



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.

Willoughby City Council EIS Submission - Western Harbour Tunnel and Warringah Freeway Upgrade Project

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 accessibility 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 (Camberay 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:
 - o Lengthen and commence the bus lane west of Miller Street.
 - o Eliminate the crossing of the bus lane by other motor vehicles.
 - o 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:
 - o Replace links that are impacted by the widening of the Freeway including shared path bridges at Ridge Street, Falcon Street and Ernest Street.
 - o Provide short sections of new bicycle route within the Freeway between Miller Street and Ernest Street; and
 - o 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)
 - o Inner eastern carriageways, carrying southbound traffic to the Sydney Harbour Tunnel and for distribution to local destinations such as Neutral Bay.
 - o 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.
 - o 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).
 - o 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
 - o 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.

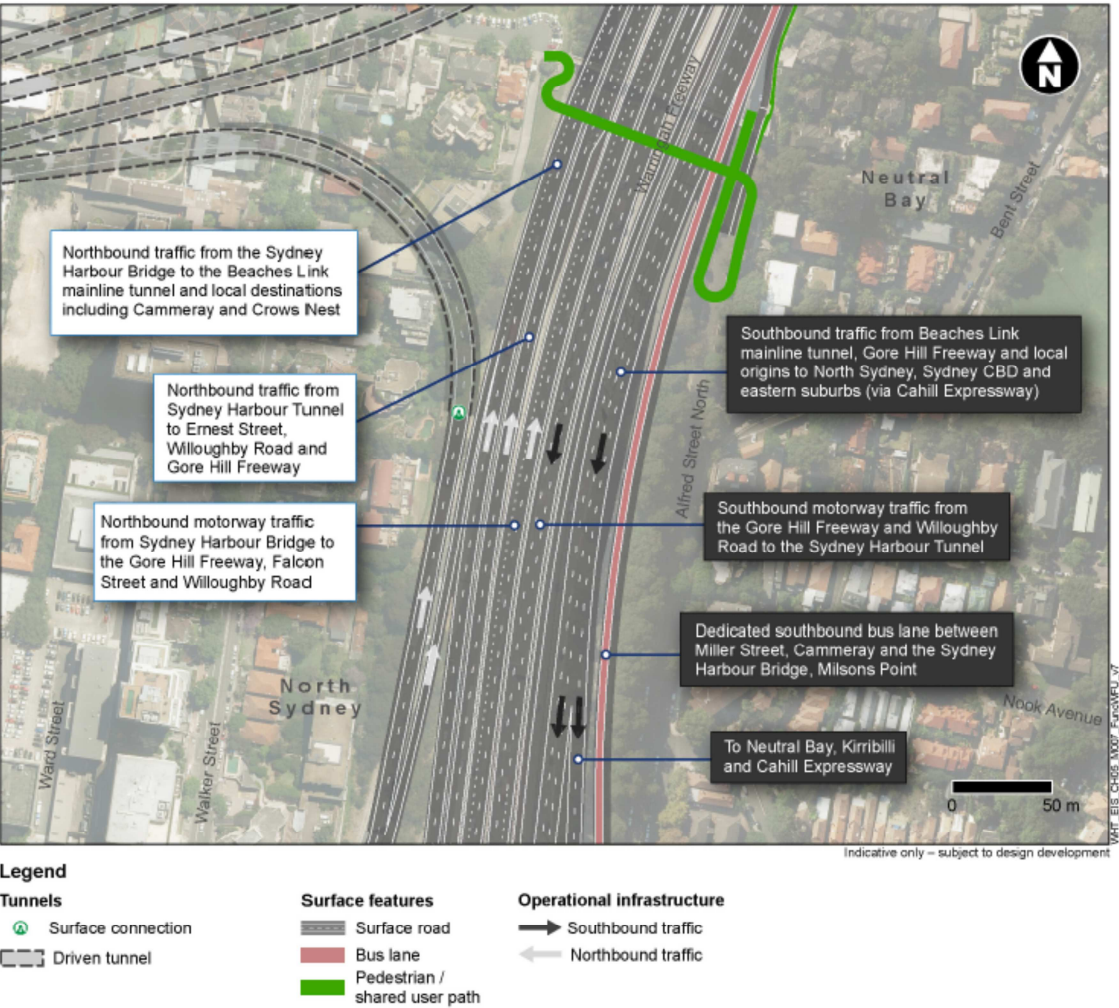


Figure 2: Proposed reconfiguration of the Freeway between Sydney Harbour Bridge and Sydney Harbour Tunnel and Gore Hill Freeway (Source: EIS Chapter 5 Project Description page 5-36)

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:
 - o There will be no direct southbound access from Miller Street and Brook Street to the Tunnel.
 - o There will be no direct northbound access from the Tunnel to Miller Street and Brook Street.
 - o 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).
 - o 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:
 - o 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
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- 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.

- o 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.

- o 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.
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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.
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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 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 existing T2 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:
 - o Promote the use of the Tunnel
 - o Encourage higher use of more sustainable transport modes.
 - o 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 indicators 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.

Artarmon Industrial Area

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

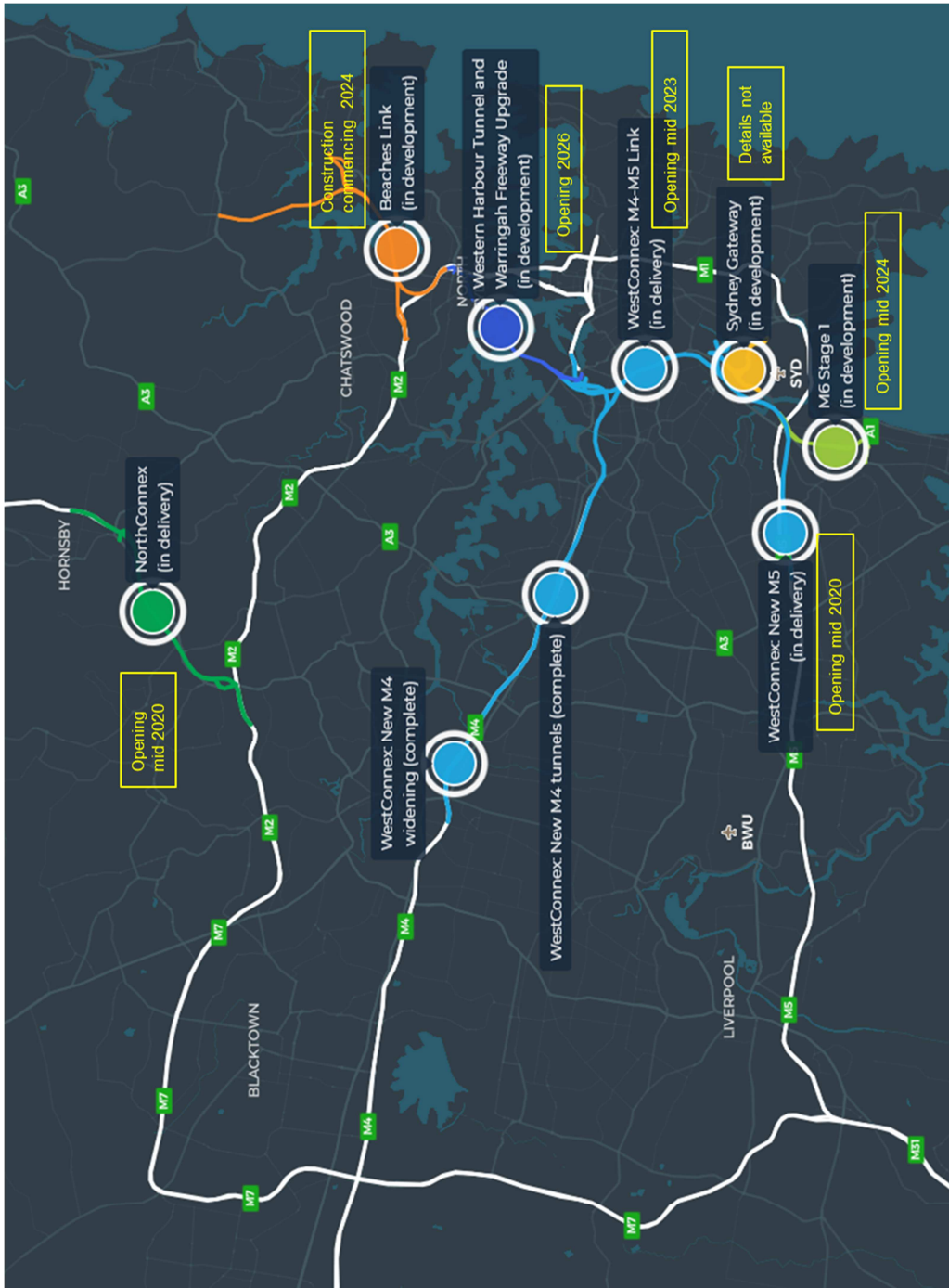
Reference Documents:

