 2021) was a barely adequate time for Councillors, Council staff and

the community to review the thousands of pages of the EIS, especially given the Christmas / summer holiday period.

Council acknowledges the restrictions in consultation due to the ongoing COVID-19 pandemic, however overall Council was disappointed with the timing of the release of the EIS, the inadequate length of the exhibition period and limited direct consultation undertaken by the project team.

As per Recommendation 7a of its submission on the EIS for the BL/GHFC project:

> *"It is recommended that a condition of any approval be included requiring TfNSW to develop and implement a Community Communication Strategy.*
>
> *This Strategy should be developed in consultation with Council, residents, businesses and other key stakeholders such as Parents and Citizens' (P&C) associations and Progress Associations and must detail the framework, methods and indicators that will be used to engage in direct, early and meaningful consultation. In particular, TfNSW is to engage with Council and relevant stakeholders to address impacts created during the construction phase of the project."*

This remains Council's recommendation.

(g) the extent to which changes in population growth, work and travel patterns due to the Covid-19 pandemic have impacted on the original cost benefit ratio,

Council response:

As stated in part 4b of Council's submission on the EIS for the BL/GHFC project (see Attachment 2 – pg. 20):

> *"The impact of the COVID-19 pandemic on travel patterns and traffic patterns (particularly the working from home trend), has not been considered in any detail in the EIS.*
>
> *While it is probably too early to fully understand what permanent impacts the pandemic will have on travel patterns, greater consideration needs to be given to how changed mobility behaviours and travel patterns will impact on forecast traffic demands, both for the Project itself and existing surface routes."*

The related recommendation 4b states:

> *"In its Response to Submissions, TfNSW is to provide further analysis and discussion of what impacts the COVID-19 pandemic has and will have on travel patterns and traffic volume forecasts for the Program overall and the project specifically."*

This remains Council's recommendation.

(h) whether the NSW Government should publish the base-case financial model and benefit cost ratio for the for the project and its component parts,

Council response:

As previously stated in response to ToR point a), it is Council's recommendation that the Final Business Case (including base-case financial model and benefit cost ratio) for the Program overall and its components be made public.

(i) whether the project is subject to the appropriate levels of transparency and accountability that would be expected of a project delivered by a public sector body,

Council response:

This relates mainly to the Final Business Case as previously stated – see Council's response to points a) and b) of the ToR.

(j) the impact on the environment, including marine ecosystems,

Council response:

Council has commented on many environmental aspects of both projects, but in particular the BL/GHFC project. Council's concerns around environmental issues include air quality, noise and vibration, contaminated land, biodiversity loss and the contribution to greenhouse gas emissions. These are described in further detail in Council's submissions, in particular Council's submission on the BL/GHFC project (Attachment 2) in the following sections:

- Part 16. Geology soils and groundwater (pages 76-80)
- Part 17. Hydrodynamics and water quality (paged 80-88)
- Part 18. Flooding (pages 88-90)
- Part 19. Biodiversity (pages 91-193)
- Part 24. Resource use and waste management (page 105)
- Part 25. Sustainability (pages 105-106)
- Part 26. Climate change and greenhouse gas (paged 105-106)

In relation to the BL/GHFC project, Council has particular concerns with the following two locations:

- **Flat Rock Reserve:** The proposed temporary construction support site (with reference code 'BL2') in Flat Rock Reserve is located on the site of a former landfill, with a high likelihood that historic contaminants will be disturbed during the construction phase of the project. As such, Council has notified the NSW Environmental Protection Authority (EPA) under the provisions of *Contaminated Land Management Act 1997* as a result of information provided in the EIS about the potential for contaminated groundwater to migrate from the site, should it be used as proposed.

  As noted in Council's submission (see Attachment 2, pg. 91):

The work proposed at construction support site BL2 will destroy 20 years of investment in site restoration by Council and the community. Given the ongoing commitment by Council and the local community to invest in the site's restoration, this will generate significant community concern.

It is understood that in a letter to the TfNSW project team dated 14 May 2021, the Department of Planning, Industry & Environment (DPIE) has requested "further assessment" through the preparation of a Preferred Infrastructure Report (PIR), in addition to a Response to Submissions Report, that will further examine this and other issues with the BL/GHFC project.

Council does not wish to preempt the outcome of this process and intends to continue engaging with TfNSW project team on this and the other matters raised in its submission. But in summary, Council has particular concerns with the proposed use of this site and the request for "further assessment" in the form of a PIR is supported.

- **Middle Harbour:** As stated in part 16c of Council's submission on the EIS for the BL/GHFC project (see Attachment 2 – pg. 78):

  The work within Middle Harbour will include extensive excavation, dredging and shoreline/water-based movement and activity causing physical damage and water turbidity. This will significantly affect marine life and existing tidal / water flow of Middle Harbour.

  Council has concerns that the dredging impacts at Middle Harbour will potentially release plumes of sediments which may be contaminated due to prior marine industries and the secondary effects of the resuspension of sediments within the shifting tides may have detrimental consequences upon the marine ecology, Northbridge Baths and recreational activities at Middle Harbour due to the turbidity of the water.

  The related recommendations 16c state:

  16c. It is recommended that conditions of any approval be included in relation to the following:
  - *Council is to receive a detailed analysis and plan for impact mitigation that identifies there will be no detrimental effect on the catchment (either long term or short term) due to the site establishment, operation and decommissioning/rehabilitation.*
  - *Council is to receive a detailed analysis and plan for impact mitigation that there will be no short- and long-term detrimental effect of construction and remediation activity on Middle Harbour.*
  - *Council is to receive detailed safety and environmental management plans for consideration and input.*

  These remain Council's recommendations.

(k) the adequacy of processes for accessing and responding to noise, vibration and other impacts on residents, during construction and operationally,

Council response:

Council's submission on the EIS for the BL/GHFC project has commented and made recommendations on these matters in the following parts of Council's submission (Attachment 2):

- Part 10. Construction noise and vibration (pages 60-61)
- Part 11. Operational noise and vibration on (pages 62-63)

Council's comments and recommendations in these sections remain.

(l) the impact of the project on nearby public sites, including Yurulbin Point and Dawn Fraser Baths, and

Council response:

Council has not commented on these two sites specifically given they are not within Willoughby LGA. However, Council has commented on the impacts the BL/GHFC project will have on various public sites in Willoughby LGA throughout its submission on the EIS for the project (Attachment 2) including the following sites:

- Artarmon Reserve, Artarmon
- Flat Rock Reserve / Creek / Gully, Northbridge
- Clive Park, Northbridge
- Middle Harbour

(m) any other related matter.

Council response:

Council has no other specific comments that are not already described in its submissions on the EIS for the WHT/WFU and BL/GHFC projects respectively or in this submission.

Willoughby City Council Western Harbour Tunnel and Warringah Freeway Upgrade Submission to Transport for NSW

Executive Summary

The Western Harbour Tunnel and Warringah Freeway Upgrade project is a city shaping project that, if implemented, will have a significant impact on strategic planning for the communities, environments, transport and traffic movements within the Willoughby local area.

Council has prepared this submission to identify and convey concerns regarding the impact on Council's residents, assets and businesses caused by the Western Harbour Tunnel and Warringah Freeway Upgrade project, as detailed in the TfNSW Reference Documents.

This submission also identifies issues requiring further clarification, improved accuracy and justification. The State Government is invited to respond to these issues upon receipt of this submission. In summary the issues relate to:

- Strategic Planning Matters
- Communication and engagement
- Northern Beaches Link
- Noise and Vibration
- Social Impacts
- Environment
- Traffic and Transport Matters
- Design Issues and Improvement Opportunities
- Construction Traffic Management

The complexity of EIS information was broken down and simplified through the introduction of the EIS guide to reduce the overwhelming extent of information into something more easily digestible. Regardless, residents have raised significant concern about the volume and density of information to be absorbed in a short period of time.

It is unfortunate that no consideration has been given to changed consultation arrangements and stakeholder submissions in light of the impact of State and Federal Government advice and legislation arising from the COVID-19 global pandemic. No engagement with Councillors and key Council personnel across the organisation was offered in the lead up to, nor during, the EIS exhibition period.

The cumulative effect of the Western Harbour Tunnel, Northern Beaches Link and Metro rail projects has not been considered. To date each project has been treated separately and the collective impact on the broader Willoughby community from these projects is not being addressed. It is suggested that the NSW Government needs to undertake an assessment of cumulative socio-economic and traffic impacts of these projects and not just rely on the individual EIS responses to the proposed projects in isolation.

The project should be seen as providing a whole-of-transport solution, and when considered in this context, the current design is deficient in the provision of active transport and bus transport. The project offers the opportunity to introduce substantial safety, efficiency and reliability improvement for bicycle and bus modes, that if implemented would make these modes more attractive at opening and have an enduring positive impact and growth in users.

The traffic and transport modelling provides a guide on the potential performance of the project at opening (2027) and ten years following opening (2037). It is concerning that the performance of the project is only forecast 10 years into the future. It would be reasonable to expect that traffic modelling is undertaken for up to 30 years post opening given the project, should it proceed, will be in operation for 50+ years.

The project provides positive benefits at opening and 10 years following opening with the majority of benefits being experienced by motor vehicle users travelling southbound in the weekday morning and afternoon peak periods. Other directions experience a similar level of benefit to that if the project was not implemented and, in some cases, may lead to a worsening of the operation of the motorway.

The project has the potential to lead to congestion, undesirable rat running and a redistribution of traffic movement within the Willoughby local area at opening and over time as traffic growth continues. The negative effects on safety, health, environment and local amenity as a result of this potential impact are unacceptable.

It is noted that a public transport alternative was not assessed. A public transport solution should be at the very least modelled, analysed and considered.

The area of greatest concern is between Lane Cove Tunnel, Epping Road/ Longueville Road and Miller Street. The modelling reveals poor performance of the mainline and intersections in the weekday morning peak period. Whilst not indicated in the traffic modelling, the northbound and westbound traffic in the Tunnel, Sydney Harbour Bridge and Sydney Harbour Tunnel during the weekday afternoon peak period is likely to lead to congestion and travel time delays as traffic enters the Gore Hill Freeway, Naremburn.

A number of initiatives have been identified that should be strongly considered and desirably introduced to minimise impact on local communities and environments, and to increase the long term resilience and performance of the project and connecting motorways, State Roads and non-State Roads.

A number of suggestions are provided in this submission on the EIS to clarify information, increase accuracy and to improve the project’s strategic and operational outcomes.

Strategic Planning Matters	
Overview	The Western Harbour Tunnel and Warringah Freeway Upgrade project will have a significant impact on the current strategic planning program being undertaken by Willoughby City Council (WCC) and all other Eastern Harbour City Councils who are all responding to directions set out in the Greater Sydney Region and District Plans. This project would appear to work counter to these key Strategic Planning documents for Metropolitan Sydney. The emphasis in Council's endorsed Local Strategic Planning Statement (LSPS) is to create liveable places and strong communities, supported by public transport options, connected walkways and cycle paths to minimise the impact of cars on our roads and provide us with healthier transport choices in the future. This project which is a motor vehicle focused infrastructure upgrade, pays scant regard to how public transport and active transport connections will be addressed and as such its contribution to achieving the strategic vision for Sydney contained in the Sydney Region Plan has to be seriously in question. The indicators to achieve this aspect of the vision in the North District Plan focus on the achievement of a 30-minute city where public transport is used by people to move most efficiently between work, services and home. In addition, the impact on Willoughby's local centres of Naremburn and Willoughby South will be seriously damaging and would negate the considerable effort invested by Council in working with the community to plan for a healthy and economically vibrant future.
Communication and Engagement	
Overall Community Engagement Approach	The overall community engagement approach by TfNSW (formerly RMS) has generally been appropriate for this phase of the project, however specific consultation with Willoughby City Council did not occur nor were any consultations scheduled for the heavily impacted suburbs of Willoughby especially Naremburn. Early scoping of the project did not include impacted suburbs, particularly in relation to route selection which has created a technical gap in terms of risk assessment. TfNSW has endeavoured to provide information in a variety of different mediums for stakeholders including the use of technology to assist stakeholder understanding with the complex and technical aspects of the project design, such as traffic flow, through the interactive portal. The complexity of EIS information was broken down and simplified through the introduction of the EIS guide to reduce the overwhelming extent of information into something more easily digestible. Regardless, residents have raised significant concern about the volume and density of information to be absorbed in a short period of time. No consideration has been given to changed consultation arrangements and stakeholder submissions in light of the impact of

	State and Federal Government advice and legislation arising from the COVID-19 global pandemic. No engagement with Councillors and key Council personnel across the organisation was offered in the lead up to, nor during, the EIS exhibition period. Further, Willoughby residents' concern, lack of confidence in genuine consultation and community interest levels are likely to increase significantly around impacts associated with the future Northern Beach Link EIS.
Consultation with Councillors and Key Council Personnel	The Secretary's environmental assessment requires that the project must be informed by consultation with relevant local government agencies. Chapter 7 of the EIS key milestones for stakeholder engagement states that consultation was held with councils during March/April 2017 following the initial announcement of the project. A launch briefing was held with the Executive Leadership Team and a senior planning staff member. Six meetings in total were held during this first round of consultation with various personnel however specialist traffic / transport personnel were not engaged. A Councillor briefing was held on 20 August 2018 with four key TfNSW personnel as part of the second round of consultation which followed the publishing of further development of the design. The briefing included geotechnical studies, potential impacts, temporary construction support sites, noise, air quality, future land use post construction, the EIS development and feedback received to date from the local community. Another six meetings, to various degrees, were held during this period and again excluded engagement with key traffic / transport personnel. The last meeting held with Council was in May 2019. A commitment was made to come back later in the year with more information upon the release of the EIS. That did not occur. Council has not been engaged at all during the EIS public exhibition consultation program and no arrangements were made to meet with specialist personnel. There has been no meaningful discussion with key personnel holding expertise in the traffic and transport area about the project's traffic implications for Willoughby. This has resulted in a technical gap in the EIS beyond the North Sydney Council boundary. The Traffic and Transport Team Leader from Willoughby City Council proactively attended a generic community drop in session, however belated meeting arrangements late in the EIS phase were cancelled due to meeting implications of the COVID-19 virus.

Consultation Concerns Raised by Key Stakeholder Groups	Progress Associations were invited to attend EIS information sessions, however there were no formal consultation activities arranged with these stakeholder groups as part of the EIS public exhibition program. Feedback received from Progress Associations about the consultation process during the EIS information sessions expressed a desire for greater access to the expertise of subject matter experts and the need for more technical detail in responses that were unable to be managed by communication staff, required further research to respond, or where deferred. Concerns about consultation fatigue were also raised due to a number of large development and infrastructure projects running simultaneously. A mutual concern expressed by the Naremburn, Northbridge, South Willoughby and Castlecrag Progress Associations relate to the WHT impact on traffic flow and the inability of traffic to exit from Brook and Miller Streets. Other concerns raised by stakeholders include disruptive traffic and transport delays during construction and how TfNSW will manage the constantly changing information to help residents plan their journey.
Review of Community Engagement Approach	Council would welcome an opportunity to review the Community Communication Strategy approach that will guide interactions with the community and stakeholders and which outlines engagement activities proposed throughout the project design, construction and project opening phases.
Council's active participation in Western Harbour Tunnel EIS engagement	• EIS hard copies were provided in key locations including the Chatswood Library and customer service area of Council's administration building in Victor St – which included iPad access for submissions. • Communication promotion to Willoughby LGA stakeholders through Council distribution lists for events, e-newsletters and over 6,000 registered Have Your Say participants. • Council Have Your Say website project page established to link with TfNSW resources.

Northern Beaches Link	
Northern Beaches Link and Gore Hill Connection	The EIS for the Beaches Link and Gore Hill Connection project is anticipated to be released in July 2020. Construction is forecast to commence on this project in 2024. The exact construction period is not known but it is estimated to be around 4 years.

It is noted that the Gore Hill Connection is referred to at several points of this EIS however a full risk assessment has not been undertaken. Chapter 6: Construction Work states "Should timeframes for the Beaches Link component of the Beaches Link and Gore Hill Freeway Connection project be advanced, some elements of the Beaches Link component may be delivered as part of the Western Harbour Tunnel and Warringah Freeway Upgrade project..."

This is unacceptable, the Beaches Link and Gore Hill Connection should not be permitted to proceed in any form until the Beaches Link EIS has been published, consulted on and fully assessed. According to the EIS this area is a sensitive environment and there are significant contamination risks.

A limited amount of information relating to this project is provided in the EIS. Whilst a detailed analysis and assessment of this project will be provided as part its own EIS, a review of the information provided reveals that there are likely to be impacts during construction and operation within the Willoughby Local Government area. The Gore Hill Freeway and road network within Artarmon are forecast to experience a worsening in operational performance. Gore Hill Freeway and Reserve Road interchange and intersections in its vicinity are highlighted in the traffic modelling as experiencing a deterioration in operation.

It is considered that the construction and operation of the Northern Beaches Link and Gore Hill Connection project should lead to minimal short term impacts on the existing traffic and transport system and ultimately provide a positive whole-of-transport outcome for all users, in particular sustainable transport modes

Noise and Vibration	
Noise and Vibration	The EIS demonstrates that construction works/activities will generate noise and vibration which will affect the amenity of occupiers of residential premises in proximity to the works and with noise from vehicle movements to other occupiers of residential premises within the local government area. In particular, the Miller St to Willoughby Rd surface works are predicted to generate noise exceedances and night-time noise disturbance over significant periods of time. Given that the area is highly residential, containing a high proportion of young children, this is of great concern particularly regarding educational outcomes and mental health. Council requests to receive a detailed analysis and plan for impact mitigation for occupiers of residential premises within the Willoughby local area that confirms: • there will be no detrimental effects of noise, vibration and construction vehicle movements during the construction period • noise and vibration will be further mitigated during any periods of construction outside of 'traditional' working hours.

	• that an assessment considers measures for the mitigation of potential noise, vibration and impacts upon all areas, post construction. • that vehicle movements will be limited to the Warringah and Gore Hill Freeway. Any access to surface roads should be agreed via a transport plan with Council and should only be considered as an exception during school hours. Need to expand on noise abatement measures once operational as the EIS identifies a number of receivers in the City of Willoughby who will be eligible for noise abatement post construction, suggesting that our traffic impacts will be significant. At property treatments should be mandated as a condition of approval in addition to noise barriers and road treatments. Ongoing noise monitoring should be employed to identify any buildings requiring further treatment after opening. Sensitive receivers such as Naremburn Library, Childcare Centres, Schools, Community Facilities and Churches should be offered noise abatement as a matter of priority.
Social Impacts	
Public Health	Unfiltered ventilation stacks and operations buildings will be built to service the tunnels across the residential area – these are close to schools, homes & hospitals. As a result, surrounding residents may be subject to unacceptable exposure to air pollution. The EIS assumes Euro 6 vehicle standards which have not been legislated so it is likely that pollution impacts are underestimated. Should the project proceed as documented, strict dust control measures are required and dusty work should not be permitted during school pick up and drop off times. The EIS confirms that 7.29Ha of green space will be lost along the route and that several parks such as Cammeray Oval and St Leonards Park will be subject to dust and noise risks during construction. This puts further pressure on Willoughby's limited green spaces which are already under pressure due to increasing population.
Socio-economic	Generally, the project raises a number of concerns for the social well-being of Willoughby residents, including reduced economic productivity, reduced liveability, induced traffic, declining air quality, mode-shifting from public transport and the equity impact of tolls. These concerns are perpetuated by the cumulative effect of the Western Harbour Tunnel, Northern Beaches Link and Metro rail projects. To date each project has been treated separately and the collective impact on the broader Willoughby

	community from these projects is not being addressed. It is suggested that the NSW Government needs to undertake an assessment of cumulative socio-economic impacts of these projects not just rely on individual EIS of proposed projects in isolation. More specifically, the project has potential impacts on community cohesion due to temporarily restricting access to some social infrastructure and meetings places, which may reduce opportunities for social and community interaction. Early engagement with managers of social infrastructure located near to surface construction works/construction support sites and sensitive social infrastructure needs to be conducted and impacts mitigated.
Accessibility	Any adjustments to existing bus stops must be determined in consultation with relevant stakeholders, and advanced notification will be provided to affected bus customers with accessibly issues. Relocations will need to be as close as feasible and with similar amenity to their existing position. Consideration should be given to land bridges across the major roads in the vicinity of the project with the purpose of accommodating pedestrians, prams, and cyclists during and on completion of the project. Consideration should also be given to bus loops to railway stations to create a more pedestrian friendly, healthy environment and encourage the continued use of public transport during the project. The EIS fails to recognise that hundreds of Willoughby City school children must transverse the project footprint daily due to school zoning (Cammeray Public, Anzac Park, Cammeraygal and Willoughby Girls High School). Of particular concern is the bus stop used by dozens of school children close to the Willoughby Rd exit. A bus stop on a land bridge at Merrenburn Ave (which re-joins Naremburn at its commercial centre) would allow for children to be safely re-located away from construction and additional traffic. A land bridge has the potential to reduce other impacts from this project such as noise and pollution and give back to Naremburn some of the visual amenity and access that has been lost due to the division of the suburb when the Warringah Freeway was built. Changes to bus routes should be made in consultation with Council and key community stakeholders such as schools. Brook St is the only point of exit and entry for many residents in surrounding streets, in part due to the cut through of the original Warringah Freeway. The use of Brook St as a truck or traffic thoroughfare should be avoided. Additional traffic controls along Brook St need to be considered to allow safe access to homes and schools.

Heritage	Naremburn is a conservation area with historical significance. Given the age of buildings and existing ground movement residents already invest heavily in maintenance to preserve the character of the area. There is significant community concern that truck movements and works will cause damage to these buildings and consequently risk health and safety. It is noted that the Church on the corner of Merrenburn and Willoughby Rd has been earmarked for heritage consideration but residences of similar age and historical significance across Naremburn have not. Further investigation is needed with regard to the historical significance of the area as this was not included in scoping documents.
Environment	
Water Use	"The average total water demand during construction is estimated to be 1327 kilolitres per day. About 837 kilolitres per day would be sourced from mains supply (potable water) with the remainder coming from treated groundwater or harvested rainwater (non-potable water)." Water use is highlighted by recent drought conditions. We therefore request the NSW government to look for further ways to reduce the potable water use including reuse of water on site.
Water Quality	"The majority of wastewater generated during construction would be through groundwater infiltration in the tunnels" What is the water testing and treatment plan prior to discharge, is there a remediation plan?
Electricity Use	Considering the electricity demand for tunnelling construction support sites Council recommends using a 100% renewable energy power purchase agreement to offset this demand. Appendix X lists "Opportunities to install solar panels at the tunnel portals and on tunnel support and traffic control facility buildings to supplement non-renewable power sources where feasible" This opportunity should be maximised to meet on ongoing site demand.
Marine Environment	"Marine construction works for the project within Sydney Harbour would produce around 900,000 cubic metres of dredged material from soil and rock from the installation of the immersed tube tunnel" What impact will the dredging have on the marine environment and how will it be mitigated?
Minimise Energy Use and Greenhouse Gas Emissions	More detail and focus on energy efficiency and renewable energy is required.
Maximise Sustainable Procurement	Follow state and national objectives for sustainable procurement and have "Recycled content" and "Australian made" as target themes.

Climate Change Risk and Greenhouse Gas	Environmental Management Measure GHG2 in Table 26-7 should ensure energy efficient systems to be installed not "where reasonable and practicable". Willoughby Council recently declared a Climate Emergency. Based on the climate and sustainability data detailed in the EIS this project is not currently consistent with that declaration nor does it appear to satisfy the Protection of the Environment Administration Act 1991. Specifically, the project itself will generate more than 1M Tonnes of CO2 per year which is an increase of over 31,000 CO2 Tonnes per year compared to not completing the project. Known alternative solutions with lower climate impacts need to be considered to be consistent with action on climate change and improved resilience.
Waste Management	Waste avoidance should be the focus for waste management, with landfill disposal the last option. • All materials taken offsite go to appropriate licenced processing and disposal facilities. • Hazardous wastes are sorted, stored and transported. Project to produce a Waste Management Plan prior to project commencement. Strict conditions regarding the transport of contaminated waste should be a condition of approval and agreed with Willoughby Council. Contaminated Waste should not be transported via local streets and at times when children are moving through the area.
Risks to Parks and Flat Rock Gully	Further analysis of contaminants, groundwater changes and re-routing to avoid both Quarry and Flat Rock Creek should be considered to minimise risk.
Tree Impact and Urban Heat Island Impact	A large number of trees will be removed or impacted in the course of construction. Given the proximity of residential and other buildings to the Warringah Freeway and the large amount of concrete, urban heating is already a concern. Trees should be maintained or replaced as close as possible to existing trees in and around the Warringah Freeway. There should be no net loss of tree canopy if the project proceeds.

Traffic and Transport Matters	
Overview	The Western Harbour Tunnel and Warringah Freeway Upgrade project is a city shaping project that, if implemented, will have a significant impact on the traffic and transport movement within Willoughby local government area. The Project provides a motor vehicle focused infrastructure upgrade that supports the north-south movement across Sydney Harbour. The current two motor vehicle harbour crossings, Sydney Harbour Tunnel and Sydney Harbour Bridge, experience significant congestion during the weekday morning and afternoon peak periods and impact on motor vehicle travel times. The recently released Integrated Transport Strategy (Draft) highlights a strong desire to reduce congestion, improve accessibility and increase transport choice. The western section of the project, Miller Street, Cammeray to Willoughby Road, Naremburn is within Willoughby Council. This section of the project has been largely overlooked in regards to improvements for public transport and active transport. The access restriction proposed along the Warringah Freeway has the highest impact on Willoughby Council's road network. The EIS has been reviewed with design issues and improvement opportunities identified to improve the whole-of-transport outcomes and minimise the long term impacts on Willoughby, its communities and different user groups likely to use the project. Whilst it is considered that the project provides benefits for cross harbour motor vehicle movement, it is recommended that Willoughby Council strongly recommend that the improvements identified in this report be included as part of the project.
Project Scope, Design and Operational Performance	The project comprises the following components: • A new third crossing of Sydney Harbour involving 6.5 kilometre twin tolled motorway tunnels connecting the M4-M5 Link at Rozelle and the existing Warringah Freeway at North Sydney/ Cammeray (the Western Harbour Tunnel). • Upgrade and integration works along 4.0 kilometres of the existing Warringah Freeway between Fitzroy Street, Milsons Point and Willoughby Road, Naremburn, including infrastructure required for connections to the Beaches Link and Gore Hill Freeway Connection project (the Warringah Freeway Upgrade). • Traffic management changes on the State and non-State road networks in Artarmon, Cammeray and North Sydney. • Support facilities including a new Motorway Control Centre in Waltham Street, Artarmon A locality plan is provided in Figure 1 below. Detailed diagrams showing the scope and key design features of the project are provided in Attachment 2. The key features of the project are outlined in the EIS Chapter 5 Project Description pages 10 – 13 and the Technical Working Paper pp 1 – 4.

Figure 1: Locality Plan

Design and Operation Performance - Description

The Western Harbour Tunnel (the Tunnel) is a new 6 lane motorway standard link across Sydney Harbour that will provide a new western bypass of Sydney CBD. The Tunnel will provide a substantial increase in road capacity for motor cars, freight vehicles and high occupant vehicles, including buses. The Tunnel is proposed to have:

- Three traffic lanes in each direction in the tunnel with the number of traffic lanes reducing at portals.
- Ingress and egress portals in Warringah Freeway between Ernest Street and Miller Street
- A southbound ingress portal in Berry Street, North Sydney
- A southbound egress portal at Falcon Street, North Sydney

Diagrams of the portals are provided in Attachment 3.

The Warringah Freeway (the Freeway) will be reconstructed between Willoughby Road, Naremburn and Fitzroy Street, Milson Point to deliver the following:

- Additional lanes in the Freeway (mainline) that will increase capacity for both directions of travel to accommodate the Tunnel and the Beaches Link Tunnel.

- Changes to existing interchange access arrangements on the Freeway between Sydney Harbour Bridge, Sydney Harbour Tunnel and Willoughby Road at the interchanges of High Street, Alfred Street North, Berry Street, Falcon Street, Ernest Street, Miller Street, Brook Street and Willoughby Road.

- Modified interchanges including High Street, Mount Street, Alfred Street North, Falcon Street, Ernest Street, Miller Street and Brook Street (refer to Technical Working Paper 7.5.4 Road Network Changes and Access Management p 241 - 242).

- The existing southbound bus lane on the Warringah Freeway will be reconfigured to:
  - Lengthen and commence the bus lane west of Miller Street.
  - Eliminate the crossing of the bus lane by other motor vehicles.
  - Connect bus lanes from Falcon Street and Mount Street.

- The existing bus layover facilities on the Freeway, north of Ernest Street, will be relocated to within a widened section of the Freeway near Cammeray Golf Course (14 bays and an amenity block for drivers) and on the Cahill Expressway

south of High Street (nine bays).

- Bicycle route improvements focused from Miller Street, Cammeray to North Sydney within, across and adjacent to the Freeway (refer to Technical Working Paper 7.5.6 Active Transport Impacts). The design of the bicycle route and provision of bicycle infrastructure will:

  - Replace links that are impacted by the widening of the Freeway including shared path bridges at Ridge Street, Falcon Street and Ernest Street.
  - Provide short sections of new bicycle route within the Freeway between Miller Street and Ernest Street; and
  - Direct the bicycle route off the Warringah Freeway onto new and/ or existing bicycle routes.

  Design changes to the bicycle route and provision of improvements to existing bicycle infrastructure west of Miller Street to Willoughby Road are not proposed. This results in the retention of existing bicycle infrastructure in the Warringah Freeway between and including Willoughby Road and Amherst Street.

- Removal of the pedestrian underpass at the eastern side of the Falcon Street Bridge. Pedestrians and bicyclists will share infrastructure. Shared paths and bridges are being provided so that bicycle and pedestrians are permitted to use the links (refer to Technical Working Paper 7.5.6 Active Transport Impacts).

A review of the operation of the project reveals that (refer to Technical Working Paper 2.5.4 Road Network changes and access arrangements pp 239 – 244):

- The Tunnel connects to North Sydney with provision of an on ramp from Berry Street to allow vehicles to travel southbound toward Rozelle. Changes to the road network in North Sydney CBD will be undertaken to support access to the Tunnel via Berry Street. A new off ramp to Falcon Street, Cammeray will be provided for vehicles travelling northbound in the Tunnel. Vehicles exiting the portal will only be permitted to travel westbound in Falcon Street.

- Access controls along the mainline and interchanges including High Street, Alfred Street North, Berry Street, Falcon Street, Miller Street, Brook Street and Willoughby Road to integrate the Tunnel and Beaches Link ramps and remove / reduce weaving areas on the Freeway between Sydney Harbour Bridge, Sydney Harbour Tunnel and Willoughby Road, Naremburn. Access control and separation of traffic is based on a trip distribution strategy, which segments the freeway into 3 carriageways; central, southbound outer, and northbound outer (refer to Technical Working Paper 7.5.4 Road Network Changes and Access Management p 239 - 241). A diagrammatic representation of the strategy is provided in Attachment 4.

- The central carriageway would act as the mainline motorway corridor connecting Gore Hill Freeway and Willoughby Road with the Tunnel. This carriageway would carry northbound and southbound motorway traffic between the Tunnel, Gore Hill Freeway and Willoughby Road.

- The southbound outer carriageway would act as the access distributor for North Sydney, Sydney CBD and journeys on to the Eastern Suburbs (including the Sydney Harbour Bridge and Sydney Harbour Tunnel)

    - Inner eastern carriageways, carrying southbound traffic to the Sydney Harbour Tunnel and for distribution to local destinations such as Neutral Bay.
    - The outer eastern carriageway, carrying southbound traffic for the Sydney Harbour Bridge (both the Bradfield Highway and Cahill Expressway) and for distribution to local destinations such as North Sydney and Kirribilli.
    - A dedicated bus lane between Miller Street, Cammeray and the Sydney Harbour Bridge, Milsons Point which would carry southbound buses and other permitted bus lane vehicles.

- The northbound outer carriageway would act as the access distributor for North Sydney, Sydney CBD and journeys from the Eastern Suburbs (including the Sydney Harbour Bridge and Sydney Harbour Tunnel).

    - An outer western carriageway, carrying northbound traffic from the Sydney Harbour Bridge to the Beaches Link northbound on ramp and for local distribution to local destinations such as North Sydney and Crows Nest
    - Inner western carriageways carrying northbound traffic from the Sydney Harbour Bridge and Sydney Harbour Tunnel to Gore Hill Freeway and Willoughby Road.

A diagram showing the proposed reconfiguration of the Freeway and impact on access between Sydney Harbour Bridge and Sydney Harbour Tunnel and Gore Hill Freeway is provided in Figure 2 below.

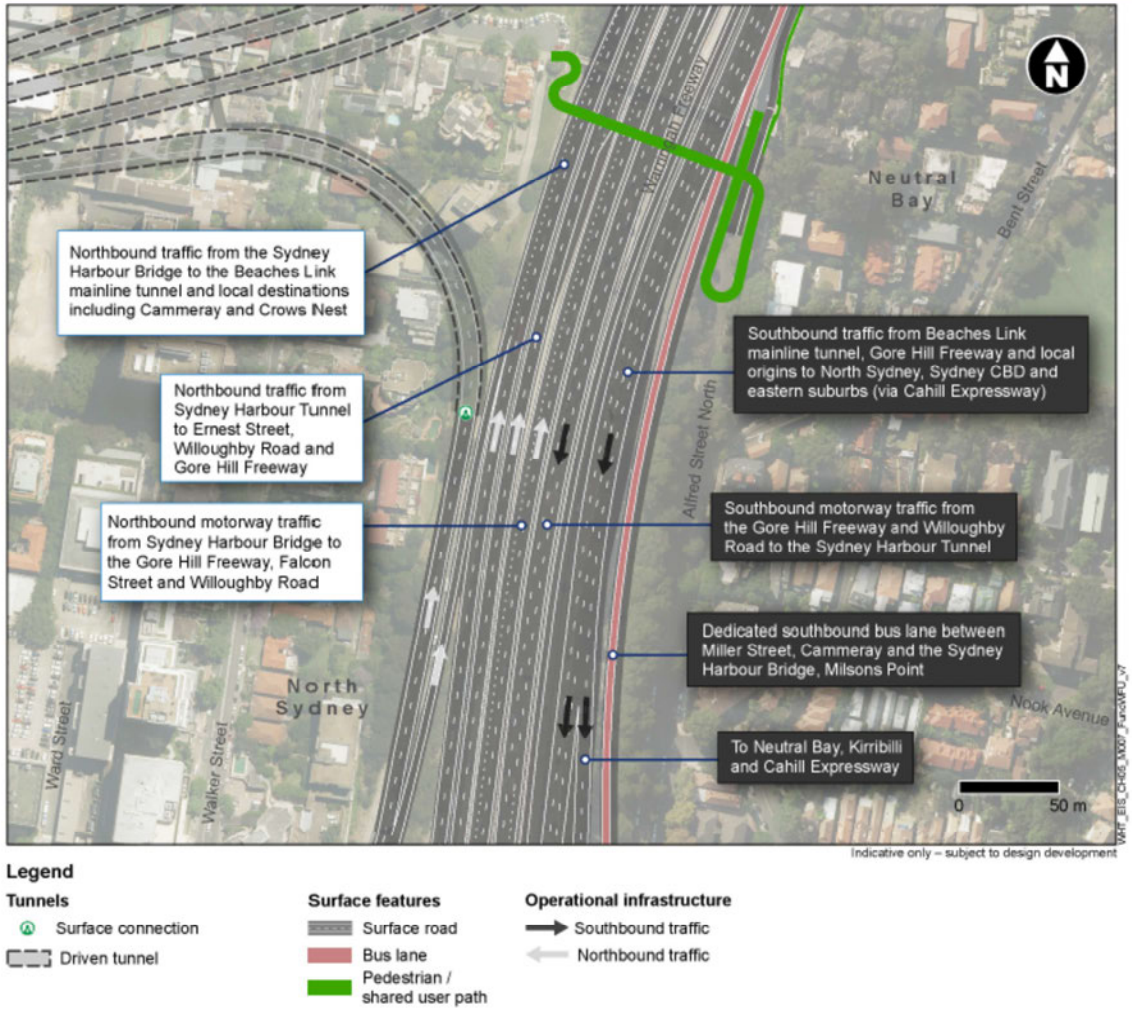


Figure 2: Proposed reconfiguration of the Freeway between Sydney Harbour Bridge and Sydney Harbour Tunnel and Gore Hill Freeway (Source: EIS Chapter 5 Project Description page 5-36)

Design and Operation Performance - Analysis and Impact

- The impact of major access changes to the Willoughby community if the Tunnel and the reconfiguration of the Freeway are implemented include:
    - There will be no direct southbound access from Miller Street and Brook Street to the Tunnel.
    - There will be no direct northbound access from the Tunnel to Miller Street and Brook Street.
    - There will be no direct southbound access to the Sydney Harbour Tunnel from Brook Street. (There is currently no access from Miller Street to the Sydney Harbour Tunnel).
    - There will be no direct northbound access to Miller Street and Brook Street from the Sydney Harbour Tunnel.

- The traffic modelling results indicate that the project will achieve a high level of operational performance improvements in the southbound direction during the weekday morning and afternoon peak periods. Little or no operational performance improvement occurs in the northbound direction during this period. In some instances the operational performance appears to worsen at opening (2027) and within 10 years of opening (2037).

- Due to the targeted nature of the traffic and transport analysis in terms of focusing on the weekday morning and afternoon peak periods only it is difficult to understand the level of improvement at other times. The Sydney Harbour Tunnel and Sydney Harbour Bridge typically operate with an acceptable operational performance at other times therefore the primary benefit will be travel time savings provided by the Tunnel, as compared to the other routes, and this is likely to be relatively small.

- A summary of the key operational performance outcomes of the project are outlined below:
    - Traffic flows on Sydney Harbour Tunnel and Sydney Harbour Bridge compared to ‘Do minimum’ for the same year (refer to Technical Working Paper Table 7-1 to 7-3 pages 213 – 215):
        - 2027 AM peak – around 10% reduction
        - 2027 PM Peak - around 16% reduction
        - 2027 All day - around 18% reduction
        - 2037 AM peak - around 11% reduction
        - 2037 PM peak - around 13% reduction

- 2037 All day - around 18% reduction

'Do minimum' Includes approved and under construction motorway projects (NorthConnex and WestConnex) but without Western Harbour Tunnel and Warringah Freeway Upgrade, Beaches Link and Gore Hill Freeway Connection, Sydney Gateway and F6 Extension (Stage 1) projects. Also reflects operational effects of approved and under construction public transport projects (e.g. Sydney Metro City & Southwest).

The traffic modelling indicates that additional traffic, other than traffic that has transferred from the other harbour crossings will use the Tunnel. This could be considered induced traffic which potentially could be users that have transferred from public transport.

o Travel time between Rozelle and North Sydney, Rozelle to North Sydney, Moore Park to North Sydney and North Sydney to Moore Park trips compared to 'Do minimum' for the same year (refer to Technical Working Paper Figures 7-1 and 7-2 pages 216):
  - 2027 and 2037 AM peak - Rozelle to North Sydney – improves
  - 2027 and 2037 AM peak - North Sydney to Rozelle – improves
  - 2027 and 2037 AM peak – Moore Park to North Sydney – improves
  - 2027 and 2037 AM peak - North Sydney to Moore Park – improves
  - 2027 and 2037 PM peak - Rozelle to North Sydney – improves
  - 2027 and 2037 PM peak - North Sydney to Rozelle – improves
  - 2027 and 2037 PM peak – Moore Park to North Sydney – worsens
  - 2027 and 2037 PM peak - North Sydney to Moore Park – improves

The level of trip travel time improvement varies with the highest for all trips in the AM peak and the North Sydney to Rozelle in the PM Peak. The other PM trips experience a minor improvement or worsening.

o General traffic travel time changes differ for the direction of travel as compared to 'Do minimum' for the same year (refer to Technical Working Paper Table 7-21 to 7-22 page 235 and 7-31 and 7-32 page 249): Outlined below:

  - Sydney Harbour Bridge to Gore Hill Freeway/Pacific Highway interchange

    - 2027 AM peak northbound – essentially the same
    - 2027 PM Peak northbound – essentially the same
    - 2027 AM peak southbound – significant improvement

- 2027 PM Peak southbound – significant improvement
- 2037 AM peak northbound – essentially the same
- 2037 PM Peak northbound – minor improvement
- 2037 AM peak southbound – significant improvement
- 2037 PM Peak southbound – significant improvement

- Sydney Harbour Tunnel to Gore Hill Freeway/Pacific Highway interchange

  - 2027 AM peak northbound – essentially the same
  - 2027 PM Peak northbound – Intermediate worsening
  - 2027 AM peak southbound – significant improvement
  - 2027 PM Peak southbound – significant improvement
  - 2037 AM peak northbound – essentially the same
  - 2037 PM Peak northbound – Minor improvement
  - 2037 AM peak southbound – significant improvement
  - 2037 PM Peak southbound – significant improvement

- Longueville Road to Gore Hill Freeway

  - 2027 AM peak eastbound – significant worsening
  - 2027 AM Peak westbound – essentially the same
  - 2027 PM peak eastbound – significant improvement
  - 2027 PM Peak westbound – essentially the same
  - 2037 AM peak eastbound – significant worsening
  - 2037 AM Peak westbound – essentially the same
  - 2037 PM peak eastbound – minor worsening
  - 2037 PM Peak westbound – essentially the same

- Lane Cove Tunnel to Gore Hill Freeway

  - 2027 AM peak eastbound – significant worsening
  - 2027 AM Peak westbound – essentially the same
  - 2027 PM peak eastbound – essentially the same

- 2027 PM Peak westbound – essentially the same
- 2037 AM peak eastbound – significant worsening
- 2037 AM Peak westbound – minor improvement
- 2037 PM peak eastbound – essentially the same
- 2037 PM Peak westbound – essentially the same

o Buses travel time changes differ for the direction of travel as compared to 'Do minimum' for the same year (refer to Technical Working Paper Table 7-27 to 7-28 page 245 and Tables 7-31, 7-32, 7-35 and 7-36 pages 249 and 251):

- Sydney Harbour Bridge to Lane Cove Tunnel (via Gore Hill Freeway)

  - 2027 AM peak northbound – minor improvement
  - 2027 PM Peak northbound – essentially the same
  - 2027 AM peak southbound – significant improvement
  - 2027 PM Peak southbound – significant improvement
  - 2037 AM peak northbound – minor improvement
  - 2037 PM Peak northbound – essentially the same
  - 2037 AM peak southbound – significant improvement
  - 2037 PM Peak southbound – significant improvement

- Lane Cove Tunnel to Gore Hill Freeway via transit lanes

  - 2027 AM peak eastbound – essentially the same
  - 2027 AM Peak westbound – essentially the same
  - 2027 PM peak eastbound – essentially the same
  - 2027 PM Peak westbound – essentially the same
  - 2037 AM peak eastbound – essentially the same
  - 2037 AM Peak westbound – essentially the same
  - 2037 PM peak eastbound – essentially the same
  - 2037 PM Peak westbound – essentially the same

o Heavy vehicle demands using the Sydney Harbour Bridge and Tunnel compared to 'Do minimum' for the same year (refer to Technical Working Paper Table 7-6 page 224):

- A noticeable reduction on Sydney Harbour Bridge
- A lowering but a similar level of the heavy vehicle movements on the Sydney Harbour Tunnel
- The retention of a relatively high number of heavy movements on the Sydney Harbour Bridge.

The on-going use of the Sydney Harbour Bridge by heavy vehicles is of a concern and it is questioned where the vehicles are coming/ going to.

- Intersection performance at the 4 intersections (see below) in Naremburn significantly worsen between 2016 and 2027 as well as 2037 under the 'Do minimum' option and then significantly improve in 2027 and 2037 with the 'Do Something' option (refer to Technical Working Paper Tables 6-22, 6-23 on page 206, 207 and 7-23 page 237).

  - Willoughby Road/Gore Hill Freeway interchange
  - Brook Street/Warringah Freeway on ramp
  - Brook Street/Warringah Freeway off ramp
  - Brook Street/Merrenburn Avenue

Design and Operation Performance - Opinion

The extreme change and worsening in performance is difficult to understand and accept given that the performance now (in 2020) is acceptable. It would be appropriate to request further explanation of the model design and operation and its results. Could it be that one movement is leading to all the problems and the rest of the intersection operates satisfactorily?

Also at some intersections the performance of the 'Do Something' option is worse than the 'Do minimum' option (refer to Technical Working Paper Tables 7-24 p238). This is an unacceptable performance outcome.

- Intersection performance at the 7 intersections (see below) in Lane Cove and Chatswood worsen or significantly worsen between 2016 and 2027 as well as 2037 under the 'Do minimum' option and then worsen in 2027 and 2037 with the 'Do Something' option (refer to Technical Working Paper Tables 6-30, 6-31 on page 211 and 7-33 and 7-34 page 250 and 251).

  - Epping Road/Longueville Road/Parklands Avenue
  - Longueville Road/Pacific Highway
  - Pacific Highway/Howarth Road/Norton Lane

- Pacific Highway/Gore Hill Freeway interchange
- Reserve Road/Gore Hill Freeway interchange
- Reserve Road/Dickson Road
- Reserve Road/Barton Road

The worsening of the performance of the intersections with the implementation of the project is of concern and unacceptable. It is noted that there would be no road network changes within the Gore Hill Freeway and Artarmon study area, other than minor optimisation of existing traffic signal operation (refer to Technical Working Paper 7.6.4 Road network changes and access arrangements page 251).

Benefits	The traffic and transport benefits that the project will provide the Willoughby community include: • Improved access and reduced travel time between Artarmon Industrial Area with markets and transport interchanges within Sydney including, but not limited to, metropolitan and strategic centres such as Sydney Central Business District, Parramatta, Sydney International and Domestic Airport and Port Botany. • Potential enhancement to bus services to strategic centres such as St Leonards and Chatswood. • Reduced travel times for commuters, business operators and service providers to/ from Willoughby local government area. • Improvement in road safety for residents and other visitors moving to/ from Willoughby local government area when using Western Harbour Tunnel as compared to Sydney Harbour Tunnel and arterial roads including Victoria Road. Increase in choice of motorway routes between Willoughby Local Government Area and key destinations south of Sydney Harbour including Sydney Airport, Inner West and WestConnex.

Design Issues and Improvement Opportunities

Strategic Alignment	The strategic alignment is deficient in its consideration of the role the Tunnel will/ should play in the broader State Road network, in particular its future role in freight access to major freight transport facilities including Port Botany and Sydney International and Domestic Airport. The Tunnel, if implemented, when combined with WestConnex, Lane Cove Tunnel, M2 Motorway and NorthConnex could become a route in the Urban National Land Transport Network (Road) in Sydney. This route has a more direct path and provides a motorway standard road type and is therefore anticipated to be/ become an important north-south connection for heavy vehicles (and regional motor car travellers) to / from the Pacific Motorway (M1), Port Botany, Sydney Airport, regional centres and land uses north of Sydney. The suggestion is provided in Attachment 5.

Policy Context

Providing a transport solution that supports multi-modal outcomes

Council considers that all city shaping projects should provide a comprehensive whole-of-transport solution so that all modes are improved. A project should acknowledge the needs of all transport users and contemporary transport planning policies and practices applied including the Safe System approach, and Movement and Place so that a sustainable transport system is delivered.

It is noted that the Strategic Transport benefits of the project (refer to Technical Working Paper 2.8 Strategic Transport Benefits pages 21 and 22) provide aspirations for all modes, however, it is considered that there are significant deficiencies for some modes with the current design.

The project in its current design provides significant benefits for motor vehicles in the following order of priority; motor cars, freight and lastly high occupant vehicles.

The project must support public and active transport safety and movement more effectively so that the attractiveness, convenience, safety, efficiency and reliability of movement of these modes between Naremburn and Milsons Point is maximised.

Alpha-numeric route numbering system in Sydney

The Tunnel provides the opportunity to reconfigure Sydney's alpha-numeric route numbering system in line with contemporary wayfinding systems used across Australia and confirm the importance of the Tunnel in motor car and freight movement in Sydney and New South Wales.

Route No. 1 traverses around Australia and is recognised as the primary route serving the whole of Australia. It is provided on the most direct and highest standard route. The Tunnel in combination with WestConnex, Lane Cove Tunnel, M2 Motorway and NorthConnex could be renumbered as route number 1. This would provide a continuous motorway standard route between Pacific Motorway M1 and Princes Highway A1. The future M6 Stage 1 could also lead to the extension of route number 1 as motorway standard.

The proposed alpha numeric numbering system that may be applied with the commissioning of the Tunnel is provided in Attachment 6.

Motorway Names

Consideration could also be given to implementing new motorway names to improve customer understanding and use of the motorway network, particularly in areas with closely spaced and parallel motorways. There is the potential to apply a new motorway name for the Sydney Harbour Tunnel, Eastern Distributor, Southern Cross Drive route such as the 'Eastern Motorway' or 'Harbour Motorway'. An aboriginal name may also be a consideration. The proposed new motorway name is provided in Attachment 7.

Design and Operational Principles

A number of principles applied to the design and operation of the project are of concern and need to be reviewed to minimise the impact on the non-State Road network and State Roads with a high place function. There is the potential that the current design will lead to operational problems that will result in a safety, amenity, urban domain and financial impact on Willoughby Council and its community:

The EIS advises that it has adopted the following design and operational principle approach (refer to Technical Working Paper Traffic and Transport Impacts page xvii; 3.6.1 Network wide Statistics page 34; 4. Existing Traffic and Transport Environment page 37 and 9, Environmental Management Measures Table 9.1 page 299):

Whole of project benefit takes precedence over local vs local benefits

> *The substantial additional travel that would be facilitated by the project would increase traffic demands in some areas where the project would integrate with the existing transport network. There would be some localised residual delay surrounding these interface precincts. In such cases, localised delays would be offset by the large travel time benefits provided by the project at the broader network level. Page xvii*
>
> *'The project includes mitigations to address potential localised impacts created by changes to the existing network, with residual local impacts offset by the broader network benefits provided by the project. For example, increased delays at an intersection would be outweighed by the travel time benefits to and from that location'. Page 37*

This position is interpreted to mean that worsening in the local context is acceptable due to the overall benefits provided by the whole project. This position is not supported as it will lead to the transfer of the problem, and ultimately the costs associated with the resolution of the problem, to Council.

Design and Operational Principles	***Problem mitigation transferred to other programs*** *Intersections that are outside of the scope of works but still affected by the project are expected to operate no worse than they would under the 'Do minimum' scenario. Any works required to improve the operation of these intersections would be considered under Roads and Maritime's wider programs to ease congestion in metropolitan Sydney.* The approach to provide a level of performance equal to or better that than the 'Do minimum' forecast performance is acceptable. The ability to apply this policy is based on the accuracy of the traffic modelling undertaken. It is considered however that the project must address the problems that it causes. It is not considered acceptable to pass the problem onto other programs and potentially other agencies including Councils. ***General traffic movement vs Public Transport priority*** *Conversion of transit lanes to regular traffic lanes along Gore Hill Freeway will be considered if there is a traffic performance requirement/benefit in peak times.* It is noted that a possible management measure to minimise congestion and poor performance as a result of the project is the removal of the T2 Transit Lane along the Gore Hill Freeway, and possibly the Lane Cove Tunnel. It is considered that road based public transport priority measures such as transit lanes fulfil an important role in providing a more efficient and reliable road based public transport system and thereby making public transport more attractive to use by the community. Council does not support the proposed removal of the existingT2 Transit as it will downgrade of the road based public transport priority and support single occupant vehicle movement.
Motorway Design and Traffic Modelling Implications	***Integration of the Sydney Harbour Bridge into the project scope*** There is a strong operational connection between the Sydney Harbour Bridge and the Warringah Freeway. Many of the congestion problems on the Warringah Freeway that occur on a daily basis during Monday to Friday are as a result of congestion entering the Sydney CBD at the southern end of the Sydney Harbour Bridge. The existing traffic management systems operated on the Sydney Harbour Bridge and the Warringah Freeway are operated as one system. It is suggested that the project scope should include the Sydney Harbour Bridge for the following reasons:

- Provides the opportunity to address safety issues on the Sydney Harbour Bridge by facilitating the provision of a permanent barrier separating opposing flows on the Bradfield Highway. This is supported by the reduction in traffic demand on the Bradfield Highway
- The removal of the existing time of day tidal lane management system in Warringah Freeway link with, and impacts traffic movement on, the Sydney Harbour Bridge.
- Provides the opportunity to significantly enhance bus efficiency and reliability through the provision of a new designated northbound bus lane. It is proposed that this new bus lane would link with a northbound bus lane on the Warringah Freeway at least to Miller Street. The reduction in road capacity on the Sydney Harbour Bridge and Warringah Freeway with the proposed northbound bus lane would:
    - Promote the use of the Tunnel
    - Encourage higher use of more sustainable transport modes.
    - Minimise the congestion, at peak times, on the westbound approach to the Gore Hill Freeway.

Traffic Modelling - Land Use and Transport Assumptions

The three stage traffic modelling approach used is comprehensive and appropriate. Notwithstanding, there are a number of issues that need clarification so that Council has confidence in the models developed and their results:

1. Do the models reflect the provision of the latest information on land use and transport provision such as the changes in land use anticipated in the Chatswood and St Leonards Strategic Centres as well as the local centres within Willoughby and within the North District.
2. Do the models include all existing and new mass transit modes such as the Metro City and South West, B-Line, patronage levels and changes to transport mode splits.
3. Clarification on the difference in traffic performance results of introducing a toll to the Sydney Harbour Bridge and Sydney Harbour Tunnel (the approach used in the EIS) as compared to the toll free situation (retain status quo).
4. Clarification on why the forecast heavy vehicle volumes using the Sydney Harbour Bridge following the commissioning of the Tunnel are still high.
5. Clarification of the meaning of the network measures, as many of the performance indictors get worse with the project. How do any measures relate to the model operation and what are the implications for the model results provided in the EIS?

Motorway and Network Performance Implications

Naremburn to Milsons Point

The following issues have been identified:

1. Redistribution of traffic movement to State (arterial) and non-State Road networks.

   Access arrangements proposed as part of the project are anticipated to result in a redistribution of traffic within Willoughby local government area. The key factors leading to the redistribution is the proposed access arrangements to the Tunnel and Sydney Harbour Tunnel from Brook Street and Miller Street.

   It is noted that the access points to the Tunnel to / from Brook Street and Miller Street is the Berry Street and Falcon Street portals. There is concern that residents and regional traffic using the Willoughby LGA State and non-State road networks will use the Willoughby Road and Reserve Road interchanges to access the Tunnel mainline portals.

   Traffic with an origin and destination of Sydney Harbour Tunnel that currently uses Brook Street on-ramp will also likely use the Willoughby Road interchanges rather than use other routes.

   The impacts of this redistribution of traffic movement is reduced road safety and amenity on, but not limited to, Sailors Bay Road, Mowbray Road, Frenches Road, Alpha Road, Edinburgh Road, Reserve Road, Willoughby Road, Dalleys Road, Herbert Street and Frederick Street.

2. Increase in traffic movement on State (arterial) and non-State Road networks with high place significance.

   Whilst it is noted that Willoughby Road and Penshurst Street are State (arterial) roads. These roads are also locations of local centres including East Chatswood, Penshurst Street and Willoughby South and have a high place significance. Council is concerned that increases in traffic would lead to a reduction in safety and amenity at these local centres. Council would strongly oppose any measures that may reduce the place character such as new and extended clearway restrictions.

   The potential increase in regional traffic through other local centres, not on State Roads, such as, Naremburn and High Street is also a concern. Local Centres have a high place significance that are proposed to expand overtime. The planning for these centres is underpinned by a transport system that is not impacted by high motor vehicle flows.

3. Motorway safety and congestion between Ernest Street and Gore Hill Freeway

   The motorway capacity of the Warringah Freeway/ Gore Hill Freeway between Brook Street and Willoughby Road is not proposed to be changed as part of the project. The project will lead to higher westbound traffic demands during both weekday peak periods on this section of the Freeway. In addition, the design indicates that at least 5 westbound trafficable lanes may have motorists with the Gore Hill Freeway as their destination, refer to Attachment 8.

   There is concern that this arrangement will lead to a crash potential and congestion during the weekday afternoon peak period. The traffic modelling indicates poor travel times and a worsening in travel times between Sydney Harbour Tunnel and the Gore Hill Freeway/Pacific Highway interchange in the weekday afternoon peak in 2027. This situation would be worsened with the progressive growth in traffic in the corridor. It is considered that the design of this section of the Freeway be reviewed to ensure safety and efficiency is provided at all times.

Lane Cove to Naremburn

The following issue has been identified:

Redistribution of traffic to State arterial and non-State Road networks.

The traffic modelling forecasts a worsening of performance and delays for eastbound and westbound traffic during both weekday peak periods on the Freeway and on approach routes including Lane Cove Tunnel, Gore Hill Freeway, Pacific Highway, Longueville Road and Reserve Road.

There is the potential for a significant increase in regional traffic using the non-State road network (rat running) leading to a lowering of safety levels and amenity on roads including Mowbray Road, Mowbray Road West, Hampden Road and Herbert Street. This is considered an unacceptable outcome.

Artarmon Industrial Area

The traffic modelling forecasts a worsening of performance and delays along Reserve Road on north and south side of the Gore Hill Freeway

It is noted that the EIS proposes changes to the road network to retain a reasonable level of service. The proposed changes to the local road network within the Artarmon Industrial Area have been developed without Council input. It is essential that

	the Council understands the road network management rationale, design approach including options considered and the decision making associated with the TfNSW proposals. Council is considering a number of initiatives that have an impact on road network management within the Artarmon Industrial Area. These changes must be considered in the development of the final road network arrangements in Reserve Road and any other roads within the Industrial Area. Council's approval will be required on any change to its road network.
Road Safety	The improvement in safety with the project is considered beneficial. The Tunnel will be a similar road standard to a number of the roads used in the assessment such as Sydney Harbour Tunnel, Western Distributor. Safety benefits are likely to be highest on roads with lower safety infrastructure such as the Sydney Harbour Bridge (Bradfield Highway) and Victoria Road. It is noted that Sydney Harbour Bridge (Bradfield Highway) and Victoria Road do not experience a noticeable change in traffic flows with the implementation of the project. The project may lead to a lowering in safety performance in a number of areas including: • Warringah Freeway/ Gore Hill Freeway between Brook Street and Willoughby Road due to the higher traffic flows and increased weaving manoeuvres. • State (arterial) and non-State Road networks that experience increases in traffic due to redistribution of traffic and rat running during weekday peak periods. • Bicycle riders that use the link between Willoughby Road and Amherst Street. It is recommended that the safety risks and safety performance at these locations are investigated and mitigation measures introduced. Improvements proposed by Council may lead to a similar or better safety outcome than with the delivery of the project as it is currently designed.
Modal Connections and Management Improvement Opportunities	The following provides improvements and studies that would ensure that the project delivers a world class multimodal road transport system that improves safety, connectivity, accessibility, efficiency and reliability outcomes for all modes and land uses. The purpose of these measures are to: • Minimise and manage road capacity along the Warringah Freeway, particularly between Sydney Harbour Bridge and Ernest Street to promote the use of Tunnel. • Discourage use of, and progressive increase in demand using, the Western Distributor and Sydney Harbour Bridge.

- Minimise congestion, queues and travel time delays on Warringah Freeway, Sydney Harbour Tunnel, Gore Hill Freeway and Willoughby Road during peak traffic periods such as the weekday morning and afternoon peak periods.
- Maximise safety and amenity on the State (arterial) and non-State Road networks that provide feeder routes to/ from the Warringah Freeway, Western Harbour Tunnel, Sydney Harbour Bridge and Sydney Harbour Tunnel.
- Reduce rat running and regional traffic use of non-State Road networks as bypass routes to congestion on motorway and State Road (arterial) approach routes to Warringah Freeway, Western Harbour Tunnel, Sydney Harbour Bridge and Sydney Harbour Tunnel

Road Based Public Transport

Provide an efficient, reliable and safe 24/7 road based public transport link between Gore Hill Freeway and Sydney CBD at York Street:

- Extend and connect the 24/ 7 T2 Transit Lane on Gore Hill Freeway (eastbound) to the proposed southbound bus lane, west of Miller Street.
- Provide a new 24/7 bus lane (northbound) from Sydney CBD (York Street) to at least Miller Street.
- Provide a transit lane or bus lane (preferred) between Miller Street interchange to connect with the existing 24/ 7 T2 Transit Lane on Gore Hill Freeway (westbound).
- Retain the 24/ 7 T2 Transit Lane on Gore Hill Freeway (eastbound and westbound) and Lane Cove Tunnel (eastbound) at all times.
- Bus service routes and frequency should be mandated so that the Tunnel provides improved public transport provision between the lower north shore/ northern beaches and the inner west. It is not considered acceptable to ‘provide the opportunity’ only.

Bicycle Transport Link

Provide a connected, reliable and safe 24/7 bicycle transport link between Gore Hill Freeway and Milson Point:

- Provide a new separate, dedicated and improved bicycle only bridge connecting the existing bicycle facilities along Gore Hill Freeway, west of Willoughby Road, to the northern side of Gore Hill Freeway/ Warringah Freeway and Slade Street, Naremburn. The bicycle bridge is to seamlessly link to new high standard dedicated two way bicycle only lanes between Willoughby Road, Naremburn and Brook Street, Crows Nest.
- Provide a new separate dedicated and high standard two-way bicycle only lanes along Gore Hill Freeway/ Warringah Freeway, on the northern side of Freeway, between Willoughby Road, Naremburn and Brook Street, Crows Nest. The

dedicated two-way bicycle only lanes must have physical separation by an appropriate standard infrastructure barrier from the motor vehicle lanes using the freeway to ensure safety and amenity of bicycle users.

- Provide a separate, dedicated bicycle only bridge across the Brook Street on-ramp connecting the high standard dedicated two way bicycle only lanes along Gore Hill Freeway/ Warringah Freeway, on the northern side of Freeway, between Willoughby Road, Naremburn and Brook Street, Crows Nest and a new dedicated, separate and high standard two way bicycle only lanes along Gore Hill Freeway/ Warringah Freeway, on the northern side of Freeway, between Brook Street on-ramp and the proposed new high standard dedicated two way bicycle only lanes between Miller Street and Ernest Street, Cammeray.
- Provide a new separate dedicated and high standard two-way bicycle only lanes along Gore Hill Freeway/ Warringah Freeway, on the northern side of Freeway, between the new bicycle only bridge across the Brook Street on-ramp, Crows Nest to seamlessly connect with the proposed new high standard dedicated two-way bicycle only lanes between Miller Street and Ernest Street, Cammeray. The dedicated two-way bicycle only lanes must have physical separation by an appropriate standard infrastructure barrier from the motor vehicle lanes along the freeway to ensure safety and amenity of bicycle users.
- Ensure the bicycle network that interacts with the project within Willoughby local government area is connected, safe and an acceptable design standard, in particular the connect from Merrenburn Avenue and easterly to Cammeray, currently via Brook Street and Amherst Street.
- Ensure that the opportunity for the future delivery of The Northern Link and Harbour Link projects (refer to North Sydney Council Integrated Cycling Strategy 2014 Appendix A) is retained through road and/ or land reservation/ acquisition and/ or designation of airspace above the motorway.

Pedestrian Links

Provide a connected and safe 24/7 pedestrian link across Gore Hill Freeway/ Warringah Freeway, Naremburn:

- Provide a separate and improved pedestrian bridge connecting the existing footpath on Slade Street to Willoughby Road. The pedestrian bridge must have ramps to be compliant with all relevant accessibility standards and policies.

Given that the catchment for several schools crosses the project footprint and considering the increase in traffic created by the project, additional measures are needed to separate pedestrians moving through the area e.g. children and families who cross Brook St into Cammeray via surrounding streets i.e. ramps, pedestrian tunnel, shared user pathways.

Motor Vehicles Transport

Sydney Harbour Bridge

- Introduce a toll on the Sydney Harbour Bridge, northbound direction, to encourage use of the Tunnel. A higher toll on the Sydney Harbour Bridge and on the Western Distributor should be considered as compared to the Tunnel (refer to Toll Strategy below)
- Consider introduction of congestion charging on the Sydney Harbour Bridge for both directions as a means to minimise the increase in commuter traffic and maximise the duration of, and maintain an acceptable level of service on, this link. Tolls can be applied to time of day and vehicle type to achieve the operational objectives and performance service levels (refer to Tolling Strategy below)
- Consider the introduction of a permanent central barrier separating opposing flows on the Bradfield Highway, Sydney Harbour Bridge.

Warringah Freeway

- Provide an appropriate number of traffic lanes along the Warringah Freeway to provide a balanced road network between Sydney Harbour Bridge, Sydney Harbour Tunnel and Gore Hill Freeway noting the introduction on new motorway capacity with the Western Harbour Tunnel.
- Provide and operate traffic management systems to manage and optimise the road capacity by time of day and day of week including intelligent transport systems. The management would be linked with and operated in concert with the road capacity and systems on the Sydney Harbour Bridge, Western Harbour Tunnel, Gore Hill Freeway, interchanges and surrounding State (arterial) roads.

Heavy Vehicle Movement

- Introduce a toll on the Sydney Harbour Bridge, northbound direction, to encourage use of the Western Harbour Tunnel. A higher toll for heavy vehicles on the Sydney Harbour Bridge and the Western Distributor should be considered as compared to the Western Harbour Tunnel (refer to Tolling Strategy)
  Introduce access limitations on heavy vehicles using the Western Distributor, potentially using number plate recognition point to point movement monitoring to mandate the use of the Western Harbour Tunnel by heavy vehicles.

Area Connections and Performance	Lane Cove to Naremburn It is recommended that an area-wide study is undertaken to understand the impacts on the local, regional and State Road network so that effective safety, access and amenity mitigation measures are implemented. The proposed study area is bounded by: • Miller Street/ Strathallen Avenue/ Eastern Valley Way in the east. • Falcon Street/ River Road in the south. • Longueville Road/ Epping Road/ Centennial Avenue in the west, and • Mowbray Road West/ Mowbray Road/ High Street/ Edinburgh Road in the north. Willoughby Road and Penshurst Street, Naremburn to Roseville Willoughby Road and Penshurst Street between Boundary Street Naremburn are State Roads. These roads traverse through, and form an integral component of the East Chatswood, Penshurst Street and Willoughby South local centres. Willoughby Road between Gore Hill Freeway and Chandos Street is a Regional Road within which the Naremburn local centre is located. The local centres are an important part of the fabric of the Willoughby local government area with commercial, retail and residential land uses that provide services and products to the local community. The community values these local centres and desire that they continue to thrive. The Local Centres provide employment and support a liveable community by providing amenities within close proximity to the local residential areas. It is understood that NSW Government also supports the Movement and Place Framework that recognises the differing roles and functions of land use along all roads by time of day and day of week. The project has the potential to detrimentally impact the urban domain within East Chatswood, Penshurst Street, Willoughby South and Naremburn local centres as a result of the increase in regional traffic using Willoughby Road and Penshurst Street. Street parking along State Roads is a value asset for a local centre as it provides an opportunity for customers to park, supplement existing on and off street parking in the local centre, provide a buffer between moving traffic and the pedestrian environment and reduce the need for expensive property acquisition and development to supply parking capacity. Council has deep concerns and disagrees with the current proposed reconfiguration design of the Warringah Freeway at the interface sections of Brook Street and Willoughby Road. The reconfiguration works will have a major impact by increasing the traffic load on Willoughby Rd through:

i) the loss of access to the Miller St and Brook St exit ramps for Sydney Harbour Tunnel traffic heading north.
ii) the loss of access to the Sydney Harbour Tunnel from the Brook St on- ramp for traffic heading south.

Both Brook and Miller St entry/exit ramps are major dispersal roads for traffic which would not use the proposed Beaches Link Tunnel. This comprises a significant amount of traffic heading to East Chatswood, Northbridge, Castlecrag, Castle Cove, Roseville, Lindfield and north to St Ives, as well as the areas of Forestville, Killarney Heights, Frenchs Forest, Belrose, Davidson, Terrey Hills and beyond.

In view of the successful existing traffic configuration, with Sydney Harbour Tunnel traffic having the option of using both Miller and Brook St ramps, it is difficult to appreciate either the reasons for, or the benefits of, the proposed reconfiguration and we request that this aspect of the planning be abandoned in favour of the existing ramp entries and exits. To shift a major portion of the Sydney Harbour Tunnel traffic onto Willoughby Rd will further overload an arterial road already acknowledged as operating at full capacity in peak hours.

Council's additional concern is the current lack of a traffic study of Willoughby Rd by TfNSW in Chapter Nine of the EIS which addresses traffic management associated with the Western Harbour Tunnel/Warringah Freeway project. In this chapter there are several locations where studies have shown there will be further impairment of existing traffic flow due to the Warringah Freeway reconfiguration. One of these is in Artarmon, at the Warringah Freeway on-ramp for Pacific Highway traffic, in the morning peak. Some of this traffic already uses Willoughby Rd as an alternate access to the Warringah Freeway and this will be exacerbated by the proposed Warringah Freeway reconfiguration. However, nowhere in Chapter Nine does discussion focus on a study of the traffic effects on Willoughby Rd and surrounding Willoughby streets in the City of Willoughby.

It is worth noting and drawing to the attention of TfNSW that within the next three years more than 700 additional apartments will be added in Artarmon Rd and Walter St, immediately adjacent to Willoughby Rd, and additional traffic lights, approved by the former RMS, are contemplated in conjunction with the Walter St development. Morning peak traffic delays in Artarmon Rd at the Willoughby Rd intersection, often already at two or even three light changes, are more likely to be exacerbated by the additional Willoughby Rd traffic.

Council requests the EIS be revised with additional sections added to Chapter Nine providing a detailed study on:

i) the impact to Willoughby Rd and its feeder roads of Penshurst and Mowbray Rds as the above closures will force more traffic onto these roads.
ii) the impact to the local streets surrounding Willoughby Rd as traffic attempts to rat-run through residential suburbs.
iii) the impact on the Local Centres of the increased traffic as Willoughby Road, and its Penshurst St extension, bisects at

	least three of the seven Local Centres in the Willoughby Local Government Area. iv) The Willoughby Road and Penshurst intersection also bisects Willoughby Girls High School. Consideration needs to be given to student safety both pedestrian and in terms of access to public transport. Street parking removal to increase road capacity to support the high traffic flows and localised congestion through the introduction of clearway restrictions is being implemented by TfNSW as part of the NSW Government Clearway Strategy. There is concern that congestion as a result of the delivery of the project will lead to the desire by TfNSW to introduce new and extended clearway restrictions to remove street parking capacity. The introduction of new and extended clearway restrictions along Willoughby Road and Penshurst Street in the East Chatswood, Penshurst Street, Willoughby South and Naremburn local centres is strongly opposed. <u>Artarmon Industrial Area</u> TfNSW and Council must collaborate on the future access and operation of road network management within the Artarmon Industrial Area so that the final design of initiatives within the Artarmon Industrial Area on all roads including Reserve Road meet both agencies traffic, road transport and active transport mobility and safety objectives and outcomes. Council's must approve any change to its road network.
Tolling Strategy	It is noted that tolls have been applied to the existing northbound crossings of Sydney Harbour including Sydney Harbour Bridge and Tunnel (refer to Technical Working Paper 7.2.4 Tolling scenarios and implications page 224). The tolls applied are similar to the proposed tolls for the Tunnel. This approach potentially discourages use of the Tunnel and more traffic using the other Harbour Crossings. TfNSW should consider the introduction of a tolling strategy to maximise the use of the Tunnel at all times. The strategy could consider application of new tolls on Sydney CBD motorways, Sydney Harbour Bridge (northbound direction) as well as vehicle specific, time of day and distance based.