- 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

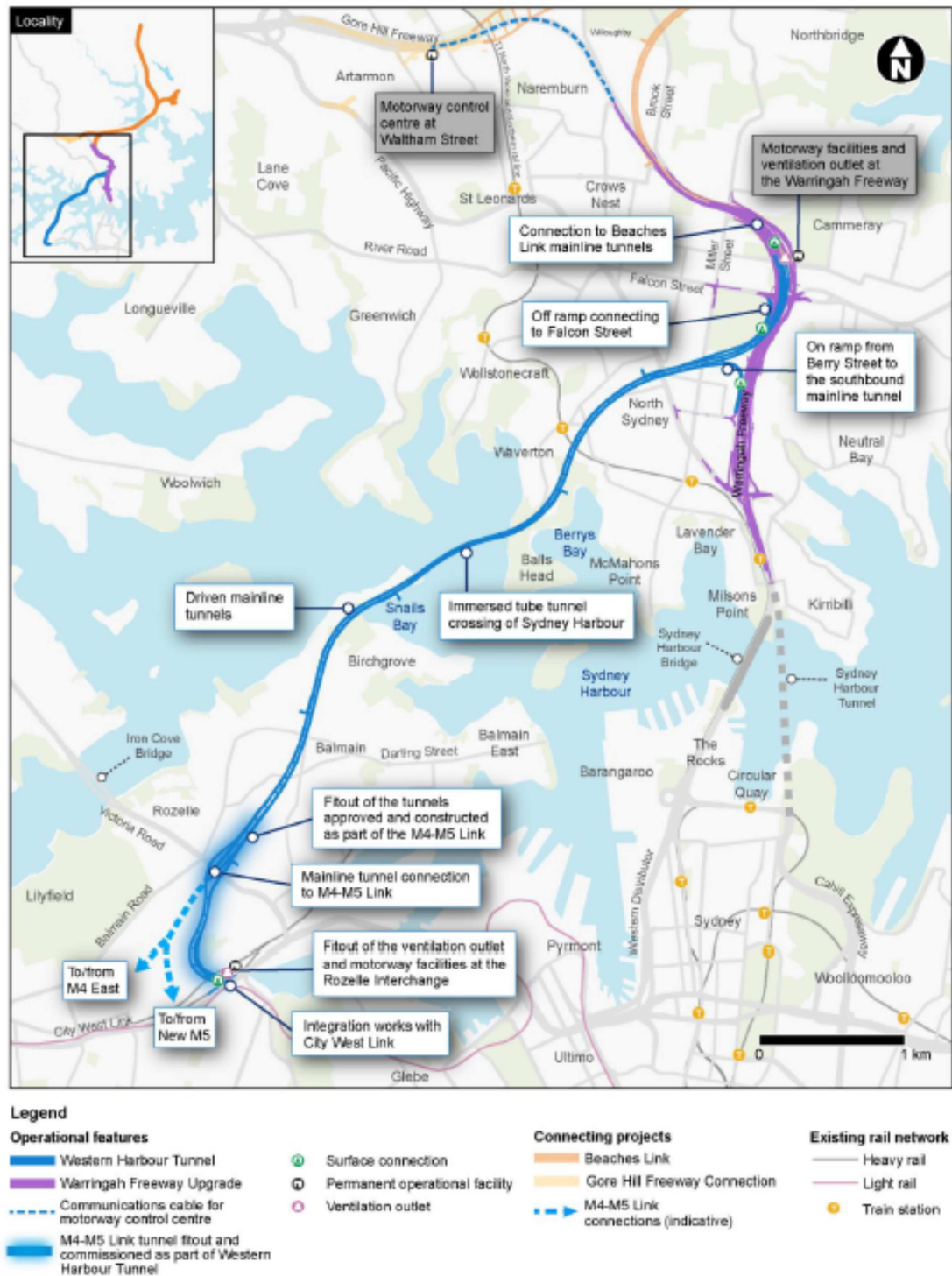
No.	Description
1	Sydney Motorway Network and Current Delivery Status
2	Project Scope
3	Western Harbour Tunnel Portals
4	Trip Distribution Strategy
5	Proposed change to the Urban National Land Transport Network (Road) in Sydney
6	Proposed Alphanumeric Route Numbering Changes
7	Proposed New Motorway Name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