Construction Traffic Management

Traffic Management	The Project will require an extensive construction footprint impacting primarily the Warringah Freeway but also extending into the non-State Road network. The high number of heavy trucks servicing the construction area is an indication of the intensity of activities and potential impacts on the travelling public.

It is noted that the EIS indicates that the construction will be managed and provides an indication that the road system impacts will be minimised. Unfortunately modelling and desktop analysis do not typically reflect the actual impact of construction once it commences. Construction traffic and transport impacts are determined by both the construction vehicle operation and the road users using the impacted road network. This combination typically leads to a lowering of the performance of the road network.

The construction of the Project within a complex, highly trafficked, congested and multimodal road environment will lead to a temporary worsening of the travel conditions along Warringah Freeway with the potential to impact on the Willoughby local area. Key areas of concerns arising from the construction are congestion, parking demand, road safety and accessibility. There is a particular need to manage vulnerable road users including pedestrians and bicyclists during the construction activities due to the adjustment / modification to a number of important connections along and across the Warringah Freeway.

The proposed measures including management of construction activities, time of day heavy vehicle access, information to stakeholders and the local community, reduced speed limits and introduction of multi-agency traffic and transport meetings.

Willoughby Council should be represented at all relevant construction traffic and transport forums to support the construction of the project.

Supplementary Comments

Additional information for consideration in the EIS

The following provides additional information that may be worthwhile including in the EIS:

2.5 Role and function of key road corridors (page18)

The information should include Willoughby Road and Edinburgh Road/ Alpha Road/ Flat Rock Drive / Brook Street route.

2.6.1 Target customers of the project (page 20)

Public transport users are customers of the project and should be included in the list.

2.6.2 Non-target customers of the project (page 20)

Active transport users are missing and should be considered.

4.2.2 Road Network Key Features (page 62 and page 84)

Consider use of the administrative road classification system agreed between Transport for New South Wales and Councils i.e. State, Regional and Local Road networks

Reference Documents:

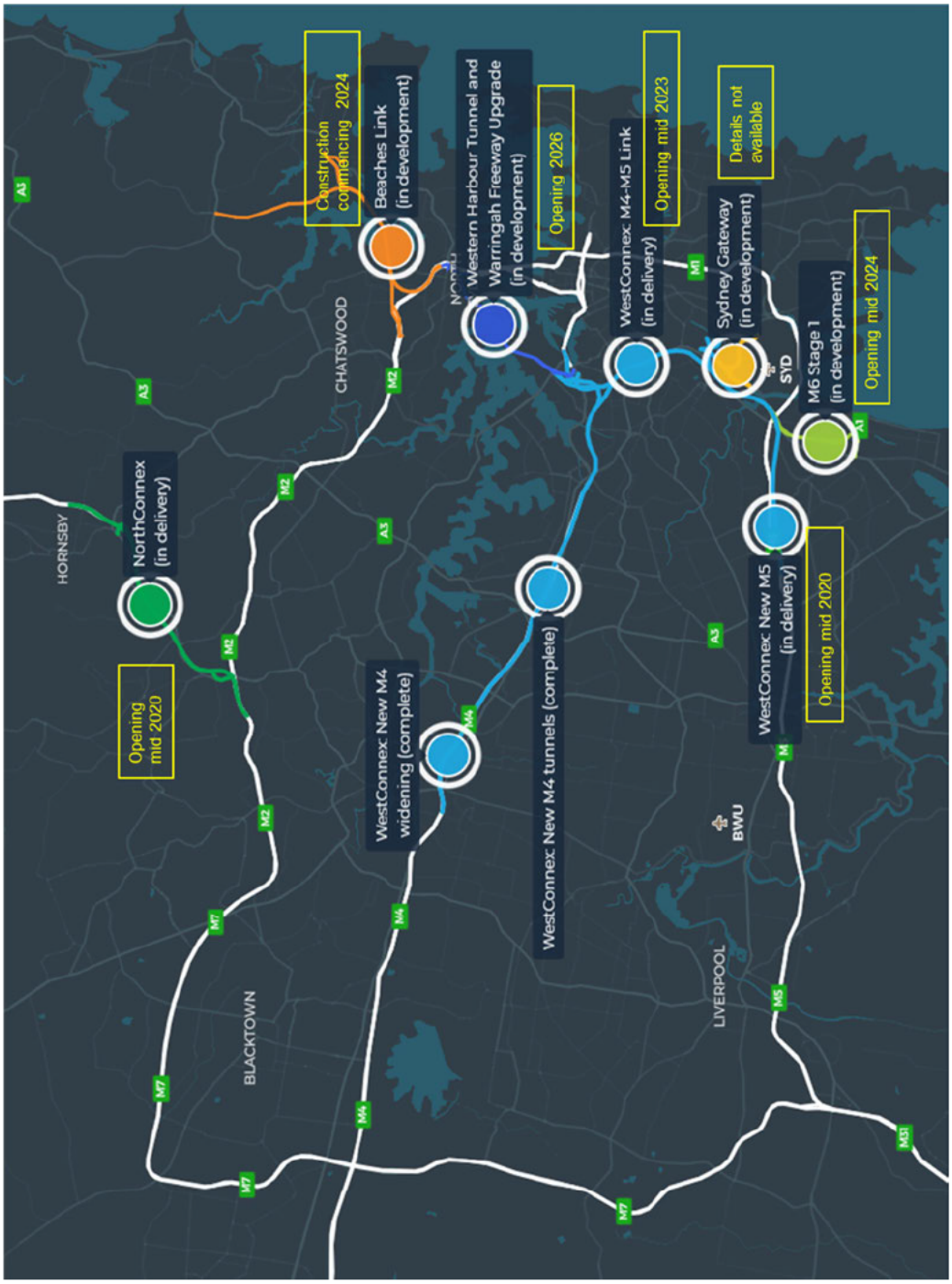
- Transport for New South Wales *Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement Volume 1A Executive Summary, Chapters 1 to 13* January 2020
- Jacobs Australia *Roads and Maritime Services Western Harbour Tunnel and Warringah Freeway Upgrade Technical Working Paper: Traffic and Transport Part 1*, January 2020

ATTACHMENTS

No.	Description
1	Sydney Motorway Network and Current Delivery Status
2	Project Scope
3	Western Harbour Tunnel Portals
4	Trip Distribution Strategy
5	Proposed change to the Urban National Land Transport Network (Road) in Sydney
6	Proposed Alphanumeric Route Numbering Changes
7	Proposed New Motorway Name for Sydney Harbour Tunnel, Eastern Distributor and Southern Cross Drive
8	Lane configuration in the vicinity of Miller Street, Cammeray

ATTACHMENT 1

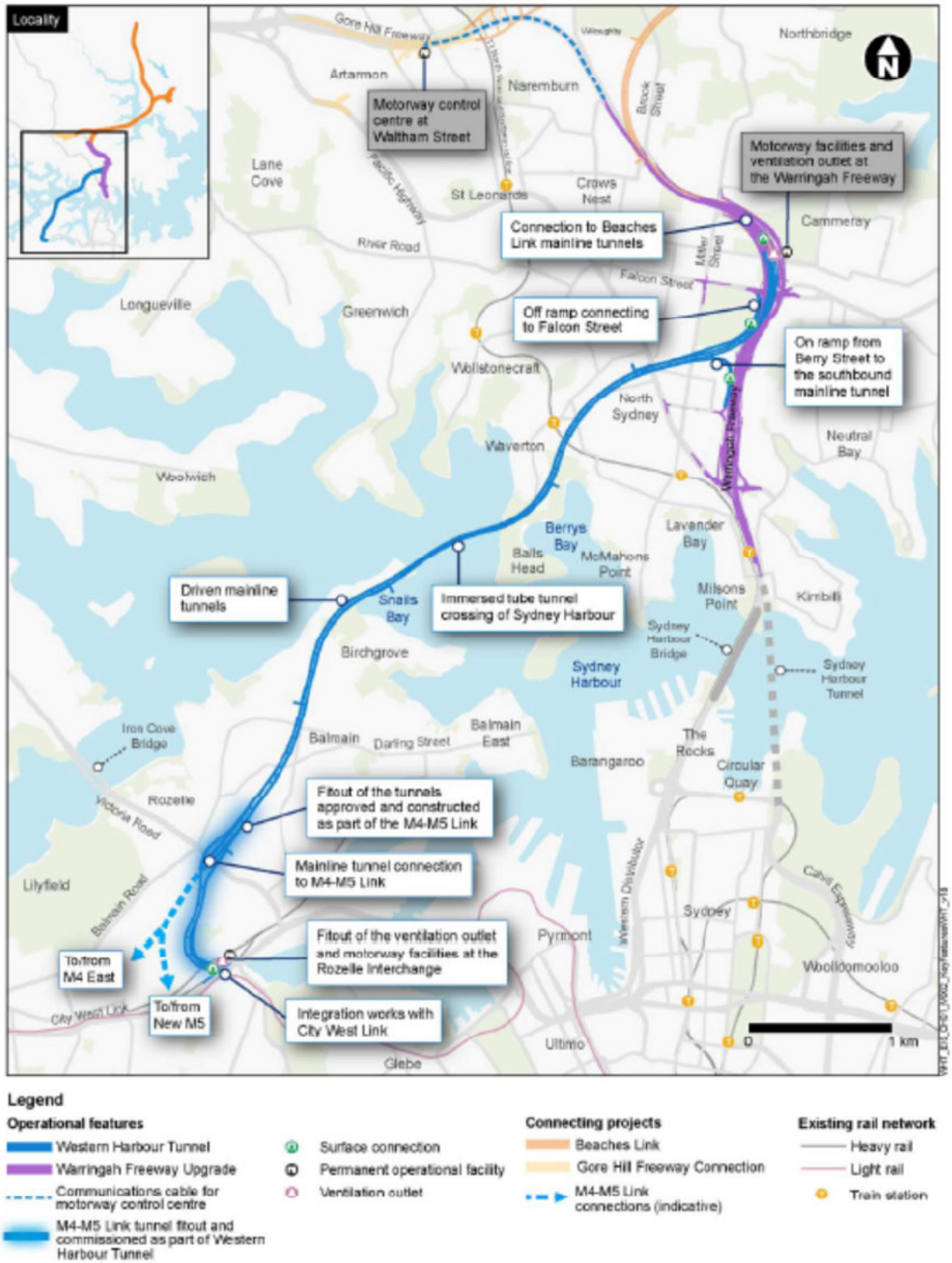
Sydney Motorway Network and Current Delivery Status



ATTACHMENT 2

Project Scope

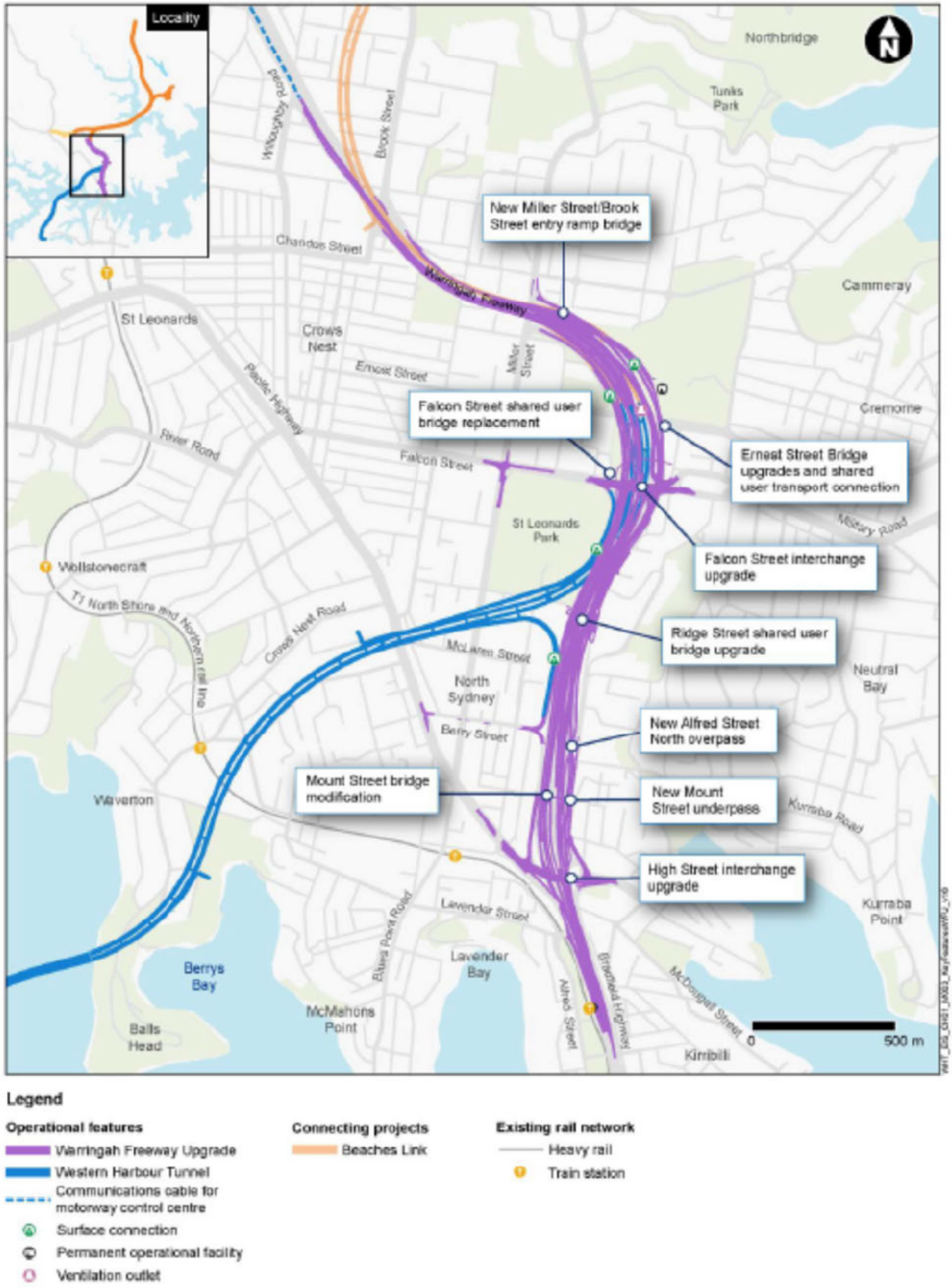
Western Harbour Tunnel



(Source: Technical Working Paper page 3)

Note: The mainline portals of Western Harbour Tunnel in Warringah Freeway are not shown the above diagram. The ingress and egress portals are proposed between Ernest Street and Miller Street

Warringah Freeway Upgrade



Legend

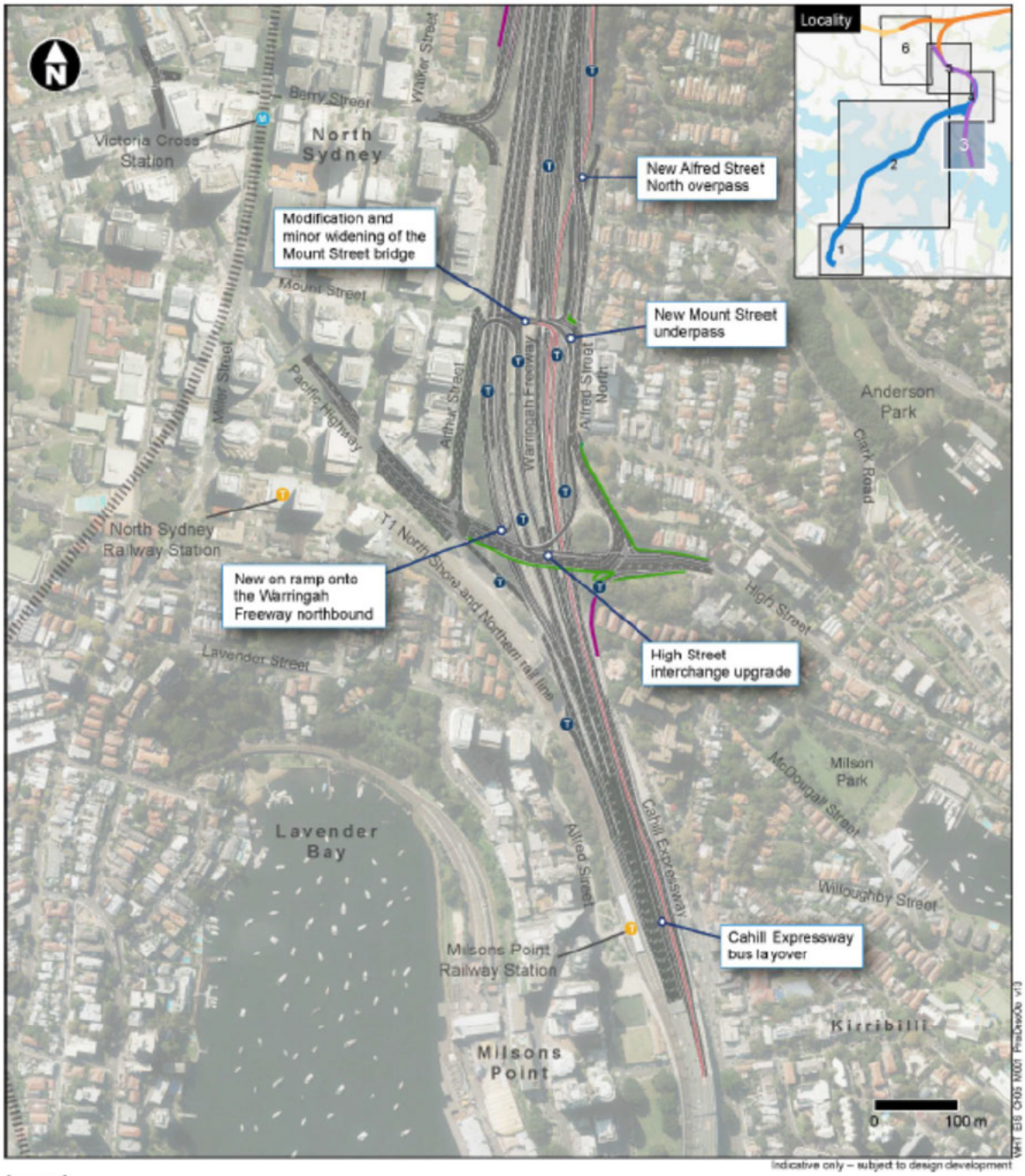
Operational features
- Warringah Freeway Upgrade
- Western Harbour Tunnel
- Communications cable for motorway control centre
- Surface connection
- Permanent operational facility
- Ventilation outlet

Connecting projects
- Beaches Link

Existing rail network
- Heavy rail
- Train station

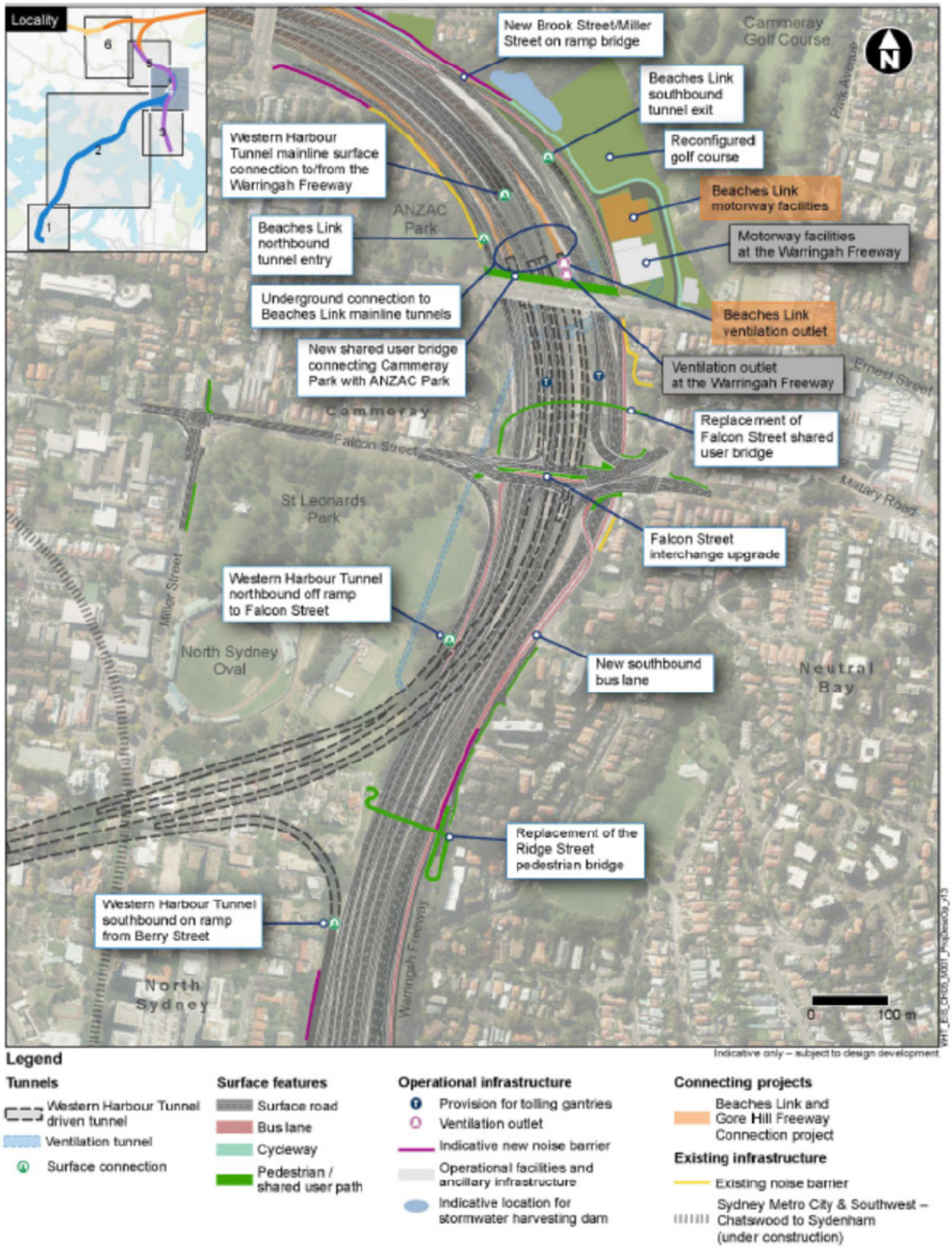
(Source: Technical Working Paper page 4)

Warringah Freeway Upgrade - Fitzroy Street, Kirribilli to Berry Street, North Sydney



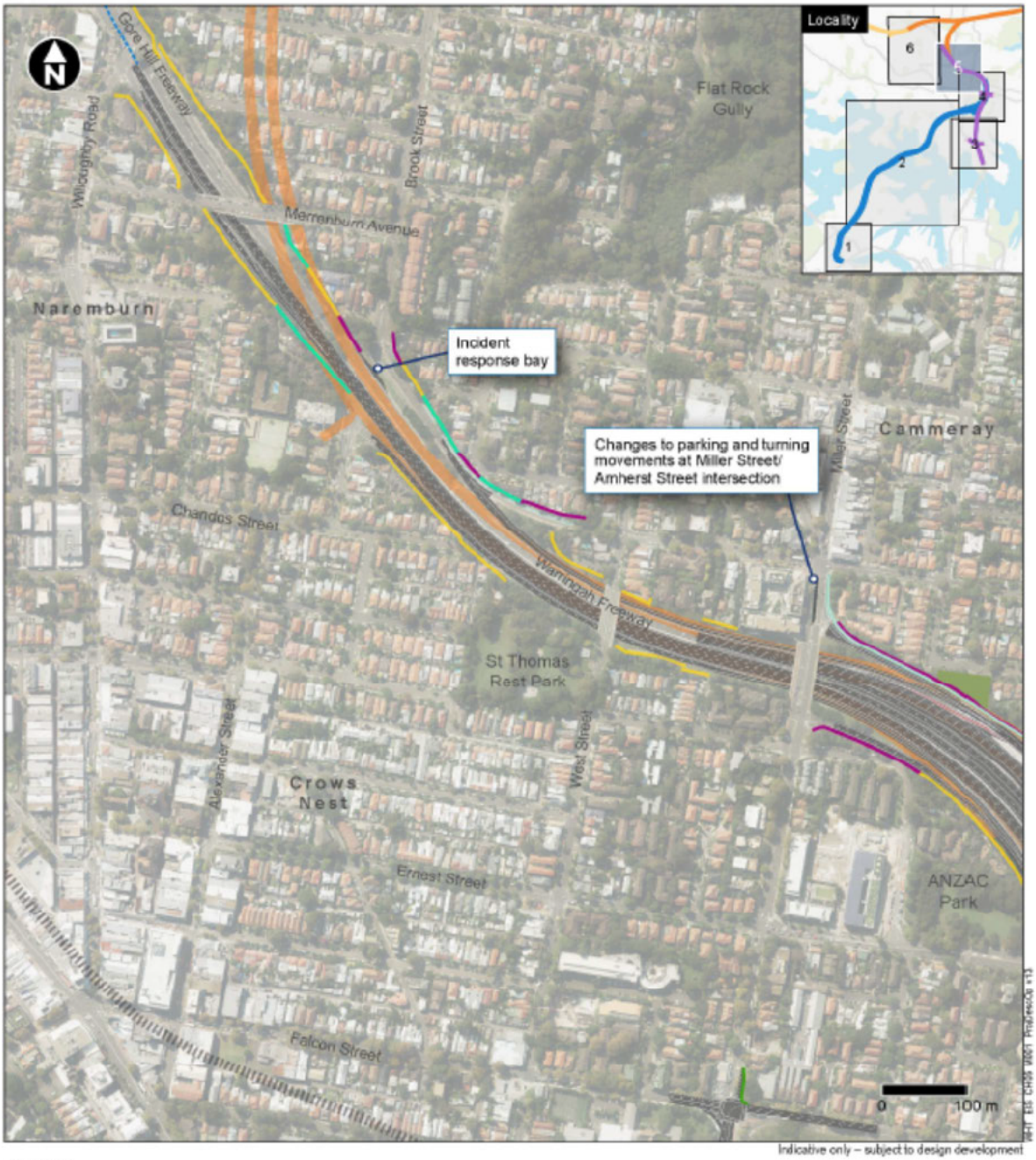
(Source: EIS Chapter 5 page 5 - 10)

Warringah Freeway Upgrade - Berry Street, North Sydney to Ernest Street, Cammeray



(Source: EIS Chapter 5 page 5 - 11)

Warringah Freeway Upgrade - Ernest Street, Cammeray to Willoughby Road, Naremburn



Legend

Surface features
- Surface road
- Bus lane
- Cycleway
- Pedestrian / shared user path

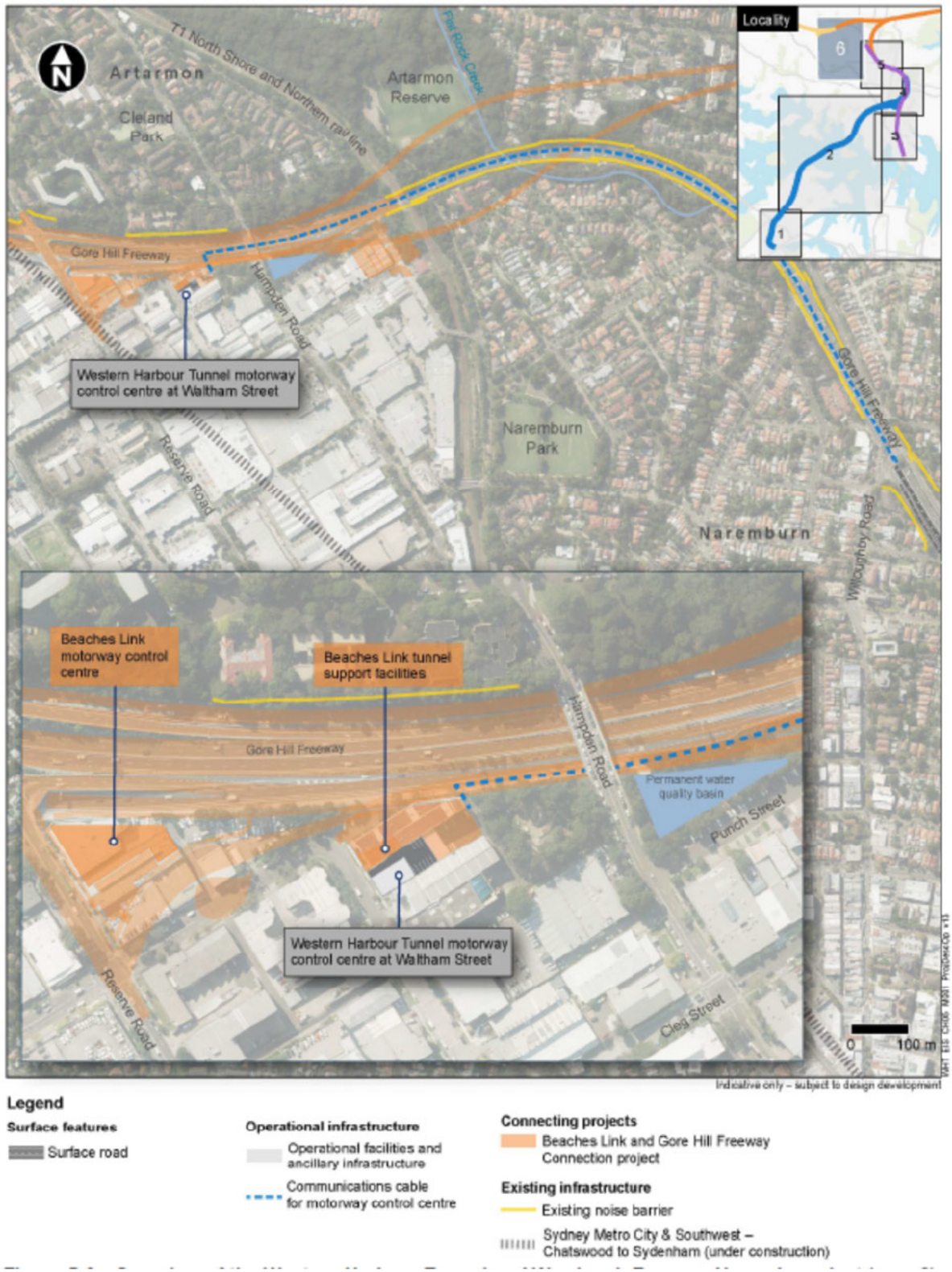
Operational infrastructure
- Indicative new noise barrier
- Indicative upgraded noise barrier
- Communications cable for motorway control centre

Connecting projects
- Beaches Link and Gore Hill Freeway Connection project

Existing infrastructure
- Existing noise barrier
- Sydney Metro City & Southwest – Chatswood to Sydenham (under construction)

(Source: EIS Chapter 5 page 5 - 12)

Warringah Freeway Upgrade - Willoughby Road, Naremburn to Reserve Road, Artarmon

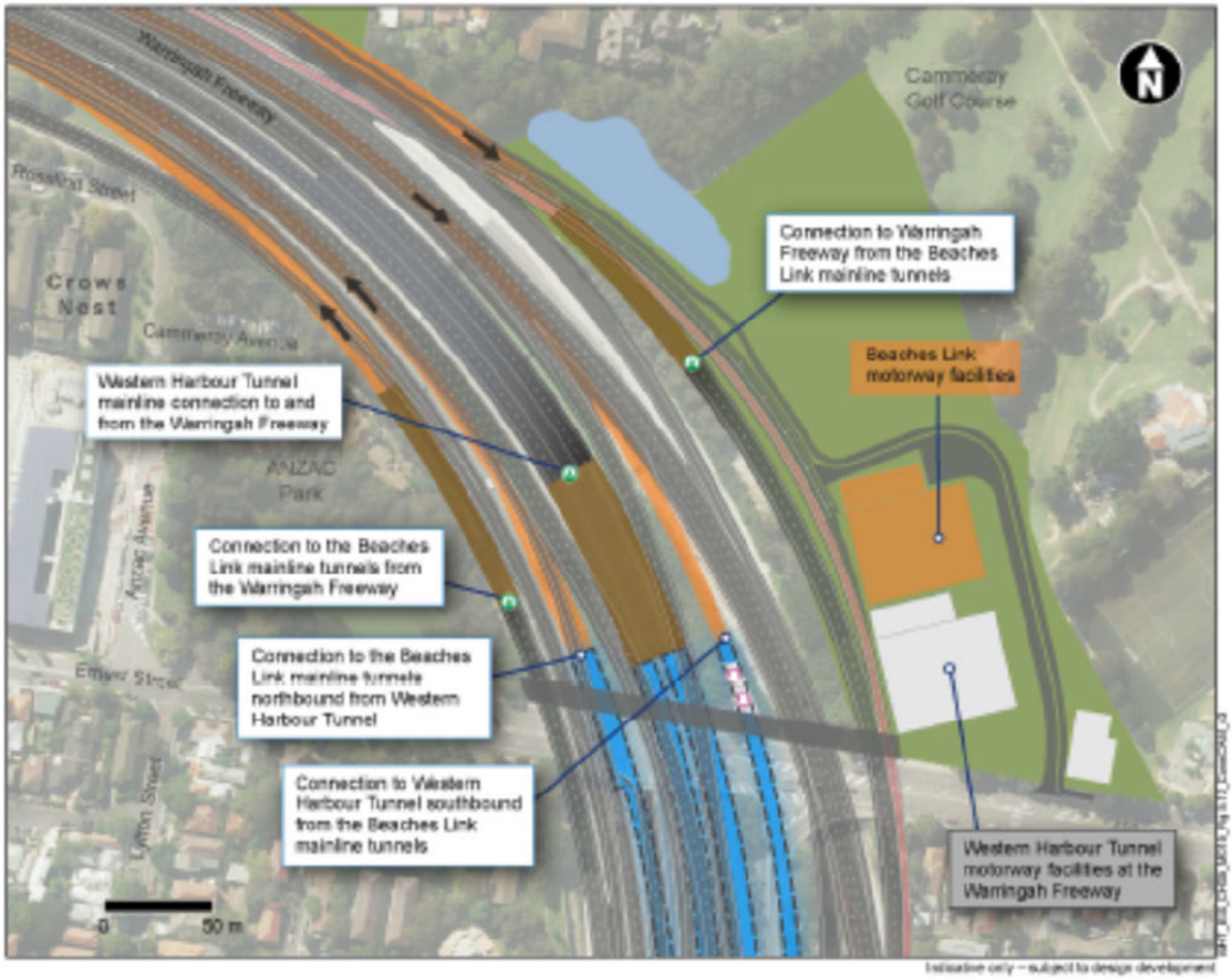


(Source: EIS Chapter 5 page 5 - 13)

Attachment 3

Western Harbour Tunnel Portals

Mainline Portals within the Warringah Freeway



Legend

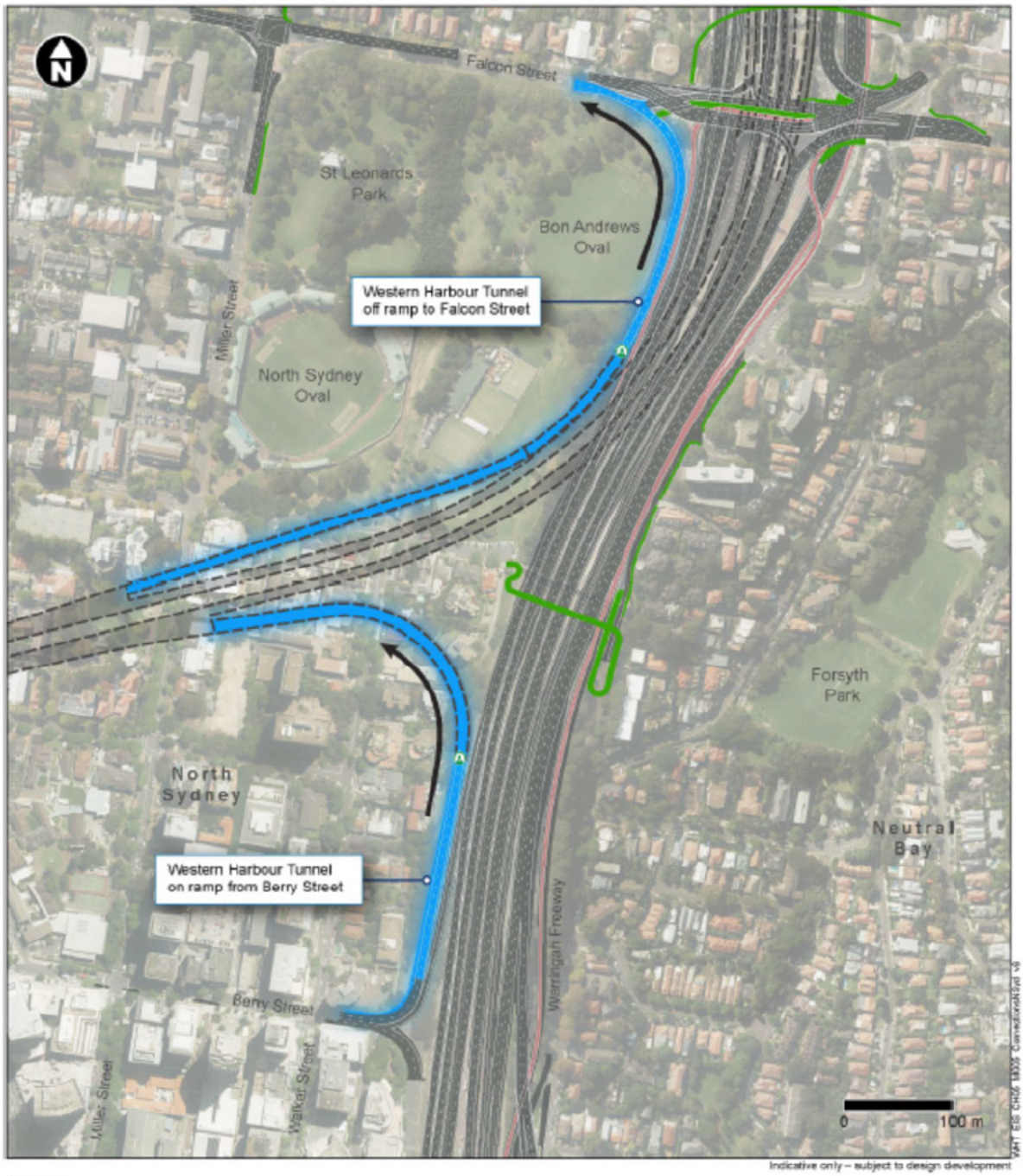
Tunnels
- Western Harbour Tunnel driven tunnel
- Cut and cover
- Surface connection

Surface features
- Surface road
- Bus lane

Operational infrastructure
- Ventilation outlet
- Operational facilities and ancillary infrastructure
- Direction of traffic
- Indicative location for stormwater harvesting dam

Connecting projects
- Beaches Link and Gore Hill Freeway Connection project

Falcon Street and Berry Street Portals



Legend

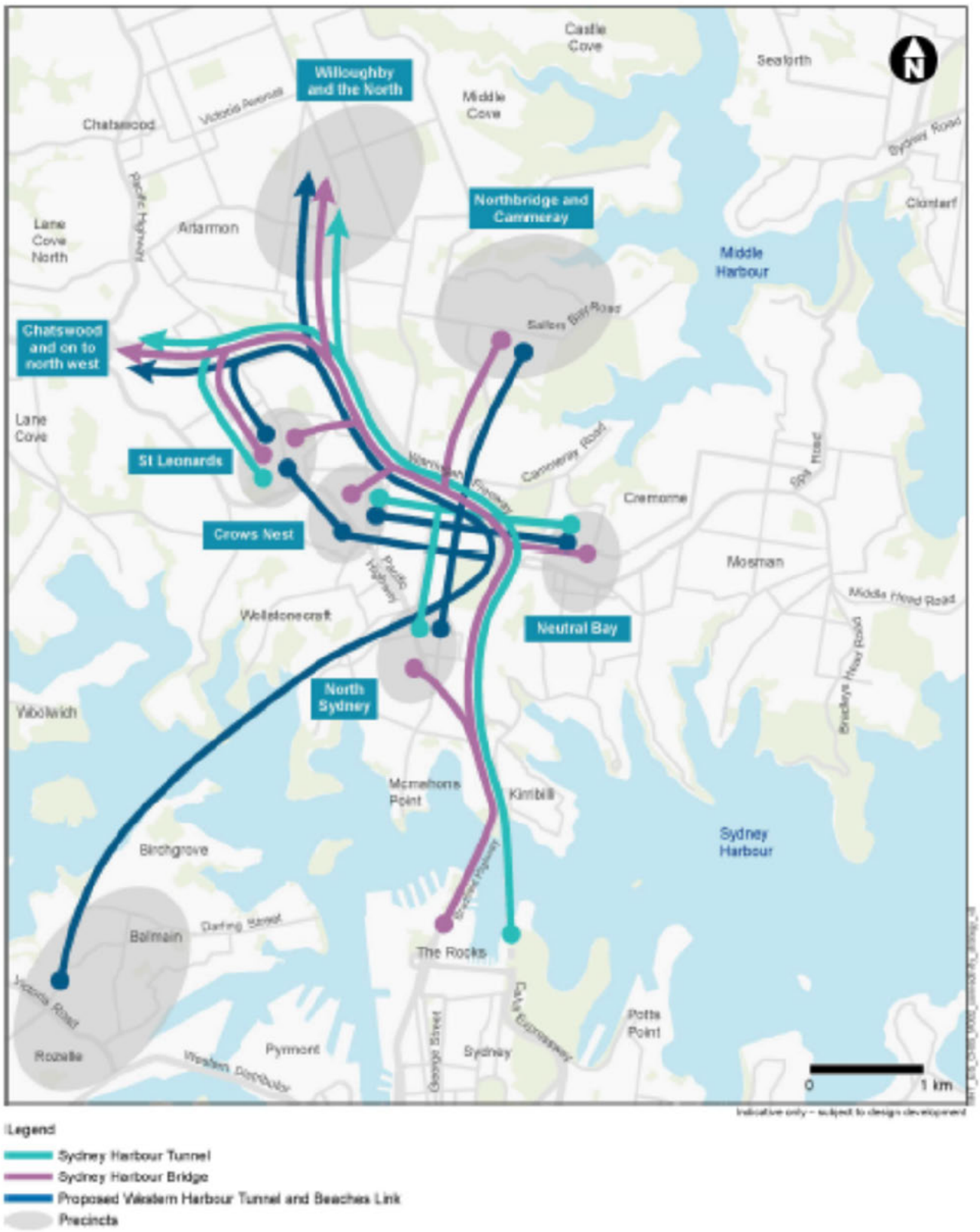
Tunnels
- Ramp tunnel
- Driven tunnel
- Surface connection

Surface features
- Ramp surface
- Surface road
- Bus lane
- Pedestrian / shared user path

Operational infrastructure
- Direction of traffic

ATTACHMENT 4

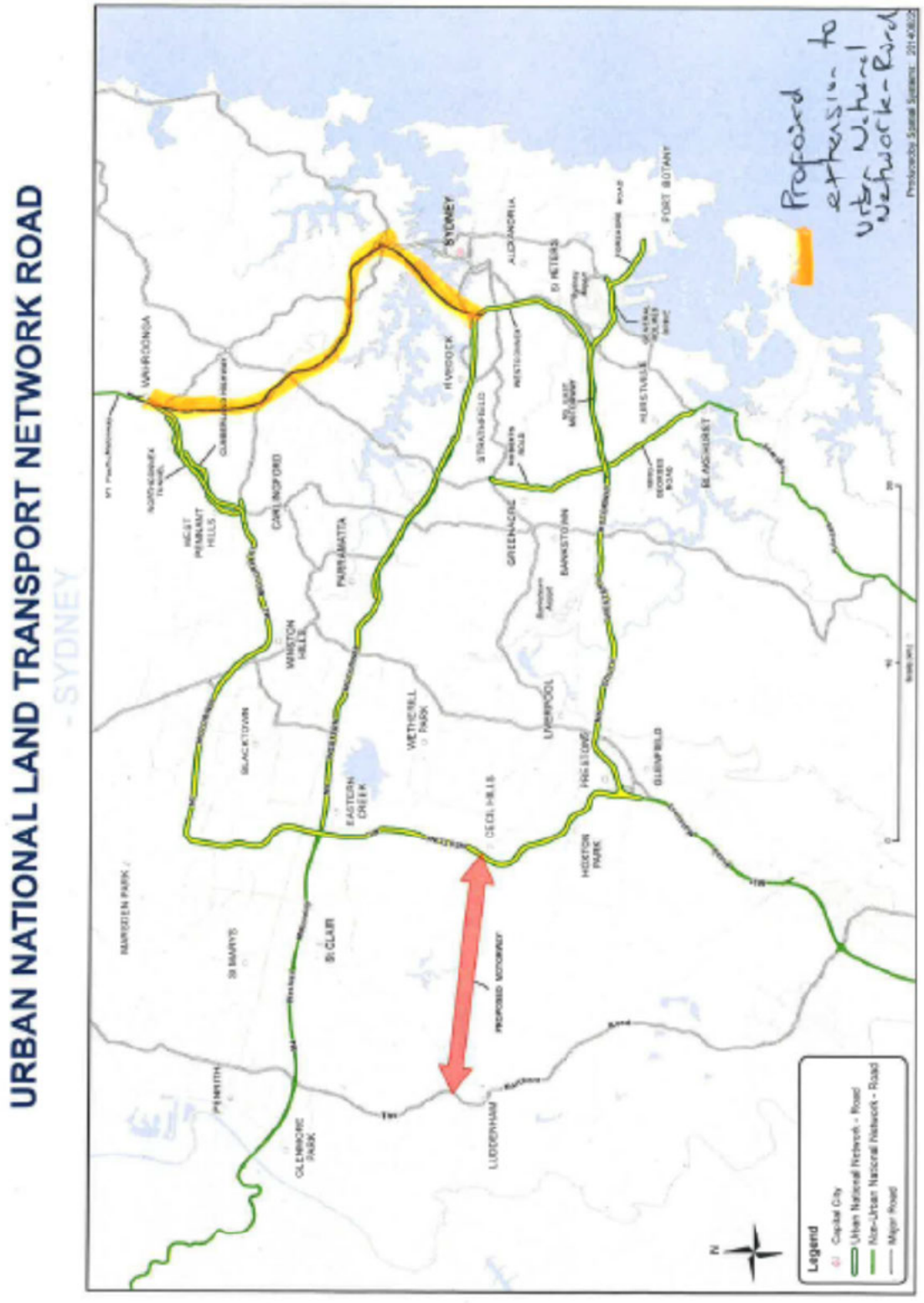
Trip Distribution Strategy



(Source: EIS Chapter 5 Project Description page 5-34)

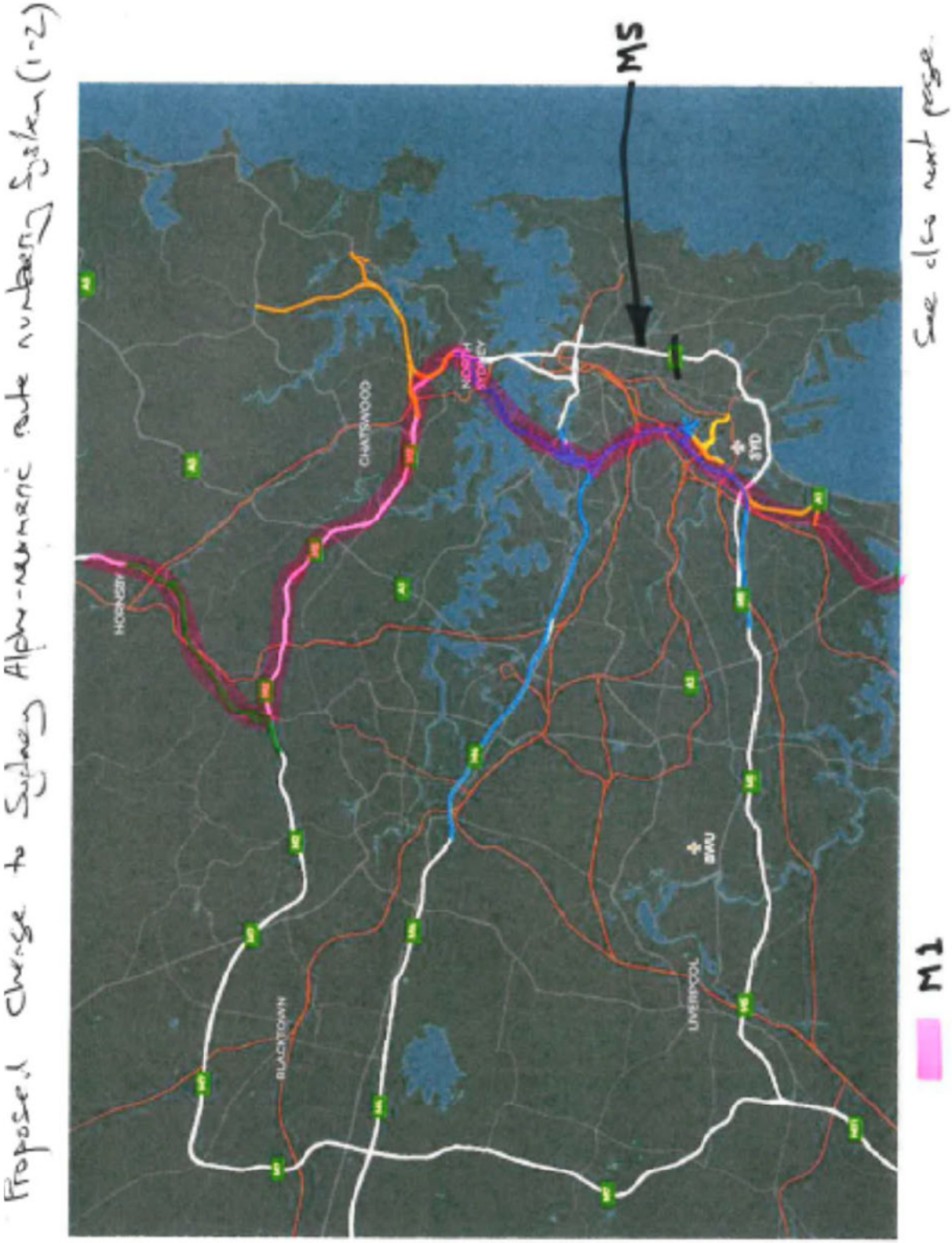
ATTACHMENT 5

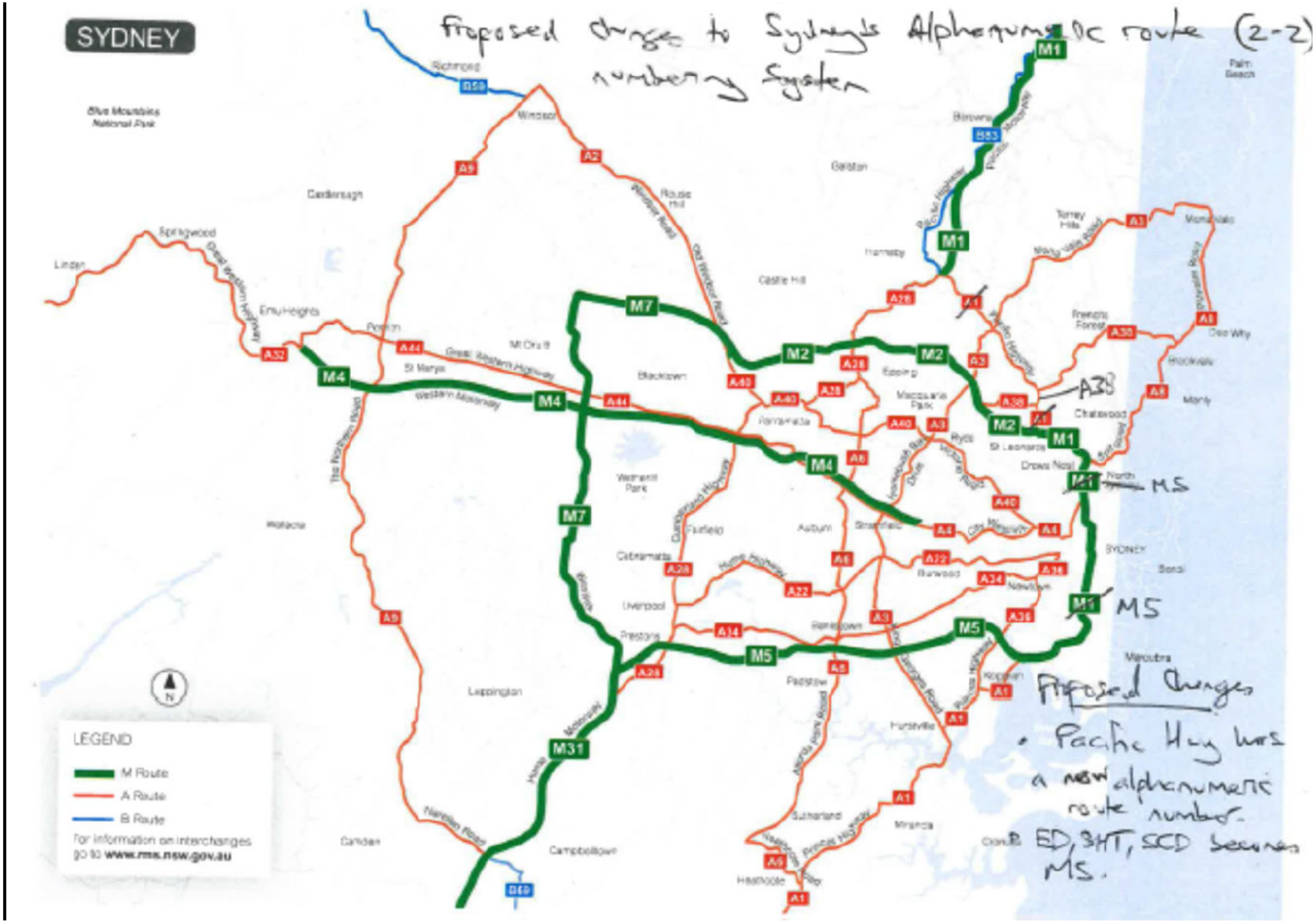
Proposed change to the Urban National Land Transport Network (Road) in Sydney



ATTACHMENT 6

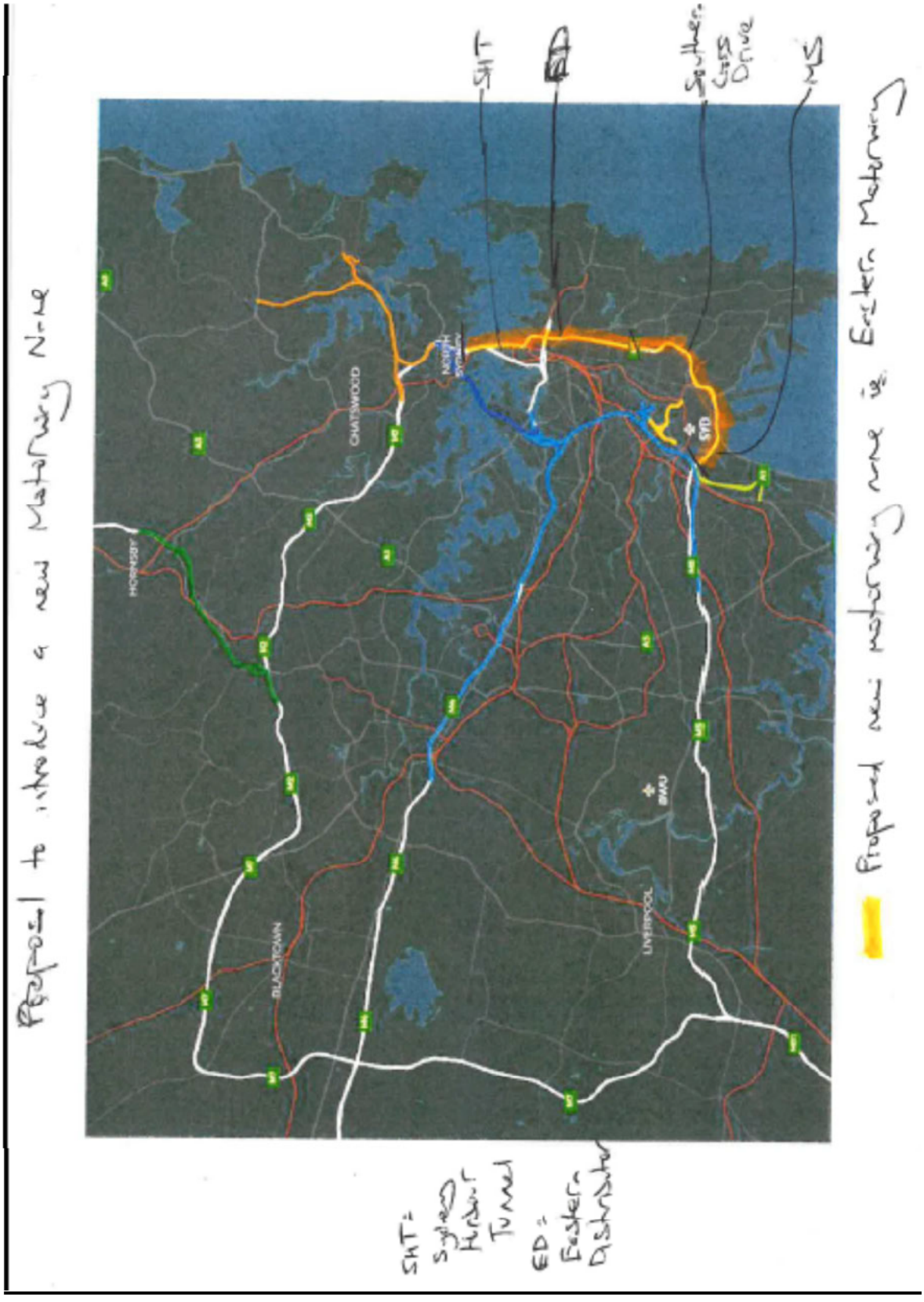
Proposed Alphanumeric Route Numbering Changes




SYDNEY
Proposed changes to Sydney's Alphanumeric route (2-2) numbering System
LEGEND
M Route
A Route
B Route
For information on interchanges go to www.rms.nsw.gov.au
M1
M2
M4
M5
M7
M31
A38
MS
Proposed Changes
• Pacific Hwy has a new alphanumeric route number.
ED, SHT, SCD Sections MS.

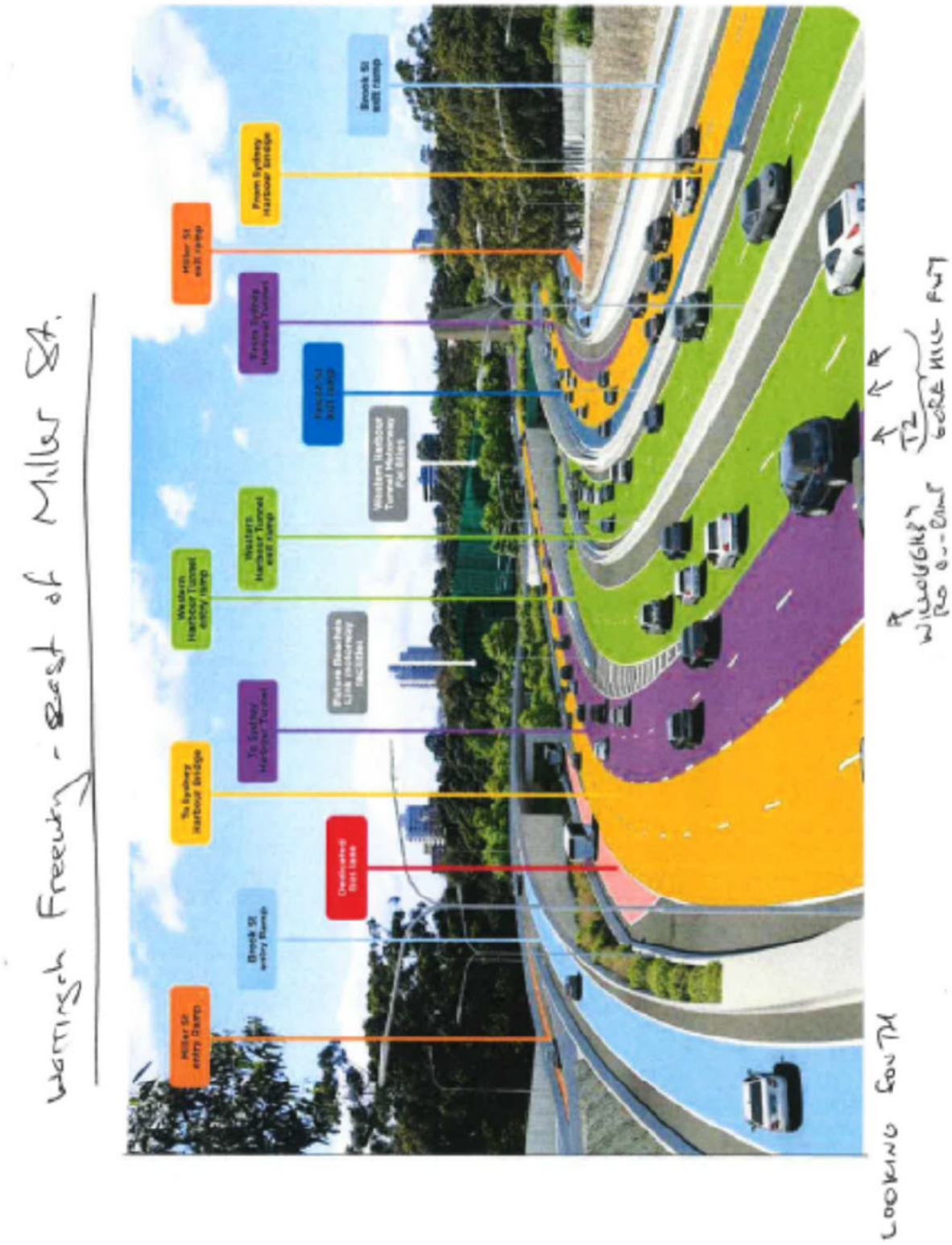
ATTACHMENT 7

Proposed New Motorway Name for Sydney Harbour Tunnel, Eastern Distributor and Southern Cross Drive



ATTACHMENT 8

Lane configuration in the vicinity of Miller Street, Cammeray



Beaches Link and Gore Hill Freeway Connection
Submission on Environmental Impact Statement (EIS)
Willoughby City Council – March 2021

Executive Summary

The Western Harbour Tunnel and Beaches Link program of works ('the Program') comprises two separate but related projects:

- **The Western Harbour Tunnel and Warringah Freeway Upgrade (WHT/WFU)** project which comprises a new motorway tunnel connection across Sydney Harbour, and an upgrade of the Warringah Freeway to integrate the new motorway infrastructure with the existing road network; and

- **The Beaches Link and Gore Hill Freeway Connection (BL/GHFC or 'the Project')** project which comprises a new motorway tunnel connection across Middle Harbour from the Warringah Freeway and Gore Hill Freeway to the Burnt Bridge Creek Deviation at Balgowlah and Wakehurst Parkway at Killarney Heights. The project also includes a surface upgrade of Wakehurst Parkway from Seaforth to Frenchs Forest and upgrade and integration works to connect to the Gore Hill Freeway and Reserve Road at Artarmon.

The Program is a city-shaping project that, if built, will have significant traffic and transport, environmental, social and economic impacts on the Willoughby local government area (LGA).

The EIS for the WHT/WFU project was released in early 2020. Willoughby City Council (Council) made a submission on that document. That project was approved by the Minister for Planning and Public Spaces on 21 January 2021.

The EIS for the BL/GHFC project was released on 9 December 2020. This document is Council's submission on the EIS for the BL/GHFC project.

The EIS describes the transport challenges facing the northern Sydney region, including congestion, high traffic volumes, limited harbour crossings, low resilience of the transport network and travel time reliability. These are all certainly issues that need to be addressed. However, the strategic justification for the Program/Project has not been clearly articulated – especially over alternative public transport improvements. A Final Business Case has never been released to the public.

The Project seems to be at odds with key concepts from NSW and Council strategic plans, including the *Greater Sydney Region Plan – A Metropolis of Three Cities, Future Transport 2056, the Greater Sydney Services and Infrastructure Plan 2056 and Willoughby Integrated Transport Strategy 2036*. The Project will likely perpetuate car dependency and congestion and do little to contribute to the NSW Government's target of net-zero emissions by 2050.

Notwithstanding these broader issues about merit and feasibility, the strategic opportunities the Project could present are recognised. This includes the opportunity for urban renewal along the Penshurst Street / Willoughby Road corridor – the location of several of Willoughby's local centres – due to the possibility to reduce and redistribute through-traffic away from this route and onto the Project once both the WHT/WFU and the BL/GHFC components are completed. There could also be opportunities to improve the standard of active and public transport infrastructure/services, especially the key east-west link of Warringah Road / Boundary Street, between the Northern Beaches and Willoughby and Ku-ring-gai LGAs.

However, for these opportunities to be realised they should be considered concurrently and conditioned with any approval of the Project. This submission makes clear recommendations as to how these opportunities could be realised. Addressing active and public transport improvements as part of the Project would support Transport for NSW's (TfNSW) claim of the Project being an integrated transport solution.

The Project will have significant impacts during both its construction and operational phases. In the construction phase, this would include construction traffic and transport, air quality, noise and vibration, heritage, environment, biodiversity, social and economic impacts. In the operational phase, this would primarily be related to the effects of changed traffic volumes and distribution – and the secondary effects of this on the residential, industrial and business areas of Willoughby LGA – but also in term of noise and vibration from ongoing traffic, particularly in and around Artarmon.

While the overall merit and feasibility of the Project is questioned – particularly over a public transport alternative – this submission provides an assessment of issues that are recommended to be taken into account, should the Project proceed.

Throughout this submission, recommendations are made for Transport for NSW (as the proponent) and the Department of Planning, Industry & Environment (DPIE) (as the assessment/consent authority) to address in the Response to Submissions, any project approval and on an ongoing basis.

Structure of this document

This submission is structured in line with the 28 Chapters of the EIS (not including Chapter 29 – References). Given certain issues can have relevance to more than one Chapter, there may be some repetition. The Chapters (and thus discussion of issues and Council recommendations) are divided as follows:

1. Introduction	**8. Construction traffic and transport**	**15. Aboriginal cultural heritage**	**22. Urban design and visual amenity**
2. Assessment process	**9. Operational traffic and transport**	**16. Geology, soils and groundwater**	**23. Hazards and risks**
3. Strategic context and project need	**10. Construction noise and vibration**	**17. Hydrodynamics and water quality**	**24. Resource use and waste management**
4. Project development and alternatives	**11. Operational noise and vibration**	**18. Flooding**	**25. Sustainability**
5. Project description	**12. Air quality**	**19. Biodiversity**	**26. Climate change and greenhouse gas**
6. Construction work	**13. Human health**	**20. Land use and property**	**27. Cumulative impacts**
7. Stakeholder and community engagement	**14. Non-Aboriginal heritage**	**21. Socio-economics**	**28. Synthesis of the EIS**

Under the section for each Chapter of the EIS, key issues are listed in the left column, comments and discussion are provided in the middle column, and recommendations to address the issues (or mitigate the impacts) are listed in the right column.

List of issues, comments and recommendations

EIS Chapter 1 – Introduction EIS Chapter 2 – Assessment process		
Issue	**Comments**	**Recommendations**
N/A	These Chapters provide an overall introduction and description of the Program, the Project and the assessment process. No specific comments are offered on these Chapters.	N/A

EIS Chapter 3 – Strategic context and project need		
Issue	**Comments**	**Recommendations**
3a. Strategic context and project need – General comments	Chapter 3 of the EIS *"outlines the strategic context and need for the project, taking into account the current and future transport challenges Sydney is facing, and describes the benefits of the project for people across Greater Sydney"* (p. 3-1). Section 3.2 talks about the North District's transport challenges, including congestion, high traffic volumes, limited harbour crossings, low resilience of the transport network and travel time reliability. Sections 3.5 and Section 3.6 discuss the key benefits of the Program overall, and the Project specifically, and the intention to address these issues. These benefits are all essentially are related to the effect of decreasing traffic congestion. While general travel time savings are detailed in the Jacobs report (Appendix F), Council questions the 'congestion-busting' benefit of the Project, and whether these could be sustained over the long term due to the phenomenon of 'induced demand'. The strategic justification for the Project has not been made clear – especially over alternative public transport improvements – and that the Project does not satisfy two key concepts from NSW strategic and transport planning – the '30-Minute City' and 'Sustainability'. These are described below.	N/A - See below
3b. Alignment with key concepts of *the Greater Sydney*	Whether the Project has demonstrated alignment with two key concepts from the *GSRP, FT 2056* and the GSSIP is questionable, as follows:	**3b.** In its Response to Submissions, TfNSW is to demonstrate:

***Region Plan – A Metropolis of Three Cities (GSRP), Future Transport 2056 (FT 2056) and the Greater Sydney Services and Infrastructure Plan* (GSSIP) and a Road-Based Public Transport Review**	**The '30-Minute City'** The '30-Minute City' is a key guiding principle across all documents. As defined in the GSSIP (p. 7) (**bold** for emphasis): *"The vision for Greater Sydney is one where people can access jobs and services in their nearest metropolitan city and strategic centre **within 30 minutes by public transport**, 7 days a week."* In its brief discussion of these plans on page 3-28 of the EIS, this critical detail has been omitted. As such, it is questioned whether the Project – which focuses on improving access by private vehicle – aligns with this concept. Section 4.1.2 (30-minute city catchments) of the Jacobs report notes this wording of 30 minute by **public transport** but then proceeds to discuss and show Figures indicating 30-minute catchments **by road**. It states that the Project: *"Would create opportunities for new, or extension of existing, public transport services. These new service opportunities would benefit from the same increases in catchment size as private vehicles"* (p. 44) This appears to be in reference to bus journeys. But this is a questionable assumption; maximum benefits for bus travel times would be achieved if dedicated bus lanes were created – something that is not currently proposed in either the proposed BL tunnel itself or on existing surface corridors.	• How the Project contributes to achieving the '30-Minute City' ideal *by public transport*, as per the wording of the various state strategic plans including *FT 2056*. • How the Project aligns with all six Outcomes of *FT 2056*, including Outcome 6 – Sustainable. A condition of any approval should be included that requires TfNSW to prepare a **Road-Based Public Transport Plan.** This Review should identify bus priority measures to be implemented on corridors that will see a reduction of general traffic due to the construction of the Project to maximise benefits for bus journey times. Such measures would contribute to achieving the '30-Minute City' idea; promote public transport use and support emissions reductions (especially in light of TfNSW's stated intention to completely electrify Sydney's bus fleet by 2030).