Sydney Motorway Network and Current Delivery Status



Project Scope

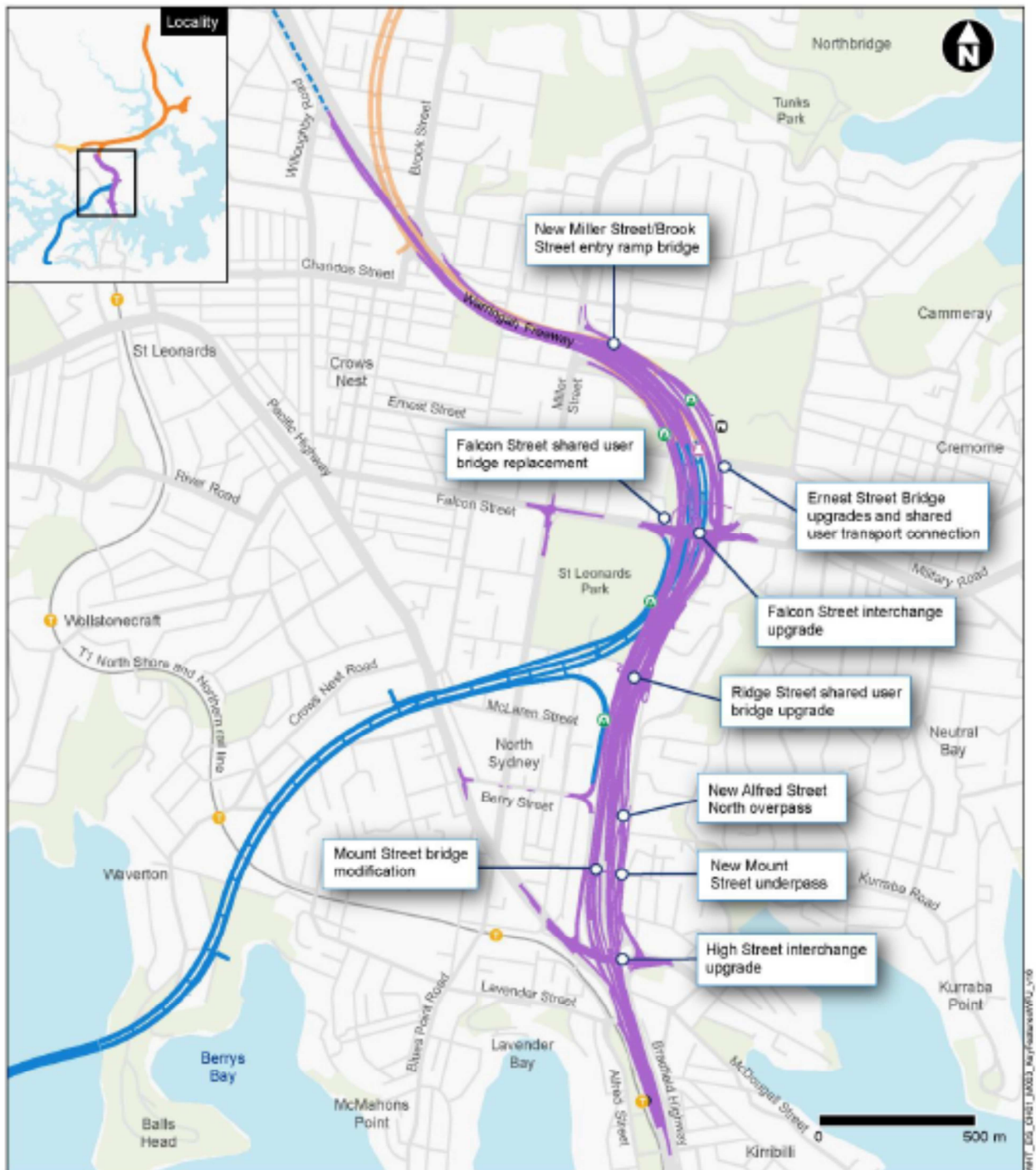
Western Harbour Tunnel



(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

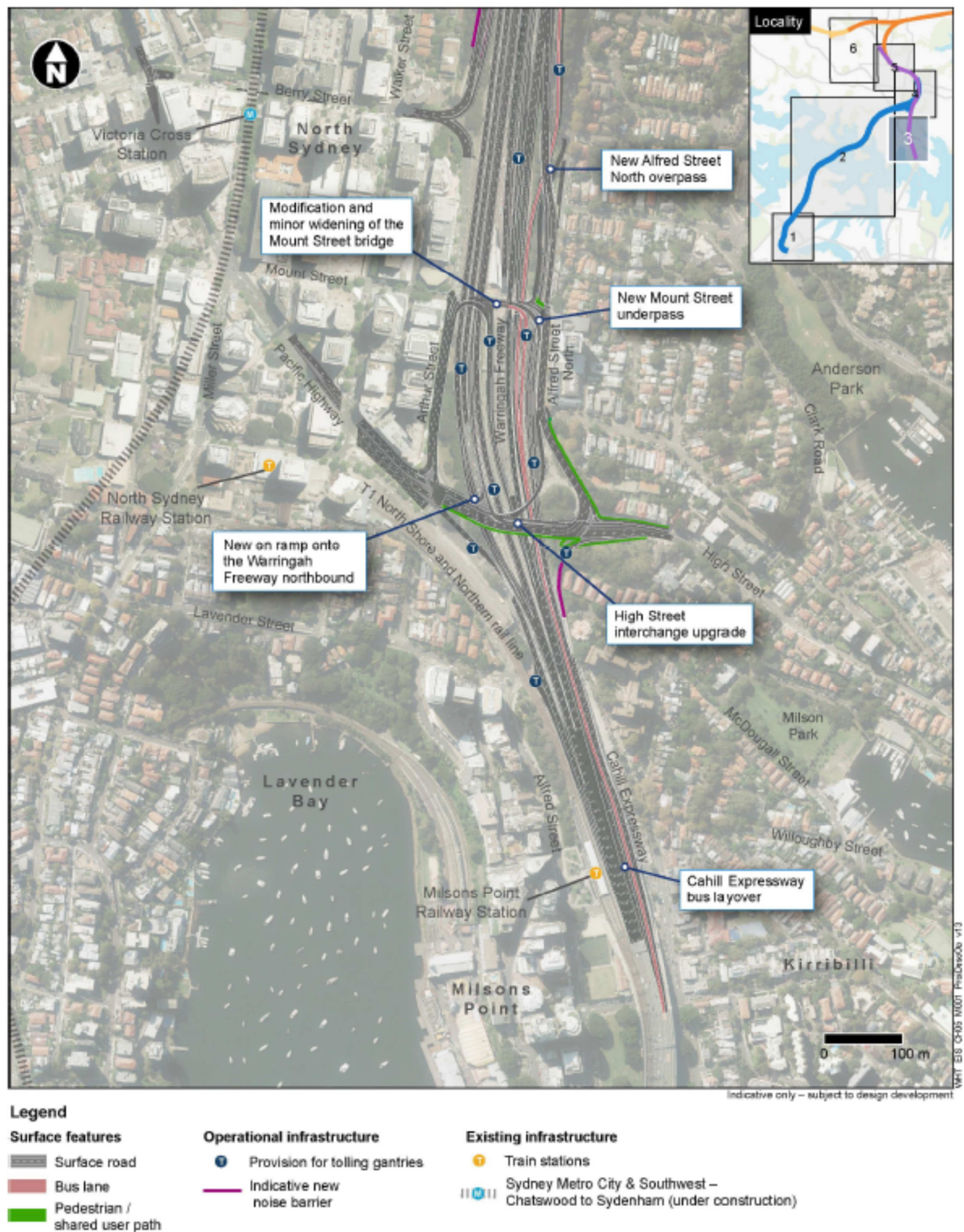
- Beaches Link