	Outcome 6 of *FT 2056* – Sustainability To quote from *FT 2056* (p. 7) (**bold** for emphasis): > *"As a significant emitter of greenhouse gases, **transport also has a role in operating in a more sustainable way** to limit environmental impacts and contribute to the NSW Government's aspirational target **to achieve net-zero emissions by 2050**."* Furthermore, *FT 2056* has six Outcomes, Outcome 6 being: > *"**Sustainable** – The transport system is economically and environmentally **sustainable**, affordable for customers and **supports emissions reductions**."* (p. 15) It is questionable whether the Project can be described as sustainable and whether it support emissions reductions or the ideal of net-zero emissions by 2050.The argument is put forward in the EIS that the Project will result in less congestion which will therefore have benefits on emissions reductions. But any such benefits would be minor when compared to the continued and induced demand for private vehicle travel which will be entrenched by the Project.	
3c. Alignment with Willoughby City	In Table 3-3 (Local strategic plans) on page 3-29 of the EIS, a brief assessment of *"relevant local government*	**3c.** In its Response to Submissions, TfNSW is to provide an assessment of the Project against the key concepts of Willoughby

Council strategic plans	*strategic plans and their relation to the project"* are outlined. However, no assessment against relevant Willoughby City Council local strategic plans is provided. In particular, *Willoughby City Local Strategic Planning Statement* (LSPS) has a number of Priorities that are inconsistent with the Project, but consistent with improved public transport along the Warringah Road corridor between Dee Why and Chatswood, namely: ***Priority 7:*** *Developing Chatswood's role as a true transport hub for Willoughby and the North Shore* ***Priority 8:*** *Connecting Willoughby's network of centres with each other and with Greater Sydney by mass transit* ***Priority 9:*** *Developing Chatswood as a key commercial centre and integral part of the Eastern Economic Corridor* Furthermore, the Project should align with the five Outcomes of *Our Future Willoughby 2028* – Council's Community Strategic Plan (CSP): ***1.*** *A City that is green* ***2.*** *A City that is connected and inclusive* ***3.*** *A City that is liveable* ***4.*** *A City that is prosperous and vibrant* ***5.*** *A City that is effective and accountable* And the related five Strategic Directions of *Willoughby Integrated Transport Strategy (ITS) 2036*: ***1.*** *Our transport system will be sustainable and promote greater levels of walking and cycling*	City Council relevant strategic plans, namely: • *Our Future Willoughby 2028 – Community Strategic Plan (CSP)* – The five Outcomes • *Willoughby City Local Strategic Planning Statement (LSPS)* – Priorities 7, 8 and 9 • *Willoughby Integrated Transport Strategy (ITS) 2036* – The five Strategic Directions

	2. *Our transport system will provide excellent local and regional connectivity and be accessible to all* ***3.*** *Our transport system will contribute to the development of vibrant, liveable and safe places* ***4.*** *Our transport system will support our local economy by efficiently managing congestion and parking demand* ***5.*** *Our transport system will embrace smart technology and respond to community needs*	
3d. Strategic opportunities presented by the Project – Overview	Notwithstanding the aforementioned issues about merit and feasibility and alignment with key strategic plans, the strategic opportunities the Project could present are recognised. This includes the opportunity for urban renewal along the Penshurst Street / Willoughby Road corridor – the location of several of Willoughby's local centres – due to the possibility to reduce and redistribute through-traffic away from this route and onto the Project once both the WHT/WFU and the BL/GHFC components are completed. There could also be opportunities to improve the standard of active and public transport infrastructure/services, especially the key east-west link of Warringah Road / Boundary Street, between the Northern Beaches and Willoughby and Ku-ring-gai LGAs. Travel time benefits of the Project (Figure 3-8) will result in the transfer of traffic on the arterial road network including Fullers Road, Pacific Highway, Boundary Street, Eastern Valley Way, Willoughby Road and Penshurst Street. The travel time benefits will primarily be for trips between the Northern Beaches and Sydney CBD, Macquarie Park, St Leonards and Chatswood. Forecast major traffic	N/A - See below

	reductions on major arterial routes (page 3-19) include: • Warringah Road would decrease by up to 23% in the peak period • Eastern Valley Way would decrease by up to 40% in daily traffic demand Assuming that these forecast decreases in trip travel times and traffic demands are met, it is considered appropriate that Council: • Capitalise on the surplus road capacity provided by the Project and repurpose this road space for other more important uses; • Maximise the use of the new connected motorway network as the primary road network for regional journeys; and • Change the surface road network to balance regional road network capacity with safety, access and amenity of current and future centre and land use provision and operation.	
3e. Strategic opportunities presented by the Project – Urban Renewal	The Project could be a catalyst for urban renewal along Penshurst Street / Willoughby Road, similar to what the Eastern Distributor did for Bourke Street, Surry Hills. This would align with the overall intention and directions of Council's *Willoughby Local Centres Strategy 2036.* There is also the potential to improve safety and local amenity in Chatswood (Boundary Street to Victoria Avenue / Penshurst Street to Pacific Highway) by reducing the	**3e.** It is recommended that a condition of any approval be included requiring TfNSW to create and implement a **Roseville to Naremburn Corridor Transport Plan** in consultation with Council. This Plan should incorporate plans for urban renewal and changes to traffic management on the corridors: • Warringah Road / Babbage Road / Boundary Street / Clive

	level of rat-running in the weekday peak periods. Using the Movement and Place framework, significant benefits could be realised to promote the Place function of several of Council's local centres located along the Penshurst Street / Willoughby Road corridor as well as Flat Rock Drive / Brook Street. However, any change will require an improved connection between Boundary Street / Babbage Road and Clive Street / Eastern Valley Way, Roseville. Traffic flows forecast to reduce along Eastern Valley Way as a result of the Project would be replaced with traffic redirected from Penshurst Street / Willoughby Road, albeit it is anticipated that overall, there would still be a decrease in traffic volumes along Eastern Valley Way. To achieve this urban renewal project along Penshurst Street / Willoughby Road, the following changes would be required: • Traffic management would be implemented along Penshurst Street / Willoughby Road to increase access and reduce capacity for movement (typically only one travel lane in each direction excluding intersections) i.e. – Permit the right-turn movement from Penshurst Street into Ashley Street, both directions, at all times. – Provide a designated right turn-bay/lane in Penshurst Street into Ashley Street (north to eastbound).	Street / Eastern Valley Way / Sailors Bay Road / Strathallen Ave / Miller Street; and • Penshurst Street / Mowbray Road / Willoughby Road • Flat Rock Drive / Brook Street

	– Provide new pedestrian traffic control signals in Penshurst Street at Muston Park. The signals could also be used to support bicycle movement along a new bicycle link along Scotts Creek. – Permit the right-turn movement from Penshurst Street into Victoria Avenue, both directions, at all times. – Provide a designated right-turn bay/lane in Penshurst Street into Victoria Avenue (south to westbound). – Change the operation of the Penshurst Street / Willoughby Road / Mowbray Road to reduce the benefits to through movement. – Permit the right-turn movement from Willoughby Road into Small Street and Artarmon Road, both directions, at all times. – Provide a designated right turn lane in Willoughby Road, southbound, into Willoughby Road (across Gore Hill Freeway). – Reduce the number of road lanes in Willoughby Road, southbound, to one travel lane only and use the road space to extend the footpath. – Modify the design of the Willoughby Road off-ramp at Willoughby Road, Naremburn to remove the slip lane – Provide a 40 km/h speed limit through the local centres and 50 km/h at other locations. – Change the traffic signal operation at all traffic signal-controlled intersections to promote access and pedestrian movement at all times. – Remove clearway restrictions and permit parking during the weekday peak periods along the full length of the route.	

	• Traffic management would be implemented along Boundary Street / Babbage Road and Clive Street / Eastern Valley Way, Roseville to increase access and increase capacity for movement i.e. – New dual right-turn bay in Babbage Road, northbound, at Clive Street, Roseville – New right-turn signal and phase in Babbage Road, northbound, at Clive Street within the traffic control signals – Close the right-turn bay in Boundary Street, northbound, at Boundary Street (local road). (This action will also improve road safety and amenity for the residents and park users between Boundary Street and Eastern Valley Way). – Change the guide signs to advise regional traffic to use Babbage Road / Eastern Valley Way to access North Sydney, Harbour Crossing, Sydney CBD etc. To realise these ideas, it is proposed that a condition requiring a **Roseville to Naremburn Corridor Transport Plan** be included as part of any approval to investigate and make recommendations on these matters. This would be created with the input from all Councils in the area (including Willoughby and Ku-ring-gai).	
3f. Strategic opportunities presented by the Project – Public	The EIS states that the Project provides an integrated transport solution/network with the potential to improve express bus services to employment centres including Chatswood, St Leonards and Macquarie Park.	**3f.** It is recommended that a condition of any approval be included requiring TfNSW to create and implement a **Road-Based Public Transport Plan** in consultation with Council.

Transport	The EIS however advises the Project but will only provide the "opportunity" for improved bus services, and does not propose any specific improvements. For the Project to be considered a truly integrated transport solution, such opportunities to improve future bus services and interchanges need to be addressed as part of any approval. A number of specific proposals are detailed below: ***Warringah Road / Babbage Road / Boundary Street (to Archbold Street)*** The Project provides the opportunity to introduce bus priority measures along Warringah Road, Babbage Road and Boundary Street (to Archbold Street). It is noted that the NSW Government is currently progressing plans for a B-Line style of service along this route. Bus lanes along Warringah Road / Babbage Road / Boundary Street (to Archbold Road), operating at all times, would improve journey times and improve safety, access, attractiveness along this key transport corridor. ***St Leonards Bus Interchange*** The Project offers the potential for a significant improvement in bus services to/from St Leonards as a consequence of improved travel times for buses using the Project. This could be the catalyst for a new bus interchange in St Leonards. The location for the bus interchange could be	This Plan should incorporate future bus services and interchanges as part of the Project, in particular: • Consideration of bus priority measures for the Warringah Road / Babbage Road / Boundary St corridor; • A proposed St Leonards Bus Interchange; and • Upgrades to the existing Chatswood Bus Interchange to improve its efficiency and operation.

	over the rail line, just south of current train station. This location has excellent access to the road network to/from St Leonards and the Project. A new St Leonards Bus Interchange could potentially relieve the ongoing congestion and layover pressures at the Chatswood Bus Interchange. ***Chatswood Bus Interchange*** The Project offers the potential for a significant improvement in bus services to/from Chatswood as a consequence of improved travel times for buses using the Project. However, there is the potential that new services to commence or terminate at Chatswood would add pressure to an already over-capacity bus interchange. Expansion of the Chatswood Bus Interchange should be planned and delivered prior to the to completion of the Project, in anticipation of new and more bus services to this strategic centre, noting that a B-Line style service is also being implemented along Warringah Road / Babbage Road / Boundary Street. The expanded Chatswood Bus Interchange would provide the opportunities to implement pedestrian and urban amenity improvements in Chatswood CBD by repurposing the road space used by bus layover on the local roads. To realise these ideas, it is recommended that a condition requiring a **Road-Based Public Transport Plan** be included as part of any approval to investigate and make recommendations on these matters. This would be created with the input from all Councils in the area (including	

	Willoughby, Ku-ring-gai, Lane Cove, North Sydney, Mosman and Northern Beaches).	
3g. Strategic opportunities presented by the Project – Active Transport	The EIS highlights that the Project provides an integrated transport solution/network, but provides no active transport improvements connecting the Northern Beaches with Willoughby LGA. A separated, two-way bicycle lane on the southern side of Warringah Road / Babbage Road should be investigated to improve safety, access, attractiveness and operation for cyclists along this principal transport corridor. It is therefore recommended that a **Forestville to Chatswood Bicycle Route Plan** be developed by TfNSW. This would investigate opportunities to upgrade the connection for cyclists between the Forest District and Ku-ring-gai and Willoughby LGAs. This is a vital missing link that should be addressed, if the Project is to be considered a truly integrated transport solution.	**3g.** It is recommended that a condition of any approval be included requiring TfNSW to undertake an **Active Transport Review** for both the construction and operational phases of the Project. In particular, a **Forestville to Chatswood Bicycle Route Plan** should be required as part of this Review, in order to investigate and recommend improvements to safety, access, attractiveness and operation for cyclists along the Warringah Road / Babbage Road corridor between Forestville and Chatswood. This would be created in consultation with Northern Beaches, Ku-ring-gai and Willoughby Councils and local cyclist groups/organisations.

EIS Chapter 4 – Project development and alternatives		
Issue	**Comments**	**Recommendations**
4a. Final Business Case for the project and complete assessment of public transport alternatives	Under section 2 of the revised SEARs (2020) for the BL/GHFC Project, *"the EIS must include, but not necessarily be limited to, the following: … (e) an analysis of any feasible alternatives to the project".* The EIS has not demonstrated that the Program overall, and the Project specifically, is the best solution to address the transport issues facing the northern Sydney region (as outlined in Chapter 3), and has not thoroughly assessed feasible public alternatives to the Project, such as an extension of the Sydney Trains or Sydney Metro network (e.g. between Chatswood and Dee Why). A brief analysis of strategic alternatives is provided in Section 4.3 of Chapter 4. These are listed as: • Do nothing • Travel demand management • Improvements to the existing arterial road network • A new motorway crossing of Middle Harbour (the Project) • Improvements to alternative transport modes The "Improvements to alternative transport modes" options are described in section 4.3.5 with the subsections: • Improvements to the Sydney bus network • Improvements to the rail network • Improvements to the ferry network	**4a.** It is recommended that TfNSW to release the final Business Case prepared for the Program/Project to demonstrate why the Program/Project was considered the best option for addressing the transport issues facing the northern Sydney region. If this is not forthcoming, in its Response to Submissions, TfNSW is to provide a more thorough and comprehensive assessment of alternative public transport options to the Project – in particular an extension of the Sydney Trains or Sydney Metro network (e.g. between Chatswood and Dee Why). Evidence is to be provided as to why these public transport options were discounted in favour of the Project. Furthermore, TfNSW is to address the issue of induced demand, providing a more direct, detailed, relevant and clear assessment of what effect this phenomenon will have on the Project itself and arterial and local roads within the vicinity of the Project footprint. This assessment should also have a longer time horizon than just 2027 and 2037.

	• Improvements to active transport • Summary All of these options are discounted as unviable for various reasons. The arguments put forward can be summarised as follows: • The arterial road network in northern Sydney is already congested; therefore, this Project is needed to relieve this existing congestion; • Sydney's population is growing; therefore, traffic will increase, and therefore the Project is needed to address future congestion; • The physical and urban geography of the Northern Beaches region means it is technically too challenging, would be too expensive, and would take too long to dig a rail tunnel under Middle Harbour; • The provision of rail infrastructure is reliant on the location of and accessibility to high density residential or commercial property close to proposed stations as well as along its route; • The Northern Beaches has too low population density and growth rate to make (light) rail viable; and • A rail network cannot serve the variety of dispersed destinations like the road network. Little justification is given to support these broad claims. The fundamental philosophy that has been used to justify the Program overall, and Project specifically is that congestion can be solved by expanding road space. But new road space will only ever provide temporary relief from	

	congestion. Over time, traffic will expand to fill the new space and congestion will return, thus creating a self-perpetuating cycle of endless road building. This phenomenon has been recognised for decades and is known as 'induced demand' (also the 'Lewis-Mogridge Position'; Mogridge 1990, 1997*). Yet the word 'induced' is used only five times in the Jacobs report (Appendix F). The only reference of significance is as follows: > *"Even with no growth in regional population and economic activity, a new or substantially upgraded road can induce changes in trip patterns, which then appear as induced traffic demand. The SMPM includes the changes in traffic associated with all three of the above sources of traffic, with induced demand equating to about 0.3 per cent additional daily trips in the Sydney metropolitan area in 2037".* (Jacobs, 2020, p. 29) What does this 0.3% figure mean? What does this represent in actual new vehicle movements? What would this mean at a local level? Quoting this small figure in the context of the whole Sydney metropolitan obscures the reality of induced traffic demand to be created by both the WHT/WFU and BL/GHFC projects. A more efficient and sustainable way to support mobility and continued growth of travel over the long term would be to invest in public transport, in particular heavy and light rail but also the rapid bus network. The combined WHT/WFU and BL/GHFC projects only widen the inequality in coverage of the public transport network compared to the road network and perpetuate car	

	dependency. The Final Business Case needs to be made public to justify the significant projected cost and impacts of the combined WHT/WFU and BL/GHFC projects. ***References:** Mogridge, Martin J. H. (1990). *Travel in towns: jam yesterday, jam today and jam tomorrow?* London, UK): Macmillan Press. Mogridge, Martin J.H. (1997). 'The self-defeating nature of urban road capacity policy: a review of theories, disputes and available evidence'. *Transportation Policy*, vol. 4, no. 1, p. 5-23.	
4b. Impacts of the COVID-19 pandemic on travel patterns and traffic forecasts	The impact of the COVID-19 pandemic on travel patterns and traffic patterns (particularly the working from home trend), has not been considered in any detail in the EIS. While it is probably too early to fully understand what permanent impacts the pandemic will have on travel patterns, greater consideration needs to be given to how changed mobility behaviours and travel patterns will impact on forecast traffic demands, both for the Project itself and existing surface routes. This issue of inaccurate traffic forecasts is particularly important given the still recent experience of other Australian tunnel projects, in which forecast traffic demands were significantly overstated (e.g. Cross City Tunnel and Lane Cove Tunnel in Sydney, Clem Jones Tunnel and Airport Link in Brisbane), resulting in the	**4b.** In its Response to Submissions, TfNSW is to provide further analysis and discussion of what impacts the COVID-19 pandemic has and will have on travel patterns and traffic volume forecasts for the Program overall and the Project specifically.

	financial failure of these projects. In light of these experiences and in the wake of the pandemic, further consideration of this issue needs to be given by TfNSW in its Response to Submissions.	

EIS Chapter 5 – Project description		
Issue	**Comments**	**Recommendations**
5a. WHT, WFU, BL and GHFC (Program) delivery (Section 5.1, page 5-3)	The overall Program provides the maximum benefits for Willoughby LGA if delivered concurrently. However, Council acknowledges that this may be unrealistic given the scale of both projects. Furthermore, the separation of the Gore Hill Freeway Connection from the Beaches Link component (page 5-3) does not provide the best performance outcomes for Willoughby LGA; both elements ideally should be delivered at the same time.	**5a.** It is recommended that a condition of any approval be included requiring TfNSW to deliver the Beaches Link and Gore Hill Freeway Connection elements of the Project at the same time to achieve the best performance outcomes for the Willoughby LGA.
5b. Artarmon industrial and residential areas	The Project as it is currently designed will have significant detrimental impacts on the operation of the Artarmon industrial and residential areas, with loss of highly valued industrial land, on-street parking and changes to the road network configuration and operation. Numerous significant road network changes are proposed in this area including: • The proposed construction of new traffic control	**5b.** It is recommended that a condition of any approval be included requiring TfNSW to undertake a **Transport Study of the Artarmon Industrial Area** in consultation with Council. This would cover both the construction and operational phases of the Project. This Study would include the road network bounded by Pacific Highway, Herbert Street / Hampden Road, Frederick Street, Reserve Road, Campbell Street, Gore Hill Freeway and the proposed Beaches Link off-ramp. This should be undertaken prior to the installation of the traffic control signals. The study will

	signals at the intersection of the Pacific Highway and Dickson Avenue; • A connection from the Beaches Link tunnel via an off-ramp to Reserve Road, linking to Dickson Avenue; • An on-ramp via the existing Reserve Road interchange to the Beaches Link tunnel; and • Closures of parts of Dickson Avenue and Punch Street to through-traffic. These proposed measures will significantly change the road network hierarchy, performance and operations in the Artarmon industrial area. Whilst providing on- and off-ramps in the vicinity of the Artarmon industrial area is considered acceptable, the best design and operational outcome is for the ramps to connect directly with Pacific Highway, in the vicinity of Dickson Avenue. This design would provide benefits to the industrial area (and residential areas as well), as there would be a direct connection of the Project to a State Road, similar to the Lane Cove Tunnel and Gore Hill Freeway. Any surplus land could then be used to provide green space or a park for the industrial area, something that is currently lacking. The use of Reserve Road for bus movements strengthens the need to reclassify the section between Frederick Street and Gore Hill Freeway to a Regional Road (it is currently a Local Road). Consideration may also need to be given to change the classification of Dickson Ave, Frederick Street and Herbert Street (between Frederick Street and the Pacific Highway) to Regional Roads.	identify traffic demands and intersection performance within the area and works required to ensure safety, accessibility and efficient movement and operation of the road network for all road users. This Study should consider the following specific measures: • A direct connection from the Beaches Link tunnel to the Pacific Highway (i.e. State Road to State Road) to discourage traffic from using the Willoughby local road network to access the Beaches Link tunnel. • Reclassification of certain roads in the Artarmon industrial area from Local to Regional Roads, in particular part of Reserve Road, Frederick Street, part of Herbert Street and Dickson Avenue. • A plan to replace the on-street parking spaces that will be lost in the Artarmon industrial area due to the Project.

	Table 5-12 (page 5-54) indicates that the surface road works in the Artarmon industrial area relating to changes to Local Roads is considered minor. Council does not agree with this assessment. The removal of 36 temporary and 25 permanent on-street parking as proposed is not acceptable. Street parking is highly valued by workers, businesses and visitors and the loss will be a material impact on the operation of the Artarmon industrial area. A plan to replace the missing parking should be created with alternate parking of the same number provided. One option is to widen the Hampden Road overpass to provide separate, two-way bicycle lanes as well as parking on both sides of the overpass. Finally, concerns exist about what impact the design will have on the Artarmon local centre, given the main on-ramp to the BL tunnel in this area will be located on Reserve Road. While it is clearly intended for Pacific Highway and Dickson Ave to be the main routes for traffic to both join and leave the tunnel, Council is concerned that traffic coming from the north will instead use Council's local road network i.e. Elizabeth Street / Brand Street / Hampden Road / Broughton Road / Jersey Road. This would undo the significant work Council has undertaken in recent years to revitalise and promote Artarmon as a local centre with a high Place function. As such, it is recommended that a detailed **Transport Study of the Artarmon Industrial Area** be completed.	

5c. Motorway operation – Signage and ramp metering	It is noted that guide signs and ramp metering will be installed as part of the Project (page 5-42). The design and operation of these systems will impact on the traffic use and local road network performance. It is requested that Council is consulted in the design of these systems so that issues can be understood and appropriate measures taken to minimise impacts on the Regional and Local road network.	**5c.** It is recommended that a condition of any approval be included requiring TfNSW to consult with Council in the design and operation of signage and ramp metering for the Project.
5d. Active Transport – Gore Hill Freeway shared user path	It is noted that the existing bicycle and pedestrian link along the southern side of the Gore Hill Freeway will be realigned and reconstructed as part of the Project (Table 5-13, page 5-57). The current bicycle and pedestrian link provide separate bicycle lanes and pedestrian footpath. The new bicycle and pedestrian link should lead to maximum user safety and amenity.	**5d.** It is recommended that a condition of any approval be included requiring TfNSW to undertake an **Active Transport Review** for both the construction and operational phases of the Project. In relation to the Gore Hill Freeway shared user path, the new bicycle and pedestrian link must be realigned and reconstructed with a similar and preferably better alignment and capacity than the existing facility. The design standard for the new facility should incorporate contemporary design standards, guidelines and practices. The design should also integrate seamlessly with the existing bicycle links and facilities along, and connecting to, the existing Gore Hill Freeway bicycle and pedestrian link.
5e. Application of Tolling	It is noted that tolling and related equipment is to be implemented as part of the Project. However, there is no specific information on what toll levels will be. Toll levels will have a significant influence on usage of the Project or alternative free routes. However, until this point, TfNSW has deferred consideration of this aspect of the Project to the NSW Government at a later date.	**5e.** In its Response to Submissions, TfNSW is to provide further detail and analysis of tolling options for the Project and what impacts these tolls will have on usage of both the Project and existing surface Regional and Local Roads, including in Willoughby LGA.

	This issue should not be treated separately and deferred to a later date. Appropriate toll levels need to be proposed and assessed to maximise use of the Project and avoid toll evasion i.e. where drivers end up using existing (free) Regional and Local Roads, negating the intended main benefit of the Project – to decrease traffic volumes on existing surface roads. Council objects to any additional Harbour crossing tolls as a consequence of either the WHT/WFU or BL/GHFC Projects.	

EIS Chapter 6 – Construction work		
Issue	**Comments**	**Recommendations**
6a. Damage and degradation of Council assets	TfNSW need to ensure that no damage is caused to existing Council assets during the works. If Damage occurs, then repairs are to be at the cost of TfNSW.	**6a.** It is recommended that conditions of any approval be included in relation to the following: • A comprehensive works agreement between Council and TfNSW is to be agreed upon to document responsibilities. • To protect both parties, dilapidation surveys are required prior, during at agreed intervals, and at the completion of works on Council assets in the vicinity of the construction support sites extending 50m beyond the sites within the Willoughby LGA and on the nominated construction traffic routes. • Any damage to Council assets is to be repaired at the cost of TfNSW. TfNSW must carry out routine maintenance in these surveyed areas so that all infrastructure assets, facilities and amenities are maintained at all times in a condition that provides for public safety and maintains functionality and performance. • All dilapidation surveys are to be carried out by suitably qualified companies that specialise in the specific asset they are inspecting. These dilapidation surveys are to be submitted to Council when completed for their records and shall contain a report comparing condition changes. • Road pavement dilapidation surveys are to utilise laser profilometer and video visual surveys and falling weight deflectometer (FWD) testing with data and videos supplied

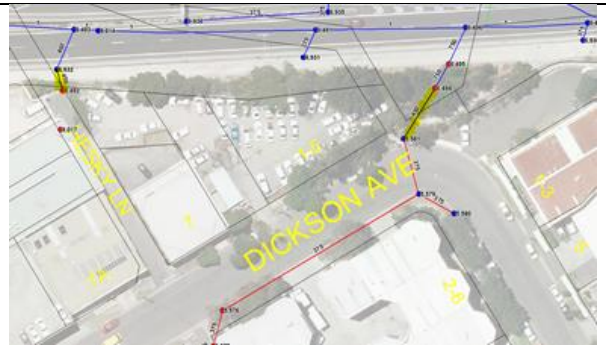
		to Council. • Stormwater conduits are to utilise CCTV inspection in accordance with Water Services Association of Australia WSA05-2020 Conduit Inspection Reporting Code of Australia. Council asset node numbers to be used in surveys may be obtained from Council. • Photographic dilapidation surveys are to be undertaken for all other Council assets including but not limited to footpaths, nature strips, kerb and gutter, bridges, retaining walls car parks, roadside assets, stormwater structures etc.
6b. Design of Council Infrastructure and impacts on Council infrastructure	Construction works will impact on Council assets.	**6b.** It is recommended that conditions of any approval be included in relation to the following: • Community and Council consultation is required during all phases of the design and construction process for new or modified elements that impact on Council assets which may include, but is not limited to, new or modified roads, stormwater systems, bridges, footpaths, cycleways, traffic signals, on and off freeway ramps, road closures etc. Consultation shall be at the cost and responsibility of TfNSW. • Elements that are the responsibility of third parties to maintain, such as the Hampden Road and Reserve Road bridges, are to be consulted as part of the design process. • Work as executed plans are to be provided to Council for records for the completed works to Council assets.

		• Stormwater detention systems or other alternative systems should be installed to mitigate the negative impact on existing drainage network flows and prevent afflux on the network.
6c. Flat Rock Drive construction support site (BL2)	Key activities will impact on Council assets.	**6c.** It is recommended that conditions of any approval be included in relation to the following: • All costs associated with the site support works are to be constructed, maintained and disposed of at the cost of TfNSW. • Details to be provided on the "Installation of a culvert in an existing aboveground watercourse within the northern extent of Flat Rock Reserve along the north eastern boundary of the site" with Council consulted during the various design phases. • Any access roads used as part of the construction support site including roads from Small Street may require upgrade to meet traffic loads. Public car park and access roads are to be upgraded and maintained at the cost of TfNSW. • Agreements for the occupancy of lands will be required to be approved by Council with appropriate compensation. For impacts on natural assets refer to recommendation 16b.
6d. Punch Street	Key activities will impact on Council assets.	**6d.** It is recommended that conditions of any approval be included

construction support site (BL3)		in relation to the following: • BL3 appears to close parts of Lambs Road and Punch Street to support the site. This appears to be a proposed permanent road closure. TfNSW is to confirm this in its Response to Submissions. If so, a road closure proposal will be required to be submitted to Council with relevant compensation. All fees and associated costs will be at the cost of TfNSW. • Agreements for the occupancy of lands will be required to be approved by Council with appropriate compensation. • Street parking is proposed to be removed from Punch Street, which will cause parking issues in the local area. TfNSW is to explore and implement solutions to resolve these parking issues that would be caused by the removal of parking at the cost of TfNSW. • The BL3 construction support site impacts drainage systems at: – Corner of Punch Street and Lambs road (existing pipeline through the BL3 site) – The Low point (sag) in Clegg Street (existing pipeline through the BL3 site) – Water from Lambs roads South of Clegg Street now appears to be required to be diverted to the sag point in Clegg Street adding to the stormwater flow at the sag. – The proposed cul-de-sac on Punch Street will require a drainage system to be created to drain the cul-de-sac. – Overland flow paths will need to be created through the proposed site from the sag point of Cleg Street, through the prolongation of Lambs Road and from the cul-de-sac

		in Punch Street In light of the above, new pipeline systems and easements will be required to be created with Council consulted during all phases of design. Note, these drainage works must be designed in accordance with Council's DCP and relevant design standards. Pipelines must not be constructed over to enable future maintenance.  The site will sever the existing connection of the shared user path at the corner of Lambs Road and Punch Street. Post-construction, this connection is to be reconnected to the cycleway network at the cost of TfNSW.

6e. Dickson Avenue construction support site (BL4)	Key activities will impact on Council assets.	**6e.** It is recommended that conditions of any approval be included in relation to the following: • Dickson Avenue, East of Waltham Street and Hesky Lane north of Dickson Ave and portions of the road reserve north of Dickson Ave appear to be proposed to be used by the site. • This appears to be a proposed permanent road closure. TfNSW is to confirm this in its Response to Submissions. If so, a Road Closure proposal will be required to be submitted to Council with relevant compensation. All fees and associated costs will be at the cost of TfNSW. Agreements for the occupancy of lands will be required to be approved by Council with appropriate compensation. • Council stormwater systems pass through this site at the corner of Dickson Ave and Waltham Street and at the northern end of Hesky Lane. Currently a storage area is proposed over the stormwater system at the corner of Dickson Ave and Waltham Street. • These assets must be protected during works and should not be affected or built over during works. Analysis needs to be carried out by TfNSW to ensure that no damage will be caused to the stormwater assets. Pre- and post-work CCTV of stormwater systems will be required to be undertaken and submitted to Council in accordance with WSA05-2020.

		 • It is noted that the Western Harbour Tunnel motorway control centre is proposed at this site. In its Response to Submissions, TfNSW is to confirm whether this is this occupying the road reserve and/or other public or private land.
6f. Barton Road construction support site (BL5)	Key activities impact on Council assets	**6f.** It is recommended that conditions of any approval be included in relation to the following: • Butchers Lane is not capable of supporting traffic proposed to access the site and is currently a loose gravel road with very minimal use. TfNSW would need to upgrade the road pavement in of Butchers Lane, provide kerb and gutter and appropriate stormwater drainage to support access via Butchers Lane. There is also no footpath currently provided in Butchers Lane that must be constructed by TfNSW. • It is noted that this site is proposed to be used for car parking for construction workers. Installation of a formed concrete vehicular crossing would be required to the site from Barton Road and Butchers Lane would be at the cost

		of TfNSW with approvals sought via Council. • Lot 11 DP805818 and Lot 15 DP4639 are owned by Council. Agreements for the occupancy of lands will be required to be approved by Council with appropriate compensation.
6g. Middle Harbour south cofferdam (BL7) and Middle Harbour north cofferdam (BL8)	Key activities impact on Council assets The construction of the cofferdams and associated water borne staging activities represent significant maritime navigational waterway changes and cannot be easily mitigated at this stage of project and design development. The recreational waterway activities, sailing, boating risks and hazards require additional and specialist review and mitigation prior to commencing any pre-construction or primary construction works in the Middle Harbour area.	**6g.** It is recommended that conditions of any approval be included in relation to the following: • It is noted that materials and equipment be supplied to construct and support works at these coffer dams via support from the water. Consultation by TfNSW with the community and Council will be required regarding works at these cofferdams and any restrictions on recreational activities. **Maritime Working Group (MWG)** (MWG-01) The Proponent is to prepare a **Maritime Communication Strategy** to provide mechanisms to facilitate communication about restrictions to waterways, changes in berthing and moorings, pre-construction and construction activities. The Strategy is to address who (the Proponent, Independent Appointments and/or Construction contractor) in the maritime community, relevant councils and maritime agencies, and how they will be engaged and the timing of engagements. The Strategy must provide:

		• A four (4) week look ahead approach for external party communications planning; • A six (6) and twelve (12) month calendar including a forward plan of: • Upcoming work, planned engagements and stakeholder activities; • Maritime stakeholder, community and Middle Harbour Maritime and CPHA meetings; and • Updating processes for notifications and newsletters; • An update on any current or emerging maritime and CPHA issues; • An update on complaints received and actions taken to resolve them; and • An update on any neighbouring construction projects (including Sydney Water sewerage/stormwater contamination treatment works which affect Middle Harbour) where cumulative impacts need to be actively communicated and locally managed. (MWG-02) The Proponent is to establish an independent **Maritime Working Group** to provide input into the Maritime Communication Strategy, into the maritime planning and design elements of the project, pre-construction detailed planning and maritime construction risks, hazards and mitigations for the project. The Proponent is to establish the working group before relevant works commence including any intrusive excavations. The Secretary must be informed of the members and the working group must comprise maritime planning, geotechnical and engineering experts independent of the design and construction team.

		The working group is to contain a representative selection of regular waterway users, of immediately adjacent potentially affected landowners and local aboriginal groups. The working group must meet bi-monthly during the pre-construction phase and then quarterly during the primary construction phase, unless agreed otherwise by the parties. The Maritime Working Group is: • Not be used solely as 'presentation sessions'; • Be attended by suitably qualified and experienced key individuals, who have the appropriate levels of delegated authority from the stakeholders and adjacent landowners to bind the objectives, inputs and outcomes; • Assess the Proponents intended approach to meeting the requirements of the EIS and other Planning Approvals (including any Environmental Protection License - EPL); • Review any specific maritime technical requirements (e.g. navigational changes and restricted work areas) and agree these between the Proponent and future contractor(s); and • Identify, discuss, resolve and agree on resolution of problems or mitigation measures associated with the maritime technical designs and maritime construction methods. Note: Where an impasse exists between members of the working group, the Planning Secretary will provide final approval or endorsement. (MWG-03) The Proponent is to gain endorsement of the

		Maritime Communication Strategy and Maritime Working Group composition from the Planning Secretary, prior to the commencement of pre-construction activities, unless otherwise agreed by the Planning Secretary. **Pre-construction phase** (MWG-04) The Proponent is to develop a **Maritime - Construction Environmental Management Plan (M.CEMP)** in consultation with Maritime Working Group and with feedback from other maritime stakeholders (e.g. Maritime Rescue and NSW Water Police) and maritime user of the Middle Harbour waterway and stakeholder of the Clive Park Heritage Area (CPHA). The Plan is to provide technical staging, programming and detail all preliminary investigations, any pre-construction and construction phase maritime impingements to navigational waters (refer MWG-01 to MWG-03. The M.CEMP is to be submitted to the Sydney Harbour Master for approval and or endorsement prior to any changes in navigational waters. Where maritime notices and publications are required, the Proponent must allow a minimum of two (2) months' notice prior to any changes to those navigational patterns, unless in an emergency and at the approval of the Sydney Harbour Master. Further, any changes to navigational waters must be notified in accordance with the Sydney Harbour Masters requirements and in accordance with the Maritime Communication Strategy (MWG-01). **Construction phase**

		(MWG-05) The proposed construction methods is to reduce navigational risks and hazards while optimising the use of the Middle Harbour for maritime users. The Proponent must implement the requirements of the M.CEMP (MWG-04) and provide regular updates on the maritime activities to the Maritime Working Group and to the Secretary Planning (MWG-02). (MWG-06) The proponent is to restrict construction activities related to crossing-construction hours reference MHC_07 Inundate and remove cofferdams and MHC_10 Immerse and connect tube tunnel units to being carried out between May and be complete before the end of August of each calendar year, when Middle Harbour waterway use is generally at its lowest. Note: These intrusive and disruptive works are currently scheduled for the Middle Harbour 'peak summer' sailing and waterway activity periods during 2025 and 2026.

EIS Chapter 7 – Stakeholder engagement		
Issue	**Comments**	**Recommendations**
7a. Overall community engagement approach and consultation to the present	The overall community engagement approach by TfNSW (formerly RMS) has generally been appropriate to this point, however specific consultation with Council only occurred at a very late stage in the development of the EIS. Early scoping of the Project did not include impacted suburbs, particularly in relation to route selection which has created a technical gap in terms of risk assessment. A briefing was held by the project team with the Mayor, CEO and relevant Council staff (4 November 2020 – WHT/WFU, 18 November 2020 – BL/GHFC). This was followed by a briefing to all Councillors and relevant Council staff (10 December 2020 – BL/GHFC). Council thanks the project team for holding these sessions, enabling Council to raise many of the issues included in this submission. The EIS was released on 9 December 2020. While the project team at TfNSW had previously indicated to Council that the EIS would be released at some point in December, Council only became aware of the release via members of the community and through the media. Direct advice, which would have been expected to have been provided, did not eventuate until the day after the release. Given the substantial amount of information in the EIS, the potential impacts of the Project, the Christmas/summer holiday period and the break in Council meetings until February 2021, Council has previously expressed its disappointed with the timing of the release of the EIS and	**7a.** It is recommended that a condition of any approval be included requiring TfNSW to develop and implement a **Community Communication Strategy**. This Strategy should be developed in consultation with Council, residents, businesses and other key stakeholders such as Parents and Citizens' (P&C) associations and Progress Associations and must detail the framework, methods and indicators that will be used to engage in direct, early and meaningful consultation. In particular, TfNSW is to engage with Council and relevant stakeholders to address impacts created during the construction phase of the Project.

	the period available to make submissions (until 1 March 2021). It has been previously stated that this was an inadequate period of time for a heavily affected community to review the EIS documents and for Council to make a submission. It had already been a very difficult year for our local communities – primarily due to the COVID-19 pandemic - and this additional burden during what was hoped to be a festive holiday period was unacceptable. Even working through the holiday period, a Council submission was only able to be considered at the Council meeting of 8 March 2021 at the earliest. Nevertheless, TfNSW has endeavoured to provide information in a variety of different mediums for stakeholders including the use of technology to assist stakeholder understanding with the complex and technical aspects of the Project design, such as traffic flow, through the interactive portal. The complexity of EIS information was broken down and simplified through the introduction of the Guide to the EIS to reduce the overwhelming extent of information into something more easily digestible. However, residents have raised significant concern about the volume and density of information that needed to be absorbed in such a short period of time. Council acknowledges the restrictions in consultation due to the ongoing COVID-19 pandemic. Several virtual information sessions were held, generally on a site-specific basis, and these were somewhat useful and informative to both Council staff and the community who attended. It is	

	appreciated how additional sessions were held, tailored to key concerns raised previously, and by geographic area, which both Council and residents found easier to understand and comment on. In conclusion, it is acknowledged that the impacts the COVID-19 pandemic has had on consultation activities. While it appreciated the recent briefings and information sessions held by the project team, Council's disappointment with the lack of direct notification, the timing of the release of the EIS, and the inadequate length of the exhibition period remain. Residents were polled during the exhibition period to understand community sentiment about the Project. The results of that consultation, including key quotes, are contained in **Attachment 1 – Willoughby City Council – Community Sentiment Report – Beaches Link and Gore Hill Freeway Connection (BL/GHFC) EIS**. It must be noted that these results are from a self-selected group of people who chose to respond, following notification via email to all of Council's registered *Have Your Say* users. A more scientifically valid random sampling was not possible due to COVID restrictions and the short exhibition period. These results are nevertheless considered a useful barometer of general community sentiment towards the Project.	
7b. Future consultation – with Council	Direct, early and meaningful consultation should be led by TfNSW with Council. Throughout this document, specific requests for consultation and involvement on various issues have been requested.	N/A - See above

7c. Future consultation – with key community stakeholders	Direct, early and meaningful consultation should also be led by TfNSW with relevant stakeholders – residents, businesses, Progress Associations, community organisations etc. This will be particularly important during the construction phase of the Project, regarding the temporary construction sites proposed in Willoughby LGA.	N/A - See above

EIS Chapter 8 – Construction traffic and transport		
Issue	**Comments**	**Recommendations**
8a. Construction traffic and transport impacts – Overview	***Introduction*** Construction traffic and transport impacts from the Project will be significant. Managing these impacts and ensuring safety for the community should be the common goal for Council, TfNSW and all other stakeholders. The construction of the Project introduces higher safety risks for all road users, particularly cyclists and pedestrians who are the most vulnerable. The increase in heavy vehicle movements will lead to increased localised congestion and potential for incidents on Council's local road network. It is critical that the current operation, use and performance of the routes used for all temporary construction sites are effectively investigated, and all safety hazards identified and managed to maximise safety for all road users. ***Incident management***	**8a.** It is recommended that conditions of any approval be included requiring TfNSW to: • Complete a **Construction Transport Management Framework (CTMF)** to support the effective integration, management and operation of construction transport generated by the Project. Council should be consulted in the development of the structure and content of the CTMF and concur to the CTMF as it relates to Willoughby LGA. • Complete a **Construction Transport Management Plan (CTMP)** for each construction site that is one component of, and underpins, the CTMF. A site-specific CTMP should be created for the Flat Rock Drive (BL2) and Artarmon industrial area (AIA) sites (BL3, BL 4, BL5). Council should be consulted in the development of the structure and content of the CTMP and concur to the CTMP for all sites within the Willoughby LGA.

	The increase in heavy and light vehicle traffic as a result of the construction of the Project increases the risk of unplanned incidents that may lead to significant increases in delays, queues, congestion, noise and air pollution, particularly during weekday morning and afternoon peak periods. It is essential that incident management plans and support infrastructure is provided on the routes used for all sites to quickly and effectively respond to incidents to return traffic operations to 'normal' conditions as quickly as possible to minimise the negative impacts of these incidents on the community. ***Managing construction traffic and transport impacts*** Council recommends the following to manage construction traffic and transport impacts in Willoughby LGA: • A Construction Transport Management Framework (CTMF) • A Construction Transport Management Plan (CTMP) • A Transport Study of the Artarmon Industrial Area Further detail on these plans/studies is detailed at right. Where possible, construction vehicle movements should be based on the following road network hierarchy; motorway, arterial roads, regional roads and, lastly, local roads. The opportunity to use the Gore Hill Freeway for construction vehicle movements to/from sites BL3, BL 4, and BL5 should be investigated to maximise safety and efficiency of the local road network.	• Complete a **Transport Study of the Artarmon Industrial Area** (including the road network bounded by Pacific Highway, Herbert Street/Hampden Road, Frederick Street, Reserve Road, Campbell Street, Gore Hill Freeway and Beaches Link off-ramp). This is to be undertaken prior to the installation of the traffic control signals. This Study will identify traffic demands and intersection performance within the area and works required to ensure safety, accessibility and efficient operation of the road network for all users. • Complete a detailed **Transport and Traffic Management Study of the Naremburn to Roseville and Northbridge to Roseville Road Corridors**, investigating and responding to the cumulative impacts at the following: – The impact to Willoughby Road and its feeder roads of Artarmon Road, Penshurst Street and Mowbray Road. – The impact to Brook Street, Alpha Road and its feeder roads of Edinburgh Road, Sailors Bay Road and Mowbray Road. – The impact to Strathallen Avenue, Sailors Bay Road and its feeder roads of Miller Street, Eastern Valley Way and Edinburgh Road. – The impact to the local streets of Naremburn, Northbridge, Willoughby South, Willoughby, Willoughby North, Castlecrag, Middle Cove and Castle Cove and the road network as traffic attempts to rat-run through residential areas not designed to handle the increase in traffic volumes. – The impact on the Local Centres of Naremburn, Northbridge, Willoughby, Castlecrag and East Chatswood Industrial Area due to the increased

	Permits for works on Council roads Road network management and operation in Willoughby LGA is managed through a broad and comprehensive permit system including (but not limited to): Road Opening, Crane, Heavy Plant, Road Occupancy and Work Zone permits. The provision of permits is mandatory when work is to be undertaken on Council's road network.	traffic congestion associated with construction. – Consideration needs to be given to active public transport, public safety, pedestrian amenity and access to public transport, acknowledging the varying needs of commuters, the elderly, primary school and high school students. – The construction impacts associated with the redevelopment of the Channel Nine site and Willoughby Leisure Centre. – The cumulative impacts of the WHF and WFU. This Study will identify traffic demands and intersection performance within the area and works required to ensure safety, accessibility and efficient operation of the road network for all users. • Obtain the relevant permits for any works on Council's road network. Fees and conditions would apply for all permits. TfNSW, its contractors and their sub-contractors will need to comply with Council's policies and guidelines in the application, payment and operation of all permits. • Implement the environmental management measures as detailed in section 8.5 Table 8 – 24 CTT1 – CTT16. These should be undertaken as part of a Project-wide CTMF and for each site-specific CTMP. Council should be a stakeholder in CTT12.
8b. Construction traffic and transport impacts – Flat Rock Drive site (BL2)	The following issues, comments and suggestions are provided in relation to the Flat Rock Drive site (BL2): ***Site Access Management*** • The installation of traffic control signals in Flat	**8b.** It is recommended that a condition of any approval be included requiring TfNSW to develop a **Safety and Traffic Management Plan for Flat Rock Drive and Brook St**. This should be developed in consultation with Council and the community. The safety options that should be considered include:

	Rock Drive at the site entry and exit is supported. • All motor vehicles accessing to the site must enter/exit to the south. ***Access Routes Management*** • Safety and operational impacts are the major concerns with the operation of Flat Rock Drive and Brook Street between Warringah Freeway on and off-ramps and the site entry/exit intersection. Safety concerns relate to the increase in construction heavy and light traffic two-way at all times, estimated to be an additional 160-180 vehicles during the weekday peak periods (Table 8-16). Operational impacts relate to the increase in difficulty accessing the local roads, particularly right turn movements out and into the local roads, as a consequence of the increased traffic flows. It is also understood that Flat Rock Drive and Brook Street is used by school buses and school children. It is requested that a Safety and Traffic Management Plan for Flat Rock Drive and Brook Street should be developed for this link in consultation with Council and the community. ***Construction Worker Transport and Parking Management*** • Construction worker motor vehicle parking should occur wholly within the site. It is not acceptable that worker motor vehicles park in nearby local road network in Northbridge and Naremburn, as parking is highly valued by residents and visitors.	– A 'left turn on red' sign to allow this movement from Merrenburn Avenue, eastbound, into Brook Street, northbound. – A right-turn arrow and traffic signal phase is introduced in Brook Street, southbound, at Merrenburn Avenue at the intersection of Brook Street and Merrenburn Avenue. – The eastern footpath along Brook Street between Marks Street and Warringah Freeway on-ramp is widened and designated a shared path. It is recommended that a condition of any approval be included requiring TfNSW to undertake an **Active Transport Review** for both the construction and operational phases of the Project. In relation to the shared paths in the vicinity of the Flat Rock Drive site, the following should apply: – The shared path to be provided along Flat Rock Drive along the western boundary of the site, in place of the shared path to be removed within the site, must be a minimum 3.0 metre width and clear of any obstructions. – The shared path must be designed in accordance with Australian Standards and relevant NSW policies and guidelines. A barrier treatment such as a guard rail or concrete jersey barrier must be provided between the shared path and Flat Rock Drive so that acceptable level of protection between the shared path and Flat Rock Drive is provided. Wayfinding signs will also be required to ensure effective guidance along the new route. – The shared path to be provided within the reserve along the eastern boundary of the site, in place of the shared path to be removed within the site, must be a minimum 3.0 metre width and clear of any obstructions.

	• Workers should be strongly encouraged to use bus services and walk or be transported by shuttle bus services. It is recommended that the shuttle bus service start/end at St Leonards train station and the future Crows Nest Metro station. Should construction workers be identified to be parking in the local road network, then Council reserves the right to request that TfNSW funds any resident and visitor street parking permit system to manage street parking to Council's satisfaction. ***Shared Path Management*** The shared path diversions in the vicinity of the Flat Rock Drive site should address the points listed at right.	– Lighting along the shared paths must meet relevant Australian Standards. – The shared paths must be designed in accordance with Australian Standards and relevant NSW policies and guidelines. Wayfinding signs will also be required to ensure effective guidance along the new route.

8c. Construction traffic and transport impacts – Artarmon industrial area sites (BL3, BL 4 and BL5)	The following issues, comments and suggestions are provided in relation to the Artarmon industrial area sites (BL3, BL4 and BL5): ***Site Access Management*** • BL3, BL 4, BL5 sites have frontages to, and potential for motor vehicle access, to use the Gore Hill Freeway. It is preferable that all construction vehicle movements to/from the sites be via Gore Hill Freeway. The use of the Gore Hill Freeway for all construction vehicle movements will maximise safety and efficiency of the Artarmon industrial area local road network. • The safe movement of all construction vehicles into and out of a site is essential to minimise potential conflicts with all other road users. A **Site Access and Movement Management Plan** is recommended for all sites addressing safety of motor vehicle movements and the interaction with the adjacent road network. ***Access Routes Management*** • Should the AIA road network need to be used for the proposed construction vehicle access to the sites then the access routes identified as considered satisfactory. These should be mandated in contracts so that construction vehicles utilise these routes at all times. • Safety and operational impacts are the major concerns with the movement of heavy construction	**8c.** It is recommended that a condition of any approval be included requiring TfNSW to develop and implement a **Site Access and Movement Management Plan** for all temporary construction sites, addressing safety of motor vehicle movements and the interaction with the adjacent road network. – This Plan should detail how construction worker traffic movements will be minimised through the use of shuttle bus services e.g. to/from St Leonards train station and Crows Nest Metro station. – Should construction workers be identified to be parking in the local road network, Council reserves the right to request that TfNSW funds a resident and visitor street parking permit system to manage street parking to Council's satisfaction. – Given the proposed removal of 36 temporary and 25 permanent on-street parking spaces in the Artarmon industrial area, a plan to replace the missing parking should be created with alternate parking of the same number provided nearby. It is recommended that a condition of any approval be included requiring TfNSW to undertake an **Active Transport Review** for both the construction and operational phases of the Project. In relation to the temporary diversion of the Gore Hill Freeway shared path, a similar standard of facility to the existing shared user path must be delivered along the alternative route. Furthermore, an on-road, mixed treatment for cyclists is only considered acceptable in Taylor Lane (if used as per Council's suggestion), the Lambs Road rail overpass, Francis Street and

	vehicles within the Artarmon industrial area. The turning path of the heavy vehicles should be checked so that all vehicles operate safely at all times and location, considering the impacts of existing street parking. Bicyclists using Herbert Street in the on-road bicycle lanes may be at risk of a conflict with heavy vehicle movements that travel into the bicycle lanes. • Intersections within Artarmon industrial area may not currently provide sufficient capacity for the extra construction vehicle movements leading to increased queues, delays and congestion. The operation of the intersections should be monitored to minimise worsening of traffic safety and movement. ***Construction Worker Transport and Parking Management*** • Construction worker motor vehicle parking should occur wholly within the sites. It is not acceptable that worker motor vehicles park in nearby local road network in Naremburn and Artarmon as parking is highly valued by residents and visitors. • Workers should be strongly encouraged to use bus services and walk or be transported by shuttle bus services. It is recommended that the shuttle bus service start/end at St Leonards train station and the future Crows Nest Metro station. Should construction workers be identified to be parking in the local road network, then Council reserves the right to request that TfNSW funds any resident and visitor street parking permit system to manage	Station Street. The exact route and standard of facility is to be designed and constructed in consultation with Council and relevant cyclist organisations and user groups.

street parking to Council's satisfaction.

- The removal of 36 temporary and 25 permanent on-street parking spaces as proposed is not acceptable. Street parking is highly valued by workers, businesses and visitors and the loss will be a material impact on the operation of the Artarmon industrial area. A plan to replace the missing parking should be created with alternate parking of the same number provided. One option is to widen the Hampden Road overpass to provide a separate two-way bicycle lane as well as parking on both sides of the overpass.

Diversion of Gore Hill Freeway shared path during construction

The existing Gore Hill Freeway shared path will need to be diverted during construction. On page 8-47 it is stated that this detour would *"have a moderate impact on pedestrians and a minor impact on cyclists, and would be managed by providing advanced notification to the community and appropriate line-marking and signage…"*

This is not a sufficient level of detail that gives any indication of what form this detour would take. TfNSW must deliver a similar standard of facility to the existing shared user path. For cyclists, an on-road mixed treatment is only suitable in the lowest-traffic streets. The following facilities are thus suggested to be the preferred treatment for this alternative route:

Link	Facility
Gore Hill Freeway to	Two-way ramp

Reserve Road	
Reserve Road between Gore Hill Freeway to Dickson Ave	Shared path
Dickson Ave, Waltham Street, Lambs Road	On-road, two-way separated bicycle lanes with parking retained on both sides of road
Cleg Street	On-road, two-way separated bicycle lanes with parking retained on both sides of road, shared path and on-road mixed treatment
Lambs Road	Wide section – On-road, two-way separated bicycle lanes with parking retained on both sides of road Rail overpass – On-road mixed treatment
Francis Street, Station Street	On-road mixed treatment

The use of Dickson Avenue is of concern as it will lead to the mixing of construction traffic with bicycle riders. An alternative route that could be considered is described below:

Link	Facility
Gore Hill Freeway to Reserve Road	Two-way ramp
Reserve Road between	Shared path

Gore Hill Freeway and Taylor Lane	
Taylor Lane	On-road mixed treatment
Dickson Ave, Waltham Street, Lambs Road	On-road, two-way separated bicycle lanes with parking retained on both sides of road.
Cleg Street	On-road, two-way separated bicycle lanes with parking retained on both sides of road, shared path and on road mixed treatment.
Lambs Road	Wide section – On-road, two-way separated bicycle lanes with parking retained on both sides of road Rail overpass – On-road mixed treatment
Francis Street, Station Street	On-road mixed treatment

Lighting along the alternative route will be important and must meet relevant Australian Standards. The bicycle facilities must be designed in accordance with Australian Standards and relevant NSW policies and guidelines. Wayfinding signs will also be required to ensure effective guidance along the new route.

New traffic control signals at the Pacific Highway and Dickson Avenue intersection

	• The timing for the installation of traffic control signals at the Pacific Highway and Dickson Avenue intersection is not indicated. The design of the new traffic control signals is not outlined in the EIS. The design will determine the impact on the Pacific Highway including access and street parking. The design, construction and commissioning of the new traffic control signals is important due to the impacts on the local road network and traffic movements in the Artarmon industrial area. ***Road closures at Dickson Avenue and Punch Streets*** • The timing for the permanent road closures of Dickson Avenue and Punch Street is not indicated. The design of the new closed roads is not outlined in the EIS. The design will determine the impact on the circulation and operation including access and street parking. The design, construction and commissioning of the new road closures is important due to the impacts on the local road network and traffic movements in the Artarmon industrial area. ***Hampden Road Overpass Upgrade*** • Hampden Road is a designated bicycle route. The work site on Hampden Road during the construction of overpass and narrowing of the road should provide a safe road environment for cyclists including consideration of an advanced warning signs, lower speed limit (40 km/h) and speed	

	cushions in Hampden Road.	
8d. Construction traffic and transport impacts – Middle Harbour cofferdam sites (BL7 and BL8) – Road and maritime	The following issues, comments and suggestions are provided in relation to the Middle Harbour cofferdam sites (BL7 and BL8): ***Access to the waterways*** It is noted that there may be an impact on the use of Middle Harbour for businesses and residents of Willoughby LGA that are boat owners/users. It is requested that consultation and advanced warning via regular communications is undertaken to impacted businesses and waterway users to minimise financial loss, inconvenience, safety, amenity and access impacts. ***Traffic generation of the maritime works*** The impact of construction road traffic generated by maritime works is not clear. There is concern that maritime works may lead to undesirable worsening of road traffic on the local road network such as Sailors Bay Road. It is important that construction road traffic does not use Willoughby LGA and impact on resident safety and amenity. Council is not supportive of any temporary access tunnel during the construction phase and or permanent tunnel access being established within Clive Park or adjacent residential properties within proximity of Minimbah Road, Tycannah Road, Coolawin Road and Sailors Bay Road, Northbridge due to traffic congestion associated with	**8d.** It is recommended that a condition of any approval be included requiring TfNSW to develop and implement: • A **Community Communication Strategy**. This should be developed in consultation with Council and the community. In relation to the Middle Harbour cofferdam sites (BL7 and BL8), this should include procedures, mechanisms and measures to advise impacted businesses and waterway users to minimise financial loss, inconvenience, safety, amenity and access impacts. • A **Construction Transport Management Plan (CTMP)** for each construction site. In relation to the Middle Harbour cofferdam sites (BL7 and BL8), the CTMP should provide details on how road-based construction traffic will be avoided or at least minimised. • In the event of potential changes associated with the design development of the Project and subsequent planning modification lodgement by the Proponent seeking to establish either temporary tunnel access, evacuation tunnel or permanent tunnel access at Clive Park, that the Proponent complete a **Transport Study of Northbridge** to ensure safety, accessibility and efficient operation of the road network for all users.

	potential construction related truck movements along a singular access road to a peninsula suburb.	
8e. Cumulative impacts of the Program	It is concerning that the performance of the Warringah Freeway and Gore Hill Freeway worsens (Table 8-23) and the intersection performance of the Willoughby Road and Brook Street interchanges also worsen should construction of the Program occur concurrently. Accordingly, it is recommended that the following be created and implemented: • **A Construction Traffic Monitoring and Operational Management Plan;** and • **A Construction Road Transport Operational Management Forum** Further detail on these items is described at right.	**8e.** It is recommended that a condition of any approval be included requiring TfNSW to develop and implement: • **A Construction Traffic Monitoring and Operational Management Plan** to introduce technology to monitor, respond and report on the performance of the State and Regional Road networks and key Local roads identified by Council; and • A **Construction Road Transport Operational Management Forum**, to be chaired by TfNSW. This Forum would share performance information with all stakeholders, meet regularly with stakeholders to discuss the operation of the road network impacted by the construction and undertake works to address identified locations with worse performance, to restore these locations to an acceptable level of performance. Council is a key stakeholder that should participate in this forum.

EIS Chapter 9 – Operational traffic and transport		
Issue	**Comments**	**Recommendations**
9a. Operational traffic and transport - General comments	Overall, this chapter contains similar information to previous chapters. As previously noted, while the Project would seem to have benefits in reduced traffic volumes on existing key arterial routes, these reductions would not be sustained over the long term, due to the effects of induced demand. Furthermore, concern exists about the effects the Project will have in terms of redistributing traffic onto Council's local road network, in particular around Artarmon. A comprehensive multi-agency management framework supported by plans, monitoring and forums is considered essential to ensure safety, amenity, access and efficient movement is maintained on the whole road network. As noted in Chapter 3 of the EIS, TfNSW is coordinating a North Sydney Integrated Transport Program (Table 3-3, pages 3-29) to manage traffic and transport issues in North Sydney in a holistic manner. Noting the significant impacts and opportunities presented by this Program generally and Project specifically, Council also proposes a **Willoughby Integrated Transport and Planning Forum** to plan, develop and deliver the proposed traffic and transport changes resulting from the Project in a way that maximises benefits and minimises negative impacts on the Willoughby LGA. It is noted that the routes used for travel time assessments are not provided but it would have been desirable to know	**9a.** In its Response to Submissions, TfNSW is provide further detail on what routes have been used for travel time assessments. It is recommended that a condition of any approval be included requiring TfNSW to create and implement a **Willoughby Integrated Transport and Planning Forum** to plan, develop and deliver the proposed traffic and transport changes resulting from the Project in a way that maximises benefits and minimises negative impacts on the Willoughby LGA.

	which routes were used. This is particularly the case in some of the more dramatic claims on travel time savings, which seem questionable (e.g. 56min saved on a trip from Dee Why to Sydney Airport, a trip which currently takes circa 40-55mins). The *Do Something Cumulative* modelling scenario appears to provide the best performance outcome for Willoughby LGA. This is now clearly the expected scenario, given the recent approval of the WHT/WFU project.	
9b. Road traffic – Artarmon industrial and residential area	As previously noted, the Project as it is currently designed will have significant detrimental impacts on the operation of the Artarmon industrial and residential areas, with loss of highly valued industrial land, on-street parking and changes to the road network configuration and operation. Numerous significant road network changes are proposed in this area including: • The proposed construction of new traffic control signals at the intersection of the Pacific Highway and Dickson Avenue; • A connection from the Beaches Link tunnel via an off-ramp to Reserve Road, linking to Dickson Avenue; • An on-ramp via the existing Reserve Road interchange to the Beaches Link tunnel; and • Closures of parts of Dickson Avenue and Punch Street to through traffic. These measures proposed will significantly change the	**9b.** It is recommended that a condition of any approval be included requiring TfNSW to undertake a **Transport Study of the Artarmon Industrial Area** in consultation with Council. This would cover both the construction and operational phases of the Project. This Study would include the road network bounded by Pacific Highway, Herbert Street / Hampden Road, Frederick Street, Reserve Road, Campbell Street, Gore Hill Freeway and the proposed Beaches Link off-ramp. This should be undertaken prior to the installation of the traffic control signals. The Study will identify traffic demands and intersection performance within the area and works required to ensure safety, accessibility and efficient movement and operation of the road network for all road users. – A direct connection from the Beaches Link tunnel to the Pacific Highway (i.e. State Road to State Road) to discourage traffic from using the Willoughby local road network to access the Beaches Link tunnel. – A plan to replace the on-street parking spaces to be lost in

	road network hierarchy, performance and operations in Artarmon industrial area. Whilst providing on- and off-ramps in the vicinity of the Artarmon industrial area is considered acceptable, the best design and operational outcome is for the ramps to connect directly with Pacific Highway, in the vicinity of Dickson Avenue. This design would provide benefits to the industrial area (and residential areas as well), as there would be a direct connection of the Project to a State Road, similar to the Lane Cove Tunnel and Gore Hill Freeway. Any surplus land with this proposal could then be used to provide green space or a park for the industrial area, something that is currently lacking. Table 5-12 (page 5-54) indicates that the surface road works in the Artarmon industrial area relating to changes to Local Roads is considered minor. Council does not agree with this assessment. The removal of 36 temporary and 25 permanent on-street parking as proposed is not acceptable. Street parking is highly valued by workers, businesses and visitors and the loss will be a material impact on the operation of the Artarmon industrial area. A plan to replace the missing parking should be created with alternate parking of the same number provided. One option is to widen the Hampden Road overpass to provide separate, two-way bicycle lanes as well as parking on both sides of the overpass. Finally, concern exists about what impact the design will have on the Artarmon local centre, given the main on-ramp to the BL tunnel in this area will be located on Reserve	the Artarmon industrial area.

	Road. While it is clearly intended for Pacific Highway and Dickson Ave to be the main routes for traffic to both join and leave the tunnel, Council is concerned that traffic coming from the north will instead use Council's local road network i.e. Elizabeth Street / Brand Street / Hampden Road / Broughton Road / Jersey Road. This would undo the significant work Council has undertaken in recent years to revitalise and promote Artarmon as a local centre with a high Place function. As such, it is recommended that a detailed **Transport Study of the Artarmon Industrial Area** be completed. This would include the road network bounded by Pacific Highway, Herbert Street / Hampden Road, Frederick Street, Reserve Road, Campbell Street, Gore Hill Freeway and Beaches Link off-ramp.	
9c. Operational traffic and transport - Public transport	As previously mentioned, the EIS states that the Project provides an integrated transport solution/network with the potential to improve express bus services to employment centres including Chatswood, St Leonards and Macquarie Park. The EIS however advises the Project but will only provide the "opportunity" for improved bus services, and does not propose any specific improvements. For the Project to be considered a truly integrated transport solution such opportunities to improve future bus services and interchanges needs to be addressed as part of any approval for the Project. A number of specific	**9c.** It is recommended that a condition of any approval be included requiring TfNSW to create and implement a **Road-Based Public Transport Plan** in consultation with Council. This Plan should incorporate future bus services and interchanges as part of the Project, in particular: – Consideration of bus priority measures for the Warringah Road / Babbage Road / Boundary St corridor; – A proposed St Leonards Bus Interchange; and – Upgrades to the existing Chatswood Bus Interchange to improve its efficiency and operation.

	proposals have been detailed previously and these include in relation to: • ***Warringah Road / Babbage Road / Boundary Street (to Archbold Street)*** • ***St Leonards Bus Interchange*** • ***Chatswood Bus Interchange***	
9d. Operational traffic and transport - Active transport	As previously mentioned, the EIS states that the Project provides an integrated transport solution/network, but provides no active transport improvements connecting the Northern Beaches with Willoughby LGA. A separated, two-way bicycle lane on the southern side of Warringah Road / Babbage Road / Boundary Road should be investigated to improve safety, access, attractiveness and operation for cyclists along this principal transport corridor. Furthermore, Council would like assurances that the Gore Hill Freeway shared user path will be restored to the same standard as it is currently post-construction of the Project. This is to ensure safe and direct travel for this principal cycling route. It is therefore proposed that a **Forestville to Chatswood Bicycle Route Plan** be completed. This would investigate opportunities to upgrade the connection for cyclists between the Forest District and Ku-ring-gai and Willoughby LGAs. This is a vital missing east-west link that should be addressed if the Project is to be considered a truly integrated transport solution.	**9d.** It is recommended that a condition of any approval be included requiring TfNSW to undertake an **Active Transport Review** for both the construction and operational phases of the Project. In relation to the Gore Hill Freeway shared user path, the new bicycle and pedestrian link must be realigned and reconstructed with a similar and preferably better alignment and capacity than the existing facility. The design standard for the new facility should incorporate contemporary design standards, guidelines and practices. The design should also integrate seamlessly with the existing bicycle links and facilities along and connecting to the Gore Hill Freeway bicycle and pedestrian link. In particular, **a Forestville to Chatswood Bicycle Route Plan** should be required as part of this Review, in order to investigate and recommend improvements to safety, access, attractiveness and operation for cyclists along the Warringah Road / Babbage Road / Boundary Road corridor between Forestville and Chatswood.

9e. Operational traffic and transport - Maritime operations	Given the forecasted decrease in traffic volumes on the Spit Bridge and related corridor, the Program overall – and Project specifically – presents an opportunity to review and possibly increase the number, frequency and duration of openings of the Spit Bridge. This could be investigated in future post-construction of the Project.	**9e.** It is recommended that a condition of any approval be included requiring TfNSW to complete an **Operational Road Network Performance Review** to be completed within 12 months of completion of the Project. As part of this Review, the possibility of increasing the number, frequency and duration of the openings of the Spit Bridge can be considered.

EIS Chapter 10 – Construction noise and vibration		
Issue	**Comments**	**Recommendations**
10a. Noise and vibration of tunnelling – General comments	Chapter 10 of the EIS *"considers the potential noise and vibration impacts from the construction of the Project and identifies management measures to minimise these impacts"* (p. 10-1). The construction works for the Project, in particular the tunnelling activity, have the potential to cause significant noise and vibration impacts. These impacts would be particularly concerning in the vicinity of the temporary construction support sites in Willoughby LGA with proximity to residential areas – Flat Rock Drive (BL2), Barton Road (BL5), the Middle Harbour cofferdam south site (BL7). However, impacts will also be likely at properties located above the alignment of the proposed tunnel, notwithstanding the significant depth of the tunnel at certain points. There are, and have been, notable cases of significant community concern regarding other Sydney tunnelling projects (e.g. WestConnex), in terms of vibration and damage caused by construction works, TfNSW and future contractors for this Project need to fully evaluate the issues that became evident in these other projects, and apply the lessons learned to ensure the best outcomes for all affected residents and businesses. Construction activity may be in operation outside of traditional working hours, and impact should be minimised. This includes any heavy vehicle construction activity during	**10a.** It is recommended that conditions of any approval be included as follows: • TfNSW is to prepare and implement a **Construction Environmental Management Plan (CEMP)**. Among other things, the CEMP is to provide Council with further detailed analysis and plan for impact mitigation in relation to noise and vibration that will be generated during the construction phase of the Project. In particular, Council and the community are to be provided with assurances that there will be no detrimental effects due to noise and vibration and that impacts can be managed and mitigated through appropriate environmental management measures. This is of particular importance in relation to properties in the vicinity of the Flat Rock Drive temporary construction support site (BL2). • That all relevant noise management, mitigation and consultation provisions in the recent Western Harbour Tunnel (WHT) approval are made conditions of approval for Beaches Link Tunnel. – Consistent with the WHT approval, that a suitably qualified Acoustics Advisor must be nominated for the duration of the construction phase. – This expert should be employed by and report to an appropriate NSW Government body independently of

	peak demand transit times and sources of noise that is external to the proposed acoustic sheds. The ventilation structures will contain high velocity fans. While it is acknowledged that any noise is proposed to meet relevant Australian Standards, noise management and control should be well below standard levels. Council is concerned that given the nature of the construction activities, the mitigation measures may not be adequate, leading to significant negative impact on the health and wellbeing of Northbridge residents.	the design and construction contractors. – Council and community organisations permitted direct access to the Acoustics Advisor for information and consultation on additional mitigation measures as needed. – The Acoustics Advisor to publish or provide Council and community organisations with a monthly report on noise and vibration levels and any breaches. – That the NSW Government formalise the process for responding to noise level excesses and complaints. – That the NSW Government commit to timely publication on at least a monthly basis of summary statistics from the Complaints Register relating to noise level excesses. – In order to undertake out-of-hours work, the contractor to identify appropriate respite periods in consultation with the Council and the community.