Existing rail network

- Heavy rail
- Train station

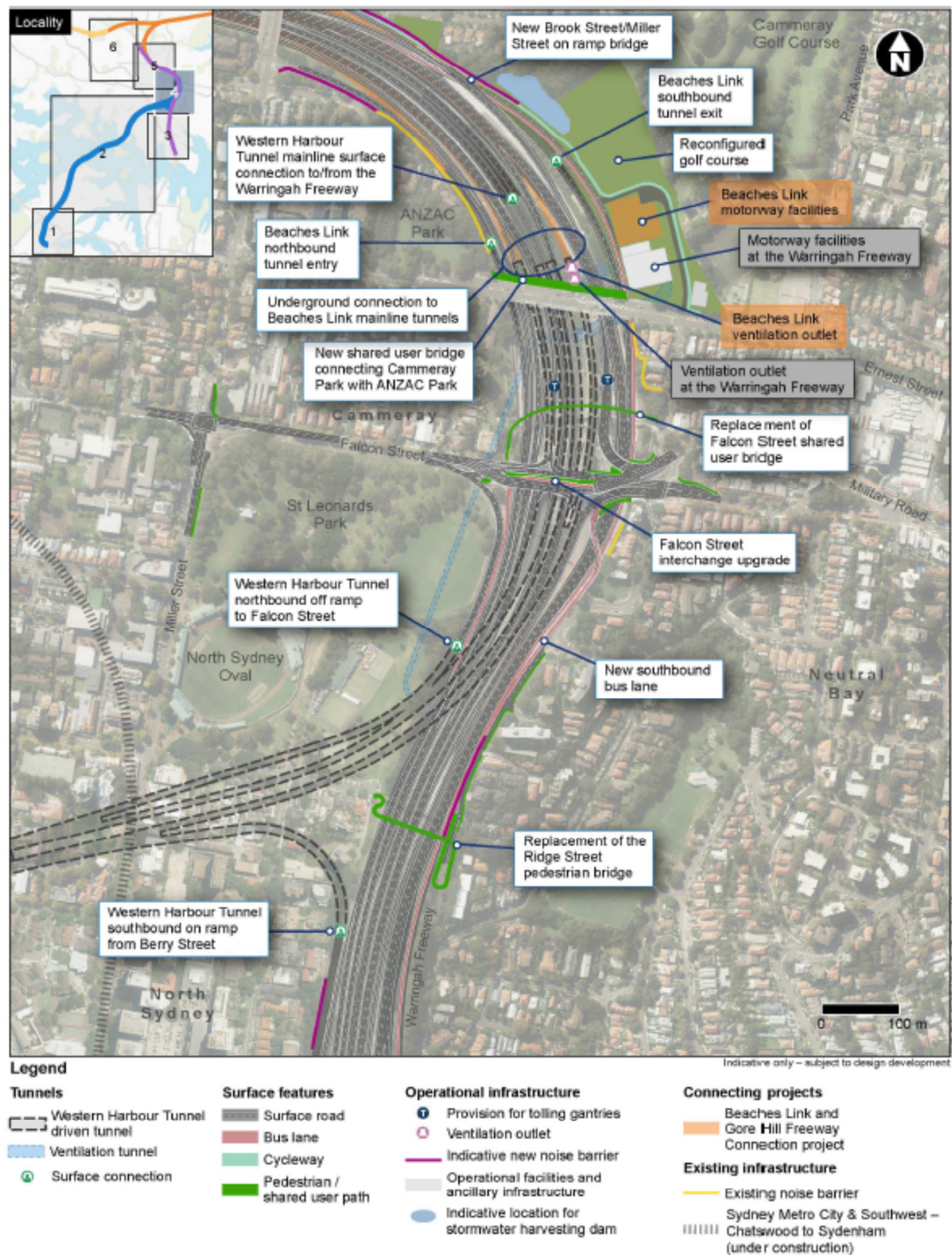
(Source: Technical Working Paper page 4)

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



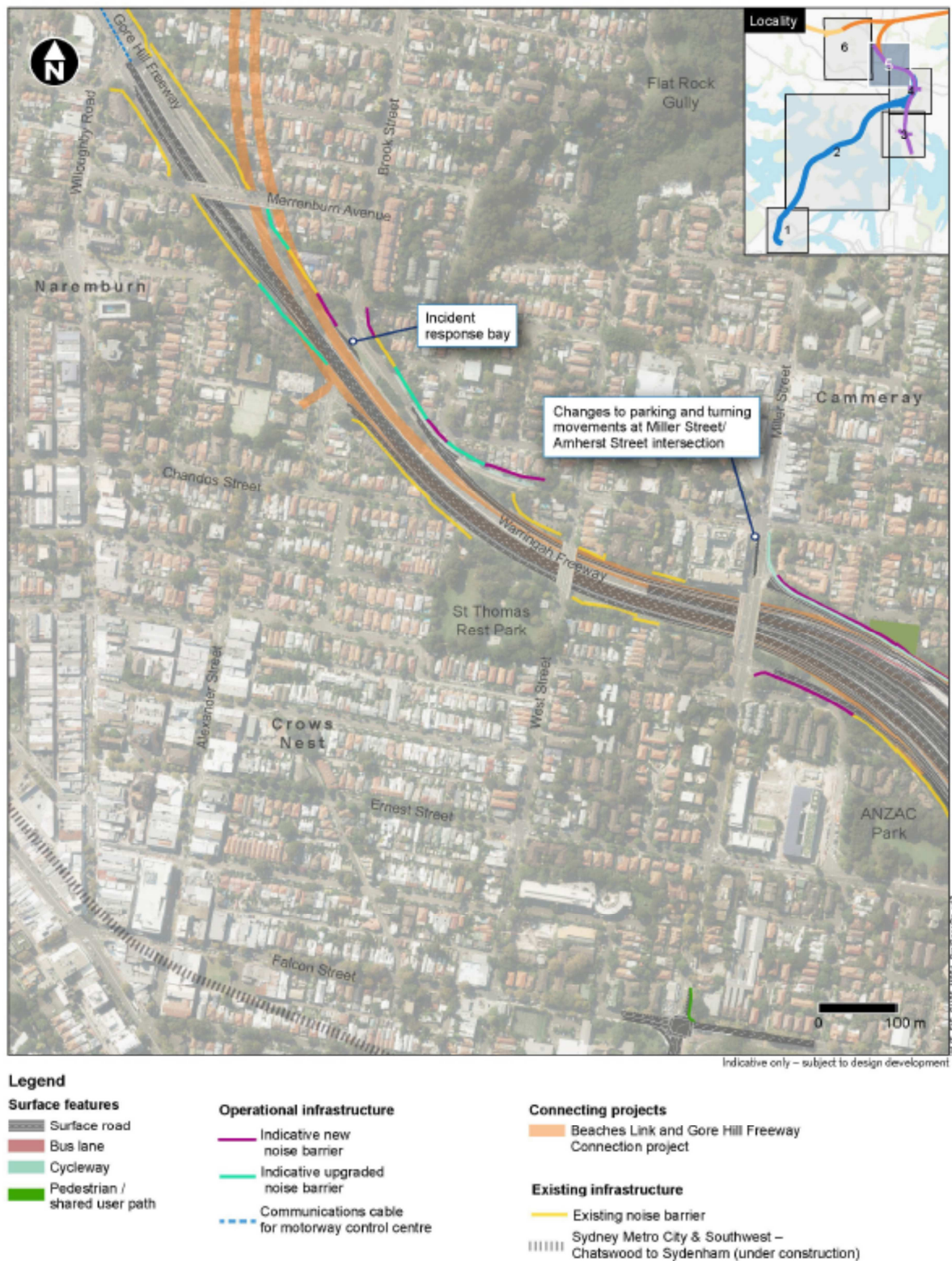
(Source: EIS Chapter 5 page 5 - 10)

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



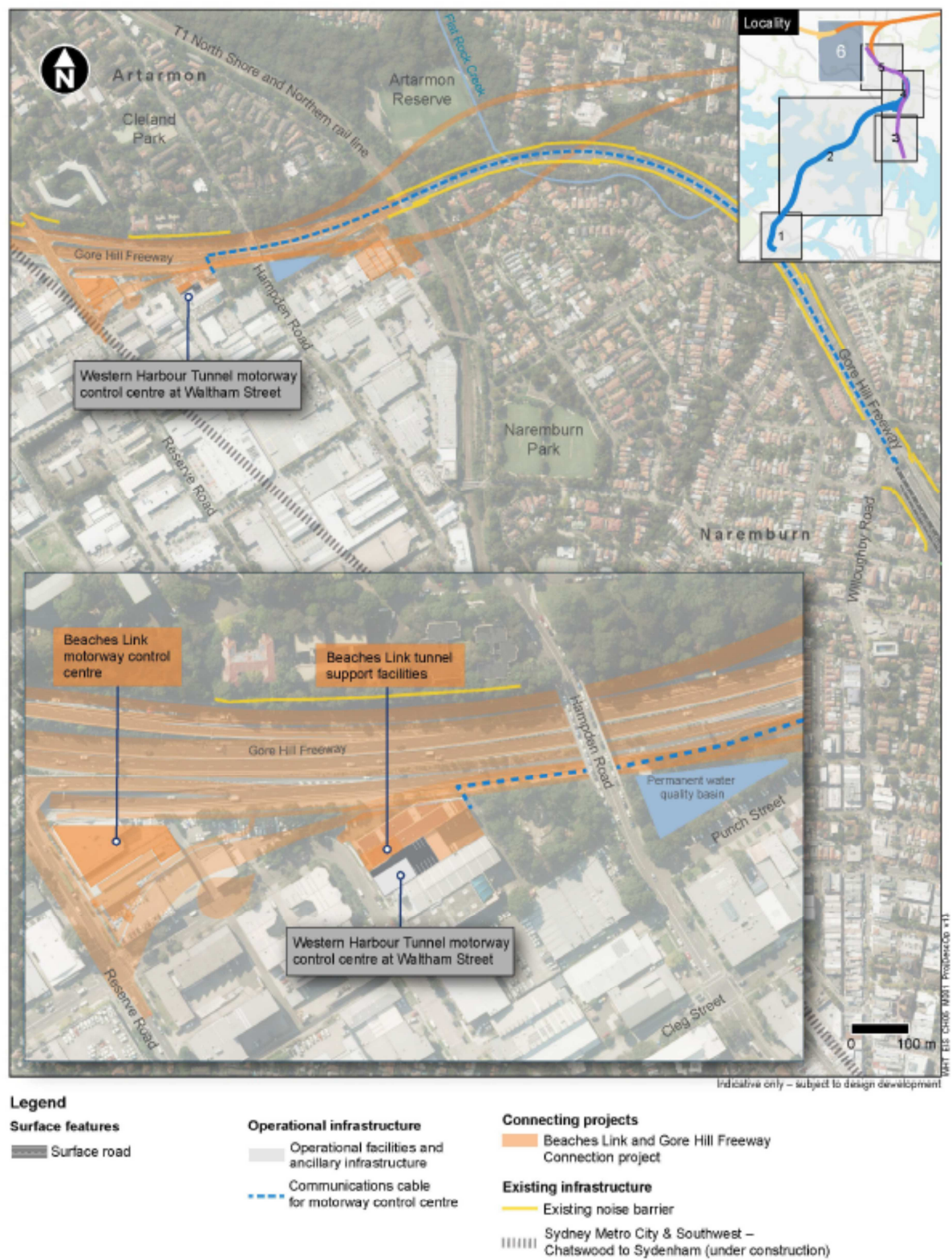
(Source: EIS Chapter 5 page 5 - 11)

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



(Source: EIS Chapter 5 page 5 - 12)

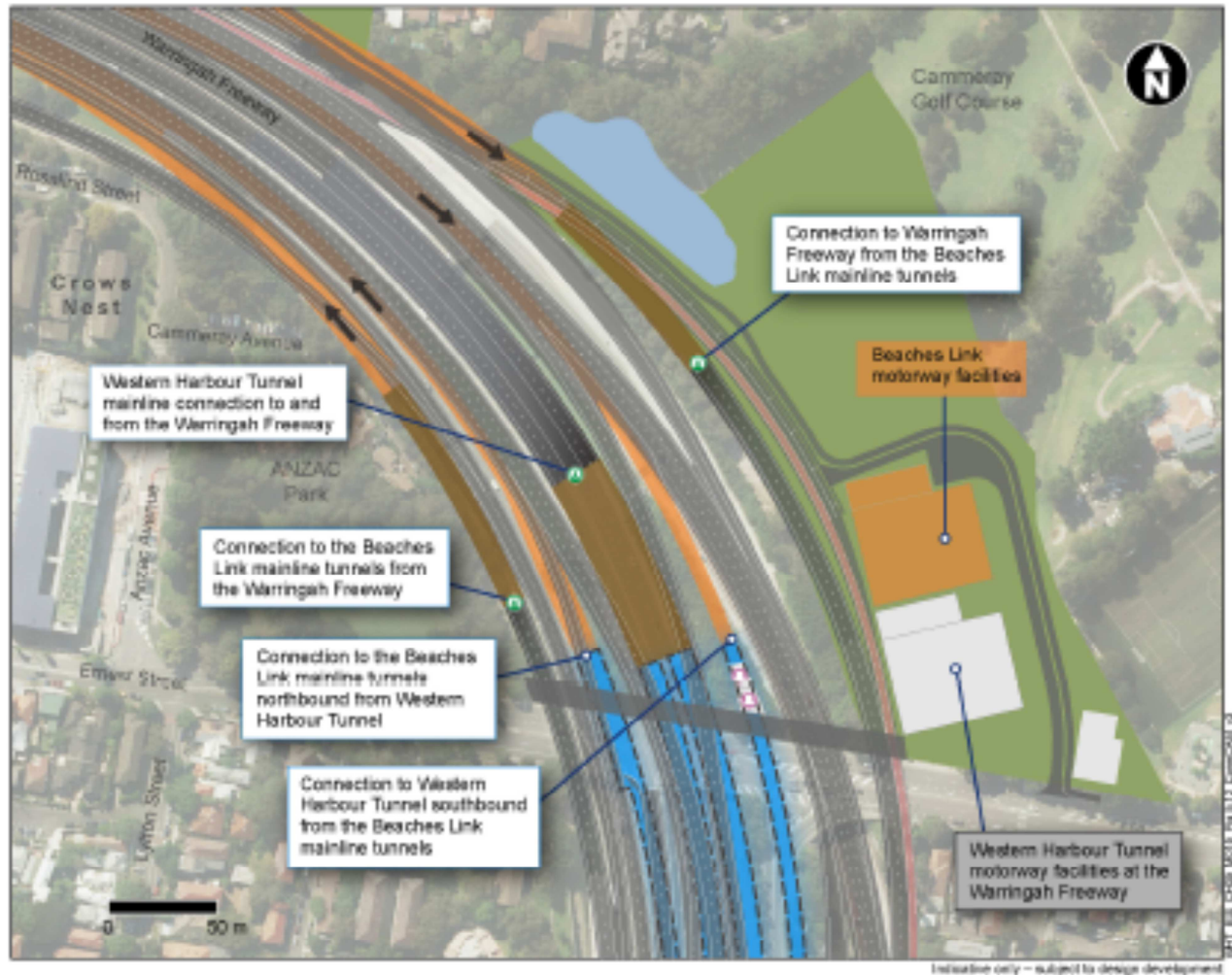
Warringah Freeway Upgrade - Willoughby Road, Naremburn to Reserve Road, Artarmon



(Source: EIS Chapter 5 page 5 - 13)