EIS Chapter 11 – Operational noise and vibration		
Issue	**Comments**	**Recommendations**
11a. Noise and vibration of tunnelling – General comments	Chapter 11 of the EIS *"considers the potential noise and vibration impacts associated with the operation of the project and identifies management measures to address these impacts"* (p11-1). Figure 11-1 on page 11-11 is a map of 'Receiver buildings eligible for consideration of additional noise mitigation measures'. This includes a significant number of residential properties located in the area to the north of the Gore Hill Freeway in Artarmon. Mitigation of road traffic noise measures are briefly described in section 11.5.3. This includes 'Quieter pavements' and 'Noise barriers' as the first option for noise mitigation. It is noted that a new barrier of 263m in length, 5m in height, is to be considered on the northern side of the Gore Hill Freeway between Hampden Road, Artarmon and the North Shore railway line. After these first measures, at-property noise mitigation treatments are considered at up to 92 properties in Artarmon, as per Table 11-9. These treatments *"may include, but are not limited to, mechanical ventilation, glazing, window and door seals, sealing of vents and sealing of underfloor areas"* (p. 11-15). It is stated that: *"The properties that are eligible for consideration for at-property treatments, with all other proposed mitigations in place, would be confirmed during further design development in accordance with the*	**11a.** It is recommended that a condition of any approval be included requiring TfNSW to prepare and complete an **Operational Noise Review (ONR)** to confirm noise control measures that would be implemented for the Project. Among other things, the ONR is to provide Council with further detailed analysis and plan for impact mitigation in relation to noise and vibration that will be generated during the operational phase of the Project. In particular, Council and the community are to be provided with assurances that there will be no detrimental effects due to noise and vibration from ongoing traffic using the Project and surrounding roads, and that impacts can be managed and mitigated through the proposed noise control measures as described in Chapter 11 of the EIS generally and Table 11-12 specifically.

	process in Noise Mitigation Guideline*"* (Roads and Maritime Services, 2015) (p. 11-15). Finally, environmental management measures are briefly described in Table 11-12 (p.11-19). Noise and vibration impact from the operational phase of the Project need to be actively managed to avoid negative impacts on the health and wellbeing of affected residents and businesses. In this regard, it is recommended that an **Operational Noise Review (ONR)** be prepared and completed by TfNSW to confirm the proposed noise control measures as described in Chapter 11 of the EIS generally and Table 11-12 specifically.	

EIS Chapter 12 – Air quality		
Issue	**Comments**	**Recommendations**
12a. Airborne contaminates	Airborne contaminants may be caused by the following events: • Construction of the site/compound • (loaded and unloaded) truck movements during construction Amelioration/reinstatement works post construction. EIS notes provision of air quality monitoring however they did not state where they will be placed and how the community would be alerted levels are dangerous.	**12a.** In its Response to Submissions, TfNSW is to provide further clarification regarding the extent of expected increases in particulate emissions due to traffic growth verses reductions linked to improvements in engine efficiency and how the resulting emissions will impact the long-term health and well-being of Willoughby communities. It is recommended that conditions of any approval be included addressing the following issues: • Delivery of a detailed analysis and plan for impact mitigation that there will be no detrimental effects of airborne contaminants or from contaminated land during construction activity. • The assessment should also consider measures to mitigate potential airborne contaminants or impacts from contaminated land during and post construction. • A requirement for location of monitoring and access to real time air quality monitoring data for the community. Monitoring should include alerts including an on-site monitor screen at the Bicentennial Reserve Ovals and Flat Rock Baseball Diamond to alert sport users to poor air quality events. • It is recommended that the EPA install and maintain permanent air quality monitoring equipment including at Bicentennial Reserve, Willoughby.

12b. Silica	Exposure to silica dust (that may come from sandstone) is a known major health risk, and may lead to lung cancer, silicosis and other ailments. Assurance is required that exposure to silica dust will not be of public concern, and that health and safety requirements will be addressed.	**12b.** In its Response to Submissions, TfNSW is to provide further clarification regarding the measures proposed to reduce and mitigate potential exposure to silica dust. A condition of any approval is to be included requiring TfNSW to provide Council with a detailed analysis and plan for impact mitigation to ensure there will be no detrimental effects of exposure to silica dust during both the construction and operational phases of the Project.
12c. Ventilation stacks	The ventilation stacks are potential sources of higher air pollution.	**12c.** In its Response to Submissions (and conditions of any approval are to be included to this effect), TfNSW is to confirm that there is to be only a single location identified (in Cleg Street, Artarmon) for the proposed Beaches Link ventilation stack in Willoughby LGA Middle Harbour (Flat Rock Creek) catchment. No additional ventilation stacks will be necessary in the Willoughby LGA. Furthermore, conditions of any approval are to be included requiring the following: • TfNSW to deliver a detailed analysis and plan for impact mitigation, that air quality will not be a source of health concerns. • The inclusion of a specific licence agreement with a map and schedule defining boundaries for this potential work site identified within the Willoughby LGA.

EIS Chapter 13 – Human health		
Issue	**Comments**	**Recommendations**
N/A	Impacts on human health have been addressed elsewhere in Council's comments in relation to Chapters 10, 11 and 12 – See Council comments in those sections.	See the recommendations in the sections related to Chapters 10, 11 and 12.

EIS Chapter 14 – Non-Aboriginal heritage		
Issue	**Comments**	**Recommendations**
14a. Potential impact on heritage items or conservation areas	Chapter 14 of the EIS describes potentially affected non-Aboriginal heritage items and areas. The items include: • Listed terrestrial heritage items and conservation areas; • Additional potential terrestrial heritage items • Listed maritime heritage items; and • Additional potential maritime heritage items Of the 76 heritage items identified within the study area, 48 have been identified as not being impacted by the Project. A brief assessment was provided for the remaining 22 items and conservation areas. The items or areas in Willoughby LGA (and assessed 'impact rating' according to the EIS) are as follows: • **Artarmon heritage conservation area** – Negligible	**14a.** It is recommended that conditions of any approval be included requiring TfNSW to implement the various environmental management measures as detailed in Table 14-5 of Chapter 14 of the EIS. In particular, it is recommended that: • Council and the local community are to be consulted in the design of heritage protection and interpretation measures proposed to be incorporated into the final Project design. • Appropriate conditions relating to noise and vibration are to be included to ensure impacts are mitigated for all heritage conservation areas and items in Willoughby LGA as identified in Chapter 14 of the EIS. • Council's Heritage Officer is to receive a copy of the Maritime Heritage Management Plan for the maritime heritage sites identified in Table 14-5 in Chapter 14 of the EIS. • Council's Heritage Officer is to receive a copy of the

	• **Clive Park and Tidal Pool, Northbridge** – Minor • Two heritage items situated above the tunnel alignment with potential settlement impacts – **Naremburn Central Township (Conservation Area), Walter Burley Griffin Incinerator** – both Negligible **Clive Park** is listed in Schedule 5 of the *Willoughby LEP 2012* as *Clive Park and Tidal Pool* (I179). The Statement of Significance for the place is as follows: *"Clive Park is of historical significance at a local level as an example of the 19th century community recognition of the value in setting aside areas of the harbour foreshore for public recreation and use. Clive Park is of aesthetic significance for its picturesque combination of natural and modified bushland, rocky outcrops and viewing points and for its tidal pool, one of the smallest pools in a harbour location, the rustic appearance and isolated scenic location of which has considerable visual appeal. Clive Park is also important for its Aboriginal archaeological sites. NB The three boatsheds in Clive Park and Northbridge Sailing Club are also of considerable significance and are dealt with separately as items 54 and 31 respectively."* The physical description of the place identifies several landscape features, including two previously identified Aboriginal sites and archaeological potential. The **Incinerator** at 2 Small Street, Willoughby, NSW 2068 is listed in Schedule 5 of the *Willoughby LEP 2012* as, *Incinerator* (I228) as well as on the State Heritage Register as *Walter Burley Griffin Incinerator*, (Listing No. 84) with	archival recordings proposed of the unlisted maritime heritage sites (Clive Park Unidentified No. 1, Clive Park Tidal Pool and Pearl Bay Unidentified No. 1) as identified in Table 14-5 in Chapter 14 of the EIS. • Council's Heritage Officer is to receive copies of the photographic archival of the listed item, *Clive Park Tidal Pool,* as well as dilapidation reports for the *Incinerator* and to have dilapidation reporting available for concerned residents within the *Naremburn Central Township Conservation Area*.

	the following Statement of Significance: *"The Willoughby Incinerator is significant as one of two remaining municipal incinerator buildings in NSW, designed by the internationally renowned architect (and landscape architect) Walter Burley Griffin and his partner Eric Nicholls, to house the Australian-patented system of vertical top gravity feed (followed by drying prior to burning) developed by the Reverberatory Incinerator and Engineering Company (REICo).* *It is significant in its local context as:* *- A major work of the architectural partnership of Griffin and Nicholls, both of whom lived in nearby Castlecrag and were active in the development of the suburb of Castlecrag and nearby areas, and also as a work associated with Nisson Leonard-Kanevsky, managing director of the REICo, who lived at Castlecrag from 1931-the early 1940s (in the Griffin-designed Fishwick house);* *- A local landmark in the suburb and local government area of Willoughby;* *- A site of contention and protest associated with its use and operation for waste management; and* *- A major cause celebre in heritage conservation in the Willoughby local government area.* *The Willoughby Incinerator is of cultural significance for its relationship with the adjoining parkland and their combined evidence of environmental management of waste disposal, and as a municipal incinerator building that survives from the 1930s. (Walker, M. & Waters, T., 2001)* *The Incinerator is an intact and particularly successful example of an industrial building integrating function with*	

	site and one of the most significant buildings erected in Australia in the 1930s. It is also one of the only three buildings of this type by Walter Burley Griffin remaining in New South Wales (Sheedy, 1976).” The **Naremburn Central Township Heritage Conservation Area** (C9) is described in the Willoughby Development Control Plan and has the following Statement of Significance: *“The subdivision pattern, together with the wide range of architectural styles represented, reflects the continuing incremental growth of the township from the mid- 1800’s through to the 1930’s and has created a mixed yet harmonious streetscape character. The area has retained its historical and social significance as the oldest commercial development on the North Shore and as an early working class residential area. The wide range of buildings, including some shops and the modest streetscape character are evidence of this.”* The Naremburn Central Township Heritage Conservation Area is subject to specific development controls which are outlined in Part H of Willoughby Development Control Plan (WDCP). Further comment on the above items is provided in the EIS as follows: **Clive Park and Tidal Pool, Northbridge** Clive Park and Tidal Pool (item I179 in Schedule 5 (Environmental heritage) of *Willoughby LEP 2012*) is located in close vicinity to the Middle Harbour cofferdams. According to the EIS:	

	"The construction methodology for the project has been selected to avoid direct impacts on Clive Park and its immediate foreshore. There is potential for the site to be physically impacted from anchoring by construction related vessels, however this is highly improbable as the area would be marked as a restricted zone. Indirect impacts would occur due to vibration, settlement and temporary changes to the visual setting of the item. With the implementation of the management measures described in Section 14.5, the level of impact on the heritage item would be minor." Concern exits about potential impacts on this item, given its proximity to the western cofferdam. As such, the environmental management measures as detailed in Table 14-5 should be included as conditions in any approval to ensure impacts are avoided or at least minimised. **Naremburn Central Township (Conservation Area)** The southern leg of the tunnel will pass directly beneath this heritage conservation area. Naremburn is a conservation area with historical significance. Given the age of buildings and existing ground movement, residents already invest heavily in maintenance to preserve the character of the area. Concern exists that construction traffic (particularly heavy truck movements) and works will cause damage to these buildings and consequently risk health and safety. The risk of impacts is labelled as 'Negligible' however this rating is questioned. **Walter Burley Griffin Incinerator** The western leg of the tunnel will pass very close to this heritage item. The risk of impacts on this item is also	

	labelled as 'Negligible' however this rating is questioned. While the depth of the tunnel in this location will be approximately 39m, there may still be a potential for impacts in terms of noise, vibration and settlement. **Environmental management measures** As described in Table 14-6 in Chapter 14 of the EIS: • *"Pre-construction building structure condition surveys will be offered and prepared for properties (and heritage assets) within the zone of influence of tunnel settlement where the degree of severity has been assessed as 'slight' or above and within the minimum working distances for cosmetic and structural damage due to vibration."* • A second condition survey will be offered within three months of the completion of construction activities. • Copies of survey reports will be provided to the owners of the buildings surveyed within one month of the survey being completed. • *"Any building and/or property damage from settlement caused by the project will be repaired at no cost to the owner. Any repairs to listed heritage items required as a result of the settlement damage will be carried out under the guidance of a suitably qualified and experienced heritage professional."* These are all expected and reasonable measures that should be included as conditions in any approval issued. There are, and have been, notable cases of significant	

	community concern regarding other Sydney tunnelling projects (e.g. WestConnex), in terms of vibration and damage caused by construction works. TfNSW and future contractors for this Project need to fully evaluate the issues that became evident in these other projects, and apply the lessons learned to ensure the best outcomes for all affected residents and businesses. **Unlisted heritage items** Several unlisted maritime heritage sites are listed including: • **Clive Park Unidentified Shipwreck No. 1** • **Middle Harbour Unidentified Shipwreck No. 1** • **Pearl Bay Unidentified No. 1 Shipwreck** Environmental management measures for these items are listed in Table 14-5 including a Maritime Heritage Management Plan and archival recording. These are all expected and reasonable measured that should be included as conditions in any approval issued.	

EIS Chapter 15 – Aboriginal cultural heritage		
Issue	**Comments**	**Recommendations**
15a. Potential impact on Aboriginal heritage items or areas	Table 15-2 in Chapter 15 of the EIS lists AHIMS sites within 50 metres of the Project construction footprint. It includes the site name, type, proximity to the Project and cultural value description. These are mapped in Figured 15-1 to 15-5 inclusive.	**15a.** It is recommended that conditions of any approval be included requiring TfNSW to implement the various environmental management measures as detailed in Table 15-9 of Chapter 15 of the EIS. Furthermore, it is recommended that conditions of any approval be

	A significance assessment is detailed in Table 15, with three AHIMS sites in Clive Park in Willoughby LGA described as having a 'High' or 'Moderate-High' overall significance. An assessment of potential impacts is detailed in section 15.4, with Table 16-7 summarising the risk of potential impacts to known Aboriginal cultural heritage sites, with all being assessed as 'No impact', 'Negligible' or 'Minor'. Environmental management measures are detailed in Table 15-9. Given Council's limited expertise in assessing Aboriginal heritage, a condition of any approval should require further investigation of identified sites within the project footprint in conjunction with the Metropolitan Aboriginal Land Council to ensure any impacts are indeed 'No impact', 'Negligible' or 'Minor' and can be adequately managed as proposed in Table 15-9. Construction, operational noise and vibration pose significant risks and hazards to the Clive Park and have the potential to damage irreplaceable Aboriginal heritage elements and potentially destabilise rock caves, shelters and rock carvings that are appreciated by the local community. Council recognises that controlled blasting can have significant public benefits by reducing the need and duration of other forms of intensive excavation techniques, such as rock breaking and rock sawing, however, with the proposed tunnels being located directly beneath the Aboriginal caves, shelters and rock carvings within 50	included as follows: **Clive Park** (CP-01) At the approval of the Maritime Working Group, and for all works (including investigations, pre-construction works, general excavation, tunnelling, piling, jack hammering, compaction and blasting activities located adjacent to Clive Park, commencing at a line generally located between 453 Sailors Bay Road and 6 Tycannah Road, Northbridge including all Beaches Link tunnel works up to and including the Southern Coffer Dam location (BL7), that the Proponent's construction planning, work methods and work activities be developed to ensure that the Clive Park is protected and enhanced. **Pre-construction analysis** (CP-02) A detailed geotechnical, structural and vibration analysis is carried out prior to any excavation or land lowering or ground water lowering activity. The Proponent must undertake a geotechnical, structural and vibration analysis of the Clive Park Aboriginal caves, shelter structures and carved rock faces, to determine the effects of the tunnel works and activities on those elements. The Proponent must provide regular updates on the maritime and Clive Park activities to the Maritime Working Group and to the Secretary Planning. (CP-03) The Proponent is to review alternative methods to rock hammering and blasting for excavation, as part of the detailed construction planning with a view to adopting methods that minimise impacts on sensitive receivers and heritage assets and artefacts. The geotechnical, structural and vibration analysis must: • (CP-03a) be sufficient to identify and provide all

	metres of the southern portal maritime works (BL7). Further detailed works plans, localised work restrictions and heritage protection is required. Note: Any relaxation of preliminary investigations, or changes to construction methodologies or excavation and blasting activities be contingent on identifying and investigating construction delivery methods that reduce the risk of aesthetic and/or structural damage to the Aboriginal caves, shelters and carvings.	geotechnical (including geological variations), structure (including short and long term rock fracture risk) and vibration information required to design, construct and maintain public and heritage asset safety during and post construction; • (CP-03b) determine the most appropriate construction method, excavation sequence, temporary supports, primary or permanent structural supports, and construction impacts to ground levels and rock faces, or for ground water and potential ground water induced settlement at Clive Park; • (CP-03c) encompass the structural adequacy, short and long term settlement or deformation and durability of Aboriginal heritage caves and shelter structures and adjacent carved rock faces; • (CP-03d) predict the in-situ ground movements, structural movements and groundwater movements; and • (CP-03e) predict effects over time. (CP-04) The Proponent is to survey, monitor and control all pre-construction investigations, and primary construction tunnelling, excavation, water table draw down, and work activities in accordance with the geotechnical and vibration analysis findings. (CP-05) The Proponent must at minimum of six (6) months prior to any site activities commencing and then at six (6) monthly intervals until 24 months post completion, provide updates on the monitoring findings, trigger levels and/or exceedances (if any) to the Maritime Working Group and to the Secretary Planning. **Construction phase** (CP-06) The construction methods is to reduce air and ground-

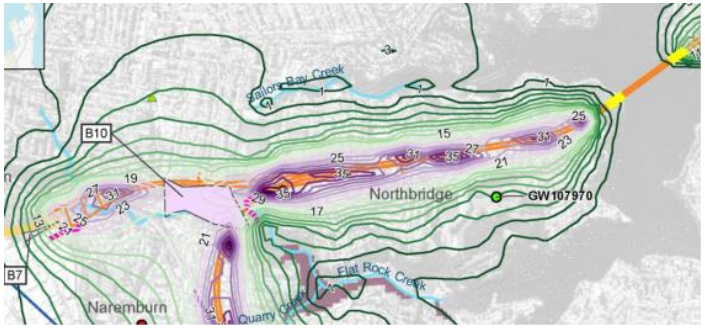
		borne vibration(s) to mitigate the risk to and potential damage to Clive Park including aboriginal shelters, caves, Aboriginal carvings and community pool artefacts. (CP-07) Construction methods to reduce reliance on blasting activities to mitigate the risk to and potential damage to Clive Park. (CP-08) the construction methods must reduce vibration and adopt the least impact alternative resulting from construction and received at any structure and/or heritage assets or artefacts, and shall be limited to: (a) For structural damage vibration, the highest asset protection elements of – the acceptable vibration values set out in the German Standard DIN 4150: Part 3- 1999 'Structural Vibration in Buildings: Effects on Structures' and/or British Standard BS 7385-2:1993 'Evaluation and measurement for vibration in buildings. Guide to damage levels from ground-borne vibration'; and (b) For human exposure to vibration - the acceptable vibration values set out in the 'Assessing Vibration: A Technical Guideline' (DEC 2006); (CP-09) Wherever practical, the Proponent shall undertake piling activities using non-percussive piles; and (CP-10) Wherever practical, the Proponent shall undertake all relevant construction activities with the objective of not exceeding the following ground-borne noise criteria at community facilities (including adjacent boat sheds) and residential receivers: a) an internal LAeq(15min) of 40 dB(A) between 6:00 pm and 10:00 pm; and b) an internal LAeq(15min) of 35 dB(A) between 10:00 pm and 7:00 am.

		(CP-11) The Proponent is to develop and implement all reasonable and feasible noise and vibration mitigation measures with the aim of minimising ground-borne noise and vibration impacts to Clive Park and at adjacent community facilities. (CP-12) The Proponent is to take all reasonable steps so as not to harm, modify or otherwise impact any Aboriginal areas and artefacts associated, except as authorised by the Minister of Planning. A condition of any approval be included requiring TfNSW to liaise with Heritage NSW, the Metropolitan Aboriginal Land Council and any other relevant stakeholders to address any impacts on Aboriginal cultural heritage.

EIS Chapter 16 – Geology, soils and groundwater		
Issue	**Comments**	**Recommendations**
16a. Landfill – potentially contaminated land	Bicentennial Reserve, Hallstrom Park and Flat Rock Reserve are known former landfill and tip sites with a high likelihood that historic contaminants will be disturbed during the construction site tenure. These contaminants may become wind-borne or be carried offsite in groundwater and erosion/run-off events. Removal of capping/topsoil, excavation of potentially contaminated material below and construction of a groundwater treatment plant are likely to have negative impacts on site stability and hydrology and increase the likelihood of pollution of Flat Rock Creek and eventually Middle Harbour with follow-on effects.	**16a.** It is recommended that conditions of any approval be included in relation to the following: • Council is to receive a detailed analysis and plan for impact mitigation and confirmation of how the waste will be removed or retained and groundwater managed in a Remedial Action Plan or equivalent. • Council is to receive the inclusion of a specific licence agreement with a map and schedule defining boundaries for this potential work site identified within the Willoughby LGA.

	Council has notified the NSW EPA under the provisions of the Contaminated Land Management Act 1997 as a result of information provided in the EIS about the potential contaminated groundwater migrating from the former landfill site	• Council is to receive written confirmation that disturbance of the contaminated fill at Flat Rock and construction of the groundwater treatment plant will not cause the ongoing management to be the responsibility of Council under the Contaminated Land Management Act 1997.
16b. Flat Rock Drive construction site	Construction and operation of the construction site will cause significant damage to existing bushland, habitat connectivity and passive recreation facilities to facilitate vehicle access to and from Flat Rock Drive to construction site/compound. Hawkesbury sandstone formations define the landscape character of Flat Rock Gully. The landfill site below is covered by contoured mounds of crushed sandstone. These provide screening, enclosure and a range of conditions suitable for establishing plant communities indigenous to this catchment. There are significant concerns in relation to the site disturbance of the former rubbish disposal site, due to the potential for exposing hazardous materials and for contaminants to enter ground and surface water bodies.	**16b.** It is recommended that conditions of any approval be included in relation to the following: • Council is to receive a detailed analysis and plan for any impact mitigation proposed for this site and that the EIS identify the specific construction site/compound area including structures required, construction parking, access/egress roads and manoeuvring (turning) areas. • The EIS shall consider a thorough assessment of the existing uses of Flat Rock Gully including passive recreation use, wildlife corridor and vegetation rehabilitation and that the EIS address the impacts of construction on all these activities. • Council is to receive the inclusion of a specific licence agreement with a map and schedule defining boundaries for this potential work site identified in Willoughby LGA. • Landfill gas monitoring and an odour management plan are required for potential issues when the landfill is opened. • Interim as well as long-term measures are needed to manage this issue effectively. Re-instatement of the capping/topsoil is required prior to use of crushed

		sandstone as a contoured base for re-establishment of locally indigenous vegetation and other landscape and infrastructure elements, while ensuring soil Ph levels are correct for each area.
16c. Middle Harbour construction site	The proposed construction sites/compound locations fall within existing catchments that flow into Middle Harbour. The work within Middle Harbour will include extensive excavation, dredging and shoreline/water-based movement and activity causing physical damage and water turbidity. This will significantly affect marine life and existing tidal / water flow of Middle Harbour. Council has concerns that the dredging impacts at Middle Harbour will potentially release plumes of sediments which may be contaminated due to prior marine industries within Middle Harbour and the secondary effects of the resuspension of sediments within the shifting tides may have detrimental consequences upon the marine ecology, Northbridge Baths and recreational activities at Middle Harbour due to the turbidity of the water.	**16c.** It is recommended that conditions of any approval be included in relation to the following: • Council is to receive a detailed analysis and plan for impact mitigation that identifies there will be no detrimental effect on the catchment (either long term or short term) due to the site's establishment, operation and decommissioning/rehabilitation. • Council is to receive a detailed analysis and plan for impact mitigation that there will be no short- and long-term detrimental effect of construction and remediation activity on Middle Harbour. • Council is to receive detailed safety and environmental management plans for consideration and input.
16d. Stormwater (Capture and Re-Use)	The presence of the major concrete culvert carrying Flat Rock Creek is a significant limiting factor to excavation. It lies below the fill platform and carries stormwater outlets from the whole Flat Rock Creek catchment, including Gore Hill, St Leonards, Artarmon, and Naremburn. It is at the level of the original creek and discharges to the lower	**16d.** It is recommended that a condition of any approval be included requiring TfNSW to provide Council with a detailed analysis and plan for impact mitigation to ensure there will be no detrimental effect on waterways and catchments during both the construction and post-construction/operational phases of the Project.

	creek line, flowing to Long Bay in Middle Harbour. Damage to the culvert would cause major scour of fill material and spread pollutants to the lower catchment and the harbour.	Refer to comments 17d
16e. Stormwater and groundwater – contamination of groundwater during construction	Construction activity will require removal of the capping/topsoil and excavation of potentially contaminated material below. This will have an impact on site hydrology increasing the likelihood of contaminants to pollute the lower creek and eventually Middle Harbour with follow on effects.	**16e.** It is recommended that a condition of any approval be included requiring TfNSW to provide Council with a detailed analysis and plan for impact mitigation to ensure there will be no detrimental effect on groundwater quality during both the construction and post-construction/operational phases of the Project. Refer to comments 17b
16f. Groundwater	Council draws attention to the EIS Appendix N (Groundwater) predictions, which are for up to 35m of groundwater drawdown along the Flat Rock and Northbridge ridge line. The EIS makes nil commentary to the potential loss of flora and fauna due to the significant change in water table. Also, the geotechnical studies show limited settlement during the 10yr assessment period. 	16f. It is recommended that conditions of any approval be included in relation to the following: • TfNSW are to provide Council with settlement predictions for all road assets, utilities, community, residential and commercial buildings within 100m (measured in the perpendicular to the tunnel and from the outer tunnel tube location) where water drawdown is predicted to be greater than 5m in change. • Where the predicted groundwater effects indicate more than 10mm of ground settlement over time, TfNSW settlement and mitigation process are to be adjusted to the 10mm perimeter trigger area (i.e. the 50m limits adopted on other RMS motorway projects are to be adjusted to the predicted effects area for this project). • TfNSW are required to convene an **Independent Property Impact Assessment Panel** (Panel). The Panel must comprise geotechnical and engineering experts independent of the design and construction team, and is

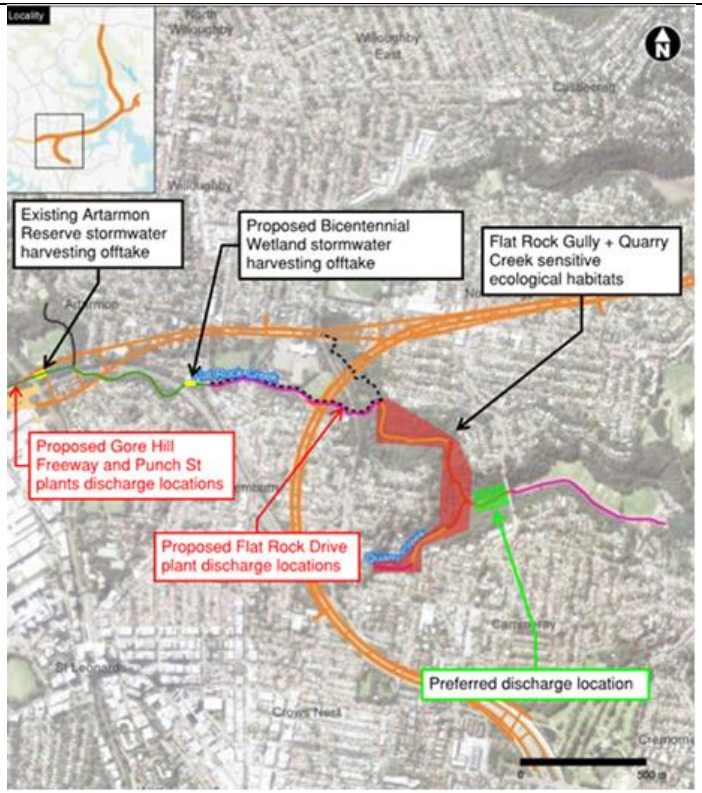
	Source: Figure 6-5 'Predicted drawdown in the water table after 100 years of operation (south), 2128 (project only)' – Page 106 of Appendix N Groundwater of EIS	responsible for independently reviewing condition survey reports, the resolution of property damage disputes and the establishment of ongoing settlement and vibration monitoring requirements. Note: Council officers are to be invited to observe the panel and may comment on risks to Council assets and property. • TfNSW is to establish a written protocol, available to the public, prior to the commencement of construction as to how this Panel is to operate, taking into account but not limited to, any documentation the NSW Government may have in place with the construction company, that concerns dilapidation of restructures near or above the tunnel construction or associated matters, to provide quick attention to any reported matters and a process to resolution of such matters.

EIS Chapter 17 – Hydrodynamics and water quality		
Issue	**Comments**	**Recommendations**
17a. Landfill – potentially contaminated land	Hallstrom Park and Flat Rock are known former landfill and tip sites with a high likelihood that historic contaminant will be disturbed during the construction site tenure. These contaminants may become wind-borne or be carried off-cite in groundwater and erosion/run-off events. Removal of the capping/topsoil, excavation of potentially contaminated material below, and construction of a groundwater treatment plant are likely to have negative impacts on site stability and hydrology, and increase the likelihood of pollution of Flat Rock Creek and eventually	**17a.** It is recommended that conditions of any approval be included requiring TfNSW to provide Council with a detailed analysis and plan for impact mitigation and confirmation of how the waste will be removed or retained and groundwater managed. Furthermore, Council is to receive the inclusion of a specific licence agreement with a map and schedule defining boundaries for this potential work site identified within the Willoughby LGA.

<table>
<tr><td></td><td>Middle Harbour with follow-on effects.</td><td></td></tr>
<tr><td>17b. Flat Rock Drive construction site</td><td>Concern exists with the treatment capacity and processes of the three waste water plants below in Table 1 and the risk of overflow to stormwater without treatment.
Table 1 – NBL waste water treatment plants summary
<table>
<tr><th>Plant Location</th><th>Type</th><th>Approximate duration of operation</th><th>Average discharge quantity (kL/day)</th><th>Discharge location</th><th>Ultimate receiving waters</th></tr>
<tr><td>Flat Rock Drive support site (BL2)</td><td>Construction</td><td>4 years</td><td>711 kL/day</td><td>Local stormwater system</td><td>Flat Rock Creek</td></tr>
<tr><td>Punch Street support site (BL3)</td><td>Construction</td><td>3 years 9 months</td><td>308 kL/day</td><td>Local stormwater system</td><td>Flat Rock Creek</td></tr>
<tr><td>Gore Hill Freeway wastewater treatment plant</td><td>Operations</td><td>Ongoing from 2028</td><td>1,425 kL/day</td><td>Local stormwater system</td><td>Flat Rock Creek</td></tr>
</table>
Significant concerns exist that this discharge will directly affect:
1. The sensitive habitat and ecosystem identified at</td><td>17b. It is recommended that conditions of any approval be included in relation to the following:

1. Council requires the discharge at all sites to meet the following criteria 100% of the time, in addition to ANZECC/ARMCANZ criteria and requirements.
• TDS or salinity below 500 mg/L
• TSS below 50 mg/L

1. If Gore Hill Freeway / Punch St wastewater treatment plant have any incidence of:
• TDS above 500 mg/L and/or
• TSS below 50 mg/L
a. Use alternative discharge point into Flat Rock Channel downstream of Fleming Park stormwater harvest offtake - See proposed location
2. A requirement for an independent company to conduct water quality testing, making raw data available to Council.
a. Testing not to be conducted by constructor or constructor's sub-contractor.
3. Flat Rock Gully wastewater discharge to be overland in existing armoured channel. Channel to be restored/retained after Flat Rock Gully site completed.</td></tr>
</table>

	Flat Rock Gully; and 2. Existing and proposed stormwater harvesting schemes in the Flat Rock Creek stormwater system that are being used by Council to irrigate ovals and parks in the area. There are two major parameters of concern in regard to the discharge: 3. Salinity 4. Total Dissolved Solids It is assumed that the discharge from the waste water plants will be saline based upon the following reasons: 5. The groundwater information obtained from the EIS, Appendix N Groundwater: • Chapter 4 outlines how the saline intrusion will mean the groundwater will most likely have a high salinity due the underlying geology. 2. Existing water quality of the Lane Cove Tunnel treated water discharge: • Willoughby City Council has a Memorandum of Understanding to utilise the groundwater generated at Lane Cove Tunnel for re-use and as such receives water quality data. On average over 12 months, the water quality is very high in salinity (TDS = over 9000 mg/L) and is unfit for reuse. TfNSW feels confident there will be little to no salinity in the groundwater discharge however additional assurances are required. Council draws attention that the Proponent's investigations within the EIS documentation have confirmed that groundwater under Bicentennial Reserve is contaminated	 • Council is to receive a detailed analysis and plan for any impact mitigation proposed for this site and that the EIS identify the specific construction site/compound area including structures required, construction parking, access/egress roads and manoeuvring (turning) areas. • The EIS shall consider a thorough assessment of the existing uses of Flat Rock Gully including passive recreation use, wildlife corridor and vegetation rehabilitation and that the EIS address the impacts of

	and the EIS states that it may move through and around the site if the landfill downstream is disturbed. The groundwater drawdown impacts as a result of the project and as stated in the EIS are: - Northbridge 28m - Flat Rock Reserve 21m - Willoughby Leisure Centre 22m This will result in water stress for vegetation and settlement issues to buildings and structures. The draw down in the area will have a significant impact on the ability of our grounds to retain moisture and the viability of bushland in an area that supports endangered species. The area is already flood prone and settlement may exacerbate the issues around this as well as contamination.	construction on all these activities. • Council is to receive the inclusion of a specific licence agreement with a map and schedule defining boundaries for this potential work site identified within the Willoughby LGA. • It is recommended that as a condition of consent to mitigate the draw down impacts of the tunnel between Bicentennial Reserve, Flat Rock Gully and Middle Harbour that the tunnels be fully lined to minimise drawdown. • It is recommended that conditions of any approval be included in relation to the following: Council is to receive detailed analysis and plan for impact mitigation detailing results of groundwater testing in the Long Bay Catchment focusing on Bicentennial Reserve and Flat Rock Gully and the Proponent will provide for containment solutions of contaminated groundwater prior to construction commencement.
17c. Middle Harbour construction site	The proposed construction sites/compound locations fall within existing catchments that flow into Middle Harbour. The work within Middle Harbour will include extensive excavation, dredging and shoreline/water-based movement and activity causing physical damage and water turbidity. This will significantly affect marine life and existing tidal / water flow of Middle Harbour. Concerns exist that the dredging impacts at Middle	**17c.** It is recommended that conditions of any approval be included in relation to the following: • TfNSW is to provide Council with a detailed analysis and plan for impact mitigation that identifies there will be no detrimental effect on the catchment (either long term or short term) or the assets within the catchment (e.g. Northbridge Baths) due to the site's establishment, operation and decommissioning/rehabilitation.