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

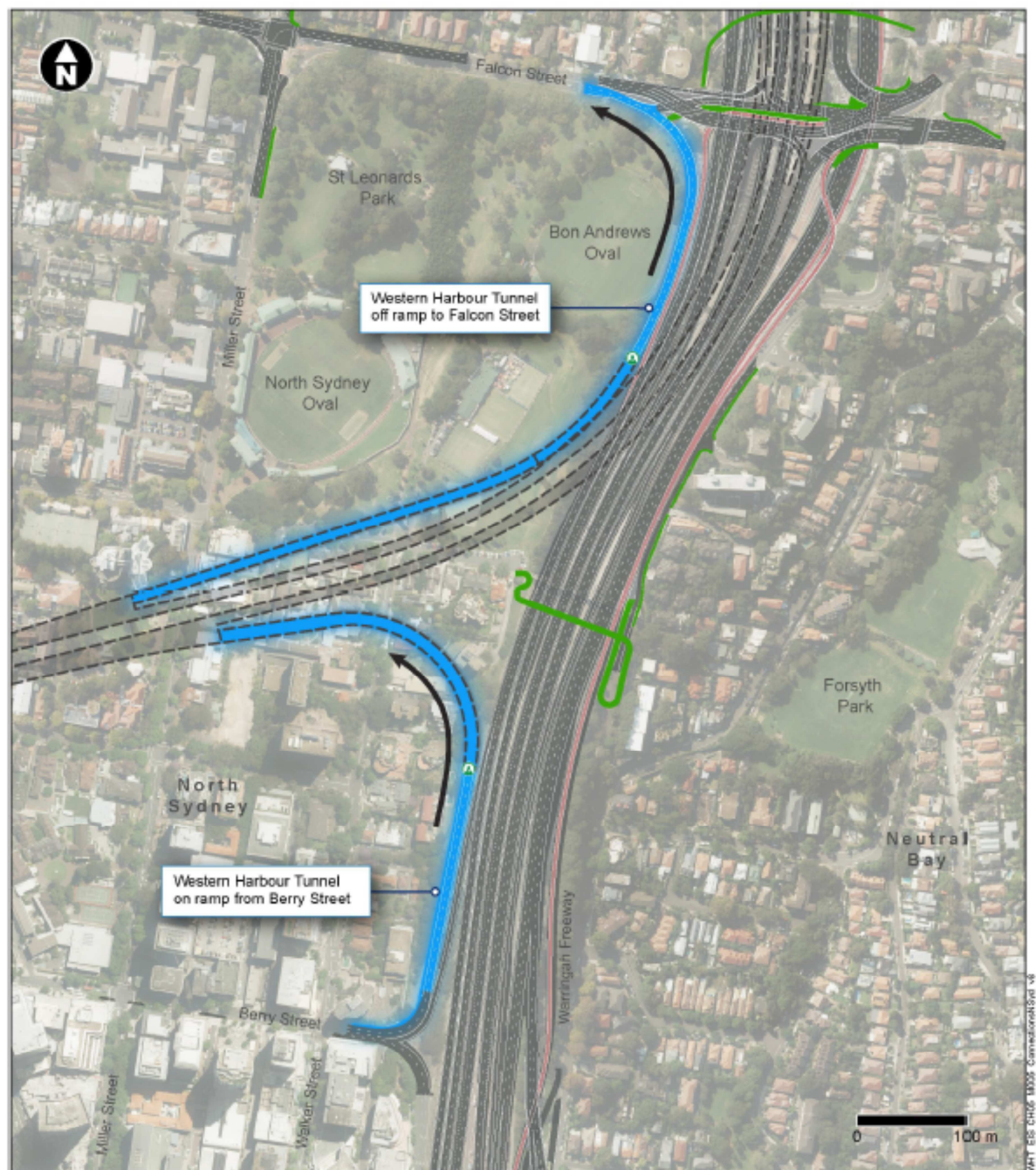
Operational infrastructure

- 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

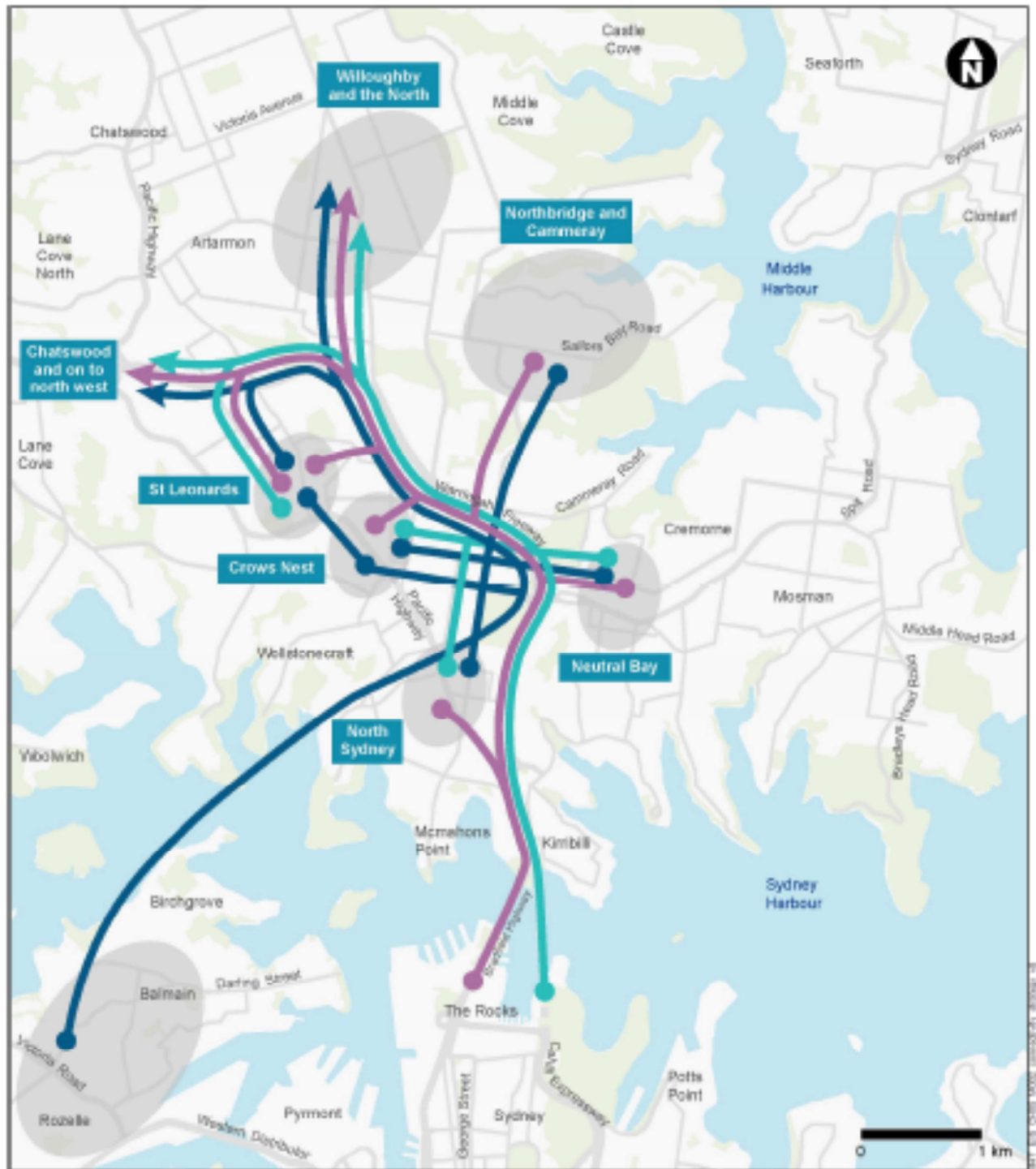
Surface features

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

Operational infrastructure

- ➔ Direction of traffic

Trip Distribution Strategy



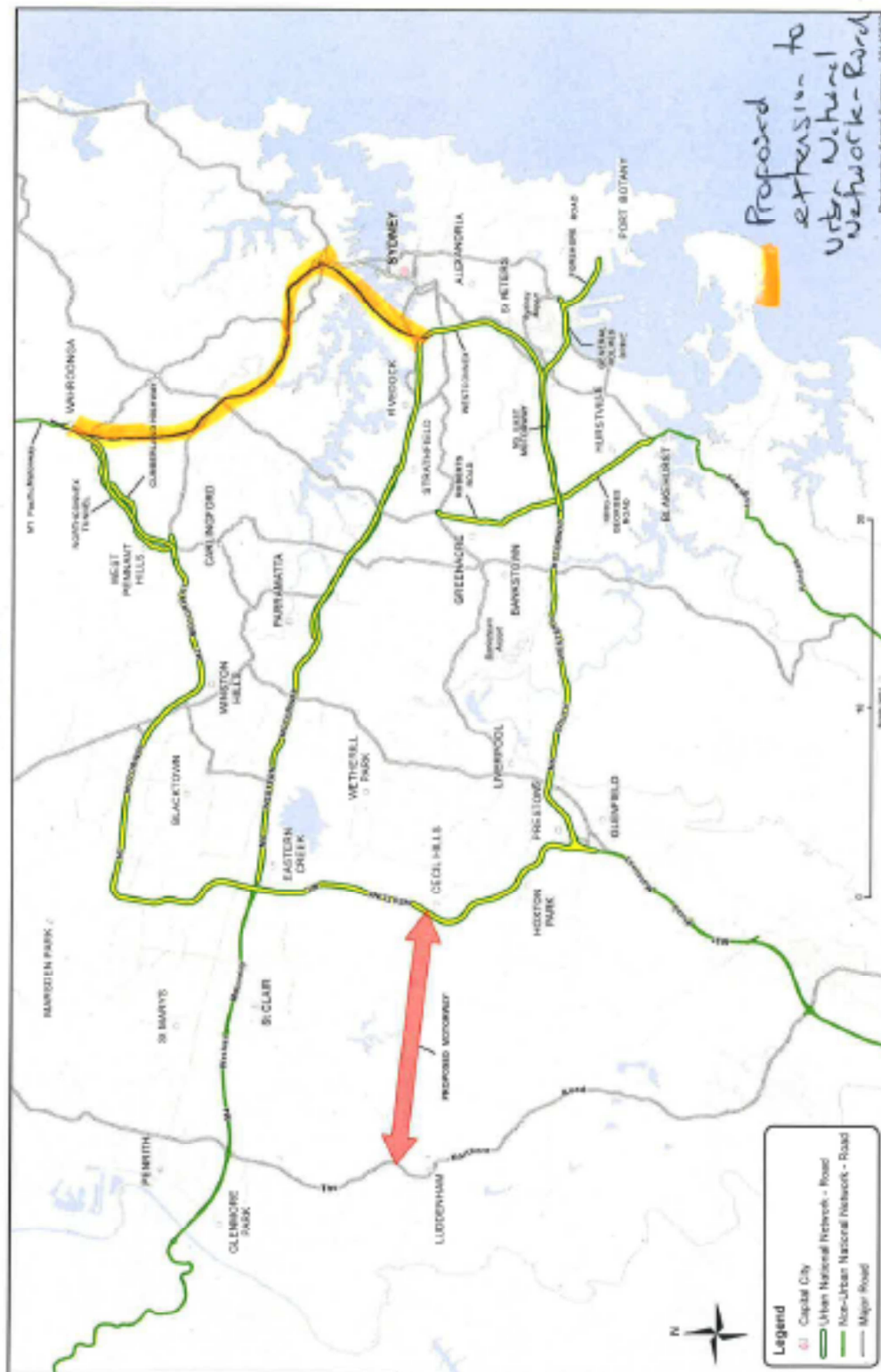
Legend

- Sydney Harbour Tunnel
- Sydney Harbour Bridge
- Proposed Western Harbour Tunnel and Beeches Link
- Precincts

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

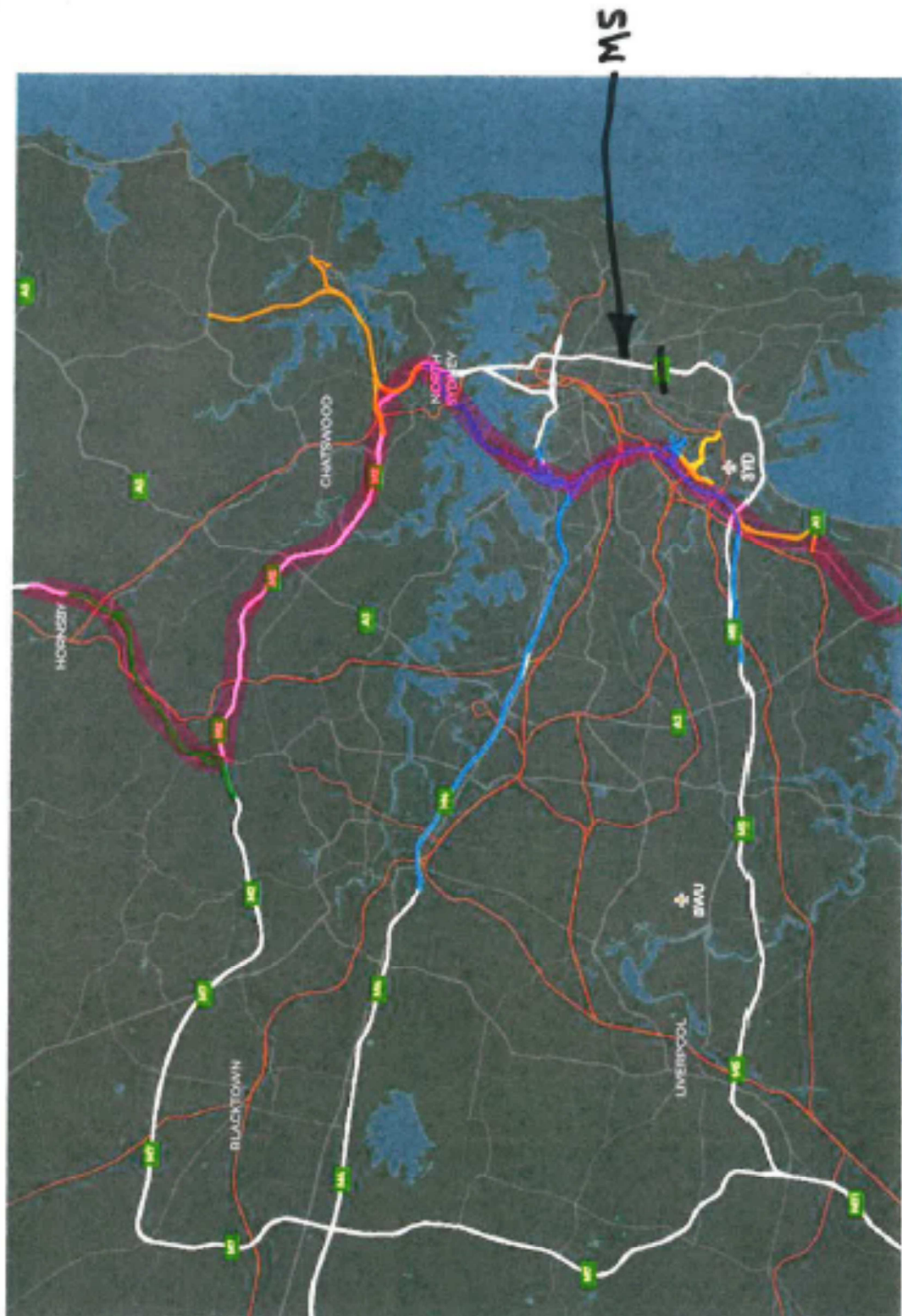
Proposed change to the Urban National Land Transport Network (Road) in Sydney

URBAN NATIONAL LAND TRANSPORT NETWORK ROAD



Proposed Alphanumeric Route Numbering Changes

Proposed Change to Sydney Alpha-numeric route numbering System (1-2)