	Harbour will potentially release plumes of sediments which may be contaminated due to prior marine industries within Middle Harbour and the secondary effects of the resuspension of sediments within the shifting tides may have detrimental consequences upon the marine ecology, Northbridge Baths and recreational activities at Middle Harbour due to the turbidity of the water. To ensure a robust evidence-based assessment it is important that peer-reviewed scientific literature is considered alongside field-collected data from the EIS. This literature also provides an independent source of information for evaluation. The Marine Estate Management Authority (MEMA) Sydney Harbour Background Report (2014) provides a comprehensive review of estuary characteristics, ecological assets relevant stressors and harbour use patterns. For example, water quality has been improving in Sydney Harbour since the closure of many industries and regulation of industrial and sewage inputs. As a result, Sydney Harbour now supports significant biodiversity and is one of the most diverse in the world. This should be acknowledged in the EIS and given more weight than threatened species such as iconic species that are rarely observed in the Harbour. The abundances of micro-plastics in the sediment have not been quantified or considered as at risk of resuspension during dredging activities. Similarly, there has been no quantification of pathogenic bacteria or resting dinoflagellate cysts (a major cause of red tides) in the sediments that might be released during dredging activities and pose a human health risk or result in a harmful algal bloom.	• Council is to receive a detailed analysis and plan for impact mitigation that there will be no short- and long-term detrimental effect of construction and remediation activity on Middle Harbour. • Council is to receive detailed safety and environmental management plans for consideration and input. • A comprehensive literature review is required for accurate assessment of potential impacts. The proposed tunnel construction, cofferdam piling, dredging and trenching works associated with the construction of the harbour crossing, submerged tubes and cofferdams, will have the potential to re-activate and re-animate existing sea floor toxins and heavy metal contaminants, and deposit toxin and heavy contaminants as siltation upon the foreshore areas and regenerating fauna and flora in the area. It is recommended that the following conditions of any approval be included as follows; **Pre-construction analysis** • (CON-01) A detailed contamination analysis, Phase 2 site audit be carried out prior to any sea floor excavations. The contamination audit must be prepared by a suitably qualified and experienced person in accordance with guidelines made or approved under the Contaminated Land Management Act 1997 (NSW). The Proponent is to undertake a detailed analysis of the sea floor for 50m either side of the immersed tube and

	The marine ecology is currently exposed to a variety of stressors, adding additional stressors might result in a tipping point from which they cannot recover. This effect has not been considered in the EIS. Sydney Harbour typically experiences good visibility and water quality unless there is a rainfall event and so increases in turbidity from dredging activities should be prevented. Deep draft silt curtains will not be effective at full containment of contaminated resuspended sediments. As noted in the EIS these curtains would contain surface layer suspended sediments and to a lesser degree the deeper suspended sediments. Full length silt curtains anchored to the sea floor are the only viable method of restricting the movement of fines. It should also be recognised that silt curtains cannot prevent the dispersal of toxic substances created by dredging which will be compounded by wind, tide and vessel movements.	cofferdam works, and for 50m surrounding at all temporary construction sites that incorporate sea floor disturbance (anchoring and piling). The Proponent is to undertake a detailed maritime analysis of the sea floor for all expected sedimentation deposit areas, based on the 98th percentile plume drift models, and base-line any existing lands/sea floor areas, to determine any existing pre-construction and post construction effects of the Proponent's activities on the lands/sea floor, foreshore, beach, Clive Park and up to Sailors Bay Creek. The Proponent is to submit the maritime analysis and plan as part of the M.CEMP to the Maritime Working Group and to the Secretary Planning. The maritime contamination analysis and plan must: • (CON-01a) be sufficiently detailed to identify and provide existing contamination information required to enabled detailed design, construction and maintenance of human and aquatic health and safety pre, during and post construction; • (CON-01b) include detailed flow or changes in flow, and contaminant flow models to allow prediction of human and aquatic life exposure levels, including Target, Trigger and Alarm event levels, during various months of the year; • (CON-01c) contain and determine exposure limits for human and in particular children under 10 years of age group and set maximum thresholds for toxins and heavy metal contaminants of the area (Trigger and Alarm event

		levels). Of particular concern and based on previous scientific studies are the following heavy metals, which are present in Middle Harbour; Copper (Cu), Lead (Pb), Zinc (Zn), Chromium (Cr), and potentially 'Per- and polyfluoroalkyl substances' (PFAS); and • (CON-01d) determine the most appropriate construction methods and contaminate mitigations, either barge based pneumatic/suction dredging vs cam-bucketing of the toxin ladened silt layer must be investigated during design development and appropriate excavation and construction sequences and schedules, for appropriate tidal ranges, temporary treatments and consideration of Target, Trigger, Alert and Alarm monitoring requirements based on the detailed analysis. **Pre-construction and Construction phase** • (CON-02) The Proponent must survey, investigate, monitor and control all pre-construction phase activities and all primary construction phase activities including tunnelling beneath Clive Park, cofferdam excavation and all other work activities in accordance with the maritime contamination analysis, methodologies and findings, as noted in CON-01. • (CON-03) The Proponent must at a minimum of six (6) months prior to any pre-construction works, including any intrusive site investigation activities and then following at bi-monthly intervals, until 24 months post completion, provide updates on the contaminant monitoring program findings, trigger levels and exceedances, if any, to the Maritime Working Group and to the Secretary.

		• (CON-04) The Proponent must provide within four (4) hours of an 'Alarm Level Exceedance' event and within twelve (12) hours of a 'Trigger Level Exceedance' event, provide a draft event report to the Maritime Working Group and to the Secretary Planning, and within 24 hours provide a further report outlining the discharge event and the Proponents planned mitigation works and further detailed reporting, until closure is received by the Secretary Planning, and/or Sydney Harbour Master and/or NSW Environmental Protection Authority (EPA). All 'Alarm Level Exceedance' events must be reported immediately (and no greater than 1 hour) to the Sydney Harbour Master and the Maritime Working Group liaison personal, who will inform the local waterway users of the risks to waterway use and implement local response and action plans as necessary.
17d. Stormwater (Capture and Re-Use)	The presence of the major concrete culvert carrying Flat Rock Creek is a significant limiting factor to excavation. It lies below the fill platform and carries stormwater outlets from the whole Flat Rock Creek catchment, including Gore Hill, St Leonards, Artarmon, and Naremburn. It is at the level of the original creek and discharges to the lower creek line, flowing to Long Bay in Middle Harbour. Damage to the culvert would cause major scour of fill material and spread pollutants to the lower catchment and the harbour. Council wants to make TfNSW aware of Council's existing and planned water harvesting of Flat Rock Creek (FRC). The FRC stormwater system has a reliable flow rate and	**17d.** It is recommended that conditions of any approval be included in relation to the following: • Council is to receive a detailed analysis and plan for impact mitigation that there will be no detrimental effect on waterways and catchments during construction and post construction activity/operation. In relation to stormwater harvesting, the following are requested: • Include Council Stormwater Harvesting in detailed design. • Dewater proposed construction site in Artarmon Park, site of onramp to tunnel, to overland flood path, this avoids

	quality is suitable for use in irrigation of ovals and parklands a. Existing Stormwater Harvesting – Artarmon Reserve b. 2021 – Stormwater Harvesting – Hallstrom Oval	Council's stormwater offtake at Artarmon Reserve • To work with TfNSW where possible to give feedback on elements of detailed design which may assist to lessen environmental impacts and provide local knowledge. • Stormwater Harvesting systems are expensive to operate and maintain, if treatments affected by poor quality water - TfNSW are to compensate Council for impact on Flat Rock Creek Stormwater Harvesting.
17e. Stormwater and groundwater – contamination of groundwater during construction	Construction activity will require removal of the capping/topsoil of the landfill site and excavation of potentially contaminated material below. This will have an impact on site hydrology, increasing the likelihood of contaminants to pollute the lower creek and eventually Middle Harbour with follow-on effects.	**17e.** It is recommended that a condition of any approval be included requiring TfNSW to provide Council with a detailed analysis and plan for impact mitigation that there will be no effect on groundwater quality during and post construction. See comments 17b

EIS Chapter 18 – Flooding		
Issue	**Comments**	**Recommendations**
18a. Stormwater (Capture and Re-Use)	The presence of the major concrete culvert carrying Flat Rock Creek is a significant limiting factor to excavation. It lies below the fill platform and carries stormwater outlets from the whole Flat Rock Creek catchment, including Gore Hill, St Leonards, Artarmon, and Naremburn. It is at the level of the original creek and discharges to the lower creek line, flowing to Long Bay in Middle Harbour. Damage to the culvert would cause major scour of fill material and spread pollutants to the lower catchment and the harbour.	**18a.** It is recommended that conditions of any approval be included in relation to the following: • Council is to receive a detailed analysis and plan for impact mitigation that there will be no detrimental effect on waterways and catchments during construction and post construction activity/operation. • Council is to receive details on any new drainage lines and proposed connections to major system.

		• Council is to receive any water reuse or treatment device details post-construction • Frequency of proposed maintenance of such devices and their connection point to the catchment.
18b. Flooding impacts	***Construction:*** Construction activities also have the potential to exacerbate flooding conditions in adjacent development (Flat Rock Drive Site). The report notes there would typically be suitable areas outside the 10% AEP flood extent that could be used to stockpile material. ***Post-Construction:*** The assessment found that once constructed, the Project would generally have only a minor impact on flood behaviour in adjacent properties for storms with AEP's up to 1% in intensity – This is noted aside from properties around Elizabeth St and Wilkes Avenue. It is noted the Flat Rock Creek Catchment appears to be negatively impacted post-construction for events greater than the 1% (mainly PMF). The EIS notes that there are instabilities in the hydraulic model which could not be resolved. Council provides PMF levels on flood information certificates. Post-construction, any changes in PMF Levels	**18b.** It is recommended that conditions of any approval be included in relation to the following: ***Construction:*** • Impact to be noted to Council on infrastructure and flood behaviour and be mitigated where possible. • Due to the potential flood impacts and environmental downstream impacts on flat rock creek, it is recommended that this is moved outside the flood extents where possible or a temporary overland flow path through the site is constructed. ***Post-Construction:*** • Properties around Elizabeth St and Wilkes Avenue are to be reviewed and if afflux is present in the 1% as a result of the Project, it is to be nil through mitigation measures to be discussed with Council. • More detail is to be provided as to why this has occurred. Council and residents must be consulted regarding the impact on lands. Strategies are to be provided to mitigate these flood level increases. Particularly on George Place and the main arm of the Flat Rock Creek Channel. • Instabilities should be resolved so Council and residents can accurately assess the impact of the Project. • A Consultant provides information to Council in WRR on

	need to be provided to Council.	new flood levels resulting from changes due to the tunnel that cannot be mitigated.
18c. Flooding impacts	Floor Level Surveys are proposed to be conducted for buildings where 1% AEP flood levels will increase and assessment of the Project's impact on a risk basis will be undertaken	**18c.** It is recommended that this be undertaken for PMF events where property flood level increases cannot be mitigated with the same design intent.

EIS Chapter 19 – Biodiversity		
Issue	**Comments**	**Recommendations**
19a Biodiversity of Flat Rock Gully	Revegetation following the site rehabilitation has used locally indigenous species and the area plays a significant role as part of a regional open space network, which also acts as a wildlife corridor. Although the revegetation is relatively recently established and does not fully represent the original ecological community, the plantings were all propagated from locally indigenous species and consequently the habitat and connectivity values are important locally. The work proposed at Construction Support site BL2 will destroy 20 years of investment in site restoration by Council and the community. Given the ongoing commitment by Council and the local community to invest in the site's restoration, this will generate significant community concern. In addition to infrastructure investment on this site including active transport paths, stormwater management structures, Council has generated strong community engagement, such as represented by Bushcare groups The EIS has identified threatened species near the construction footprint and the site does provide habitat for these species and numerous others as identified in Flat Rock Reserve Action Plan and associated species lists Biodiversity risk assessment deficient with fauna that	**19a.** It is recommended that conditions of any approval be included in relation to the following: • Recognising differing community views on the post-construction use of this area, it is recommended that a condition of any approval be included requiring TfNSW to prepare and implement a **Community Communication Strategy.** TfNSW is to engage in early and meaningful consultation with Council and the community to agree on post-construction options for this and other temporary construction support sites. • It is recommended that a condition of any approval be included requiring TfNSW to prepare and implement a **Place, Design and Landscape Plan (PDLP).** The PDLP must be prepared to inform the final design of the Project and to give effect to the outcomes informed by any Design Review.

	Willoughby has stated as significant in Reserve Action Plans. Over $1 million was spent on earthworks and other infrastructure works and a further $1.5 million in management since site restoration was completed 20 years ago.	
19b. Middle Harbour construction site	The proposed construction sites/compound locations fall within existing catchments that flow into Middle Harbour. The process intended for reinstatement of natural habitats (rocky reef and sediment) is not provided at the level of detail needed to assess the potential for recovery after the works. Further information about substrate types, sources, reconstruction methods should be included.	**19b.** It is recommended that a condition of any approval be included requiring TfNSW to provide Council with a detailed analysis and plan for impact mitigation that identifies there will be no detrimental effect on the marine habitat (either long term or short term) due to the site's establishment, operation and decommissioning/rehabilitation.
19c. Sustainability and Bushcare – Natural assets within construction sites	Council has undertaken significant investment in time, money and community engagement regarding the protection and enhancement of the natural environment. This includes: • The investment in Bushcare by both paid and volunteer labour, as well as the cost of bushland rehabilitation • Bushcare volunteers The area also provides amenity that is unable to be quantified in value to the community. This includes: • Area has high use by cyclists, dog walkers, joggers and the section of the community that require accessible tracks (elderly / disabled)	**19c.** It is recommended that a condition of any approval be included requiring TfNSW to provide Council with a detailed analysis and assurance that there will be engagement with Council and Bushcare groups to ensure that any remediation work is implemented, managed and undertaken with their input and support.

	• The ecological integrity of the natural environment will be affected, and unable to be reinstated. • Amenity that the bushland environment has on wellbeing.	

EIS Chapter 20 – Land use and property		
Issue	**Comments**	**Recommendations**
20a. Council and private property impacts – Acquisition, lease and/or use of land	A number of private properties will be acquired in the Artarmon industrial area. Furthermore, the acquisition, lease or other use of Council land (including road reserves) is proposed at various locations in Artarmon and elsewhere. At this point, indicative maps are provided but little detail on these points is provided. As such, Council recommends that TfNSW provide further detail on these issues and engage in early and meaningful consultation with Council to manage these impacts.	**20a.** It is recommended that a condition of any approval be included requiring TfNSW to prepare and implement a **Community Communication Strategy**. Among other things, this Strategy must detail how Council, residents, businesses and other key stakeholders will be consulted and given notice of construction works, to ensure peak times for vibration and noise are known in advance. Furthermore, TfNSW is to provide Council with further details on all properties in Willoughby LGA intended to be acquired, leased and or used during both the construction and operational phases of the Project.

20b. Proposal to use land on Barton Rd as a temporary construction site (BL5)	Council's long-term intention for this site (for which access is via Butchers Ln – currently an unsealed laneway) is for affordable housing. TfNSW's proposal to lease and utilise these sites for the BL5 temporary construction support site would interfere with and delay Council's initiatives in this project. It is recommended that this site to not be utilised. However, if this cannot be avoided, TfNSW is to engage in early, meaningful and ongoing consultation with Council on their temporary use of this site, to ensure it can be returned to Council control as soon as possible.	**20b.** It is recommended that a condition of any approval be included requiring TfNSW to prepare and implement a **Community Communication Strategy**. Among other things, this Strategy must detail how Council, residents, business and other key stakeholders will be consulted and given notice of construction works, to ensure peak times for vibration and noise are known in advance.
20c. Planning approvals – E2 Environmental Conservation zone	The entire area of Flat Rock Gully has an E2 Environmental Conservation zoning. Appropriate approvals will be required. The entire area of Clive Park has an E2 Environmental Conservation zoning. Appropriate approvals will be required.	**20c.** It is recommended that TfNSW, in its Response to Submissions, to provide further information on appropriate planning approvals required, in particular in relation to E2 zones in Willoughby LGA proposed to be acquired, leased or otherwise used for the construction and operational phases of the Project.

EIS Chapter 21 – Socio-economics		
Issue	**Comments**	**Recommendations**
21a. Equity impact during construction	Equity refers to a fair distribution of the resources that allow residents full participation in their community. It is anticipated that impacts to equity would be more acutely experienced by those communities closest to surface works, temporary construction support sites, or occupants of properties above the tunnel alignment. Potential equity impacts would mainly relate to construction noise, dust and vibration, affecting the amenity and liveability of the area, as well as changes in local access and connectivity. The EIS details that impacts on equity during construction is considered moderate, with the sensitivity of affected residents and the magnitude of change considered to be moderate.	**21a.** It is recommended that a condition of any approval be included requiring TfNSW to prepare and implement a **Construction Environmental Management Plan (CEMP)**. Among other things, the CEMP must detail how the level of access, particularly for residents reliant on prams, wheelchairs or mobility aids will be retained during the construction phase of the Project to ensure equality of access. Council and the community are to be provided with specific details of how access will be managed around the construction support sites.
21b. Community health and wellbeing	Construction works have the potential to create sleep disturbance. This would be particularly a concern in the vicinity of the temporary construction support sites but also for residents whose houses the tunnel alignment passes beneath. Furthermore, there is potential for construction dust to impact on health and wellbeing of groups in the community who may be more sensitive to changes in air quality, such as children and the elderly.	**21b.** It is recommended that a condition of any approval be included requiring TfNSW to prepare and implement a **Community Communication Strategy**. Among other things, this Strategy must detail how Council, residents, businesses and other key stakeholders will be consulted and given notice of construction works, to ensure peak times for vibration and noise are known in advance. Furthermore, results of air and dust levels monitoring are to be made publicly available. Council and residents are to be consulted and given notice of construction works, to ensure peak times for

		reduction in air quality are known in advance.
21c. Flat Rock Reserve / Flat Rock Drive temporary construction site (BL2) and post-construction use	As noted in Table 21-5 on page 21-31 of the EIS, part of Flat Rock Reserve (about 10%) would be temporarily leased for use as the Flat Rock Drive construction support site (BL2). This would result in the temporary loss of access and use of land within the construction footprint, disrupting the use of this land for informal recreation. Access around the site would be maintained during construction. Clearing of trees would be required and amenity of other areas outside of the site would be diminished during construction and may detract from the enjoyment of people visiting accessible parts of the parks or nearby facilities. Finally, questions remain about what the site will be used for post-construction. TfNSW should engage in early and meaningful consultation with Council and the community to agree upon post-construction options for the site.	**21c.** It is recommended that conditions of any approval be included in relation to the following: • Recognising differing community views on the post-construction use of this area, it is recommended that a condition of any approval be included requiring TfNSW to prepare and implement a **Community Communication Strategy.** TfNSW is to engage in early and meaningful consultation with Council and the community to agree on post-construction options for this and other temporary construction support sites. • It is recommended that a condition of any approval be included requiring TfNSW to prepare and implement a **Place, Design and Landscape Plan (PDLP).** The PDLP must be prepared to inform the final design of the Project and to give effect to the outcomes informed by any Design Review.
21d. Economic impact – Businesses	Construction activity will be a source of noise, vibration and increased on-road traffic activity (adding to existing congestion) possibly impacting business operation of businesses near to construction activities. The acquisition of a number of business in the Artarmon industrial area could have an immediate impact with the consideration of other businesses within the area	**21d.** It is recommended that conditions of any approval be included requiring TfNSW to: • Provide Council with a detailed analysis and confirmation there will be no detrimental effect on the operation and livelihood of businesses within the LGA. Or if there is an effect, then the nature and extent of that effect is to be clearly articulated, managed and compensated. The likely

	examining their viability during the construction phase and seek to relocate impacting the medium (construction phase) and long (post construction) term vitality and viability of the whole industrial area, especially those with a high need for servicing and delivery, and the need for quiet environments.	economic benefits of work within the city and post-construction should also be undertaken. • Provide Council with an ongoing detailed analysis of the turnover and vacancy rates of business premises in the Artarmon industrial area to ensure the vitality and viability of the area is maintained during the construction phase.
21e. Economic impact – Investment of Environment Levy	A significant initial investment of over $1 million on capital works, including site remediation, earthworks and embankment stabilisation has been matched by a subsequent investment of a similar amount over the 20-year period that it has taken to achieve the full restoration of the Flat Rock Reserve site.	**21e.** It is recommended that conditions of any approval be included in relation to the following: • Recognising differing community views on the post-construction use of this area, it is recommended that a condition of any approval be included requiring TfNSW to prepare and implement a **Community Communication Strategy.** TfNSW is to engage in early and meaningful consultation with Council and the community to agree on post-construction options for this and other temporary construction support sites. • It is recommended that a condition of any approval be included requiring TfNSW to prepare and implement a **Place, Design and Landscape Plan (PDLP).** The PDLP must be prepared to inform the final design of the Project and to give effect to the outcomes informed by any Design Review.

EIS Chapter 22 – Urban design and visual amenity		
Issue	**Comments**	**Recommendations**
22a. Urban design – General comments	Any further detail regarding urban design and landscape should be provided in a **Place, Design and Landscape Plan (PDLP)**. Such a Plan is yet to be created. Therefore, the following comments are based on the information provided in Chapter 22 of the EIS and Appendix V (Urban design, landscape character and visual impact assessment report – Arup, 2020). In the EIS, it is stated that urban design "would be addressed" in accordance with *Beyond the Pavement* (Transport for NSW, 2020), as well as reference made to the Government Architect NSW's *Better Placed,* as a high-level policy document. Both documents are aspiration (GANSW) as well as pragmatic (TfNSW) and as such form appropriate guidance for a civic infrastructure project of this type. ***Urban Design not defined in any of the EIS reporting*** A definition of 'urban design' is provided in *Beyond the Pavement*: *"Urban design is the generally accepted name for the process of giving physical design direction to urban growth, conservation and change. It is understood to include landscape as well as buildings, preservation and new construction, and rural areas as well as cities."* (Jonathan Barnett 1982) However, based on material contained in the EIS	**22a.** It is recommended that conditions of any approval be included in relation to the following: • Recognising differing community views on the post-construction use of this area, it is recommended that a condition of any approval be included requiring TfNSW to prepare and implement a **Community Communication Strategy.** TfNSW is to engage in early and meaningful consultation with Council and the community to agree on post-construction options for this and other temporary construction support sites. • It is recommended that a condition of any approval be included requiring TfNSW to prepare and implement a **Place, Design and Landscape Plan (PDLP).** The PDLP must be prepared to inform the final design of the Project and to give effect to the outcomes informed by any Design Review.

	documentation, urban design does not appear to be given this level of status in the planning, design and delivery approach to the Project. It is therefore assumed that urban design and visual amenity is largely relegated to the materiality of screening and facadism to proposed infrastructure elements. This is exemplified in the 'Strategic concept design adopted for project motorway facilities' (Appendix V, section 3.4.6 'Motorway facilities, ventilation outlets and motorway control centre' p30), where the facility is simply treated with a façade to address 'urban design' quality. Traditionally, 'civic design' incorporated the design and planning of the entire infrastructure as an integrated, built form expression based on an understanding and meaning of the Place, in which the infrastructure affects, and its meaning within this Place. This is not the approached advocated and expressed by GANSW who: *"Advocates understanding the physical overall built environment and the competing forces that impact its development, rather than pursuing only a narrow focus on a project site or on individual places. By undertaking the strategic approach outlined here, urban designers can use their expertise to influence decision-makers across all stages of urban development – not confined to traditional design stages alone".* (Good Urban Design, Issue No-1, 2019, Discussion paper) ***Visual analysis*** The visual analysis describes a minimal impact of the additional road infrastructure within the existing Gore Hill and Warringah Freeways. This relationship between the	

	road alignment, water of Sydney Harbour, local green space, expanses of native bushland and exposed sandstone geology will be explored through the Project's urban design elements, increasing the legibility of the network. ***Flat Rock Drive construction support site (BL2)*** This area comprises carefully and sensitive revegetation. Noting that the support site will remove all of the vegetation within the footprint of the proposed construction support site, Council is concerned that post-construction, the area may be considered as being suitable for alternative use (such as additional structured/regulated recreation or car parking). As previously noted, Council is of the view that TfNSW must engage in early, meaningful and ongoing consultation with Council and the community to decide on an appropriate post-construction use of this site, including design of urban design and landscape elements. ***Design Quality and Design Excellence*** It is noted that the Project is considered State Significant Critical Infrastructure (SSCI), and as such will be subject to review and consideration by the State Design Review Panel. According to the GANSW: *"The State Design Review Panel (SDRP) delivers independent, consistent design quality advice on projects that have or will undergo assessment by the state. The program provides a best-practice state-wide approach to the review of State Significant projects, precincts and infrastructure."*	

	Source: https://www.governmentarchitect.nsw.gov.au/review/nsw-state-design-review-panel The SDRP role is supported in providing independent design advice where critical issues may be raised and addressed to support the highest standards of design quality are delivered throughout the planning and design process and delivery. Design Excellence and Design Review in the Willoughby LGA is guided by the Willoughby Design Excellence Policy (WLEP Clause and Guidelines/Procedures) as well as the Northern Sydney Regional Organisation of Councils (NSROC) - Design Review Panel Terms of Reference. Where this Project requires a Planning Proposal or amendment to the Willoughby Local Environmental Plan, TfNSW should be aware that the Design Excellence Clause will be applied.	

EIS Chapter 23 – Hazard and risks		
Issue	**Comments**	**Recommendations**
23a. Hazards and risk – General comments	Chapter 23 *"assesses potential hazards arising from possible incidents during project construction and operation that could pose a risk to public safety, the surrounding community or the environment, and summarises the approaches taken to manage these risks. Other potential environmental hazards resulting from construction and operation of the project, and measures to avoid, mitigate and manage these risks are addressed in Chapter 8... to Chapter 27... and the impacts associated with human health risks are detailed in Chapter 13"* (p. 23-1). Chapter 23 includes a brief description of risk in relation to the following key areas: • Storage and handling of dangerous goods and hazardous substances • Transport of dangerous goods and hazardous substances • Ground movement and geological uncertainty • Traffic incidents • Interactions between maritime traffic and tunnel infrastructure • Damage or disruption to underground and above ground utilities • Bushfires • Aviation risks Environmental management measures are described in	**23a.** It is recommended that a Phase 2 Contamination Study be undertaken around the Flat Rock Gully Dive Site and take into consideration the Long Bay Catchment and the risks associated with an Immersed Tube crossing at Middle Harbour. The Phase 2 Contamination Study when completed, will be made accessible to Council and the results published for further consultation with the community before finalising the planning determination. It is recommended that the overall issue of hazard and risks are to be addressed through TfNSW's own risk assessment and management plans. Should the Project be approved, these issues are to be covered in conditions of any approval. See the recommendations in sections 17b and 17e in relation to the issue of contaminants and groundwater and section 19a in relation to the issue of tree removal and biodiversity impacts, in particular in the Flat Rock Gully area. That the following conditions of consent be included to respond to ground movement and geological uncertainty: **Dilapidation Report** (GMG01) At the affected owner's option and subject to access being granted, a Dilapidation Report be undertaken on potentially affected properties along the tunnel route to establish a benchmark of existing conditions of buildings and structures, carried out by a suitably qualified engineer, independent of the

	section 23.4. Council expects TfNSW to undertake further work to create its own risk analysis and assessments. Council provides additional comment on the following matters: ***Contaminants and groundwater*** As previously noted, further analysis of contaminants, groundwater changes and re-routing is considered necessary to minimise and address risk in relation to contaminants and ground water for Flat Rock Creek, specifically in relation to the temporary construction support site (BL2) proposed in this location. Council requests that recent testing results at Bicentennial Reserve and Flat Rock Gully be released. In contrast to Middle Harbour, no numerical data indicating the degree of any contamination has been released for Bicentennial Reserve or Flat Rock Gully. ***Tree removal, urban heating and biodiversity – in particular in the Flat Rock Gully area*** A large number of trees will be removed or impacted in the course of construction, particularly in the highly sensitive Flat Rock Gully area. Given the proximity of residential and other buildings and the large number of hard surfaces, urban heating is already a concern. Trees should be maintained or replaced as close as possible to existing trees in and around the Gore Hill Freeway and Flat Rock Drive temporary construction support site (BL2).	proponent and project contractors. • The Dilapidation Report shall be carried out, completed and issued to property owners before construction commencement. The Dilapidation Report is to be prepared by a suitably Qualified Engineer with current Corporate Membership with the Institution of Engineers, Australia or Geotechnical Practitioner. • The Report shall cover structural and geotechnical factors likely to arise from the development. • The Proponent having the benefit of the development consent must, at their own cost, rectify any damage in a timely manner caused to other properties during the construction of the Project. • It is requested that the document governing contracts between the NSW Government and private contractors be made public to provide certainty on the safeguards or legal avenues available to residents and other affected property owners to rectify any potential damage caused by tunnelling for the Project.

	There should be no net loss of tree canopy if the Project proceeds. The issue of biodiversity loss and impacts to flora and fauna are addressed in section 19a of this submission. It is recommended that consideration and assessment to the potential damage to below ground infrastructure, Sydney Water's Northside Storage Tunnel in the project area be completed prior to planning determination. Failure to consider this utility asset may cause project delays, unexpected costs and present a risk to community and workers, as the storage tunnel has the capacity to hold 500,000 Million Litres of sewage and stormwater. ***Governance of contracts between the NSW Government and private contractors*** Large infrastructure projects pose significant risks due to the potential for conflict between the proponent, contractors and the community (in particular affected businesses). It is understood there is a document which governs contracts between the NSW Government and private contractors engaged on infrastructure projects. However, given the presumed use of private contractors to construct this Project, there are concerns that in practice there will not be adequate safeguards or legal avenues available to residents and other affected property owners to rectify any potential damage caused by tunnelling for the Project. Accordingly, it is requested that the document governing contracts between the NSW Government and private contractors be made public to provide certainty on this issue.	

EIS Chapter 24 – Resource use and waste management		
Issue	**Comments**	**Recommendations**
24a. Resource use and waste management – General comments	Waste avoidance should be the focus for waste management, with landfill disposal the last option. In this regard: • All materials taken offsite go to appropriate licenced processing and disposal facilities. • Hazardous wastes are sorted, stored and transported. Strict conditions regarding the transport of contaminated waste should be a condition of any approval and agreed with Council. Contaminated Waste should not be transported via local streets and at times when children are moving through the area.	**24a.** It is recommended that a condition of any approval be included requiring TfNSW to prepare a **Waste Minimisation and Management Plan (WMMP)** prior to the commencement of works. Among other things, the WMMP should include strict conditions regarding the transport of contaminated waste and agreed with Council. Council is to be provided a copy of the final WMMP well in advance of works.

EIS Chapter 25 – Sustainability EIS Chapter 26 – Climate change and greenhouse gas		
Issue	**Comments**	**Recommendations**
25/26a. Sustainability and climate change – General comments	As previously noted under Chapter 3 of the EIS, Council questions the sustainability credentials of the Project. To quote from *Future Transport 2056 (FT 2056)* (p. 7) (**bold** for emphasis): *"As a significant emitter of greenhouse gases,*	**25/26a.** As per recommendation 4a, TfNSW is requested to release the final Business Case prepared for the Program/Project to demonstrate why the Program/Project were considered the best option for addressing the transport issues facing the northern Sydney region. If this is not forthcoming, in its Response to Submissions, TfNSW

	transport also has a role in operating in a more sustainable way *to limit environmental impacts and contribute to the NSW Government's aspirational target* ***to achieve net-zero emissions by 2050****."* Furthermore, *FT 2056* has six Outcomes, Outcome 6 being: *"****Sustainable*** *– The transport system is economically and environmentally* ***sustainable****, affordable for customers and* ***supports emissions reductions****."* (p. 15) Whether the Project can be described as sustainable and whether it support emissions reductions or the aspiration of net-zero emissions by 2050 is questionable. The argument is put forward in the EIS that the Project will result in less congestion which will therefore have benefits on emissions reductions. But any such benefits would be minor when compared to the continued and induced demand for private vehicle travel which will be entrenched by the Project. It is highlighted that Council recently declared a Climate Emergency. Based on the climate and sustainability data detailed in the EIS, this Project is not consistent with this declaration. By entrenching car dependency, the Project will continue to generate significant CO2 emissions. Any reduction in emissions due to greater uptake of electric vehicles (EVs) will take decades to realise.	is to provide a more thorough and comprehensive assessment of alternative public transport options to the Project – in particular an extension of the Sydney Trains or Sydney Metro network (e.g. between Chatswood and Dee Why). Evidence is to be provided as to why these public transport options were discounted in favour of the Project. Known alternative public transport-focused solutions with lower climate impacts need to be considered, in order to be consistent with Council's overall strategic intentions with regard to climate change and improved resilience, in particular as defined in *Our Green City Plan 2028* - Sustainability Action Plan for Willoughby City Council.

EIS Chapter 27 – Cumulative impacts EIS Chapter 28 – Synthesis of the EIS		
Issue	**Comments**	**Recommendations**
27/28a. Cumulative impacts of the Projects and other key construction projects and proposals in the Willoughby LGA	Chapter 27 provides an overview of the potential cumulative impacts associated with the construction and operation of the Project and identifies measures which address these impacts. As noted on page 27-2, *"Cumulative impacts can occur when impacts from the project interact or overlap with impacts from other projects and potentially result in a larger overall effect on the environment, businesses or local communities."* Section 27-2 and Table 27-3 detail the projects assessed. Of relevance to Willoughby LGA are: • ***Sydney Metro City & Southwest (Chatswood to Sydenham) – Under Construction 2017-2024*** *The Chatswood to Sydenham component of Sydney Metro City & Southwest involves the construction and operation of a 15.5 kilometre metro line from Chatswood, under Sydney Harbour and through Sydney's CBD out to Sydenham.* *Components of the project relevant to this assessment include:* *• Chatswood dive site* *• Artarmon substation* *• Crows Nest Station* *• Victoria Cross Station*	**27/28a.** In its Response to Submissions, TfNSW is to provide a brief assessment of the cumulative impacts of the Project in relation to the planning proposal for Walter St, Willoughby. It is recommended that a condition of any approval be included requiring TfNSW to engage in early, meaningful and collaborative consultation with Council to ensure that cumulative impacts of the Project can be adequately managed in relation to significant other projects underway or planned in Willoughby LGA including, but not limited to, the following: • ***Sydney Metro City & Southwest (Chatswood to Sydenham)*** *– Under construction 2017-2024* • ***Former Channel 9 site (Willoughby) staged residential development*** *– Under construction 2021-* • ***Planning Proposal for Walter St, Willoughby (Council reference PP-2020/002)*** *– Approved 2020*

	• ***Former Channel 9 site (Willoughby) staged residential development*** *– Under Construction 2021-* *Redevelopment of the Channel 9 site (14 Artarmon Road, Willoughby) for up to 400 residential dwellings with non-residential land uses such as retail/commercial space and landscaping and public domain works.* Another project that should to be included is a **Planning Proposal (PP) for Walter St, Willoughby (Council reference PP-2020/002)** which would involve a significant uplift in residential density, due to the approved proposal to rezone this street from R3 to R4. The construction and operational impacts of such a redevelopment of this area would have cumulative effects, particularly related to construction traffic. This PP was given Gateway Approval in 2020. Section 27.3 details the potential cumulative construction impacts by location. Section 27.4 covers the cumulative operational impacts. Finally, section 27.5 briefly describes proposed environmental management measures. The last section is particularly general and scant on detail. Given the impacts the aforementioned project, Council recommends that TfNSW liaise with Council to ensure impacts can be managed.	

Reference Documents:

Beaches Link and Gore Hill Freeway Connection – Environmental Impact Statement – Transport for NSW – December 2020
Beaches Link and Gore Hill Freeway Connection – Community guide to the Environmental Impact Statement (EIS) – December 2020

Attachment 1:

Willoughby City Council – Community Sentiment Report – Beaches Link and Gore Hill Freeway Connection (BL/GHFC) EIS