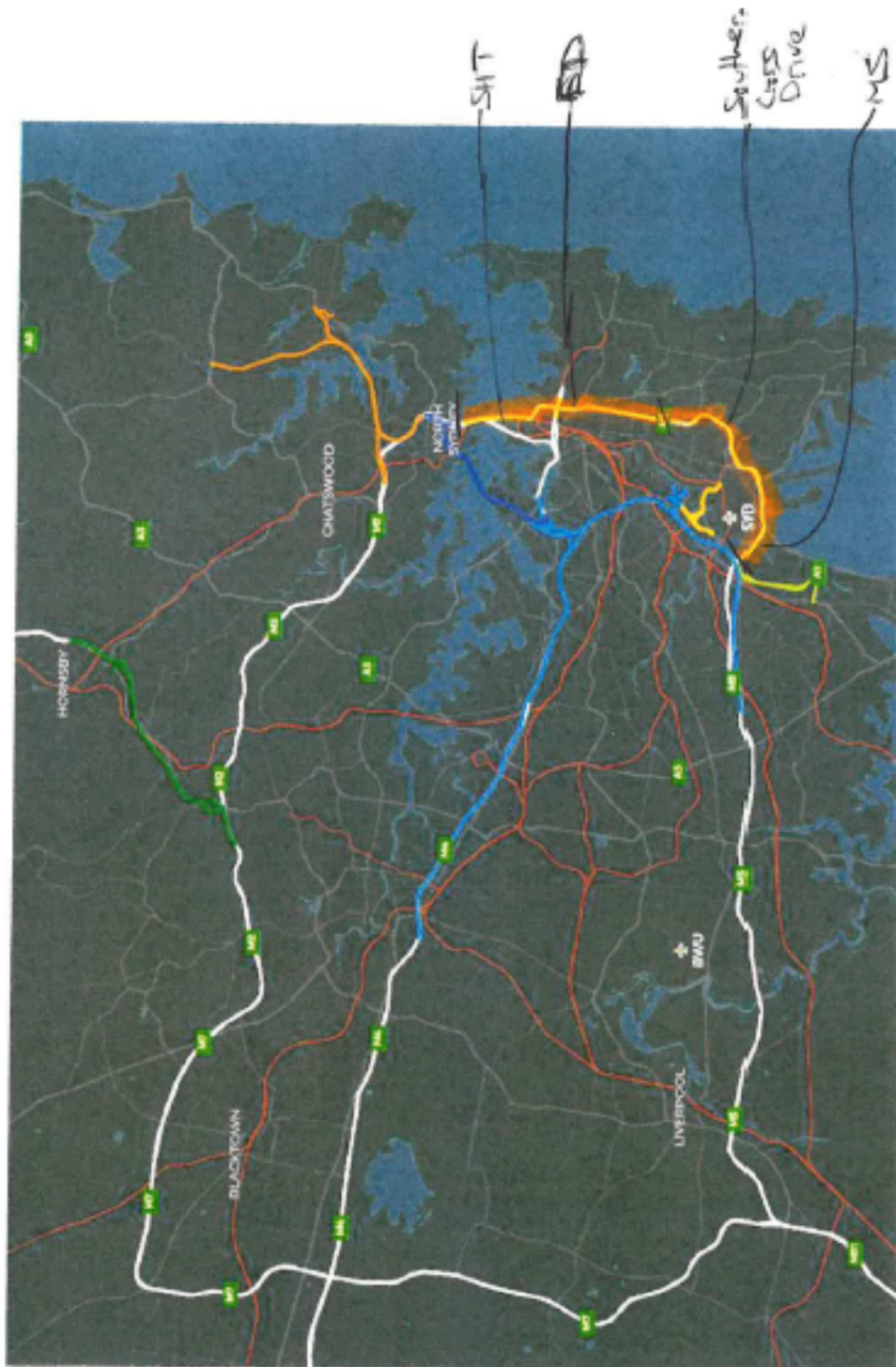


See also next page.

M1

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

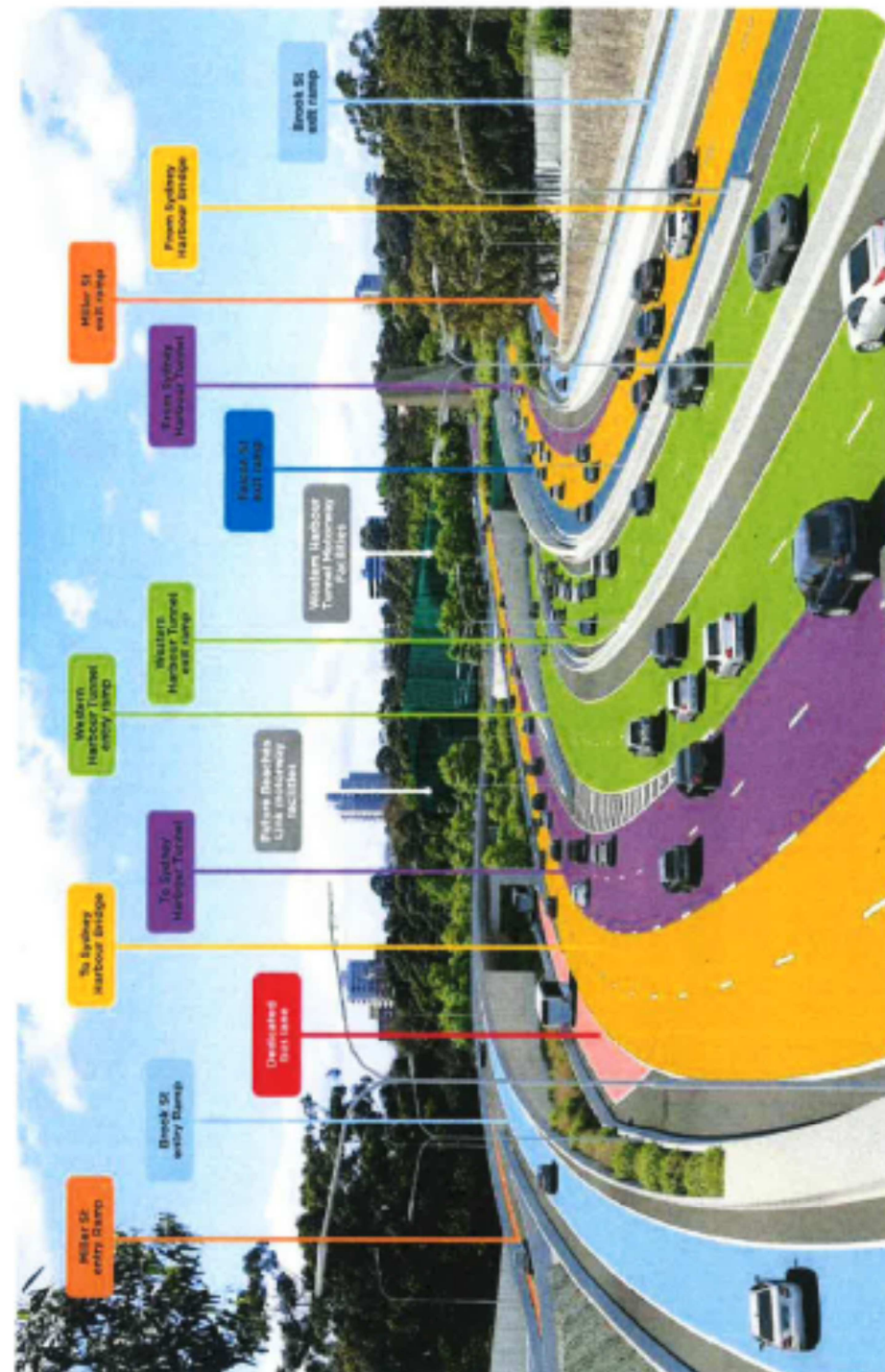
Proposed to introduce a new Motorway Name



SHT = Sydney Harbour Tunnel
ED = Eastern Distributor

Proposed new motorway name is Eastern Motorway

Warrinich Freeway - east of Miller St.



LOOKING SOUTH

$\frac{P}{\text{Wavelength}} = \frac{T_2}{\text{beat time}}$